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NORONT RESOURCES LIMITED

TECHNICAL REPORT
ON THE MINERAL RESOURCE ESTIMATE
FOR THE BLACK BIRD CHROME DEPOSITS
JAMES BAY LOWLANDS
NORTHERN ONTARIO, CANADA

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1.0 SUMMARY

1.1 TERMS OF REFERENCE, PROPERTY DESCRIPTION AND OWNERSHIP

At the request of Mr. James Atkinson, Exploration Director for Noront Resources Ltd (Noront), Micon International Limited (Micon) has been commissioned to provide an independent resource estimate of the chromite mineralization on the Blackbird 1 (BB1) and Blackbird 2 (BB2) deposits, and to prepare a Technical Report in accordance with the requirements set out in Canadian National Instrument 43-101 (NI 43-101). The estimate of mineral resources contained in this report conforms to the CIM Mineral Resource and Mineral Reserve definitions (December, 2005) referred to in NI 43-101.

The Blackbird chromite deposits are located in the McFaulds Lake area in the James Bay Lowlands of north-central Ontario, some 260 km north of the town of Nakina. The project area comprises 512 hectares centred at approximately 5842500N and 545250E in the NAD83 coordinate system. The claims which include the Blackbird deposits were staked on March 30, 2003 and recorded by John Weduwen on April 22, 2003 following the Spider/KWG VMS discoveries. They were then transferred 100% to Richard Nemis (175159) on June 22, 2003, who subsequently had them transferred 100% to Noront on June 21, 2004. Since then Noront has held these claims as part of the Double Eagle claims.

Noront optioned the Double Eagle claims to Hawk Precious Minerals Inc. (Hawk) which in turn optioned them to Probe Mines Ltd. (Probe). Probe completed an exploration program in early 2006 with 11 holes focusing on VMS style anomalies. Probe returned the Double Eagle Claims to Noront in early 2007.

The Blackbird deposits were discovered during drilling designed to follow an earlier discovery of Ni-Cu-PGE mineralization at Eagle 2 by Noront, which encountered massive chromite. The original discovery hole was NOT-08-1G017 which intersected 48.4 m (not true width) of massive chromite at 194.60 m depth in the hole. Noront has been involved in delineation drilling of the chromite discovery from February, 2008 to June, 2009. Subsequently the Triple J gold zone was discovered at the contact between the granodiorite and the Ring of Fire Intrusion (RFI) in the same area. There are also as yet to be spatially defined PGE zones present. The area is mineralogically complex, proximal to the Eagle's Nest (1km) and although this report is focused on the Blackbird resources, the development of other deposits will impact the economics of the project.

Currently there are no known environmental liabilities and all issues relating to permits and approvals for the project are yet to be tackled. Permits have been submitted for approval for an all-weather landing strip and accompanying roads to the strip, 5 km north of the Blackbird deposits and 3.5 km north of Esker Camp. This would allow for larger planes to land all year long.

1.2 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE,

Access and mode of Transport

The area is accessible by bush plane equipped with floats in the summer, or with skis or wheels during the winter. Esker Camp, where Noront’s operations are based, is approximately 1.5 km northeast of the project area and is used all year round. Direct access to the property is afforded by helicopter in summer but tractors can be used on frozen winter roads. Access for mineral exploration within the area is generally by helicopter, snowmobile and on foot, and most rivers and creeks are navigable by canoe. The closest all-weather road is in Nakina, but a winter road system services the communities of Marten Falls, Webequie, Lansdowne House, Fort Albany and Attawapiskat, which could be extended to give access to the area.

Climate

The James Bay Lowlands area of Northern Ontario has a humid continental climate with cool short summers and cold winters. The area does not experience a dry season. The summer temperatures are generally between 10°C and 20°C with a mean July temperature of 12°C. Winter temperatures are generally between -10°C and -30°C with a mean January temperature of -21°C. The extreme winter minimum is -48°C. The period from mid-June to mid- September is generally frost free. Lakes start to freeze in mid-October and start to thaw in mid-April. The average annual precipitation is 699.5 mm with approximately 241.6 mm falling as snow.

Topography, Elevation and Drainage

The Blackbird project area is generally flat with a mean altitude of 170 m ASL. The ground rises from an altitude of 120 m in the northeast to 220 m in the west-central to southwest part of the general area. The local relief of the area is very low, generally less than 15 m.

Drainage in the area is poor due to the lack of relief. Streams and rivers are generally incised only 5 to 10 m below the surrounding terrain and as a result, much of the area is waterlogged throughout the year. The waterlogged surface makes surface travel difficult, except during the winter months (December to April).

Vegetation

The Blackbird project area is in the Tundra Transition Zone and more specifically the James Bay Lowlands. This is an area of transition lying between coniferous and mixed forests of the clay belt to the south, and the tundra to the north. Where it is poorly drained, vegetation is primarily grasses, sedges and lichens, and sometimes stunted black spruce and tamarack. On well drained raised beaches and along rivers and creeks, forests are composed of larger balsam fir, white and black spruce, trembling aspen and paper birch and rarely jack pine. Willows and alders are also present along creeks and in poorly drained areas.

Local Resources/Infrastructure/Surface Rights

The local services available at Attawapiskat, Webequie and Marten Falls/Ogoki (see Figure 2.1 for location) are limited, but include an airport, health clinics, public schools, mail, telephone/facsimile, internet and various community stores and services. There are two hotels in Attawapiskat and one in Webequie. All communities are connected to the south via winter roads in the winter. West Caribou Air Service commenced charter air service operation from Webequie in 2008. Flights to Thunder Bay from Webequie are available seven days a week via both Wasaya Airways and Nakina Air Service.

The claim group containing the Blackbird deposits is sufficiently large to accommodate an underground operation, surface mining facilities, accommodation for personnel and waste dumps. Water is available and is potable although high in iron content straight from the ground. Water is currently being treated onsite at Esker Camp for cooking, drinking and cleaning purposes. Sufficient water would be available for mineral processing as well. Due to the remote nature of the project area, generators would be required for electrical power. To create onsite processing plants it might be more feasible to have an all season road or railroad to the site and to transport chromite to a town with sufficient infrastructure to support a plant. A winter road extending from Webequie to the project area is being planned, but it would be preferable to build an all-weather road from Nakina or extend rail service from Nakina, located 300 km to the south of the project area.

1.3 GEOLOGICAL OUTLINE

Diamond drilling information reveals that the environs of the Blackbird deposits are defined by flat-lying, Paleozoic platform rocks which are covered by a thin but extensively developed layer of glacial and periglacial sediments. Due to paucity of outcrop, the underlying Precambrian geology of the area has largely been inferred from airborne geophysical data augmented by sparse gravity and diamond drill hole data. Aeromagnetic patterns suggest the presence of:

- A Precambrian basement complex consisting of Precambrian rocks (volcanic and meta-sedimentary rocks collectively referred to as greenstone belt rocks).
- A regional scale granodiorite pluton intruded into and causing the doming of the host greenstone rocks.
- A mantle-derived magnetic mafic/ultramafic layered intrusion emplaced along the margin of the granodiorite. This has been dubbed the Ring of Fire Intrusion (RFI).

In this report the current focus of geological interest is the RFI. The RFI is host to the Blackbird deposits as well as the Eagle’s Nest Ni-Cu-PGM magmatic massive sulphide (MMS) deposit, the Eagle Two Ni-Cu-PGM MMS deposit, and the Thunderbird vanadium deposit on Noront’s property, as well as the Black Thor, Black Label, Black Creek and Big Daddy Chromite deposits on adjacent properties.

1.4 DEPOSIT TYPE

Class

The Blackbird and other associated chromite deposits within the RFI belong to the stratiform chromite class.

Stratiform Cr-Ni-Cu-PGE deposits are typically hosted in large layered mafic-ultramafic intrusions such as the Bushveld in South Africa, the Great Dyke in Zimbabwe and the Stillwater Complex in Montana. These are typified by chromite horizons which are laterally continuous over tens to hundreds of kilometres and easily differentiated based on geochemical and textural attributes. Other examples of stratiform chromite deposits on a smaller scale include the Kemi deposits in Finland, the Muskox Intrusion in the Northwest Territories and the Bird River Sill in Manitoba (Canada), and the Campo Formoso and Jacurici Valley in Brazil. Amongst these examples it is the Kemi deposits that most closely resemble the mineralization style seen at the Blackbird deposits.

Genetic Model

The Blackbird chromite deposits, like other stratiform chromite deposits, are formed by magmatic segregation during fractional crystallization of mafic-ultramafic magma. The challenge facing researchers is to explain the generation of large volumes of chromite from primitive melt.

Many hypotheses have been presented regarding the formation of massive chromite deposits and the research has shown that the process is much more complex than gravitational settling alone. Some early hypotheses included liquid immiscibility (McDonald, 1965), increase in oxygen fugacity (Ulmer, 1969), and changes in total pressure of the magma (Lipin, 1993). Other, more commonly cited hypotheses, are mixing of primitive magma with fractionated magma (Irvine, 1977) and crustal contamination of the parental magma (Irvine, 1975; Alapieti et al., 1989; Rollinson, 1997). Evidence supporting the crustal contamination hypothesis has been primarily from the Bushveld Complex and the Great Dyke, where chromitite layers occur at the base of well defined cyclic units. This is currently the most favoured model for an explanation of the Blackbird deposits and is discussed in greater detail in Section 8.2.

1.5 MINERALIZATION

Chromite mineralization on the Blackbird property is hosted in altered peridotite associated with serpentine, talc, magnesite, tremolite-hornblende, chlorite and rare biotite. All primary minerals have been altered from their original forms, although some are recognizable as pseudomorphs. The chromite is syngenetic with its host intrusion and occurs in zones/layers in four main forms: disseminated, banded, semi-massive and massive. Cr:Fe ratios vary from

1.5 in disseminated zones to 2.2 in massive zones. The Cr:Fe ratio is important in determining the end-use of the product as detailed in Section 18.

Disseminated

Disseminated chromite occurs mostly as isolated submillimetric black euhedral grains within the grey talc altered or green serpentinized host rock. The modal abundance of disseminated chromite varies from less than 1% to 25%. Chromite crystals tend to form small chains and clusters once the modal abundance is greater than roughly 7%.

Semi-massive chromite

Semi-massive chromitite occurs in strongly disseminated zones where the modal abundance of chromite is between 25% and 45%. The rock displays antinodular texture, with submillimetric chromite crystals distributed around larger olivine pseudomorphs, usually 1-4 mm in size.

Banded chromite zones

Within the Blackbird 2 area, close to the western contact between the ultramafics of the RFI and granodiorite, chromite mineralization, in some places, occurs as centrimetric/decimetric thin bands of massive chromite. The distribution of multiple small scale chromite bands would appear to indicate multiple fluxes of ultramafic magma, allowing for the deposition of multiple beds.

Massive chromite

The massive chromite of the Blackbird deposits occurs predominantly as lenticular bodies and/or tabular bodies which can be traced for hundreds of meters. Massive chromitite is also found as smaller scale pods or beds, most of which are not traceable for more than 50 m, interlayered with dunite and harzburgites. This interlayered zone, constituting part of Blackbird 2, has so many small scale pods and lenticular bodies that it is difficult to identify each pod individually.

1.6 EXPLORATION

Exploration Concept

Due to the paucity of outcrops and swampy nature of the project area, targets for diamond drilling were established using geophysical techniques. A summary of the airborne and ground geophysical surveys undertaken and the significant results follows. All geophysical work was done by contractors as detailed in the main text, Section 11.

2003 FUGRO Airborne survey

This magnetic and electromagnetic survey identified several bedrock conductors which were initially thought to be associated with VMS mineralization but later found to be associated with the ultramafic units that host the Blackbird deposits and magmatic massive sulphide (MMS) mineralization.

2004 Ground Magnetic and Horizontal Loop EM Survey

These were conducted to get better resolution of the anomalies (conductors) identified by the 2003 Fugro airborne survey. The significance of this survey is that it led to the discovery of the Eagle's Nest MMS mineralization.

2007 Noront Aerotem II Helicopter Surveys

This survey was conducted to get a regional picture of the trends of mineralized conductors in the McFaulds Lake area encompassing the whole of the RFI. Several companies with claims in the region participated; these include Noront, Spider Resources Inc., KWG Resources Inc. and Freewest Canada Resources Inc. As far as the Noront claims are concerned, the target showing the highest conductance was dubbed AT2 and was later drilled leading to the discovery of the Blackbird 1 chrome deposit and the adjacent Eagle 2 Cu-Ni-PGE mineralization.

2008 Magnetic, VLF, HLEM, Gravity and Large Loop TDEM Surveys

These ground based surveys were designed to follow-up on the 2007 Aerotem Helicopter Surveys in order to prioritize drilling targets. The results led to the prioritization of an anomaly about 500 m to the northeast of the AT2 anomaly which was later drilled leading to the discovery of the Blackbird 2 chromite deposit.

2008 Drill Hole IP Surveys

Borehole Spectral IP/Resistivity surveys (BHIP) were performed by JVX between May 11, 2008 and August 31, 2008. Thirteen holes on a variety of Noront's anomalies were done; only one was done on the AT2 anomaly (Eagle Two and Blackbird deposits), NOT-08-1G39. In the borehole IP survey, direction logs (Gradient) and detection logs (Pole-dipole and Mise-a-la-masse) were used. NOT-08-1G39 was blocked at 274 m but showed a weak conductive zone starting at 257 m and a chargeability zone at 247.5 m which continued to the blockage. Chargeability profiles show four chargeable zones centred at 72.5 m, 112.5 m, 172.7 m, and 212.5 m, respectively, using gradients. No known mineralization accounted for the observations listed above.

2009 TDEM Surveys

The work was carried out by JVX and was aimed at delineating the granodiorite- ultramafic contact at Blackbird 2. Subsequently, evaluation diamond drill holes were sighted with better precision into the ultramafic host rocks of chromite and MMS mineralization.

Comments

Overall, the geophysical techniques employed have so far been successful in achieving the desired goals. However, there are still a number of other geophysical targets that need confirmation by drilling.

1.7 DRILLING

Procedures

The earlier drill holes directed at Blackbird 1 (AT2 geophysical anomaly) were vertical, while the later drill holes directed at Blackbird 2 were drilled at -50 degrees towards 155 degrees to cut the mineralization as closely as possible at right angles. Rare holes were drilled at other dips and angles, this was usually to avoid a fault zone or for determining local stratigraphy and to confirm mineralization continuity. The average drill hole length is 340m with the longest hole being 805 m.

The drilling contractor was Forage Orbit Garant of Val d'Or, Quebec. All of the holes were NQ diameter, except in rare instances where the hole had to be re-cased at depth. All holes were surveyed at the collar using a Trimble differential GPS with an accuracy of +/- 30 cm and downhole using a gyro instrument (GyroSmart) which measured dip and azimuth every 3 m. Core recovery was considered excellent and averages approximately 98%.

Results

True thickness of the massive chromite zones varies between 1 m and 32 m with values ranging from 30% Cr_2O_3 to 45% Cr_2O_3 with Cr:Fe ratios of between 1.8 and 2.2. The disseminated mineralization has lower Cr_2O_3 grades and generally lower Cr:Fe ratios. The Cr_2O_3 grades and the Cr:Fe ratios which are summarized in Table 11.2 are comparable with those encountered on similar stratiform deposits in South America, Europe and Southern Africa.

1.8 SAMPLING, ANALYSES AND SECURITY

Sampling Methodology and Approach

Following identification of the host lithology, the site geologist used a grease pencil or lumber crayon to mark those intervals of core to be sampled for analysis. The lengths of samples varied from 4 cm to 2 m depending on the extent of chromite mineralization.

Massive chromitite mineralization was carefully marked and sampled along the angled contacts to ensure that grade dilution did not occur. Over zones of homogenous mineralization samples were 1.5 m or 2 m in length. Furthermore, barren host rock flanking mineralized zones was also sampled at 1.5-2 m at the discretion of the site geologist.

Prior to drill hole NOT-08-1G070 only moderately disseminated chromite intervals to massive chromite intervals were sampled with no minimum sample size. For drill holes NOT-08-1G71 to NOT-08-1G119, an estimated cut-off of 2% visible chromite was used and samples were a minimum of 30 cm. For holes NOT-09-1G120 to NOT-09-1G183 the sampling cut off was approximately 15% visible chromite with less mineralized or barren rock on either side sampled as buffer zones with samples a minimum of 4 cm in length.

Holes NOT-08-1G001 to NOT-08-08-119 have been re-sampled, using the latter sample techniques as defined for holes NOT-09-1G120 to NOT-09-1G183). This was done to ensure that grade dilution did not occur, especially in zones where small chromite beds are interlayered with peridotite or dunite.

Sample Preparation and Analyses

Samples received at the laboratory are sorted and verified against the customer list to ensure that all samples have been received and there are no discrepancies. The sorted samples are dried in the original samples bags to ensure that any damp fines are not discarded on transferring into drying containers. The samples are entered into the Laboratory Information Management System (LIMS). The sorted samples are dried at 60 degrees C in a large volume drying room. When dry, the samples are then crushed in their entirety to better than 85% -10 mesh in a TM Engineering Terminator jaw crusher. The sample is then riffle split and an aliquot is pulverized in a TM Engineering TM MAX2 ring and puck pulverizer to 95% -150 mesh. Chromite rich samples are pulverized still finer to 95% -200 mesh to ensure adequatefusion for the analysis.

Analysis is by Fusion XRF for all major oxides (whole rock analysis) and Cr_2O_3, V_2O_5, Ni, Cu and Co.

Security and QA/QC

Samples received at the laboratory are in sealed containers and the laboratory is tasked with checking for any tampering with the seals upon receipt of the samples. No employees of Noront are involved in either sample preparation or analytical work.

Standards are analyzed to verify the quality of the results as a check and are control charted. Once the data have been accepted by the analyst, they are entered into the LIMS system and approved. Reports are then generated and a final quality control check by an independent person is performed. This person also does the final certification of the data. Data are then reported to the client.

Comments on sample quality

Aside from a few narrow intervals of fault gouge and blocky core, no drilling, sampling, or recovery factors were encountered that would materially impact the accuracy and reliability of the analytical results from drill core samples of this drilling campaign.

1.9 DATA VERIFICATION

The data verification completed by Micon was carried out in four stages, viz. (i) site visit to the project area and independent quarter core sampling, (ii) laboratory visit (iii) repeat analyses on selected pulps and (iv) database inspection and validation. On the basis these exercises, Micon was able to ensure the validity and integrity of the database used in the mineral resource estimate.

1.10 MINERAL PROCESSING METALLURGY

Only very limited metallurgical testwork has been undertaken using four composite samples as detailed in Section 16. The metallurgical program completed for Noront by SGS was scoping in nature. It was designed to provide a preliminary indication of the metallurgical performance with regard to chromite recovery and upgrading potential of the Blackbird mineralization. This preliminary testwork indicates that potentially marketable concentrates, suitable for production of ferrochromium, can be produced from the Blackbird deposits with chromium content of over 50% Cr_2O_3, chromium to iron ratio 2.2 – 2.4 and silica content of less than 3% SiO_2.

1.11 MINERAL RESOURCES

Mineral resources for the Blackbird 1 and Blackbird 2 deposits have been estimated exclusively from diamond drill holes. Utilizing collar elevations and lithology logs, the overburden contact was created. The resource estimate was completed using Surpac Version 6.1.3 Software. The Blackbird database consists of a total of 154 diamond drill holes completed over two drill campaigns (2008 – 2009). However, only 82 drill holes contain the relevant information that was used for geological and resource modeling. The majority of the drill holes are on a 50 m grid.

The Blackbird resource estimate has been prepared using a conventional approach that includes block modeling based on a geological interpretation. The interpolation technique employed is ID^3. The results of the Blackbird chrome block model are summarized in Table 1.1.

Table 1.1
Summary of the Blackbird Chromite Block Model Mineral Resources

BLACKBIRD MINERAL RESOURCE SUMMARY REPORT BY CATEGORY					
(i) MASSIVE CHROMITE RESOURCES					
a) RESOURCES MEASURED AND INDICATED					
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-1	Measured	1,635,000	38.42	1.97
	BB2-2	Measured	881,000	35.35	1.95
	BB2-4	Measured	1,675,000	35.36	1.90
	Sub-total Measured		**4,191,000**	**36.55**	**1.94**
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 1	BB1	Indicated	1,895,000	36.56	1.97
BLACKBIRD 2	BB2-1	Indicated	816,000	36.75	1.94
	BB2-2	Indicated	438,000	32.91	1.88
	BB2-4	Indicated	223,000	35.76	1.85
	Sub-total Indicated		**3,371,000**	**36.08**	**1.94**
Grand Total Measured and Indicated			**7,562,000**	**36.34**	**1.94**
b) RESOURCES INFERRED					
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-1	Inferred	2,142,000	36.07	1.95
	BB2-2	Inferred	624,000	24.83	1.65
	BB2-4	Inferred	722,000	40.26	2.19
	Total Inferred		**3,488,000**	**34.93**	**1.95**

Note: All resources have been rounded to the nearest thousand.
Constraining was at 30% Cr_2O_3 allowing for maximum internal dilution of 3 m down the hole.

(ii) INTERCALATED CHROMITE RESOURCES (FRAGMENTED ZONES)					
a) RESOURCES MEASURED AND INDICATED					
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-3a (301)	Measured	450,000	20.35	1.39
	BB2-3b (302)	Measured	537,000	29.63	1.79
	Total Measured		**987,000**	**25.40**	**1.60**
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-3a (301)	Indicated	245,000	25.42	1.55
	BB2-3b (302)	Indicated	61,000	28.31	1.67
	Total Indicated		306,000	**26.00**	**1.57**
Total Measured and Indicated			**1,293,000**	**25.54**	**1.60**
b) RESOURCES INFERRED					
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-3a (301)	Inferred	121,000	22.38	1.37
	BB2-3b (302)	Inferred	185,000	30.51	1.84
	BB2-Lenses (50)	Inferred	2,280,000	31.94	1.78
	Total Inferred		**2,586,000**	**31.39**	**1.77**

Note: Intercalated includes disseminated, semi-massive and thin bands of chromite.
All resources have been rounded to the nearest thousand.
Constraining was based on mineralization and geological trends.

The block model was validated visually followed by checking its conformance to the geological model, comparing block grades (output data) with composites grades (input data) and by a parallel estimate using ordinary kriging.

Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing or other relevant issues. Micon cannot guarantee that Noront will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise for the project. There are currently no mineral reserves on the Blackbird property and there is no assurance that the project will be placed into production.

1.12 CHROME MARKETS

There is no terminal market, such as the London Metal Exchange, for chromite and ferrochromium and prices are negotiated between buyers and sellers, either on the spot market or under contract. Representative prices are reported by industry publications. Prices for chromite are quoted monthly by Industrial Minerals journal based on data from industry participants (producers, traders and consumers). It should be noted that such prices are indicative of market activity and do not represent actual transactions. Unit values may also be calculated from trade statistics although it should be noted that these represent value at the point of export or import and not at the mine gate. A series of representative chromite prices from 2004 to 2009 is provided in Table 1.2.

Table 1.2
Representative Prices for Chromite
(US$/t)

	2004	2005	2006	2007[1]	2008	2009[2]
Metallurgical grade						
South African[3] 40% Cr_2O_3, fob	75-90	65-95	100-145	240-290	320-350	110-130
Turkish 40-402%, 2.5:1				200-300	350	350
Kazakh 40-41% min				200-300	350	350
46% Cr_2O_3, wet bulk, fob						
South African chemical grade	85-125	105-125	175-183	270-350	560-570	210-230
South African foundry grade	130-150	170-195	195-220	300-350	510	240-270
South African refractory grade	100-120	100-120	215-235	455	880	390-410

[1] Turkish and Kazakh metallurgical grades quoted starting January, 2007.
[2] September, 2009.
[3] Friable lumpy grade.
Source: Industrial Minerals, December issues (2004 to 2009).

1.13 INTERPRETATION AND CONCLUSIONS

Noront’s 2008 – 2009 drilling campaigns at Blackbird 1 and 2 have enabled the definition of chromite resources which, in conjunction with the nearby Eagle 1 and 2, warrant the commissioning of studies into infrastructural development. The broad conclusions from this resource estimate are outlined as follows:

Geological Interpretation and Mineral Resources

BB1 has been adequately tested and the limit of the resource, both vertically and laterally, has been established. The chances of expanding this resource in its immediate vicinity are low as several drill holes surrounding this deposit (Figure 11.1 and Figure 17.1) are barren.

BB2 remains open at depth but the lateral extents for all the sub-zones (i.e. BB2-1 to BB2-4) appear to have been well defined by the completed drilling. Micon believes that closer drilling than the existing 50 m grid would not significantly affect the geological interpretation and/or confidence in grade distribution. Infill drill holes where the grid is > 50 m, would upgrade the resource while deeper drilling may expand the resources for all the BB2 zones.

The incomplete sampling particularly in BB2-2 and BB2-3 might have culminated in the grades being slightly understated, as zero values have been allocated wherever sampling information is missing within the limits of the solid/mineralization wireframe. However, the incomplete sampling is of small intervals of visibly barren zones between the mineralized bands and/or intervals.

The drilling pattern and grid have provided enough coverage of the Blackbird claims area and Micon believes that all major chromite layers/zones within a depth 300 m of surface have been identified. However, the possibility of a deep-seated body similar to BB1 or larger cannot be ruled out.

Metallurgy and Marketing

Mineralogical and metallurgical work conducted to date is encouraging. Of most significance is the conclusion that a good marketable chromite concentrate product could be produced (using industry standard mineral separation technologies) from the initial samples submitted by Noront. However, the work conducted on the initial samples is inconclusive. More detailed studies are required using representative bulk samples and variability testwork.

A review of the current chromite markets world-wide indicates reasonable potential for likely new entrants such as Noront’s Blackbird deposits.

1.14 RECOMMENDATIONS

In order for Noront to advance the project to the next pre-development stage, Micon makes the following recommendations:

For the Short-Medium Term

Infill and deeper drilling to upgrade and expand the resource should focus on the high quality segments of the deposits, i.e. BB2-1, BB2-2 and BB2-4. The areas for infill drilling are easily discernible from Figures 17.2 through 17.5. In every case the deepest hole shows strong continuation of high grade mineralization as presented in Table 1.2; and this, in Micon's view, is a very strong incentive.

Table 1.3
Table Showing Grade Intercepts of the Deepest Drill holes

Zone	Deepest Drill hole	From (m)	To (m)	Length (m)	%Cr_2O_3	Cr:Fe Ratio
BB2-1	NOT-08-1G061	502.00	526.00	24.00	35.56	2.03
	NOT-08-1G064	510.00	527.00	17.00	43.84	2.00
BB2-2	NOT-09-1G125	112.40	141.02	28.62	34.13	1.74
BB2-4	NOT-08-1G074	640.22	676.42	36.20	40.8	2.23

For BB2-3a and BB2-3b, drill intercepts not previously sampled should be sampled with emphasis on zones from those areas falling within the limits of the defined mineralization wireframes. It should be noted that even background values as low as 1 to 5% Cr_2O_3 will raise the overall grade, since zero values were allocated wherever there was missing sample information during the estimation process.

Detailed metallurgical work supported by mineralogical studies should be conducted on representative bulk samples. Other than establishing a treatment process for the mineralization this will also define the minimum grade of material acceptable for transformation into economic grade concentrates. This program should include the following:

- Detailed mineralogy to investigate chromite grain liberation characteristics, chromite grain chemistry and gangue mineralogy.
- Beneficiation of a wide variety of chromite feed grades encompassing all chromite lithologies found at the Blackbird deposit.
- Establishment of product quality / recovery relationships for a variety of feed samples.
- Investigation of the occurrence, association and potential recovery of PGMs and base metal sulphides.
- Investigation of the marketing potential of Blackbird chromite concentrates.

Basic engineering studies for infrastructural requirements should be initiated. The possible synergies from cooperation with third parties holding prospective mining interests in the McFaulds Lake area should be investigated.

For the Medium-Long Term

Following the completion of detailed metallurgical work, feasibility studies should follow, if warranted.

Depending on the potential for an underground operation:

Deep drilling should be conducted with the objective of increasing the resource for BB2 (1 to 4). This drilling could be designed to run concurrently with exploration activities for the adjacent Ni-Cu-PGE mineralization and gold along the shear flanking the northern contact between the granodiorite and ultramafics.

2.0 INTRODUCTION

2.1 BACKGROUND

Noront Resources Limited (Noront) owns a diversified portfolio of mineral rights within a group of claims collectively known as the Double Eagle property located in the James Bay Lowlands, northern Ontario. Within the Double Eagle property are the Eagle's Nest and Eagle 2 Ni-Cu- PGE magmatic massive sulphide deposits (MMS) and the Blackbird chromite deposits, among others. This report focuses on the Blackbird chromite deposits where Noront has been involved in delineation drilling since February, 2008. Noront believes it has conducted adequate drilling to support the estimation of chrome resources on its property.

The regional location of the Blackbird chromite deposits is shown in Figure 2.1. Details on the claim holdings are described in Section 4 of this report.

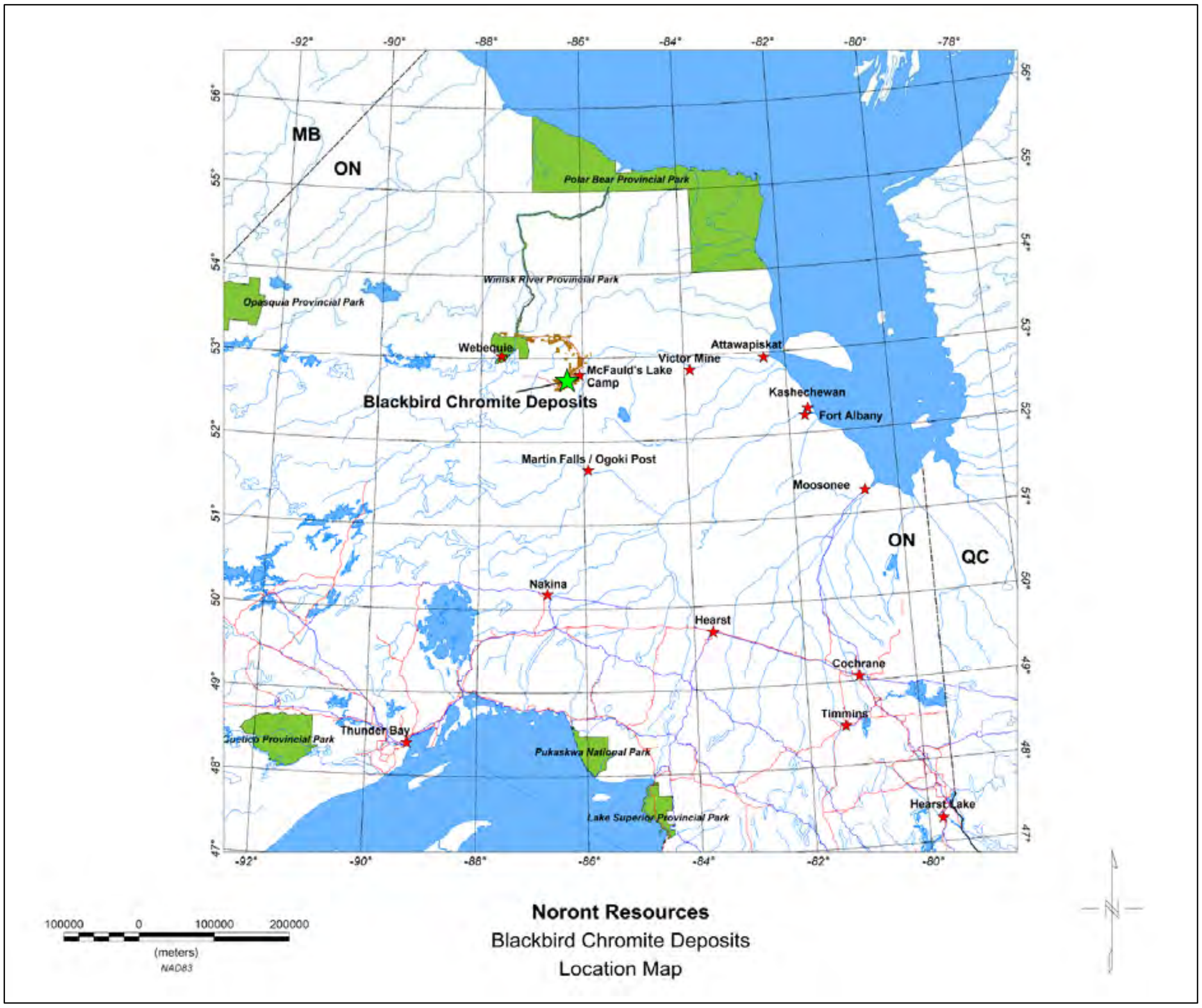
2.2 AUTHORIZATION AND PURPOSE

At the request of Mr. Jim Atkinson, Exploration Director of Noront, Micon International Limited (Micon) has been retained to complete a resource estimate of the Blackbird chrome deposits and to opine on how best to move the project forward. Noront requires an independent Technical Report to fulfill the requirements of Canadian National Instrument (NI) 43-101 for a first time disclosure of its Blackbird mineral resources.

Micon's team of independent Qualified Persons responsible for the preparation of this report and for the opinion on the propriety of the proposed pre-development program are Richard Gowans, P.Eng., Jane Spooner, M.Sc., P.Geo., Christopher Jacobs, C.Eng., MIMMM, Alan San Martin, MAusIMM and Charley Murahwi, M.Sc., P. Geo., MAusIMM. The report has been compiled following the format and guidelines of Form 43-101F1, Technical Report for National Instrument 43-101 (NI 43-101), Standards of Disclosure for Mineral Projects, and its Companion Policy NI 43-101CP, as amended by the Canadian Securities Administrators on December 23, 2005. All members of the Micon team are independent of Noront as defined in NI 43-101.

This report is intended to be used by Noront subject to the terms and conditions of its contract with Micon. That contract permits Noront to file this report as an NI 43-101 Technical Report with the Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes legislated under provincial securities laws, any other use of this report, by any third party, is at that party's sole risk.

Figure 2.1
Regional Location Map of the Blackbird Chrome Deposits



2.3 SOURCES OF INFORMATION

The sources of information for this report are detailed below, and include those in the public domain as well as personally acquired data.

- Data and transcripts supplied by Noront personnel, notably Bronwyn Azar (exploration geologist) and Matt Downey (database manager).
- Review of various geological reports and maps produced by the Ontario Geological Survey (OGS) or its predecessors, and the Geological Survey of Canada (GSC).
- Discussions with Noront staff knowledgeable of the property.
- Research of technical papers produced in various journals.

- Independent analyses of quartered core samples.
- Independent repeat analyses of sample pulps (assay splits).
- Personal knowledge of Cr and Ni-Cu-PGE mineralization in layered intrusions and similar geological environments.

Micon is pleased to acknowledge the helpful cooperation of the Noront staff and management all of whom made any and all data requested available and responded openly and helpfully to all questions, queries and requests for material.

2.4 SCOPE OF PERSONAL INSPECTION

A member of Micon staff conducted a site visit to the Blackbird chromite deposits project area during the period 6 to 9 July, 2009 for project familiarization, data validation and Quality Assurance/Quality Control (QA/QC) review. At the conclusion of the site visit, Micon carried out a brief inspection of the sample preparation facilities and analytical equipment at the Activation Laboratories Limited in Thunder Bay on 10 July, 2009. In both instances, Micon was represented by Charley Murahwi who is the main author of this report.

2.5 ABBREVIATIONS

The abbreviations used in this Technical Report are listed in Table 2.1.

Table 2.1
List of Abbreviations

Unit(s) of Measurement	Abbreviation	Name	Abbreviation
Average	Avg	Activation Laboratories	Actlabs
Above sea level	ASL	Billion years	Ga
Centimetre(s)	cm	Blackbird	BB
Coefficient of variation	Coef. Var	Blackbird 1 Deposit	BB1
Degree(s)	^{o}	Blackbird 2 Deposit	BB2
Degrees Celsius	^{o}C	Blackbird 2 Chromite Zone 1	BB2-1
Degrees Fahrenheit	^{o}F	Blackbird 2 Chromite Zone 2	BB2-2
Digital elevation model/Digital Terrain Model	DEM/DTM	Blackbird 2 Chromite Zone 3(a)	BB2-3(a)
Electro-magnetic(s)	EM	Blackbird 2 Chromite Zone 3(b)	BB2-3(b)
Gram(s)	g	Blackbird 2 Chromite Zone 4	
Grams per metric tonne	g/t	Blackbird 2 Chromite Lenses	BB2Ls
Greater than	>	Canadian Institute of Mining, Metallurgy and Petroleum	CIM
Hectare(s)	Ha	Canadian National Instrument 43-101	NI 43-101
Inverse distance	ID	Diamond drill hole	DDH
Inverse distance cubed	ID^3	End of hole	EOH
Inverse distance squared	ID^2	Eurasian Natural Resources Corp	ENRC
Kilogram(s)	kg	Geological Survey of Canada	GSC
Kilometre(s)	km	Global Positioning System	GPS

Unit(s) of Measurement	Abbreviation	Name	Abbreviation
High intensity magnetic separation	HIMS	Horizontal Loop Electromagnetic survey	HLEM
Heavy liquid separation	HLS	International Chromium Development Association	ICDA
Induced polarization	IP	International Stainless Steel Forum	ISSF
Litre(s)	L	Magmatic Massive Sulphide	MMS
Loss on ignition	LOI	Marten Falls First Nation	MFFN
Low intensity magnetic separation	LIMS	Micon International Limited	Micon
Maximum	max	Ontario Department of Mines	ODM
Metre(s)	m	Ontario Geological Survey	OGS
Milligram	mg	Parts per billion	Ppb
Millimetre	mm	Parts per million	Ppm
Million tones	Mt	Platinum Group Elements/Metals	PGE/M
Million years	Ma	Qualified Person	QP
Minimun	min	Quality Assurance/Quality Control	QA/QC
North American Datum	NAD	Net Smelter Return	NSR
Ordinary kriging	OK	Noront Resources Limited	Noront
Parts per billion	ppb	Not available/applicable	n.a.
Parts per million	ppm	Ring of Fire	ROF
Percent(age)	%	Ring of Fire Intrusion	RFI
Rock quality designation	RQD	Scott Hogg & Associates	SHA
Specific gravity	SG	Standard Reference Material	SRM
Standard deviation	Std	System for Electronic Document Analysis and Retrieval	SEDAR
Système International d’Unités	SI	Time Domain ElectroMagnetic survey	TDEM
True thickness	T.T.	Volcanogenic Massive Sulphide	VMS
Universal Transverse Mercator	UTM	Webequie First Nation	WFN
Very low frequency	VLF	Measured Resource	MR
Wet high intensity magnetic separation	WHIMS	Indicated Resource	IR
Whole rock assay	WRA	Inferred Resource	Inf. R

3.0 RELIANCE ON OTHER EXPERTS

Micon has reviewed and evaluated the data pertaining to the Blackbird Chromite deposits and has drawn its own conclusions therefrom. Micon has not carried out any independent exploration work or drilled any holes but has undertaken independent quarter core sampling and assaying of sample pulp material from the property in addition to the physical examination of mineralization in diamond drill cores.

The general descriptions of geology and past exploration activities used in this report are taken from transcripts prepared by Noront staff/consultants and from reports prepared by various reputable companies or their contracted consultants, as well as from various government and academic publications. Micon has relied on these data, supplemented by its own observations at the site.

The status of the mining claims or mineral tenements under which Noront holds title to the mineral rights for the Blackbird Chromite deposits has not been investigated or confirmed by Micon, and Micon offers no legal opinion as to the validity of the mineral titles claimed. The description of the property, and ownership thereof, as set out in this report, is provided for general information purposes only.

The existing environmental conditions, liabilities and remediation have been described under the relevant section as per the NI 43-101 requirements. However, the statements made are for information purposes only and Micon offers no opinion in this regard.

While exercising all reasonable diligence in checking, confirming and testing it, in the preparation of this report Micon has relied upon the data provided by Noront and that found in the public domain.

The conclusions and recommendations in this report reflect the authors' best judgment in light of the information available to them at the time of writing.

4.0 PROPERTY DESCRIPTION AND LOCATION

The Blackbird deposits occur within a group of claims collectively known as the Double Eagle property (Figure 4.1). Noront controls land, held directly or indirectly, through joint ventures, optioned claims and earn-in programs, consisting of 178 claims of approximately 41,700 hectares in the Double Eagle property. The centre of the property is located at roughly 5845000N and 545000E in the UTM NAD83 coordinate system (Zone 16). This includes 100% interest in two claims, 3012264 and 3012265, consisting of 8 units adjoining the Company's Double Eagle project that were earned from Condor Diamond Corp. and Greenstone Exploration Company Ltd during 2008. These two claims are subject to 1% net smelter returns (NSR), royalties payable to Condor and Greenstone, which may be purchased by the Company at any time upon payment of $500,000 and/or at the Company's option, issuance of an equivalent value in common shares of the Company. The Blackbird claims, 3012259 and 3012261, are not subject to NSR royalties at this time.

Specifically, the Blackbird claims are composed of two 16 unit claims that equal 32 units centred at roughly 5842500N and 545250E in the NAD83 coordinate system. The Blackbird claims are therefore made up of a total of 512 hectares, although the majority of the deposit lies in claim 3012259. The due dates for the Blackbird bird claims are both April 22, 2012. Details on the current status of the claims are shown in Table 4.1 and Table 4.2.

Table 4.1
Summary Table on Status of Blackbird Claims in 2009

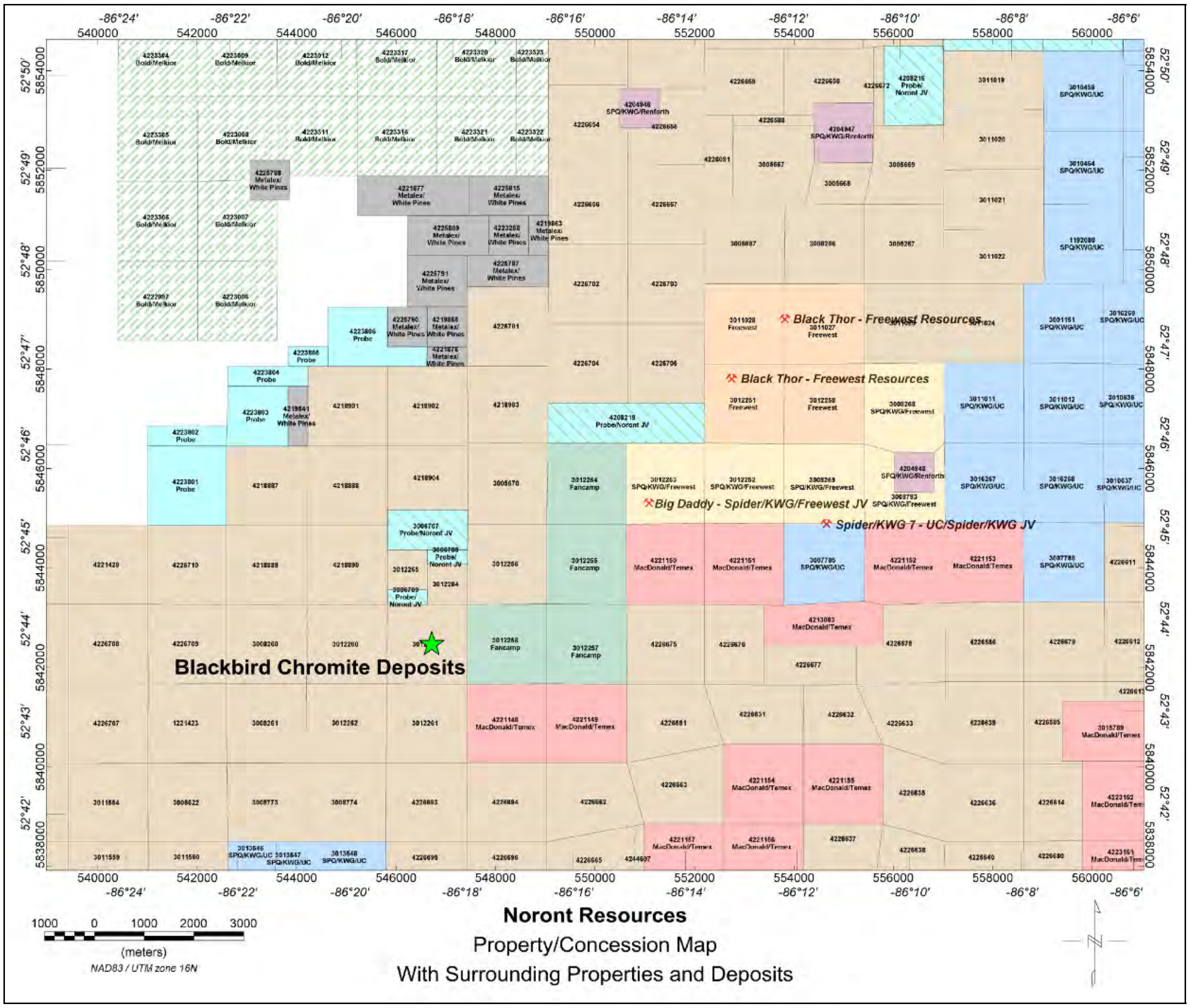
Claim Number	Claim Units	Date Staked	Date Recorded	Work required	Total Work	Due Date	Present Work Assignment	Total Reserve	Area TWP	Status
3012259	16	2003-Mar-30	2003-Apr-22	$6400	$44,800	2012-Apr-22	$6930	$0	**BMA 526862**	ACTIVE
3012261	16	2003-Mar-30	2003-Apr-22	$6400	$44,800	2012-Apr-22	$820	$0	**BMA 526863**	ACTIVE

Although due dates for the claims are in 2012 there are sufficient work credits to hold the claims for several more years. In addition, recent work that has not yet been filed will be sufficient to hold the claims for several more years, thereafter.

Other than claims 3012264 and 3012265, the remainder of the claims in the Double Eagle property were acquired by Noront by ground staking pursuant to the requirements of the Mining Act R. S. O. 1990, Chapter M.14, attached regulations and amendments thereto. In the James Bay Lowlands, claim corners are generally established with the aid of a GPS receiver, with accuracies +/- 10 metres, depending on the unit and model. To mark out claim blocks, the claim stakers navigate flag and blaze their course with the aid of a GPS receiver or a compass and they place line posts every 400 m. Each corner post is identified by a metal tag issued by the Ontario government with a unique number.

Claims are only subject to dispute for improper staking within a year of recording and that period has passed for the claims discussed above. To retain mining rights, assessment expenditures at the rate of $400 per claim unit per year must be filed from the second anniversary of recording until the claims are taken to lease. The claims may be taken to lease when the claim holder can demonstrate that the property contains a mineral resource. Further development of a property requires that environmental and all other requirements imposed by the Ministry of Northern Development and Mines in Canada are met.

Figure 4.1
Location of the Blackbird Deposits



Note: Unless where stated otherwise, the claims shown constitute Noront's Double Eagle Property

Table 4.2
Double Eagle Claims and Blackbird Claims
(highlighted in yellow)

Claim Number	Division	Township/Area	Area (Ha)	Claim Number	Division	Township/Area	Area (Ha)	Claim Number	Division	Township/Area	Area (Ha)
1221423	Porcupine	BMA 526862	256	4225873	Porcupine	BMA 526862	256	4226685	Porcupine	BMA 526862	256
3005622	Porcupine	BMA 526862	256	4225874	Porcupine	BMA 526862	256	4226686	Porcupine	BMA 526862	256
3005667	Porcupine	BMA 527862	256	4225875	Porcupine	BMA 526862	256	4226687	Porcupine	BMA 526862	256
3005668	Porcupine	BMA 527862	144	4225876	Porcupine	BMA 526862	256	4226688	Porcupine	BMA 526862	256
3005669	Porcupine	BMA 527862	256	4225878	Porcupine	BMA 525863 (PORC)	256	4226689	Porcupine	BMA 527862	256
3005670	Porcupine	BMA 527862	256	4225879	Porcupine	BMA 525863 (PORC)	256	4226690	Porcupine	BMA 527861	256
3008260	Porcupine	BMA 526862	256	4225880	Porcupine	BMA 525863 (PORC)	256	4226691	Porcupine	BMA 526862	256
3008261	Porcupine	BMA 526862	256	4225881	Porcupine	BMA 525862	256	4226692	Porcupine	BMA 526862	256
3008266	Porcupine	BMA 527861	256	4225882	Porcupine	BMA 525862	256	4226693	Porcupine	BMA 526862	256
3008267	Porcupine	BMA 527861	256	4225883	Porcupine	BMA 525862	256	4226694	Porcupine	BMA 526862	256
3008687	Porcupine	BMA 527861	256	4225988	Porcupine	BMA 527861	64	4226695	Porcupine	BMA 526862	256
3008773	Porcupine	BMA 526862	256	4226091	Porcupine	BMA 527861	112	4226696	Porcupine	BMA 526862	256
3008774	Porcupine	BMA 526862	256	4226100	Porcupine	BMA 526862	256	4226697	Porcupine	BMA 526862	256
3011019	Porcupine	BMA 527861	240	4226581	Porcupine	BMA 526861	256	4226698	Porcupine	BMA 526862	256
3011020	Porcupine	BMA 527861	240	4226585	Porcupine	BMA 526861	160	4226699	Porcupine	BMA 526862	256
3011021	Porcupine	BMA 527861	240	4226586	Porcupine	BMA 526861	256	4226700	Porcupine	BMA 526862	256
3011022	Porcupine	BMA 527861	240	4226588	Porcupine	BMA 527861	64	4226701	Porcupine	BMA 527862	256
3011024	Porcupine	BMA 527861	256	4226611	Porcupine	BMA 527861	256	4226702	Porcupine	BMA 527862	256
3011025	Porcupine	BMA 527861	256	4226612	Porcupine	BMA 526861	256	4226703	Porcupine	BMA 527861	256
3011556	Porcupine	BMA 526862	256	4226613	Porcupine	BMA 526861	32	4226704	Porcupine	BMA 527862	256
3011557	Porcupine	BMA 526862	256	4226614	Porcupine	BMA 526861	160	4226705	Porcupine	BMA 527861	256
3011561	Porcupine	BMA 526862	256	4226616	Porcupine	BMA 527861	256	4226706	Porcupine	BMA 526862	256
3011562	Porcupine	BMA 526862	256	4226617	Porcupine	BMA 526861	256	4226707	Porcupine	BMA 526862	256
3012256	Porcupine	BMA 527862	256	4226624	Porcupine	BMA 527861	256	4226708	Porcupine	BMA 526862	256
3012259	Porcupine	BMA 526862	256	4226625	Porcupine	BMA 527861	256	4226709	Porcupine	BMA 526862	256
3012260	Porcupine	BMA 526862	256	4226626	Porcupine	BMA 527861	256	4226710	Porcupine	BMA 527862	256
3012261	Porcupine	BMA 526862	256	4226627	Porcupine	BMA 527861	240	4229428	Porcupine	BMA 527861	64
3012262	Porcupine	BMA 526862	256	4226628	Porcupine	BMA 527861	256	4229430	Porcupine	BMA 528861	64
3012265	Porcupine	BMA 526862	64	4226631	Porcupine	BMA 526861	256	4229432	Porcupine	BMA 528861	32
4218185	Porcupine	BMA 526862	256	4226632	Porcupine	BMA 526861	256	4229435	Porcupine	BMA 527861	16
4218186	Porcupine	BMA 526862	256	4226633	Porcupine	BMA 526861	256	4229436	Porcupine	BMA 528861	240
4218187	Porcupine	BMA 526862	256	4226635	Porcupine	BMA 526861	256	4229437	Porcupine	BMA 528861	256
4218188	Porcupine	BMA 526862	256	4226636	Porcupine	BMA 526861	256	4229438	Porcupine	BMA 527861	64
4218887	Porcupine	BMA 527862	256	4226639	Porcupine	BMA 526861	256	4229439	Porcupine	BMA 528861	192
4218888	Porcupine	BMA 527862	256	4226640	Porcupine	BMA 526861	256	4229440	Porcupine	BMA 528861	240
4218889	Porcupine	BMA 527862	256	4226651	Porcupine	BMA 527862	256	4229442	Porcupine	BMA 528861	160
4218890	Porcupine	BMA 527862	256	4226652	Porcupine	BMA 527861	256	4229443	Porcupine	BMA 528861	192
4218901	Porcupine	BMA 527862	256	4226653	Porcupine	BMA 527861	256	4229630	Porcupine	BMA 528861	192
4218902	Porcupine	BMA 527862	256	4226654	Porcupine	BMA 527862	256	4229656	Porcupine	BMA 528861	256
4218903	Porcupine	BMA 527862	256	4226655	Porcupine	BMA 527861	192	4229657	Porcupine	BMA 528861	256
4218904	Porcupine	BMA 527862	192	4226656	Porcupine	BMA 527862	256	4229658	Porcupine	BMA 528861	256
4221425	Porcupine	BMA 527862	256	4226657	Porcupine	BMA 527861	256	4229659	Porcupine	BMA 528862	256
4221426	Porcupine	BMA 527862	256	4226658	Porcupine	BMA 527861	224	4229660	Porcupine	BMA 528862	256
4221427	Porcupine	BMA 527862	256	4226659	Porcupine	BMA 527861	256	4229661	Porcupine	BMA 528862	256
4221428	Porcupine	BMA 527862	256	4226661	Porcupine	BMA 526862	256	3011553	Thunder Bay	BMA 526863 (TB)	256
4221429	Porcupine	BMA 527862	256	4226662	Porcupine	BMA 526862	256	3011554	Thunder Bay	BMA 526863 (TB)	256
4222499	Porcupine	BMA 526862	256	4226663	Porcupine	BMA 526861	256	3011555	Thunder Bay	BMA 526863 (TB)	256
4222500	Porcupine	BMA 526862	256	4226665	Porcupine	BMA 526862	256	3011558	Thunder Bay	BMA 526863 (TB)	256
4225178	Porcupine	BMA 526862	256	4226672	Porcupine	BMA 527861	80	3011559	Thunder Bay	BMA 526863 (TB)	256
4225861	Porcupine	BMA 526862	64	4226675	Porcupine	BMA 526861	256	3011560	Thunder Bay	BMA 526863 (TB)	256
4225862	Porcupine	BMA 526862	64	4226676	Porcupine	BMA 526861	192	4218183	Thunder Bay	BMA 526863 (TB)	256
4225863	Porcupine	BMA 526862	16	4226677	Porcupine	BMA 526861	256	4218184	Thunder Bay	BMA 526863 (TB)	256
4225864	Porcupine	BMA 526863 (PORC)	256	4226678	Porcupine	BMA 526861	224	4221421	Thunder Bay	BMA 527863	256
4225865	Porcupine	BMA 526862	256	4226679	Porcupine	BMA 526861	256	4221422	Thunder Bay	BMA 527863	256
4225866	Porcupine	BMA 526862	224	4226680	Porcupine	BMA 526861	160	4221423	Thunder Bay	BMA 527863	256
4225868	Porcupine	BMA 526863 (PORC)	256	4226681	Porcupine	BMA 526862	256	4221424	Thunder Bay	BMA 527863	256
4225869	Porcupine	BMA 526863 (PORC)	256	4226682	Porcupine	BMA 526862	256	4221430	Thunder Bay	BMA 526863 (TB)	256
4225870	Porcupine	BMA 526863 (PORC)	256	4226683	Porcupine	BMA 526862	256	4225176	Thunder Bay	BMA 526863 (TB)	256
4225871	Porcupine	BMA 526862	256	4226684	Porcupine	BMA 526862	256	4225177	Thunder Bay	BMA 526863 (TB)	256

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 PHYSIOGRAPHY

The Blackbird project area lies along the western margin of the James Bay Lowlands, a flat topographic feature that slopes gently towards James Bay (0.7 m/km). Major and secondary rivers incise shallow trenches into the soft marine clays that cover much of the Lowlands. Elevations in the project area are slightly elevated relative to the surroundings and about 170 m above sea level (ASL). Drainage in the area is poor due to the lack of relief; as a result, much of the area is waterlogged throughout the year. The waterlogged surface makes surface travel difficult, except during the winter months (December to April). Missisa Lake, the largest fresh water lake in the area, lies near the southeast of the area. The Winisk River Provincial Park is about 55 km to the northwest surrounding Winisk Lake and following the Winisk River to Hudson Bay where it connects with Polar Bear Provincial Park. The Otoskwin-Attawapiskat River Provincial Park includes a 200 m wide band along both sides of the Attawapiskat River, and is located about 50 km to the east of the claim block. There is also a 1 km water reserve along the eastern part of the Attawapiskat River.

5.2 RELIEF AND DRAINAGE

The Blackbird project area is generally flat with a mean altitude of 170 m ASL. The ground rises from an altitude of 120 m in the northeast to 220 m in the west-central to southwest part of the general area. The local relief of the area is very low, generally less than 15 m. Streams and rivers are generally incised only 5 to 10 m below the surrounding terrain. Raised beach ridges form 1 to 2 metre high local topographic highs which are slightly better drained than the surrounding ground and support a local ecosystem. The relief surrounding the project area is typified by one these topographic highs, whereas the surrounding ground is poorly drained with abundant small ponds and creeks. The main rivers which drain the general area include, from south to north, the Albany River, the Atikameg River, the Attawapiskat River, the Muketei River, the Winisk River and the Ekwan River, all of which flow eastward or north into James and Hudson Bays. Between local drainages string bogs are developed. Wetlands cover roughly 50% of the area; these wetlands are composed of northern ribbed fens, northern plateau bogs and palsa bogs. River levels reach their maximum during spring runoff in late April to early May and water levels usually drop during summer months and increase prior to freeze-up in the late fall. Due to the planar nature of topography, water levels will fluctuate in response to short-lived dry spells and modest precipitation.

5.3 ACCESSIBILITY

The area is accessible by bush plane equipped with floats in the summer, or with skis or wheels during the winter. Esker Camp, where Noront’s operations are based, is approximately 1.5 km northeast of the project area and is used all year round. Direct access to the property is afforded by helicopter in summer but tractors can be used on frozen winter roads.

Presently there are year-round exploration camps serviced by float plane charter in the area at McFaulds Lake (564850E, 5849850N), Esker camp (547500E, 5843750N; float plane access to Esker camp through Koper Lake at 550500E, 5841600N), Oval Lake (536980E, 5893230N), and Richard's Lake (558560E, 5894580N). The locations above are expressed in geographic coordinate system NAD83 in Zone 16. From Koper Lake, a helicopter is used to transport people and supplies to Esker Camp in summer, whereas during the winter people and supplies are transported predominantly by skidoo, tractor and in small trucks. On the Blackbird property, drill moves were performed from January to June, 2009, using a bulldozer since it is located primarily within a forested area that is less waterlogged than the surrounding ground. Drill moves were done with a helicopter in 2008. During break-up and summer in 2009, people were transported to the drills via helicopter.

In previous programs, fuel for the camp and helicopters, along with food and equipment, were flown into the camps using float planes and helicopters. Empty drums and samples are flown out on the back-hauls. Charter air service is available from Webequie with West Caribou Air Service, 80 km to the west, Nakina with Nakina Air Service, 255 km to the south-southwest, and Pickle Lake, 400 km to the west-southwest via Wasaya Airways. Access for mineral exploration within the area is generally by helicopter, snowmobile and on foot, and most rivers and creeks are navigable by canoe. Local hunting and fishing is usually done on foot and using canoes and power boats. The closest all-weather road is in Nakina, but a winter road system services the communities of Marten Falls, Webequie, Lansdowne House, Fort Albany and Attawapiskat, which could be extended to give access to the area. In recent years, a side road to the winter road from Moosonee to Attawapiskat has been built to service De Beers Canada Exploration Inc. The Victor project mine site located approximately 100 km east of the property. Diamond drilling on the property area has been accomplished by utilizing drills designed to be moved via helicopter and bulldozer.

5.4 CLIMATE

The James Bay Lowlands area of Northern Ontario has a humid continental climate with cool short summers and cold winters. The area does not experience a dry season. This region is known to have a perhumid high boreal ecoclimate. The local climate is greatly affected by the proximity of the project area to Hudson Bay and James Bay. In the summer, there are usually 1 or 2 days when it is too foggy for activities requiring the helicopter and in the winter, snow storms occur 2 to 3 days a month which also restricts activities. The following data are based on weather statistics taken at Lansdowne House (approximately 130 km to the southwest) from 1971 to 2000. The average daily temperature is -1.3°C. The summer temperatures are generally between 10°C and 20°C with a mean July temperature of 12°C and a mean maximum summer temperature of 22°C. The extreme maximum summer temperature is 37°C. Winter temperatures are generally between -10°C and -30°C with a mean January temperature of -21°C and a mean minimum temperature of -27°C. The extreme winter minimum is -48°C; and an extreme wind chill was recorded as -58°C. The period from mid-June to mid- September is generally frost free. Lakes start to freeze in mid-October and start to thaw in mid-April. The average annual precipitation is 699.5 mm with approximately 241.6 mm falling as snow. Measurable precipitation falls on an average of 169 days during the year with snow falling on 89 of those days. The average snow depth is 65 cm in February. Winds average between 13-17 km/hour depending on the month, and blow from the west to northwest in the winter and from the west to southwest in the summer. In May, however, winds are predominantly from the northeast. Easterly winds commonly bring fog from James Bay and are associated with heavy precipitation. Fog is common in the early morning, but may last all day during the summer months.

Noront has installed a recording weather station at the Koper Lake site which will gather data to refine the information on the local climate.

5.5 VEGETATION

The Blackbird project area is in the Tundra Transition Zone and more specifically the James Bay Lowlands. This is an area of transition lying between coniferous and mixed forests of the clay belt to the south, and the tundra to the north. Where it is poorly drained, vegetation is primarily grasses, sedges and lichens, and sometimes stunted black spruce and tamarack. On well drained raised beaches and along rivers and creeks forests are composed of larger balsam fir, white and black spruce, trembling aspen and paper birch and rarely jack pine. Willows and alders are also present along creeks and in poorly drained areas.

5.6 FAUNA

Characteristic larger wildlife includes barren-ground caribou, black bear, wolf, moose and lynx. Smaller mammals are numerous, such as muskrat, weasel, American marten, red fox and Arctic fox. A number of migratory bird species are known to nest in the James Bay Lowlands in the summer, including Canada goose, ruffed grouse and American black duck. The wetlands also provide an ideal breeding ground for swarms of mosquitoes, black flies and other biting insects. Local fish species include pickerel (walleye), northern pike (jackfish), trout (lake, brook, brown, speckled and rainbow), whitefish, sturgeon and more. Fishing and hunting camps are primarily the only commercial consumption of the local fauna but the local First Nations do utilize the wildlife to a large degree. Hunting and fishing lodges are restricted to the land south of the Albany River. Only a few fishing and hunting camps exist near the project area, along the major rivers and on Missisa Lake where float planes can land. Surrounding the community of Webequie and closer to the project area, small hunting and fishing lodges have been observed, most likely belonging to the people of Webequie. The Webequie First Nation is presently developing a tourist-fishing industry in its traditional lands.

5.7 LOCAL RESOURCES

The local services available at Attawapiskat, Webequie and Marten Falls/Ogoki are limited, but include an airport, health clinics, public schools, mail, telephone/facsimile, internet and various community stores and services. There are two hotels in Attawapiskat and one in Webequie.

Hunting and fishing camps for both locals and tourists are present in the western and southern parts of the area. Attawapiskat is supplied by barge in the summer and all communities are connected to the south via winter roads in the winter, although the winter road to Martin Falls/Ogoki is generally of poor quality and is not well maintained. West Caribou Air Service commenced charter air service operation from Webequie in 2008. Flights to Thunder Bay from Webequie are available seven days a week via both Wasaya Airways and Nakina Air Service. Camp supplies and equipment are normally brought in predominantly through Nakina, but occasionally Webequie, Marten Falls, Pickle Lake and Hearst are also used.

5.8 SURFACE RIGHTS

The claim group containing the Blackbird deposits is sufficiently large to accommodate an underground operation, surface mining facilities, accommodation for personnel and waste dumps. Water is available and is potable although high in iron content straight from the ground. Water is currently being treated onsite at Esker Camp for cooking, drinking and cleaning purposes. Sufficient water would be available for mineral processing as well. Due to the remote nature of the project area, generators would be required for electrical power. To create onsite processing plants it might be more feasible to have an all season road or railroad to the site and to transport chromite to a town with sufficient infrastructure to support a plant. A winter road extending from Webequie to the project area is being planned, but it would be preferable to build an all-weather road from Nakina or extend rail service from Nakina, located 300 km to the south of the project area.

Permits have been submitted for approval for an all-weather landing strip and accompanying roads to the strip, 5 km north of the Blackbird deposits and 3.5 km north of Esker Camp. This would allow for larger planes to land all year long.

As of March 26, 2009, Noront has also arrived at a historical compensation agreement with Marten Falls First Nation (MFFN). This agreement sets up a local review and monetary compensation formula for work within their traditional lands.

Agreements covering exploration and development are currently being negotiated with both Webequie First Nation (WFN) and MFFN communities. Through its planning partner, Marten Falls Logistics, Noront has consulted with the other, more distant communities such as Eabametoong, Neskantaga, Aroland and Attawapiskat as it relates to consultations about infrastructure developments. Several applications and business plans are before the Ministry of Natural Resources and the Ministry of Northern Development, Mines and Forestry relating to these infrastructure developments.

Noront is currently working with WFN and MFFN utilizing joint venture and business enterprises that involve the local communities in the programs that Noront is undertaking in exploration. These include fixed wing and helicopter operations, diamond drilling, planning and permitting for development of infrastructure.

6.0 HISTORY

6.1 GENERAL HISTORY

The Geological Survey of Canada (GSC) was the first to explore the James Bay Lowlands/McFaulds Lake area in 1886. Robert Bell of the GSC mapped geology along the Attawapiskat River from the James Bay coast inland past the McFaulds Lake area. Mapping was also completed in 1906 and between 1940 and 1965 by the GSC and the Ontario Department of Mines (ODM). This work was focused on the potential for petroleum in the sedimentary basins associated with Hudson Bay and James Bay and, in Moose River, the potential for industrial and fuel minerals.

The Geological Survey Canada produced the Lansdowne House map (Bostok, 1962) and an accompanying summary report (Duffell et al., 1963) was generated as part of the “Roads to Resources” program between 1960 and 1962. This map covered the entire NTS map sheet 43D in which the Blackbird deposits are located. This mapping information has been used in subsequent compilation maps completed by the Ontario Geological Survey.

Early exploration activities, focused on diamonds, occurred sporadically between 1959 and 1988 until the discovery of the Attawapiskat diamondiferous kimberlite field by Monopros Limited. In the early to mid 1990s Spider Resources Inc. and KWG Resources Inc. conducted an airborne magnetic survey for diamond exploration throughout the northern part of the James Bay Lowlands as joint venture partners. They discovered the Good Friday and MacFayden kimberlites in the Attawapiskat cluster, as well as the five Kyle series kimberlites to the northeast of the Blackbird property.

In 2002, De Beers Canada Inc. entered in a joint venture with Spider Resources and KWG Resources after discovering the McFaulds No. 1 volcanogenic massive sulphide deposit while searching for kimberlites. Subsequent work by Spider Resources and KWG Resources led to the discovery of the McFaulds No. 3 deposit and other related VMS occurrences. The discovery of these deposits led to a staking rush by junior mining companies that began in December, 2002 and continued well into 2003. The staking rush and extensive exploration led to the discovery of many of the deposits listed in Table 6.1.

Noront discovered the Eagle One magmatic massive sulphide deposit while searching for VMS mineralization in 2007. Follow up testing of other airborne anomalies led to the discovery of the Eagle Two shear hosted sulphide deposit. It was drilling of this occurrence that led to the later discovery of the Blackbird deposits in 2008 hosted by the same ultramafic complex as Eagle One. The most recent discovery by Noront in the ultramafic complex has been the Thunderbird vanadium occurence which is located in ferrogabbroic units approximately 14 km northeast of the Blackbird deposits.

Table 6.1 lists the known discoveries in the Ring of Fire Area.

Table 6.1
List of Recent Discoveries Hosted in the Ring of Fire Intrusion

Deposit name	Deposit type, commodities	Holder	UTM Easting	UTM Northing
Eagle One	MMS Ni-Cu-PGE	Noront Resources	547262	5843633
AT2(Eagle Two)	MMS Ni-Cu-PGE	Noront Resources	546282	5841927
AT12	MMS Ni-Cu-PGE	Noront Resources	553772	5850768
Blackbird One	chromitite Cr	Noront Resources	546100	5842100
Blackbird Two	chromitite Cr	Noront Resources	546865	5842405
Thunderbird	Fe-Ti-V	Noront Resources	558000	5851000
Big Daddy	chromitite Cr	Spider/KWG/Freewest Resources JV	551087	5845306
Black Thor	chromitite Cr	Freewest Resources	553820	5849000
Black Thor	chromitite Cr	Freewest Resources	552750	5847800
McFauld's #1	VMS Cu-Zn-Pb	UC/Spider/KWG JV	566522	5855110
McFauld's #2	VMS Cu-Zn-Pb	UC/Spider/KWG JV	566091	5856184
McFauld's #3	VMS Cu-Zn-Pb	UC/Spider/KWG JV	565451	5854148
McFauld's #4	VMS Cu-Zn-Pb	UC/Spider/KWG JV	564530	5854587
McFauld's #5	VMS Cu-Zn-Pb	UC/Spider/KWG JV	563168	5850609
McFauld's #6	VMS Cu-Zn-Pb	UC/Spider/KWG JV	563734	5851372
McFauld's #7	VMS Cu-Zn-Pb	UC/Spider/KWG JV	554657	5844884
Spider/KWG #8	VMS Cu-Zn-Pb	UC/Spider/KWG JV	526758	5839760
Spider/KWG #9	VMS Cu-Zn-Pb	UC/Spider/KWG JV	526370	5839920
Spider/KWG #10	VMS Cu-Zn-Pb	UC/Spider/KWG JV	522390	5842525
WSR 501	VMS Cu-Zn-Pb	WSR Resources	522313	5901525
Caribou	VMS Cu-Zn-Pb	Canadian Orebodies Inc.	547396	5880012

6.2 DISCOVERY HISTORY

The claims comprising the Blackbird deposits were staked on March 30, 2003 and recorded by John Weduwen on April 22, 2003 following the Spider/KWG VMS discoveries. They were then transferred 100% to Richard Nemis (175159) on June 22, 2003 and he then had them transferred 100% to Noront on June 21, 2004.

Noront optioned the Double Eagle claims to Hawk Precious Minerals Inc. (Hawk) which then optioned them Probe Mines Ltd.

Probe completed an exploration program in early 2006 with 11 holes focusing on VMS style anomalies. Probe returned the Double Eagle Claims back to Noront in early 2007.

Drilling on the Blackbird deposits was designed to follow an earlier discovery of Ni-Cu-PGE mineralization by Noront, but resulted in massive chromitite being encountered downhole from the stringer sulphides. The original discovery hole was NOT-08-1G017 which intersected 48.4 m (not true width) of massive chromitite at 194.60 m.

The only resource estimates done in the area were from the Eagle One deposit (Table 6.2) located 1.5 km to the northeast of the Blackbird deposits. This estimate was prepared by P & E Consultants and is discussed in a Technical Report prepared for Noront, dated August 14, 2008.

Table 6.2
Summary of Results from the Eagle One Resource Estimate

Indicated	Tonnes	Ni (%)	Cu (%)	Au (g/t)	Pt (g/t)	Pd (g/t)	Ag (g/t)	Ni lbs millions	Cu lbs millions	Au (oz)	Pt (oz)	Pd (oz)	Ag (oz)
Massive	233,000	6.52	3.45	0.24	1.94	12.2	9.75	33.4	17.7	1,800	14,500	91,400	72,900
Disseminated	1,601,000	1.30	0.85	0.14	1.00	2.70	2.94	45.8	29.9	7,300	51,700	139,100	151,500
Total Indicated	**1,834,000**	**1.96**	**1.18**	**0.15**	**1.12**	**3.91**	**3.81**	**79.2**	**47.6**	**9,100**	**66,200**	**230,500**	**224,400**
Inferred	**Tonnes**	**Ni (%)**	**Cu (%)**	**Au (g/t)**	**Pt (g/t)**	**Pd (g/t)**	**Ag (g/t)**	**Ni lbs millions**	**Cu lbs millions**	**Au (oz)**	**Pt (oz)**	**Pd (oz)**	**Ag (oz)**
Massive	217,000	7.00	2.86	0.18	3.00	11.75	8.70	33.5	13.7	1,300	20,900	82,000	60,700
Disseminated	870,000	1.24	0.88	0.12	0.97	2.69	3.09	23.7	16.8	3,300	27,000	75,300	86,300
Total Inferred	**1,087,000**	**2.39**	**1.27**	**0.13**	**1.37**	**4.50**	**4.21**	**57.2**	**30.5**	**4,600**	**47,900**	**157,300**	**147,000**

6.3 HISTORIC PRODUCTION

The property has no historical reserve estimates and there has been no prior production.

7.0 GEOLOGICAL SETTING

7.1 REGIONAL GEOLOGY

The Blackbird deposits are situated in northern Ontario, Canada, to the northwest of the Attawapiskat River, 250 kilometres west of James Bay in the Western James Bay Lowlands and approximately 250 kilometres west of the community of Attawapiskat on James Bay. The Blackbird deposits are thought to be a part of the Sachigo greenstone belt in northwestern Ontario, a part of the Superior Province (Figure 7.1). Due to lack of exposure, public domain aeromagnetics data have been the primary method for the determination of bedrock geology of the region. Isotopic work by Stott and coworkers (2007) and minor drill core samples have supported the regional geological interpretation.

The geology of the James Bay Lowlands can be broadly subdivided into the Precambrian basement complex plus related intrusions, the Paleozoic platform rocks and Quaternary cover rocks. The following description is summarized mainly from Professor Jim Mungall's May 15, 2009 internal report written for Noront. The full extract of the relevant portion of Jim's report is presented in Appendix 1.

7.1.1 Precambrian Basement Complex

The basement complex consists of Precambrian rocks of the northwestern part of the Archean Superior Province. The northwestern Superior Province is composed of a series of major Mesoarchean volcanic and plutonic belts trending from west to east that each formed as separate microcontinents probably less than 3 billion years ago, with younger Neoarchean metasedimentary belts and crustal-scale faults separating them.

The basement complex occurs within a domain of the western Superior Province formerly called the Sachigo Subprovince which has been renamed the Sachigo Superterrane (Stott et al, 2007). The core of the Sachigo Superterrane is the North Caribou terrane, consisting of volcanic, metasedimentary and plutonic rocks that were originally formed prior to 3.0 Ga. Repeated episodes of deformation and plutonism occurred between 3.0 and 2.7 Ga (Percival et al., 2006).

The Oxford-Stull Domain (Thurston et al., 1991; Oxford-Stull Subprovince of Rayner and Stott, 2005), which contains the McFaulds Lake greenstone belt, runs east-southeastward along the northern margin of the North Caribou terrane from northwestern Manitoba to north-central Ontario where it extends under the Paleozoic cover rocks of the James Bay Lowlands.

A significant greenstone belt exists at the eastern limit of exposure of the Oxford-Stull Domain where it disappears under the Paleozoic cover. Uranium-lead dating of 11 plutonic and volcanic rocks in the area yielded ages ranging from 2,813 to 2,683 Ma (Rayner and Stott, 2005). Calc-alkaline volcanics from McFaulds Lake yielded a U/Pb age of 2,737±7 Ma which is similar to other parts of the Superior Province (Stott, 2007).

There are a handful of basement inliers in the James Bay Lowlands that have been documented including:

- Coarse-grained fragmental and pillowed basalt about 30 km north of Missisa Lake (McBride, 1994).
- Fine- to medium-grained intermediate to felsic volcanics about 55 km north-northwest of Missisa Lake.
- Aphebian (Proterozoic) iron formation, greywacke and other clastic sediments (Sutton Ridge Formation), dolomite, limestone and minor argillite (Nowashe Formation) and Archean gneisses are exposed in the Sutton inlier about 200 km north-northeast of Missisa Lake (Bostock, 1971).

A paleo weathering profile is sometimes preserved 10 to 20 metres into the Precambrian basement immediately below the Paleozoic rocks. Some drill holes within the Blackbird deposits have this clearly observed.

The property lies within the Ring of Fire Intrusion (RFI), an ultramafic intrusion. The RFI was emplaced along the margin of a large granodiorite pluton which caused doming of the overlying Sachigo greenstone belt rocks.

7.1.2 Paleozoic Platform Rocks

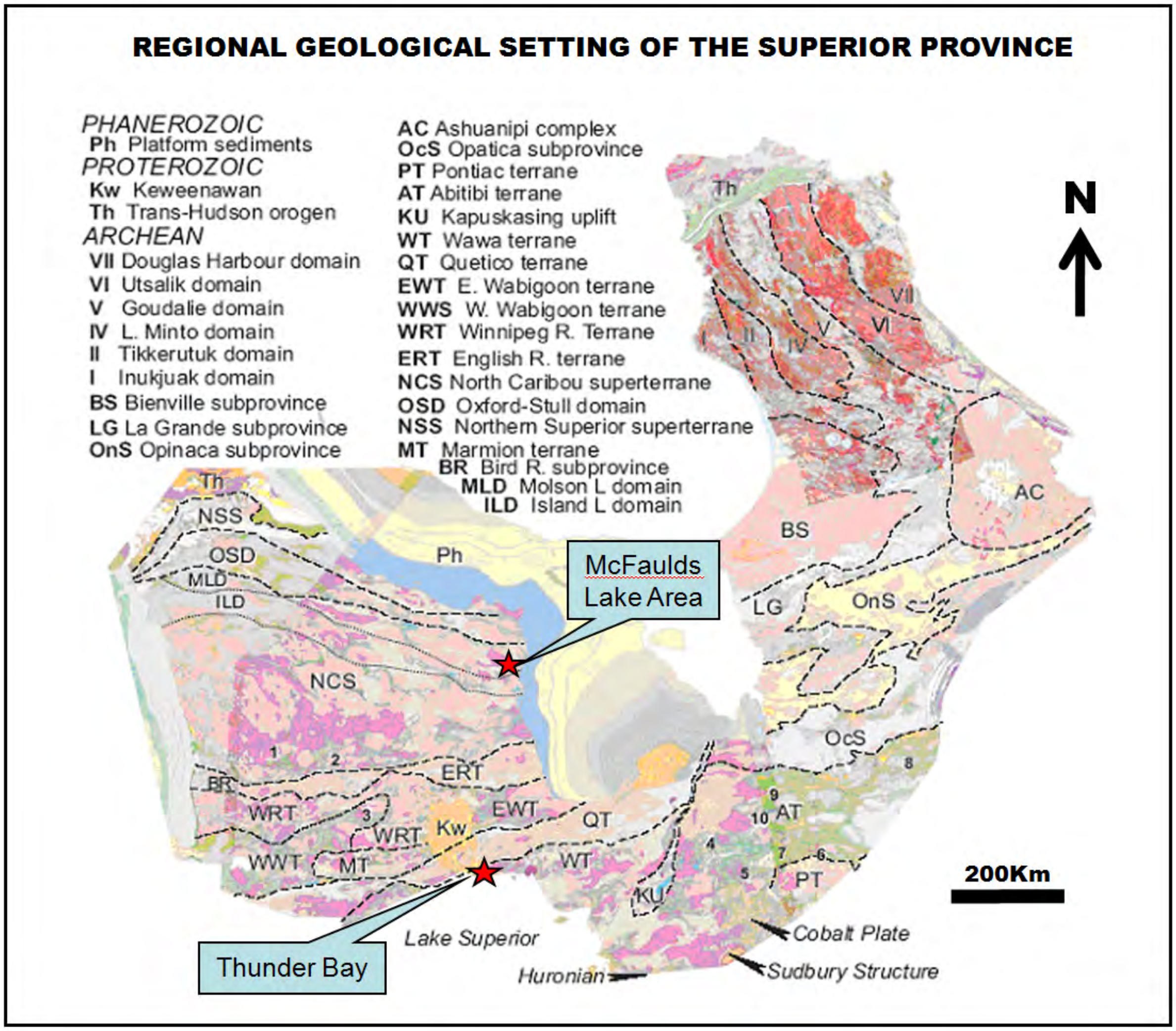
The Paleozoic platform rocks of the James Bay Lowlands consist primarily of sedimentary rocks of upper Ordivician age (450 Ma to 438 Ma). The sedimentary pile consisting of basal sandstone, mudstone, muddy dolomites and limestones is intermittently present within the project area, but thickens significantly to the west towards McFaulds Lake, where up to 100 m are seen.

The cover most frequently seen in drill core is fossiliferous beige limestone and more rarely muddy dolomites. The fossils present are usually mollusks and various forms of sponges.

7.1.3 Quaternary Geology

The Quaternary cover ranges from 3.5 m to 10 m in drill holes. It usually consists of 1 m – 2 m of sandy till overlain by sand grading up to clays and capped by marine clays (Thomas, 2004). The cover is persistent over the property.

Figure 7.1
Regional Geological Setting of the Superior Province



Source: OGS

7.2 LOCAL AND PROPERTY GEOLOGY

The local geology is presented in Figure 7.2. The property lies on slightly elevated ground relative to the flat lying swampy ground surrounding it. No outcrops occur within the project area. Geology is interpreted from a combination of drilling and geophysical surveys.

The RFI is a mantle-derived, magnetic mafic/ultramafic layered intrusion and has been dated at 2735 Ma (Hamilton personal communication). The RFI was emplaced along the margins of older tonalitic to granodioritic intrusions that occur structurally beneath the iron formation that led to discovery of the Ring of Fire. The RFI also cut up through the iron formation and into the overlying intermediate to mafic volcanics of the Sachigo greenstone belt and follows the margins of the felsic intrusions over tens of kilometres, which can be traced due to its magnetic properties.

A silicate banded iron formation that originally attracted attention to the Ring of Fire because it displays abundant air borne magnetic and electromagnetic anomalies, is overlain by rocks of Sachigo greenstone belt. The mafic to intermediate volcanics and tuff seen in this assemblage have subordinate interflow sediments. All units are now metamorphosed to greenschist facies. The package dips steeply to the west under the RFI and strikes roughly west-southwest. The package is deformed and is non-existent along some southeastern portions of the intrusion.

The eastern flank of the RFI is occupied by a granodioritic intrusion with rare late intermediate to mafic dykes. Along the contact with the RFI a distinct shear zone consisting of biotite-chlorite-talc +/- actinolite schist occurs. The schist often has large quartz veins occasionally comprising >1 m thickness in drill core. The composition of the schist usually varies from being biotite rich along the granodiorite to more chlorite rich at the centre and usually is talcose along the peridotite/dunite contact.

The RFI is host to the Blackbird deposits as well as the Eagle One Ni-Cu-PGE deposit, the Eagle Two Ni-Cu-PGE deposit, the Thunderbird vanadium deposit, the Black Thor Cr deposit, Black Label Cr deposit and the Big Daddy Cr deposit (Figure 7.2). The geometry and petrology of the intrusion is indicative of a younging direction downhole to the southeast. A simplified lithological succession of the intrusion from the base upwards comprises:

- Talc altered peridotite/dunite.
- Serpentinized dunite/peridotite with chromite bands and layers.
- Peridotite with lesser chromite.
- Talc-tremolite schist, possibly former pyroxenite.
- Gabbro, usually talc-chlorite altered (?).

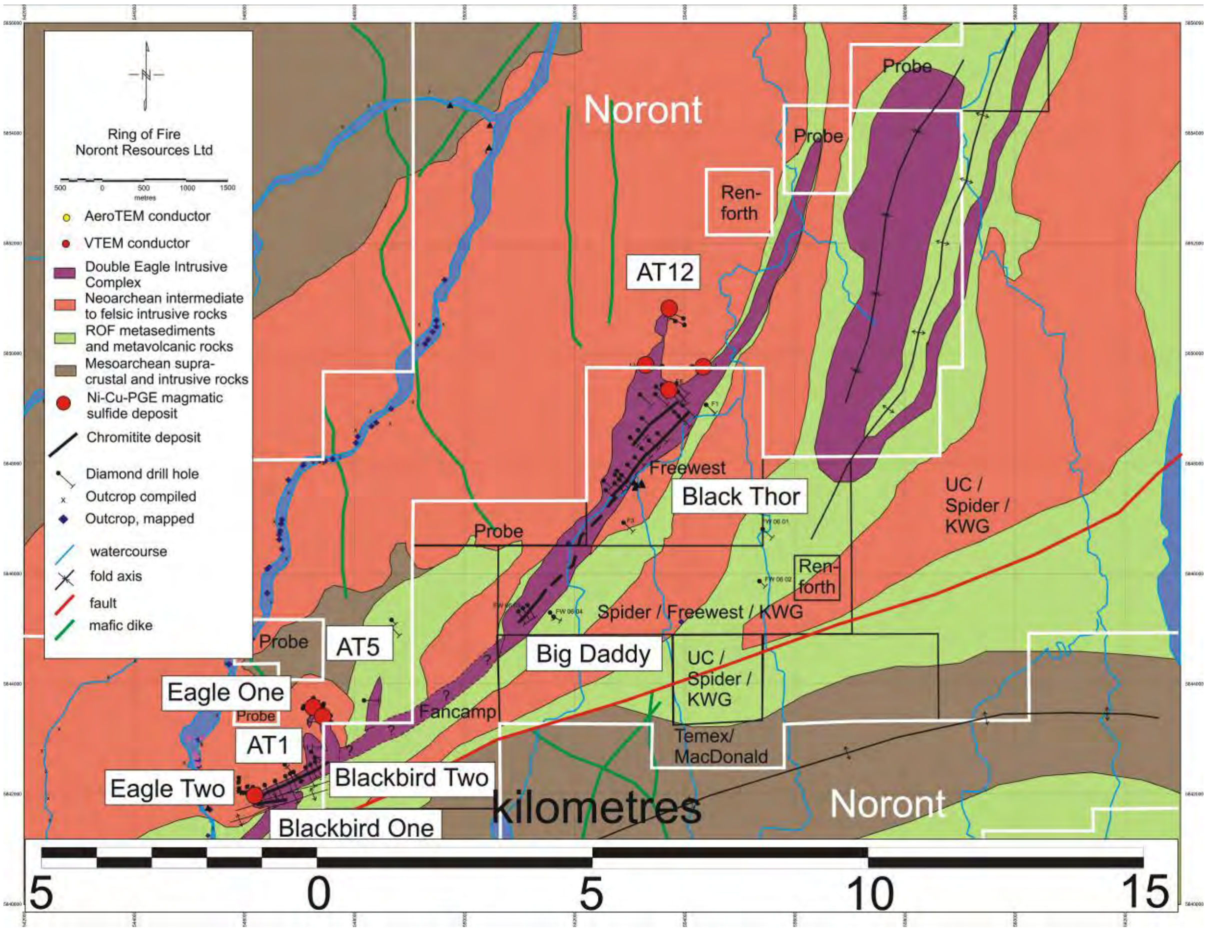
These rock units have been confirmed by detailed petrographic studies carried out by Bronwyn Azar, Noront’s exploration geologist. The summary section of the petrographic report is presented in appendix 2.

The stratigraphy has been overturned and is now dipping roughly 60 degrees towards 335 degrees (azimuth). There is evidence of folding to the southwest of the deposit where the intrusion pinches out. This folding is based on geophysical interpretation.

Intense faulting and associated alteration cuts through the southern part of the Blackbird 2 trending north-northeast (025 to 045 degrees) and is likely sub-vertical. The fault appears to widen between the Blackbird 2 zone 2 (BB2-2) chromitite and the southernmost massive chromitite layer (BB2-4). This fault shows significant influx of magnetite occurring as stringers and veins throughout the intensely altered zone. All chromite within the fault has been partially or wholly replaced by magnetite and ferritchromite.

Folding and deformation are visible in the drill cores and manifest as changing in angles of chromitite beds to core axis and strong foliation that is well developed within talc altered ultramafic rocks.

Figure 7.2
Local Geology Map with Adjacent properties



8.0 DEPOSIT TYPES

The Ring of Fire (ROF) area with its polymetallic deposits has become one of Canada's newer exploration districts. The interpreted geology of the area has been shown to be conducive to many deposit types including Ni-Cu + PGM in magmatic massive sulphides (MMS), Cu-Zn±Au in volcanogenic massive sulphides (VMS) and magmatic Cr-Ni-Cu-PGM and vanadium deposits.

The focus of interest within the ROF area is the RFI which is a mantle derived mafic-ultramafic intrusion that is 2735 Ma (Hamilton personal communication). The RFI is host to the Blackbird deposits as well as the Eagle's Nest 2 Ni-Cu-PGM MMS deposits, the Eagle 2 Ni-Cu-PGM deposit, and the Thunderbird vanadium occurrence on Noront's property, and the Black Thor, Black Label and Big Daddy chromite deposits on adjacent properties.

Other deposits of the VMS type are associated with volcanic units which overlie the RFI to the east, north and south. These include the McFaulds 1 to 11 deposits, Metallex 5-01 deposit and WPR VMS deposits, which are identified in Figure 15.1.

8.1 CHROMITE DEPOSITS

Traditionally, chromite deposits have been simply classified as podiform or stratiform types. The Blackbird and the other associated chromite deposits within the RFI belong to the latter class.

Stratiform Cr-Ni-Cu-PGE deposits are typically hosted in large layered mafic-ultramafic intrusions such as the Bushveld in South Africa, the Great Dyke in Zimbabwe and the Stillwater Complex in Montana. These are typified by chromite horizons which are laterally continuous over tens to hundreds of kilometres and easily differentiated based on geochemical and textural attributes. Other examples of stratiform chromite deposits on a smaller scale include the Kemi in Finland, the Muskox Intrusion in the Northwest Territories and the Bird River Sill in Manitoba (Canada), and the Campo Formoso and Jacurici Valley in Brazil. Amongst these examples it is the Kemi deposits that most closely resembles the mineralization style seen the Blackbird deposits.

Podiform deposits, such as the multiple deposits in Turkey, Cuba, Kazakhstan and Tibet are restricted to ophiolitic complexes and are generally less extensive.

Kemi-type deposits, also referred to as Archean komatiitic sill hosted deposits, are characterized as lensoid bodies of layered chromite and dunite/peridotite up to several tens of metres thick and hundreds of metres long. Furthermore, Kemi deposits do not show distinct megacyclic units similar to those encountered within larger stratiform deposits such as the Bushveld (Alapieti et al, 1989). Other deposits that could be classified as Kemi-type deposits are the Ipueira-Medrados deposit in Brazil, Sukinda deposits of India and a variety of sill hosted deposits in Zimbabwe (Railway Block Mine) described by Prendergast (2008).

8.2 GENETIC MODEL OF THE BLACKBIRD CHROME DEPOSITS

The Blackbird chromite deposits, like other stratiform chromite deposits, are formed by magmatic segregation during fractional crystallization of mafic-ultramafic magma. The challenge facing researchers is to explain the generation of large volumes of chromite from primitive melt.

Many hypotheses have been presented regarding the formation of massive chromite deposits and the research has shown that the process is much more complex than gravitational settling alone. Some early hypotheses included liquid immiscibility (McDonald, 1965), increase in oxygen fugacity (Ulmer, 1969), and changes in total pressure of the magma (Lipin, 1993). Other, more commonly cited hypotheses, are mixing of primitive magma with fractionated magma (Irvine, 1977) and crustal contamination of the parental magma (Irvine, 1975; Alapieti et al., 1989; Rollinson, 1997). Evidence supporting the crustal contamination hypothesis has been primarily from the Bushveld Complex and the Great Dyke, where chromitite layers occur at the base of well defined cyclic units. This is currently the most favoured model for an explanation of the Blackbird deposits and is discussed in greater detail below.

Contamination of primitive picritic magma by water-rich banded iron formation units of the Ring of Fire while the magma conduit was active is currently the most accepted genetic model for the Blackbird deposits (Mungall, 2008). The contamination event was then followed by mechanical sorting into chromite-rich and chromite-poor bedforms. This hypothesis is supported by MELTS (Ghiorso and Sack, 1995; Asimow and Ghiorso, 1998) thermodynamic modeling software and textural observations of xenolithic clasts of iron formation occurring stratigraphically below the massive chromitite layers within the RFI. Authors investigating similar deposits such as the Ipueira-Medrado Sill determined, supported by isotopic and textural observations, that crustal assimilation by a primitive and chrome enriched magma was the most likely cause for the formation of the chromite deposit (Marques et al., 2003). Studies of another analogue, the Sukinda deposits in India, have concluded that the chromitites and associated ultramafic rocks originated from a low Ti-high Mg siliceous magma or boninite. The mixing of this bonitic magma and relatively high water contents in the magmas derived from the upper mantle in a suprasubduction zone best explains the generation of the chromitites (Mondal et al, 2006). Prendergast (2008) suggested that the formation of the sill hosted chromitite deposits of Zimbabwe was directly correlated to their intrusion into thick platformal sequences containing an abundance of hydrated minerals. The somewhat cyclic and discontinuous layering observed in the Zimbabwe sill deposits was suggested to have been caused by strong variations in flow rates with large bodies being formed in long-lived magma channels and depressions (Prendergast, 2008). It is likely that the sills, such as the Prince Sill, which host chromite mineralization, can be seen as another close analogue to the RFI and related Blackbird deposits.

The hypotheses presented by Alapieti et al. (1989) for generation of chromite deposits in the Kemi intrusion could likely be applied to the Ring of Fire Intrusion and the multiple deposits found within it. This would suggest that the Blackbird deposits would have been generated by multiple pulses of variably contaminated parental magma.

9.0 MINERALIZATION

9.1 GENERAL STATEMENT

The chromite mineralization of the Blackbird deposits is hosted within the peridotite unit of a mafic/ultramafic layered intrusion known as the Ring of Fire Intrusion (RFI). The model developed for this deposit has been formulated by incorporating geophysical, geological, drill hole data and other work. Many of the features of the RFI have been compared to deposits with similar characteristics and geological settings to form an updated conceptual model.

The RFI was emplaced along the margins of older tonalitic to granodioritic intrusions that occur structurally beneath iron formation and volcanic units at 2735 Ma. Locally the RFI also cuts up through the iron formation and into the overlying intermediate to mafic volcanics of the Sachigo greenstone belt. The RFI follows the margins of the felsic intrusions over tens of kilometres, where it can be traced due to its magnetic properties.

Worldwide, mafic/ultramafic intrusions such as the RFI are host to chromite deposits, Ni-Cu deposits and platinum group metal (PGM) deposits. In some larger intrusions such as the Bushveld of South Africa, chromite deposits are found interlayered with anorthosite and norite as well as ultramafic rocks. The Blackbird chromite mineralization is restricted to the peridotite unit of the RFI, and is not found within the feeder conduit that hosts the Eagle One Ni-Cu-PGM deposit or within gabbroic rocks. As already mentioned, the closest geological analogues to the Blackbird deposits are probably the Kemi deposits in Finland although the deposits of Zimbabwe are also similar.

Chromite mineralization within the Blackbird deposits occurs in four main forms: disseminated, semi-massive, banded and massive chromitite.

9.2 MINERALIZATION TYPES

Disseminated chromite

In the host ultramafic rocks there is abundant disseminated and isolated submillimetric black euhedral chromite grains within the grey talc altered or green serpentinized host rock. The modal abundance of disseminated chromite varies from less than 1% to 25%. Chromite crystals tend to form small chains and clusters once the modal abundance is greater than roughly 7%.

Semi-massive chromite

When chromitite is greater than 25%, the rock displays antinodular texture, with submillimetric chromite crystals distributed around larger olivine pseudomorphs, usually 1-4 mm in size. Within disseminated intervals, xenoliths of chromite or dunite occur. The dunitic xenoliths in moderately/strongly disseminated chromite tend to be oval and rounded in shape and >1 cm in size. The chromite xenoliths tend to be more angular and can be difficult to distinguish from small scale massive beds when they are >5 cm in size. The angular xenoliths are indicative of brittle deformation.

Banded chromite zones

Within the Blackbird 2 area, close to the western contact between the ultramafics of the RFI and granodiorite, chromite mineralization, in some places, occurs as centrimetric/decimetric thin bands of massive chromite. The distribution of multiple small scale chromite bands would appear to indicate multiple fluxes of ultramafic magma, allowing for the deposition of multiple beds. Usually all of the centimetric beds along an interval in drill core are oriented within 10 degrees of each with occasional fluctuations over discrete intervals.

Massive chromite

The massive chromite of the Blackbird deposits occurs predominantly as lenticular bodies and/or tabular bodies which can be traced for hundreds of meters. Massive chromitite is also found as smaller scale pods or beds, most of which are not traceable for more than 50 m, interlayered with dunite and harzburgites. This interlayered zone, constituting part of Blackbird 2, has so many small scale pods and lenticular bodies that it is difficult to identify each pod individually.

9.3 CONCLUDING REMARKS

On the Blackbird property all of the chromite occurs in altered peridotite associated with serpentine, talc, magnesite, tremolite-hornblende, chlorite and rare biotite. All primary minerals have been altered from their original forms, although some are recognizable as pseudomorphs. The chromite is syngenetic with its host intrusion.

Mineralization was classified visually based on the following outline that is in accordance with South African methods of chromite identification within the Bushveld:

- Massive type: >45% visible chromite.
- Semi-massive or (strongly disseminated, DC3) type: 25-45% visible chromite.
- DC2 (moderately disseminated chromite): 15-25% visible chromite.
- DC1 (weakly disseminated chromite): 5-15% visible chromite.
- DC (trace chromite): <5% visible chromite.

Only chromite grades of DC2 type or greater are considered potentially economic, and even so DC2 is probably economic only when associated with DC3 and massive chromitite. Costs of extraction and chromite quality degrade at quantities lower than 15%. Current drilling results show that Cr:Fe ratios can be as much as 2.2, but are usually between 1.8-2.1 within the massive chromitite beds depending on their mineralogical characteristics.

The overall lack of PGMs within the Blackbird deposits may be explained by the proximity of the Eagle One massive sulphide deposit which is likely to have accumulated the majority of the PGMs from the mafic-ultramafic intrusions.

10.0 EXPLORATION

Since Noront acquired the Double Eagle property in 2003, there have been a total of seven airborne and ground geophysical surveys undertaken. Only the geophysics that covers the Blackbird deposits is discussed below. No other exploration work has been done on the property apart from diamond drilling which is presented in Section 11 of this report.

The main exploration grid in the area is centred on the Grid One baseline, which was initially designed to cover the Blackbird deposits, and has an azimuth of 045° with cross lines at 135° starting at Line 0E and terminating at Line 5400E. The grid was only used in the initial exploration of the Blackbird deposits since it was found in later drilling that an orientation of 155 degrees provided intersections closer to the true thickness of the mineralization

10.1 2003 FUGRO AIRBORNE SURVEY

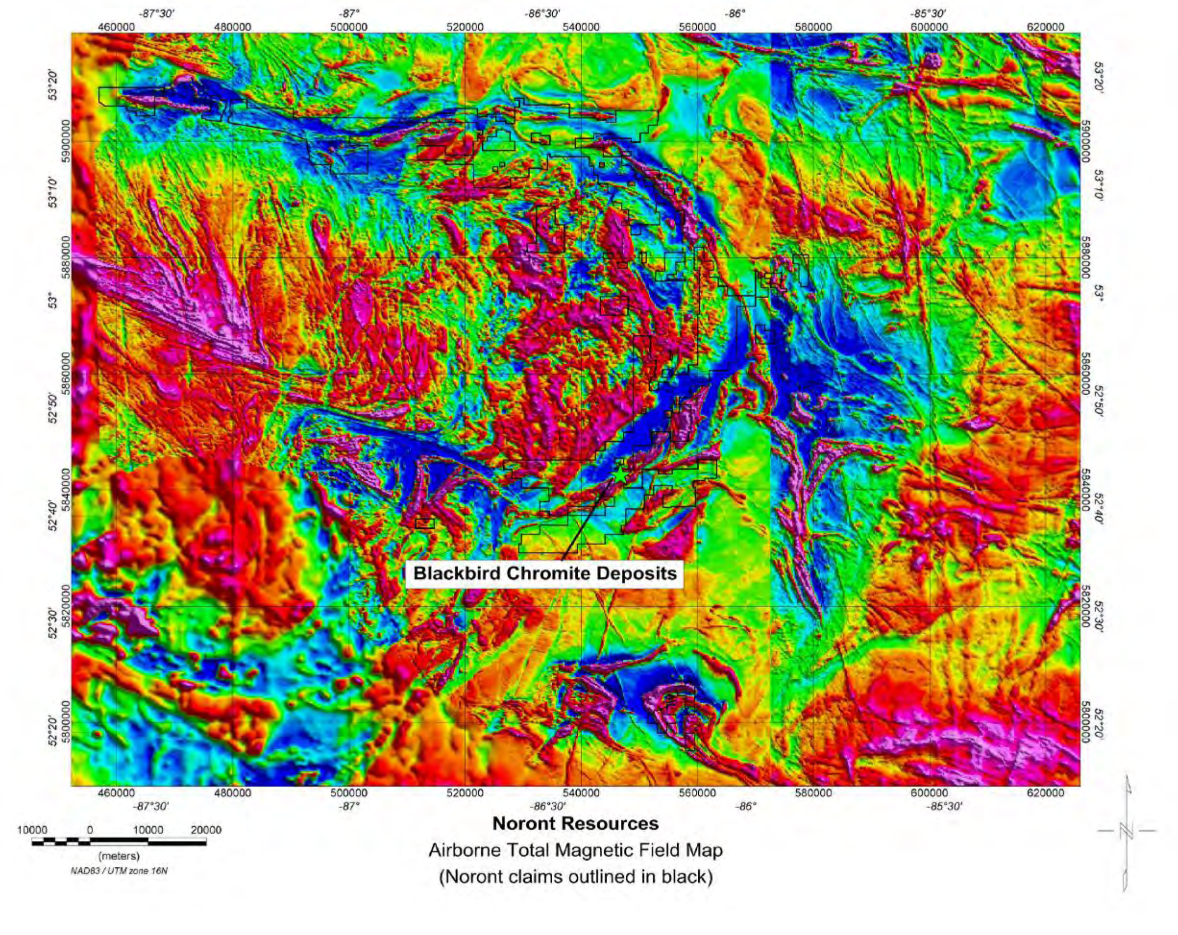
An airborne magnetic and electromagnetic survey over the McFaulds Lake area was carried out by Fugro Airborne Surveys, (Fugro) between July 26 and August 10, 2003 from an operating base at Pickle Lake, Ontario. A total of 2,148 line kilometres of data was collected, which added detail to the geophysical information available in the area. The traverse line direction was N-135E. The survey identified several bedrock conductors that closely correlated with magnetic anomalies (Figure 10.1). These surveys were used to identify potential targets for VMS style mineralization and other sulphide mineralization in the area and showed the strong magnetic anomalies related to the ultramafic units that host the Blackbird deposits.

10.2 2004 GROUND MAGNETIC AND HORIZONTAL LOOP EM SURVEY

In March and April, 2004, Noront carried out two ground geophysical surveys on two separate grids over its mineral claims in the McFaulds Lake area which included the Blackbird deposits. The data were compiled and interpreted by Scott Hogg & Associates Ltd. (SHA) of Toronto, Ontario. Ground survey grids were cut with a line interval of 200 metres, perpendicular to a base line trending 045°, using a GPS for reference. The data were collected and presented with reference to line and station. The ground magnetic survey was carried out using a Scintrex MP3 proton recession magnetometer and readings were taken at 12.5 metre intervals along the line and recorded digitally by the instrument. A second MP3 magnetometer, at a fixed location at the camp, recorded diurnal magnetic variation and a correction was applied in the field. The corrected digital magnetic files were recorded on disk and sent to SHA in Toronto for compilation and analysis.

The magnetic data, collected as profiles, were gridded using the SI-Grid process developed by SHA. This interpolation technique preserves all of the detail of the profile data and optimizes the correlation of information between adjacent survey lines. The SI-Grid output was contoured at a 50 nT interval and presented at 1:20,000 scale in colour together with survey lines and geographic reference.

Figure 10.1
Airborne Total Magnetic Map of the McFaulds Lake Area



The ground horizontal loop electromagnetic survey was carried out using a MaxMin II instrument. A coil spacing of 150 metres was used and the in-phase and quadrature response amplitudes were recorded at 3 frequencies: 444, 1,777 and 3,555 Hz. Measurements were made every 25 metres and recorded manually. The field notes were converted to digital files and sent to SHA.

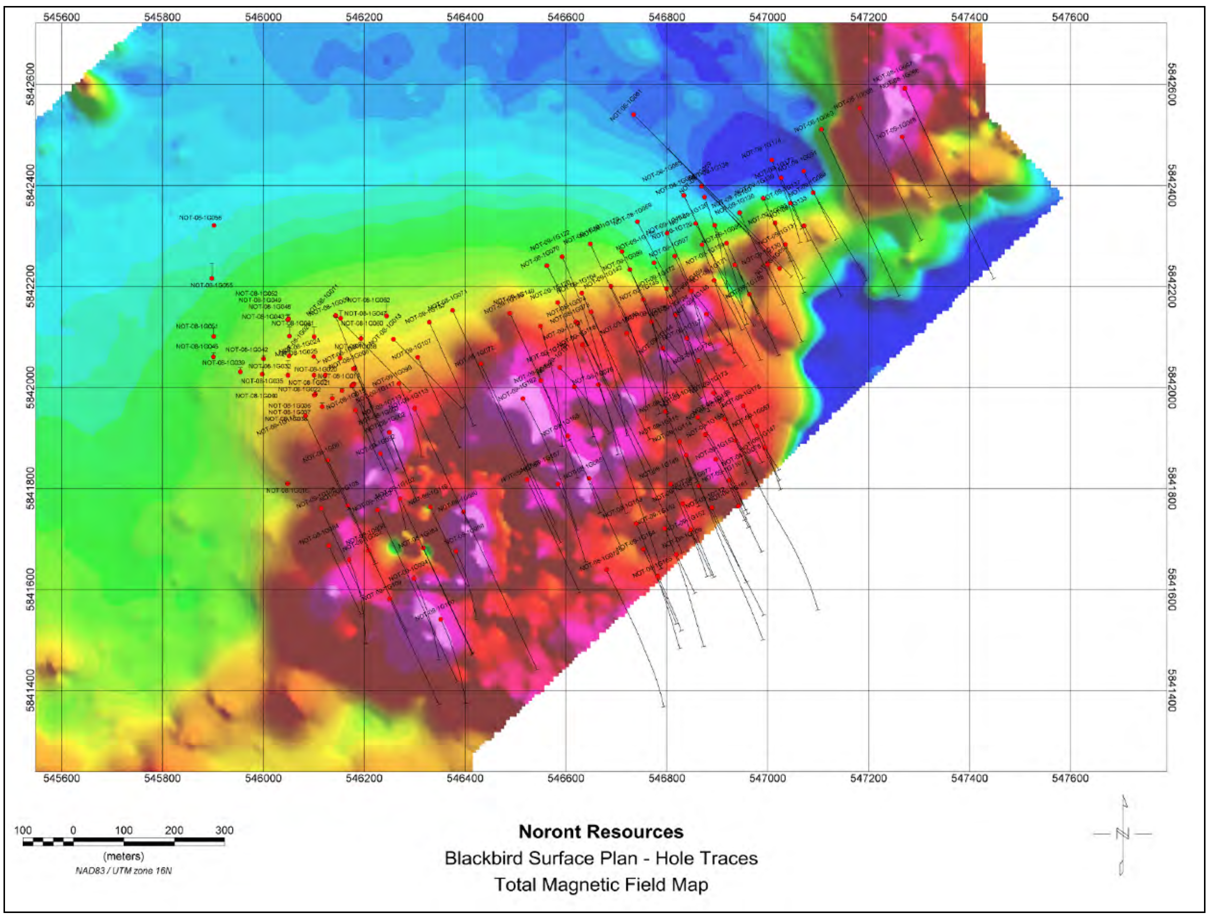
On both grids, conductive axes of bedrock origin were mapped within and adjacent to magnetic anomalies. These anomalies were interpreted to be intermediate to mafic volcanic rocks with a conductive response from sulphide mineralization. Weaker response was associated with pyrite mineralization possibly associated with gold and the strong conductance was associated with possible massive sulphides.

10.3 2007 NORONT AEROTEM II HELICOPTER SURVEY

In late 2007, following the discovery of the Eagle One deposit, Noront carried out an airborne magnetic and electromagnetic survey over a more extensive area in McFaulds Lake.

Other companies with properties in the vicinity and some with joint venture arrangements with Noront wished to participate in the airborne geophysical program. To meet the objectives of a multipartner program, Noront arranged for Billiken Management to direct the operation. Billiken Management contracted Aeroquest Ltd. to fly the survey using the AeroTem II helicopter transient electromagnetic system. Figure 10.2 is restricted to the Blackbird project area and is not the extent of the airborne survey. SHA was contracted to provide technical management, compilation and interpretation services. While the survey was in progress Aeroquest provided SHA with field-processed digital data from which preliminary maps, representative of the magnetic and electromagnetic data were prepared. An interim report that included preliminary anomaly identification and follow-up recommendations was also provided by SHA. When completed, the final Aeroquest data, maps and report were distributed.

Figure 10.2
Total Magnetic Field Map of the Blackbird Project Area



Twelve anomalies were identified in addition to the anomaly associated with Eagle One. The twelve anomalies were prioritized as "high", "medium", "low" and "no follow-up recommended". The highest priority anomalies were those exhibiting the highest conductance, whereas lower priority anomalies were for lower conductance indications.

The high priority anomaly dubbed AT2 is located where the Blackbird deposits and the adjacent Eagle Two Ni-Cu-PGE mineralization were subsequently discovered.

10.4 2008 MAGNETIC, VLF, HLEM, GRAVITY AND LARGE LOOP TDEM SURVEYS

Magnetic/VLF, horizontal loop electromagnetic (HLEM or MaxMin), gravity and large loop TDEM surveys were done on all or parts of Grid 1 by JVX in 2008. Part of Grid 1 includes the Blackbird deposits and covers all or parts of claims 3005622, 3005670, 3008261, 3008773, 3008774, 3012256, 3012259 to 3012262, 3012264 and 3012265. The field work was done in the period from January 20 to May 27, 2008. Total coverage was 144,330 metres (magnetic/VLF), 106,150 metres (HLEM), 50,225 metres or 2,222 stations (gravity) and 62,575 metres (TDEM on 14 loops). Total magnetic intensity and VLF readings were taken every 12.5 metres. Horizontal loop EM (HLEM) surveys were done with a 150 metre coil spacing at 440 (or 880) and 1,760 Hz, with readings every 25 metres. Gravity surveys were done over selected grid sections at station spacings of 25 metres and 50 metres in areas of less interest. Large loop transient EM (TDEM) surveys were done over selected grid sections, readings every 25 or 50 metres. A high pass filter was used on the Bouguer gravity channel and Fraser filter was applied to the VLF data in the database.

The results yielded a second anomaly continuing to the northeast of Blackbird 1, which became known as the Blackbird 2 anomaly. The gravity response for Blackbird 2 (Figure 10.3) was much stronger than that of Blackbird 1 and it was traceable along a 1 km strike length oriented at 065 degrees. This was considered a high priority target and drilling commenced on this target in the summer of 2008.

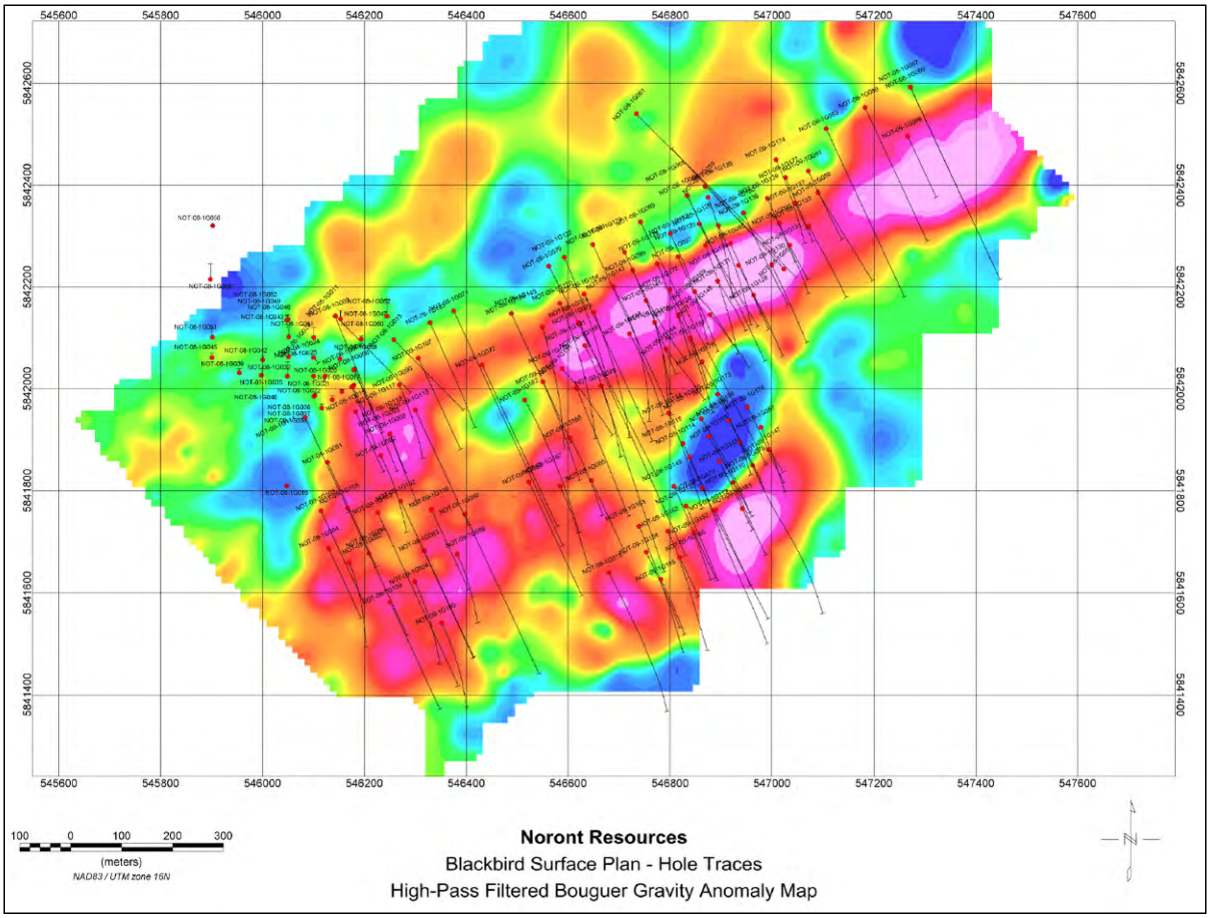
10.5 2008 DRILL HOLE IP SURVEYS

Borehole Spectral IP/Resistivity surveys (BHIP) were performed by JVX between May 11, 2008 and August 31, 2008. Thirteen holes on a variety of Noront's anomalies were done; only one was done on the AT2 anomaly (Eagle Two and Blackbird deposits), NOT-08-1G39. In the borehole IP survey, direction logs (Gradient) and detection logs (Pole-dipole and Mise-a-la-masse) were used. NOT-08-1G39 was blocked at 274 m but showed a weak conductive zone starting at 257 m and a chargeability zone at 247.5 m which continued to the blockage. Chargeability profiles show four chargeable zones centred at 72.5 m, 112.5 m, 172.7 m, and 212.5 m, respectively, using gradients. No known mineralization accounted for the observations listed above.

10.6 2009 TDEM SURVEYS

A small part of Grid One was covered in a TDEM coincident moving loop survey by JVX. The field work was done from March 10, 2009 to April 11, 2009 when the work was stopped because conditions became too wet to continue. The coincident loop transient EM (TDEM) surveys were done over selected grid sections, with readings every 25 metres. The claims covered in Grid 1 were 3012259, 3012260 and 3012262. The total Grid One coverage was 2,000 m, whereas the total coverage of all project areas included in survey was 29,900 m. The survey was used to better delineate in granodiorite-peridotite contact at Blackbird 2 in Grid One.

Figure 10.3
High-Pass Filtered Bouguer Gravity Anomaly Map of the Blackbird Area



11.0 DRILLING

Noront has been drilling continuously since February 15, 2008 on the AT2 anomaly which holds both the Eagle Two deposit and the Blackbird deposits. The drilling plan for the Blackbird project area is shown in Figure 11.1. There was a small break in drilling from December 15, 2008 to early January, 2009, during freeze-up. One hundred and fifty four holes were drilled on the AT2 anomaly for a total of 52,374.9 m. Many of the drill holes intersected both Eagle Two and Blackbird type mineralization; therefore, the drilling totals for each deposit cannot be easily differentiated. In 2008, 62 holes were drilled into the Eagle Two and Blackbird deposits. In 2009, 92 holes were drilled targeting specifically the Blackbird deposits. Drilling was undertaken in 2009 on 50-metre spaced sections

The earlier drill holes directed at Blackbird 1 were vertical, while the later drill holes directed at Blackbird 2 were drilled at -50 degrees towards 155 degrees to cut the mineralization as closely as possible at right angles. Rare holes were drilled at other dips and angles, this was usually to avoid a fault zone or for determining local stratigraphy and to confirm mineralization continuity. The average drill hole length is 340m with the longest hole being 805 m.

The drilling contractor was Forage Orbit Garant of Val d'Or, Quebec. All of the holes were NQ diameter, except in rare instances where the hole had to be re-cased at depth. All holes were surveyed at the collar using a Trimble differential GPS with an accuracy of +/- 30 cm and downhole using a gyro instrument (GyroSmart) which measured dip and azimuth every 3 m. Core recovery was considered excellent and averages approximately 98%.

All core was examined and logged in the field and sample intervals determined. All information concerning the drilling was entered into a database (Geotic) for processing and reporting purposes.

A summary of the holes drilled is presented in Table 11.1. Results of the major intersections are shown in Table 11.2. The true thicknesses of the massive chromite zones vary between 1 m and 32 m. Of particular significance are the Cr_2O_3 grades and the Cr:Fe ratios which are comparable with those encountered on similar stratiform deposits in South America, Europe and Southern Africa. As can be seen from Table 11.2, the disseminated mineralization has lower Cr_2O_3 grades and generally lower Cr:Fe ratios.

Figure 11.1
Layout of Drill Holes in the Blackbird Project Area

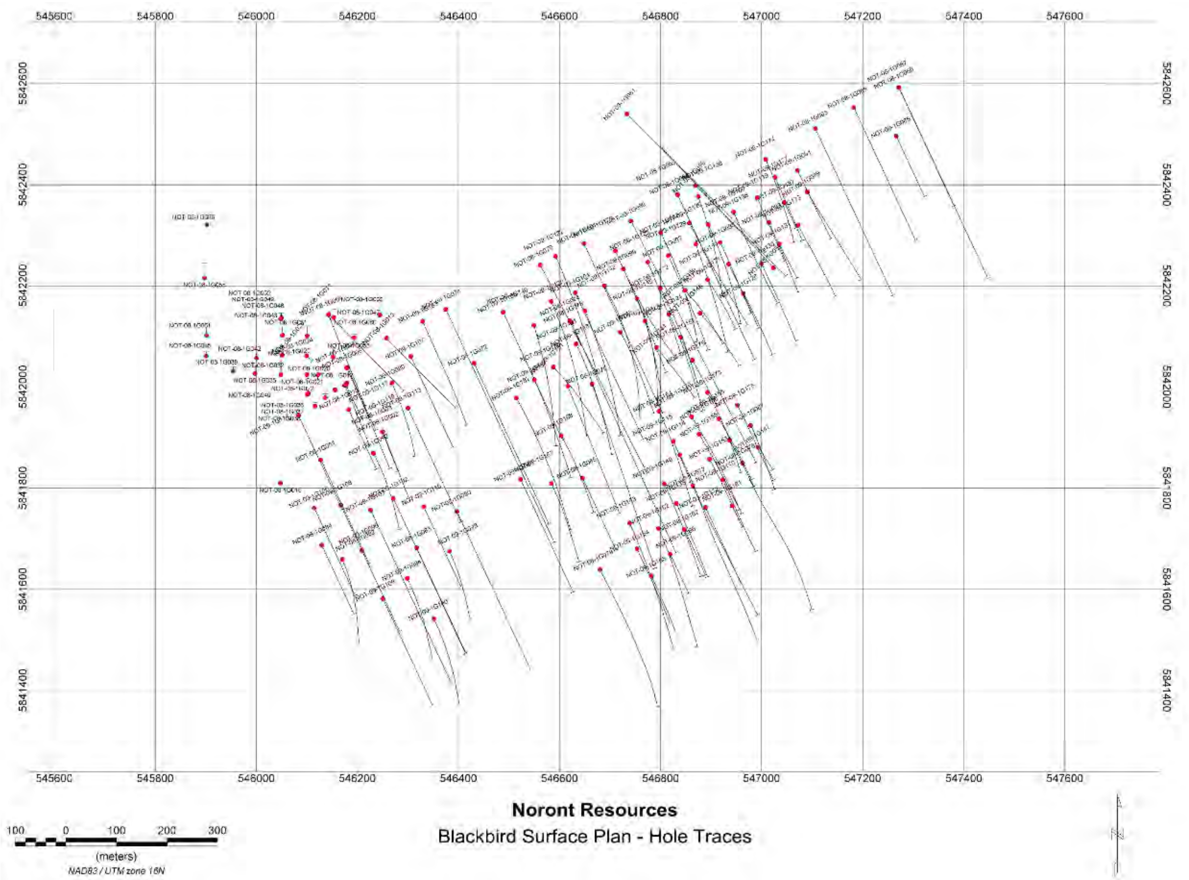


Table 11.1
Listing of the Blackbird Project Drill Holes

DDH	Easting (m)	Northing (m)	Elevation (m)	Azimuth˚	Dip˚	EOH(m)
NOT-08-1G002	546250.2	5841911.3	172.92	157.54	-50.79	239.00
NOT-08-1G003	546250.2	5841910.8	172.92	159.22	-64.78	200.00
NOT-08-1G006	546181.0	5842038.0	171.90	157.33	-50.26	348.00
NOT-08-1G008	546178.8	5842037.1	171.90	154.80	-65.40	336.00
NOT-08-1G009	546143.0	5842142.0	171.70	158.07	-50.74	309.00
NOT-08-1G011	546143.4	5842142.6	171.67	135.46	-48.89	324.00
NOT-08-1G013	546258.0	5842095.6	172.12	135.22	-49.55	306.00
NOT-08-1G015	546182.9	5841955.0	172.23	155.00	-45.00	195.00
NOT-08-1G016	546047.8	5841809.7	169.53	0.00	-90.00	186.40
NOT-08-1G017	546179.4	5842007.1	166.30	0.00	-90.00	267.00
NOT-08-1G020	546156.0	5841994.0	172.00	0.00	-90.00	288.00
NOT-08-1G021	546136.7	5841978.5	171.74	0.00	-90.00	351.00
NOT-08-1G022	546116.6	5841961.9	171.72	0.00	-90.00	303.00
NOT-08-1G024	546122.8	5842024.6	172.36	163.37	-88.70	372.00

DDH	Easting (m)	Northing (m)	Elevation (m)	Azimuth˚	Dip˚	EOH(m)
NOT-08-1G025	546100.3	5842024.2	172.26	175.77	-88.84	447.00
NOT-08-1G028	546100.0	5842061.0	172.39	129.98	-88.22	432.00
NOT-08-1G031	546100.6	5842100.4	170.88	0.00	-90.00	453.00
NOT-08-1G032	546048.7	5842024.1	169.96	0.00	-90.00	594.00
NOT-08-1G035	545997.6	5842026.1	169.93	0.00	-90.00	462.00
NOT-08-1G036	546102.0	5841985.8	171.44	0.00	-90.00	19.50
NOT-08-1G037	546103.0	5841987.0	171.44	0.00	-90.00	15.00
NOT-08-1G038	546101.0	5841985.0	171.44	0.00	-90.00	519.00
NOT-08-1G039	545954.4	5842031.0	169.67	0.00	-90.00	447.00
NOT-08-1G040	546051.1	5842062.3	170.02	0.00	-90.00	575.00
NOT-08-1G042	546000.7	5842056.7	169.77	0.00	-90.00	459.70
NOT-08-1G043	546051.8	5842101.6	170.63	0.00	-90.00	605.51
NOT-08-1G045	545900.9	5842060.6	169.30	0.00	-90.00	357.00
NOT-08-1G047	546153.3	5842136.9	171.98	0.00	-90.00	669.00
NOT-08-1G048	546050.0	5842136.0	170.61	0.00	-90.00	15.00
NOT-08-1G049	546048.0	5842134.0	169.65	0.00	-90.00	248.00
NOT-08-1G051	545901.6	5842101.0	169.65	0.00	-90.00	645.00
NOT-08-1G052	546049.3	5842135.0	170.61	0.00	-90.00	709.50
NOT-08-1G055	545897.9	5842215.7	169.69	0.00	-90.00	760.00
NOT-08-1G056	545902.2	5842320.7	169.67	0.00	-90.00	670.08
NOT-08-1G057	547023.5	5842235.8	179.49	316.96	-49.50	516.80
NOT-08-1G058	546152.1	5842058.4	172.26	0.00	-90.00	546.00
NOT-08-1G059	546869.0	5842398.1	176.79	135.00	-50.00	390.00
NOT-08-1G060	546193.8	5842097.0	171.98	0.00	-90.00	454.25
NOT-08-1G061	546734.0	5842540.0	175.47	135.00	-50.00	600.00
NOT-08-1G062	546244.5	5842141.7	172.23	0.00	-89.50	804.60
NOT-08-1G063	547106.5	5842510.8	176.79	155.00	-50.00	567.00
NOT-08-1G064	546833.6	5842380.4	177.95	155.00	-70.00	636.00
NOT-08-1G065	546834.0	5842380.0	178.00	155.00	-50.00	549.00
NOT-08-1G066	547271.5	5842592.0	175.89	155.00	-60.00	519.00
NOT-08-1G067	547272.0	5842592.0	175.90	155.00	-45.00	582.00
NOT-08-1G068	547182.5	5842552.4	176.09	155.00	-50.00	429.00
NOT-08-1G069	546741.6	5842328.2	175.97	152.63	-49.63	690.00
NOT-08-1G070	546562.1	5842241.2	174.84	152.87	-48.42	594.00
NOT-08-1G071	546375.2	5842152.6	173.69	155.00	-49.10	684.00
NOT-08-1G072	546431.0	5842046.6	173.89	155.00	-52.00	522.00
NOT-08-1G073	546620.0	5842130.0	172.00	155.00	-57.00	96.00
NOT-08-1G074	546623.5	5842127.4	175.96	155.56	-57.09	774.03
NOT-08-1G076	546664.6	5842005.5	176.93	161.19	-49.50	585.00
NOT-08-1G077	546863.8	5841805.0	177.91	155.00	-50.04	451.17
NOT-08-1G078	546962.2	5841849.4	177.83	153.36	-49.00	432.00
NOT-08-1G079	546680.3	5841639.1	176.93	155.00	-48.82	426.00
NOT-08-1G080	546397.1	5841753.8	173.65	155.00	-48.00	524.00
NOT-08-1G081	546127.8	5841855.7	172.07	155.00	-50.00	342.00
NOT-08-1G082	546209.0	5841676.9	172.52	155.00	-49.50	256.00

DDH	Easting (m)	Northing (m)	Elevation (m)	Azimuth°	Dip°	EOH(m)
NOT-08-1G083	546317.5	5841682.1	174.13	155.00	-49.00	342.00
NOT-08-1G084	546129.8	5841687.1	172.34	155.00	-50.00	225.00
NOT-08-1G085	546645.7	5841819.9	178.93	155.00	-50.00	234.00
NOT-09-1G086	546523.2	5841817.3	176.10	155.00	-50.00	345.00
NOT-09-1G087	546978.4	5841924.1	178.56	151.79	-49.92	208.34
NOT-09-1G088	547266.5	5842496.1	176.21	155.00	-50.00	195.00
NOT-09-1G089	547090.4	5842385.6	181.17	148.09	-50.28	315.77
NOT-09-1G090	546268.6	5842007.7	171.70	155.00	-51.32	231.00
NOT-09-1G091	547071.2	5842428.1	179.99	155.00	-51.60	225.00
NOT-09-1G092	546231.9	5841868.9	172.71	155.00	-49.68	231.00
NOT-09-1G093	547014.6	5842325.4	177.54	155.00	-51.03	234.00
NOT-09-1G094	546298.7	5841621.8	173.59	155.00	-50.89	255.00
NOT-09-1G095	546918.3	5842285.8	180.71	155.00	-52.27	249.00
NOT-09-1G096	546170.2	5841659.3	172.90	155.00	-50.93	252.00
NOT-09-1G097	546815.4	5842259.9	176.82	155.47	-50.20	312.00
NOT-09-1G098	546382.3	5841675.5	174.87	155.00	-50.54	210.00
NOT-09-1G099	546726.6	5842233.4	176.98	156.01	-50.05	318.00
NOT-09-1G100	546351.6	5841541.1	173.92	155.00	-51.19	262.73
NOT-09-1G101	546648.5	5842284.0	174.88	155.20	-49.92	552.00
NOT-09-1G102	546271.2	5841779.8	172.60	155.00	-44.00	462.00
NOT-09-1G103	546226.2	5841757.1	173.06	155.00	-44.00	486.00
NOT-09-1G104	546631.3	5842186.7	175.60	157.13	-50.69	489.00
NOT-09-1G105	546114.8	5841760.6	171.83	155.00	-48.00	271.59
NOT-09-1G106	546488.6	5842147.0	175.33	155.00	-48.00	405.00
NOT-09-1G107	546305.8	5842059.8	172.64	155.00	-50.00	297.00
NOT-09-1G108	546167.2	5841766.4	172.68	155.00	-50.00	270.00
NOT-09-1G109	546250.4	5841581.8	173.38	155.00	-48.00	318.00
NOT-09-1G110	546923.6	5841816.4	178.74	155.00	-50.22	231.00
NOT-09-1G111	546083.7	5841943.8	171.42	155.00	-49.00	306.10
NOT-09-1G112	546889.2	5841761.7	177.79	155.00	-48.00	234.00
NOT-09-1G113	546300.1	5841958.2	172.66	155.00	-48.00	380.00
NOT-09-1G114	546825.4	5841892.5	178.22	155.14	-49.76	138.00
NOT-09-1G115	546838.3	5841865.9	177.43	155.58	-49.91	528.00
NOT-09-1G116	546331.5	5841763.2	174.27	155.00	-50.00	264.00
NOT-09-1G117	546175.0	5842003.0	168.00	155.00	-66.92	330.00
NOT-09-1G118	546632.7	5842084.6	177.10	153.12	-49.91	357.00
NOT-09-1G119	546177.6	5842003.4	171.63	155.00	-78.90	372.00
NOT-09-1G120	546583.9	5842168.1	174.56	157.66	-49.90	410.00
NOT-09-1G121	546650.2	5842149.6	175.08	156.44	-50.20	378.39
NOT-09-1G122	546592.3	5842258.8	175.05	155.88	-49.90	375.00
NOT-09-1G124	546816.7	5842143.0	177.30	152.80	-48.40	300.00
NOT-09-1G125	546774.8	5842246.8	178.87	156.58	-49.90	291.00
NOT-09-1G126	546857.1	5842324.3	181.75	151.95	-51.00	357.00
NOT-09-1G128	546964.1	5842184.5	177.70	150.06	-50.00	204.00
NOT-09-1G129	546870.0	5842282.6	178.09	160.47	-50.35	351.00

DDH	Easting (m)	Northing (m)	Elevation (m)	Azimuth˚	Dip˚	EOH(m)
NOT-09-1G130	546999.8	5842243.7	180.01	153.69	-49.10	252.00
NOT-09-1G131	547034.8	5842282.9	179.42	151.98	-48.99	117.00
NOT-09-1G132	546800.6	5842305.4	177.33	155.21	-49.90	342.00
NOT-09-1G133	547072.0	5842320.2	181.02	152.08	-49.40	240.00
NOT-09-1G135	546831.4	5841769.7	177.54	155.00	-49.70	243.00
NOT-09-1G136	546944.4	5842345.9	177.44	155.00	-51.68	312.00
NOT-09-1G137	547045.0	5842365.0	181.70	155.00	-49.00	84.00
NOT-09-1G138	546874.5	5842376.6	176.74	158.47	-50.73	315.00
NOT-09-1G139	546990.9	5842374.6	187.27	155.72	-49.30	207.00
NOT-09-1G140	546549.2	5842121.0	174.49	162.80	-50.20	375.00
NOT-09-1G142	546688.9	5842200.3	175.75	151.90	-48.07	417.00
NOT-09-1G143	546720.6	5842107.5	176.65	150.90	-49.20	258.00
NOT-09-1G144	546792.2	5842077.6	177.46	140.62	-49.50	183.00
NOT-09-1G145	546753.1	5842174.2	176.74	155.51	-47.81	330.00
NOT-09-1G147	546993.9	5841880.5	180.00	145.80	-55.40	79.38
NOT-09-1G148	546878.6	5842145.3	177.53	138.92	-49.51	201.00
NOT-09-1G149	546807.3	5841808.5	177.56	155.00	-49.30	294.00
NOT-09-1G151	546587.9	5842039.2	176.39	137.15	-50.48	255.00
NOT-09-1G152	546847.3	5841718.0	177.74	155.00	-48.80	150.00
NOT-09-1G153	546896.9	5841857.5	178.37	152.86	-49.80	195.00
NOT-09-1G154	546797.2	5841952.0	178.00	155.00	-48.83	303.44
NOT-09-1G155	546876.4	5841906.4	178.52	148.69	-46.70	255.00
NOT-09-1G156	546936.9	5841894.6	177.76	150.53	-49.30	153.00
NOT-09-1G157	546839.9	5842097.7	176.62	155.41	-50.25	159.00
NOT-09-1G158	546915.3	5841937.1	178.67	149.20	-48.40	204.00
NOT-09-1G159	546934.5	5842242.8	178.80	152.54	-51.82	228.00
NOT-09-1G160	546894.7	5842321.0	178.35	155.52	-49.12	297.29
NOT-09-1G161	546941.8	5841765.1	180.05	155.00	-48.49	72.00
NOT-09-1G162	546795.8	5841720.7	178.54	155.00	-48.90	363.53
NOT-09-1G163	546739.0	5841730.3	180.26	155.00	-47.82	384.00
NOT-09-1G164	546753.4	5841679.9	176.78	155.00	-49.26	246.80
NOT-09-1G165	546782.1	5841626.6	176.87	155.00	-50.07	180.00
NOT-09-1G166	546819.0	5841669.3	177.07	155.00	-48.93	129.00
NOT-09-1G167	546584.2	5841808.9	178.96	155.00	-49.54	246.00
NOT-09-1G168	546603.6	5841904.0	178.66	151.62	-48.60	240.00
NOT-09-1G169	546848.4	5842191.2	177.04	139.06	-50.77	198.00
NOT-09-1G170	546861.3	5841941.1	177.85	148.62	-48.10	297.00
NOT-09-1G171	546893.4	5842212.1	177.60	146.78	-49.20	165.00
NOT-09-1G172	546799.3	5842195.8	176.44	152.80	-45.38	237.00
NOT-09-1G173	546893.0	5841988.8	178.07	151.78	-48.84	258.00
NOT-09-1G174	547008.1	5842450.2	182.47	156.18	-49.91	252.00
NOT-09-1G175	546951.7	5841963.9	180.62	151.96	-49.48	246.00
NOT-09-1G176	546863.0	5842052.6	177.22	152.39	-43.85	141.00
NOT-09-1G177	547026.6	5842414.9	181.31	155.02	-49.51	201.00
NOT-09-1G178	546769.7	5842130.0	177.33	164.28	-49.36	210.00

DDH	Easting (m)	Northing (m)	Elevation (m)	Azimuth°	Dip°	EOH(m)
NOT-09-1G179	546710.7	5842269.1	177.48	155.36	-47.70	372.00
NOT-09-1G180	546616.4	5842001.5	176.59	157.85	-48.49	381.00
NOT-09-1G181	546550.3	5842013.7	175.56	155.00	-48.53	279.00
NOT-09-1G182	546514.7	5841978.1	174.55	150.72	-50.60	405.00
NOT-09-1G183	546329.0	5842129.1	173.26	155.00	-48.92	324.00

Table 11.2
Summary of the Major Intersections in the Blackbird Drill Holes

Hole ID	From	To	Length	Cr_2O_3%	Cr%	Fe%	Cr:Fe Ratio	Mineralization Type	Cut-Off Criteria
NOT-08-1G017	192.10	241.50	49.40	39.10	27.40	11.10	2.47	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G020	234.00	246.40	12.40	10.20	7.00	10.70	0.65	Intercalated chromite beds	> 10m thickness
NOT-08-1G020	246.40	285.70	39.30	31.60	21.60	16.00	1.35	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G020	246.40	264.00	17.60	28.20	19.30	15.90	1.21	Massive chromite	> 10m thickness
NOT-08-1G020	264.00	285.70	21.70	34.40	23.50	16.00	1.47	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G024	310.70	368.20	57.50	40.40	27.50	15.80	1.74	Massive chromite	> 10m thickness, >30%
NOT-08-1G024	324.00	364.50	40.50	42.30	28.90	15.80	1.83	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G025	374.10	416.70	42.60	24.90	17.10	13.90	1.23	Massive and Intercalated	> 10m thickness
NOT-08-1G025	387.00	416.40	29.40	29.30	20.00	15.20	1.32	Massive chromite	> 10m thickness
NOT-08-1G028	355.50	425.05	69.55	33.83	23.14	12.26	1.79	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-08-1G028	365.15	413.00	47.75	42.18	28.85	13.76	2.11	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G031	337.60	412.50	74.90	37.32	25.53	12.9	1.94	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-08-1G031	373.50	385.50	12.00	45.07	30.83	12.86	2.4	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G040	498.00	506.40	8.40	41.20	28.00	15.20	1.84	Massive chromite	> 30% Cr_2O_3
NOT-08-1G040	499.80	505.50	5.70	48.20	33.00	16.20	2.04	Massive chromite	> 30% Cr_2O_3
NOT-08-1G043	462.10	497.00	34.90	33.00	22.60	14.50	1.56	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-08-1G043	466.00	481.10	15.10	35.50	24.30	15.80	1.54	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G043	482.00	496.00	14.00	39.80	27.30	15.70	1.74	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G047	548.70	554.50	5.80	13.62	9.32	10.80	0.86	Intercalated chromite beds	Other
NOT-08-1G059	273.00	283.20	10.20	36.60	25.00	17.30	1.45	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G061	502.00	526.00	24.00	35.56	24.33	12.00	2.03	Massive and semi-massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G064	510.00	527.00	17.00	43.84	29.98	15.02	2.00	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G065	190.00	205.00	15.00	29.80	20.39	13.33	1.53	Intercalated chromite beds	> 10m thickness
NOT-08-1G070	140.70	145.50	4.80	34.28	23.44	20.26	1.16	Massive and semi-massive chromite	> 30% Cr_2O_3
NOT-08-1G072	433.00	441.50	8.50	25.47	17.43	9.14	1.91	Intercalated chromite beds	Other
NOT-08-1G074	640.22	676.42	36.20	40.8	27.91	12.54	2.23	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G076	260.70	266.60	5.90	33.68	23.02	14.64	1.57	Massive and Intercalated	> 30% Cr_2O_3
NOT-08-1G077	78.30	89.30	11.00	35.01	23.96	14.42	1.66	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G077	136.80	153.30	16.50	35.38	24.21	11.87	2.04	Largely massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-08-1G078	55.80	57.40	1.60	36.19	24.80	14.60	1.70	Massive chromite	> 30% Cr_2O_3
NOT-08-1G081	101.80	109.70	7.90	32.14	21.99	15.43	1.43	Massive chromite	> 30% Cr_2O_3

Hole ID	From	To	Length	Cr_2O_3%	Cr%	Fe%	Cr:Fe Ratio	Mineralization Type	Cut-Off Criteria
NOT-08-1G081	121.40	124.10	2.70	34.06	23.30	13.49	1.73	Massive and semi-massive chromite	> 30% Cr_2O_3
NOT-08-1G082	72.50	105.80	33.30	26.75	18.30	11.96	1.53	Massive and Intercalated	> 10m thickness
NOT-08-1G082	90.50	99.50	9.00	43.00	29.43	14.17	2.08	Massive chromite	> 30% Cr_2O_3
NOT-08-1G085	69.90	81.50	11.60	34.01	23.26	12.05	1.93	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-08-1G085	74.50	81.50	7.00	44.02	30.11	14.14	2.13	Massive chromite	> 30% Cr_2O_3
NOT-09-1G087	92.90	103.10	10.20	36.32	24.84	16.05	1.55	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G089	30.00	43.90	13.90	42.22	28.87	13.93	2.07	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G090	70.50	73.70	3.20	33.13	22.66	14.98	1.51	Massive chromite	> 30% Cr_2O_3
NOT-09-1G092	107.40	116.80	9.40	30.68	20.99	12.88	1.63	Massive and Intercalated	> 30% Cr_2O_3
NOT-09-1G092	107.40	113.50	6.10	38.66	26.45	14.44	1.83	Massive chromite	> 30% Cr_2O_3
NOT-09-1G093	54.60	71.00	16.40	40.28	27.55	13.78	2.00	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G095	44.00	54.00	10.00	33.59	22.99	12.61	1.82	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-09-1G095	61.30	62.60	1.30	33.26	22.72	12.44	1.83	Massive chromite	> 30% Cr_2O_3
NOT-09-1G095	179.70	210.00	30.30	38.52	26.34	13.25	1.99	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G095	179.70	192.50	12.80	41.26	28.22	12.87	2.19	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G095	195.50	210.00	14.50	39.45	26.98	14.39	1.87	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G097	169.70	175.90	6.20	39.95	27.33	12.78	2.14	Massive chromite	> 30% Cr_2O_3
NOT-09-1G099	89.50	102.60	13.10	26.08	17.84	11.40	1.57	Intercalated chromite beds	> 10m thickness
NOT-09-1G099	89.50	94.00	4.50	42.09	28.79	14.13	2.04	Massive chromite	> 30% Cr_2O_3
NOT-09-1G099	137.00	139.50	2.50	40.39	27.60	14.82	1.86	Intercalated chromite beds	> 30% Cr_2O_3
NOT-09-1G101	437.30	439.40	2.10	37.49	25.64	12.14	2.11	Largely massive chromite	> 30% Cr_2O_3
NOT-09-1G104	318.40	343.40	25.00	36.82	25.19	12.46	2.02	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-09-1G104	324.40	329.70	5.30	40.61	27.78	13.17	2.11	Massive and semi-massive chromite	> 30% Cr_2O_3
NOT-09-1G106	196.28	199.69	3.41	35.91	24.57	13.35	1.84	Massive chromite	> 30% Cr_2O_3
NOT-09-1G108	112.60	115.00	2.40	22.42	15.34	12.68	1.21	Intercalated chromite beds	Other
NOT-09-1G110	76.90	81.40	4.50	42.37	28.98	13.43	2.16	Massive chromite	> 30% Cr_2O_3
NOT-09-1G112	81.30	87.60	6.30	37.81	25.86	12.22	2.12	Massive chromite	> 30% Cr_2O_3
NOT-09-1G113	21.61	25.37	3.76	18.87	12.91	11.33	1.14	Intercalated chromite beds	Other
NOT-09-1G115	154.50	169.65	15.15	39.47	27.01	15.70	1.72	Largely massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G118	96.00	105.00	9.00	36.13	24.72	11.51	2.15	Massive chromite	> 30% Cr_2O_3
NOT-09-1G118	105.00	108.90	3.90	40.17	27.47	13.13	2.09	Massive chromite	> 30% Cr_2O_3
NOT-09-1G120	332.40	357.73	25.33	17.35	11.87	10.15	1.17	Intercalated	> 10m thickness
NOT-09-1G121	124.07	146.00	21.93	32.53	22.26	12.79	1.74	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-09-1G121	247.00	260.69	13.69	31.68	21.68	11.41	1.90	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-09-1G121	267.02	299.82	32.80	21.84	14.94	11.07	1.35	Massive and Intercalated	> 10m thickness
NOT-09-1G122	215.71	224.70	8.99	21.59	14.77	9.98	1.48	Largely massive chromite	Other
NOT-09-1G124	74.67	90.38	15.71	43.51	29.77	13.72	2.17	Largely massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G125	112.40	141.02	28.62	34.13	23.35	13.42	1.74	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-09-1G125	169.25	204.76	35.51	30.73	21.03	13.22	1.59	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-09-1G126	302.85	310.80	7.95	39.84	27.26	13.91	1.96	Massive chromite	> 30% Cr_2O_3
NOT-09-1G129	95.00	114.61	19.61	17.08	11.69	8.41	1.39	Intercalated chromite beds	> 10m thickness

Hole ID	From	To	Length	Cr_2O_3%	Cr%	Fe%	Cr:Fe Ratio	Mineralization Type	Cut-Off Criteria
NOT-09-1G130	37.10	58.60	21.50	41.58	28.45	13.33	2.13	Largely massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G132	206.15	245.06	38.91	18.22	12.47	9.89	1.26	Intercalated chromite beds	> 10m thickness
NOT-09-1G135	145.25	175.83	30.58	39.84	27.26	12.86	2.12	Largely massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G136	173.44	198.00	24.56	39.64	27.12	13.17	2.06	Largely massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G137	44.86	76.23	31.37	31.78	21.74	12.57	1.73	Greater than 25% chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G138	159.47	164.18	4.71	41.82	28.61	12.89	2.22	Largely massive chromite	> 30% Cr_2O_3
NOT-09-1G139	110.47	130.34	19.87	41.13	28.14	13.73	2.05	Largely massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G140	58.83	72.48	13.65	29.33	20.07	11.60	1.73	Greater than 25% chromite	> 10m thickness
NOT-09-1G142	305.56	311.61	6.05	40.14	27.46	12.54	2.19	Largely massive chromite	> 30% Cr_2O_3
NOT-09-1G148	45.09	52.74	7.65	42.90	29.35	12.93	2.27	Largely massive chromite	> 30% Cr_2O_3
NOT-09-1G149	210.28	231.50	21.22	38.11	26.07	12.91	2.02	Massive Chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G151	115.90	129.17	13.27	39.37	26.94	13.34	2.02	Massive Chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G153	115.33	143.17	27.84	38.85	26.58	13.42	1.98	Massive Chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G154	261.61	272.53	10.92	38.00	26.00	14.77	1.76	Massive Chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G157	96.23	124.50	28.27	39.31	26.90	12.99	2.07	Massive Chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G159	158.87	184.00	25.13	35.99	24.62	13.91	1.77	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-09-1G160	269.84	280.40	10.56	29.62	20.27	13.98	1.45	Massive and Intercalated	> 10m thickness
NOT-09-1G161	41.52	47.62	6.10	38.45	26.31	14.14	1.86	Largely massive chromite	> 30% Cr_2O_3
NOT-09-1G168	19.30	40.15	20.85	38.06	26.04	12.34	2.11	Massive and Intercalated	> 10m thickness, >30% Cr_2O_3
NOT-09-1G168	68.12	84.41	16.29	22.98	15.72	10.62	1.48	Massive and Disseminated	> 10m thickness
NOT-09-1G174	147.77	160.00	12.23	38.76	26.52	13.60	1.95	Massive chromite	> 10m thickness, >30% Cr_2O_3
NOT-09-1G177	96.20	111.05	14.85	41.41	28.33	13.12	2.16	Massive chromite	> 10m thickness, >30% Cr_2O_3

12.0 SAMPLING METHOD AND APPROACH

During the drill core logging process, the geologist identified the intercepts based on intensity of mineralization and host rock mineralogy. Massive chromite intercepts and strongly disseminated chromite intercepts that were greater than 4 cm in length were sampled separately from moderately to weakly disseminated chromite intervals. Intervals with sulphide mineralization where not associated with the chromite was also sampled separately.

Following identification of the host lithology, the site geologist used a grease pencil or lumber crayon to mark those intervals of core to be sampled for analysis. The lengths of samples varied from 4 cm to 2 m depending on the extent of chromite mineralization. Massive chromitite mineralization was carefully marked and sampled along the angled contacts to ensure that grade dilution did not occur. Over zones of homogenous mineralization samples were 1.5 m or 2 m in length. Furthermore, barren host rock flanking mineralized zones was also sampled at 1.5-2 m at the discretion of the site geologist.

Prior to drill hole NOT-08-1G070 only moderately disseminated chromite intervals to massive chromite intervals were sampled with no minimum sample size. For drill holes NOT-08-1G71 to NOT-08-1G119, an estimated cut-off of 2% visible chromite was used and samples were a minimum of 30 cm. For holes NOT-09-1G120 to NOT-09-1G183 the sampling cut off was approximately 15% visible chromite with less mineralized or barren rock on either side sampled as buffer zones with samples a minimum of 4 cm in length.

Holes NOT-08-1G001 to NOT-08-08-119 have been re-sampled, using the final sample techniques listed above. This was done to ensure that grade dilution did not occur, especially in zones where small chromitite beds are interlayered with peridotite or dunite.

Prior to logging and rock quality analysis (RQD) for holes NOT-08-1G070 to NOT-09-1G183, geotechnicians and sometimes geologists would assemble the drill core and ensure that it was oriented as accurately as possible. Prior to hole NOT-08-1G070, rocks were not assembled prior to logging and RQD analysis was not performed. Only core selected for sampling was split into symmetrical halves using an electric saw equipped with a diamond embedded blade. To ensure that the entire split core fit neatly into the core boxes, guidelines were drawn on assembled core for core cutters to follow. Once the core was split, one half, per sample position was bagged with corresponding sample ticket number and recorded in the sample book. One half of the sample ticket was left to remain in the box and was stapled at the beginning of the sample interval. Sample numbers were also written in grease pencil along corresponding sample intervals to ensure that sampling was well recorded in the core. Depth markers and original drill blocks were retained with the split core and unsampled whole core for future reference.

The sampling intervals were determined in two ways (a) continuously for lengths of 1.5 m or 2 m in zones of homogenous mineralization, or (b) over 4 cm to 1.5 m intervals where massive chromitite or strongly disseminated chromite was surrounded by lower grade material. This approach was used in order to give reliable estimates of the grade and distribution of higher grade material.

The individual samples were placed into plastic bags which were assembled in rice bags where a numbered seal lock was applied under the supervision of the site geologist. The sealed rice bags were placed in sealed plastic pails and shipped via bonded carrier to Activation Laboratories (ActLabs) in Thunder Bay, Ontario.

Samples were arranged into batches of 35 which included QA/QC samples and shipped along with a sample list including all of the sample numbers in the batch.

Aside from a few narrow intervals of fault gouge and blocky core, no drilling, sampling, or recovery factors were encountered that would materially impact the accuracy and reliability of the analytical results from drill core samples of this drilling campaign.

A summary of relevant samples with values and drill hole intersection widths is presented in Table 11.2 under Section 11. The true thicknesses of the massive zones vary between 1 m and 32 m.

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

All sample preparation and analyses were conducted by Activation Laboratories Ltd (ActLabs). Sample preparation was conducted at the Thunder Bay facility of ActLabs from where the sample pulps were shipped via laboratory-laboratory bonded courier to Actlabs main laboratory in Ancaster, Ontario. The ActLabs in Ancaster is ISO certified.

13.1 PREPARATION

Other than packaging the samples for dispatch, no aspect of the sample preparation was conducted by an employee, officer, director or associate of Noront. .Samples received at the laboratory are sorted and verified against the customer list to ensure that all samples have been received and there are no discrepancies. The sorted samples are dried in the original samples bags to ensure that any damp fines are not discarded on transferring into drying containers. The samples are entered into the Laboratory Information Management System (LIMS). The sorted samples are dried at 60 degrees C in a large volume drying room. When dry, the samples are then crushed in their entirety to better than 85% -10 mesh in a TM Engineering Terminator jaw crusher. The sample is then riffle split and an aliquot is pulverized in a TM Engineering TM MAX2 ring and puck pulverizer to 95% -150 mesh. Chromite rich samples are pulverized still finer to 95% -200 mesh to ensure adequate fusion for the analysis. A separate split of the reject is prepared in the same fashion and is designated as a preparation duplicate (prep duplicate). Duplicates from pulps are designated as pulp duplicates. Samples are routinely monitored to ensure that the required fineness is achieved as this is critical to maintaining the required quality for the final analytical methods.

13.2 ANALYSES

Analysis is by Fusion XRF for all major oxides (whole rock analysis) and Cr_2O_3, V_2O_5, Ni, Cu and Co.

An aliquot of the sample is weighed and undergoes loss on ignition (LOI) at 1,050 degrees C. Monitors of known LOI are also included in the batch to ensure the quality of the LOI numbers. The LOI portion is then mixed with a lithium metaborate/tetraborate flux with LiBr (added as a releasing agent) and is fused in heavy duty platinum/gold crucibles using an AFT automated fusion fluxer which fuses/mixes and pours the contents of the crucibles into preheated heavy duty Pt/Au molds. The XRF calibration is updated daily using an AUSMON recalibration disk. After recalibration, the resulting glass bead is analyzed on a state-of-the art Panalytical Axios Advanced XRF spectrometer. Data are analyzed with Panalytical's SuperQ software. Results are calculated based on a calibration which has been obtained from multiple international certified standard reference materials. Standards are analyzed to verify the quality of the results as a check and are control charted. Once the data have been accepted by the analyst, they are entered into the LIMS system and approved. Reports are then generated and a final quality control check by an independent person is performed. This person also does the final certification of the data. Data are then reported to the client.

13.3 SECURITY AND QA/QC

The security of the samples en-route to the laboratory is ensured by the use of a "Bill of Lading" whereby each person involved in the transportation chain inspects the batch seals before passing it on. Also the use of a bonded courier for transportation of the samples makes it difficult for unauthorized personnel to tamper with the samples.

Sample contamination during preparation is minimized by the use of cleaner sand and mild steel mills. For analytical precision and accuracy, ActLabs utilizes certified reference materials, routine duplicate analyses, blanks and frequent participation in round robin analytical exercises.

Comments:

Micon considers the sample preparation, analytical procedures and security to be in line with the CIM Exploration Best Practices Guidelines.

14.0 DATA VERIFICATION

The data verification completed by Micon was carried out in four stages, viz. (i) site visit to the project area, (ii) laboratory visit (iii) repeat analyses on selected pulps and (iv) database inspection and validation.

14.1 SITE VISIT

Micon conducted a site visit to the Blackbird chromite project area (Esker Camp) from 6 to 9 July, 2009, and accomplished the following tasks.

- Verification of topography and some of the drill hole collar positions in the company of Patrick Chance, P.Eng., then Project Manager for Noront.
- Review of the drill core logging and sampling procedures.
- Review of facilities and security arrangements in place for samples and drill cores.
- Visual verification of massive/semi-massive/disseminated chromite mineralization in drill hole numbers 1G025, 1G130 and 1G136.
- Verification of lithological units encountered in drill hole numbers 1G025, 1G130 and 1G136.
- Independent sampling of quarter core from drill hole 1G130.
- Independent sampling of core pieces for petrographic analyses.

The main observations arising from Micon's site visit are listed below:

The landscape is monotonously flat and there are no outcrops on the property. The flat nature of the ground implies that a DTM is not critical for an initial resource estimation.

Standard logging and sampling procedures are in place. Under the direction of Tracy Armstrong, P.Geo. (of P&E Consultants), Noront imposes and maintains various quality assurance/quality control (QA/QC) protocols on sampling and assay procedures including duplicates, standards, blanks and check analyses. Follow-up on the performance of control samples (standards) is achieved through the use of control charts and reports. An example of Noront's monthly QC reports is given in Appendix 3.

Noront maintains adequate security measures at its core storage and sampling facilities by restricting access to authorized personnel only. Figure 14.1 shows geologists logging core outside the sample packaging room while Figure 14.2 shows the entrance to the sample packaging room with a restriction notice clearly displayed.

Figure 14.1
Geologists Logging Drill Core Outside the Sample Packaging Room

Figure 14.2
Secure Entrance to Sample Packaging Room

The security of the samples en-route to the laboratory is ensured by the use of a "Bill of Lading" whereby each person involved in the transportation chain inspects the batch seals before passing it on.

Assay results of independent quarter core samples conform reasonably to the original assays obtained (Table 14.1) reflecting the laboratory's accuracy (lack of bias) and precision (degree of reproducibility).

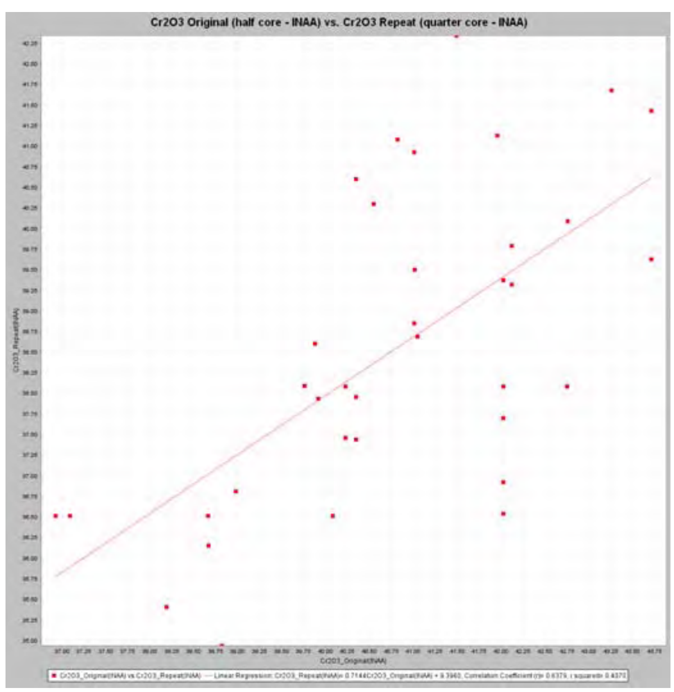
The results of the petrographic investigation (Appendix 2) are consistent with a transposed layered intrusion with a fractionation trend/younging direction to the southeast.

Table 14.1
Results of Independent Quarter Core Assays

VARIABLE	Cr_2O_3 Original (Half Core - INAA)	Cr_2O_3 Repeat (Quarter Core - INAA)
Number of samples	36	36
Minimum value	36.93	34.94
Maximum value	43.71	42.34
Mean	40.78	38.53
Median	40.92	38.09
Geometric Mean	40.74	38.48
Variance	2.78	3.49
Standard Deviation	1.67	1.87
Coefficient of variation	0.04	0.05

A scatter plot of the original and repeat assays is presented in Figure 14.3.

Figure 14.3
Scatter Plot of Half Core and Quarter Core Assays



14.2 LABORATORY VISIT

Micon inspected the Activation Laboratory facilities in Thunder Bay on July 9 and 10, 2009. This is the laboratory used by Noront for sample preparation before shipment to the main Activation Laboratory in Ancaster for the actual analyses. Thus, Micon's focus was on the sample preparation facilities. In this regard Micon observed that the sample preparation is carried out to the highest industry standards. Contamination between samples during crushing is eliminated by using a barren quartz rich material to clean the jaw/primary/secondary crushers after the treatment of every sample. Dust control is achieved by the use of a vacuum ventilation system that employs the latest technology.

14.3 REPEAT PULP ANALYSES

Micon selected 18 sample pulps (assay splits) and re-numbered them in a different sequence using a new set of sample numbers. The samples were re-submitted to the Activation Laboratory in Thunder Bay which forwarded them to the main Activation Laboratory in Ancaster for repeat analyses. The original assays and repeat analyses are compared in Figure 14.2 and the basic statistics are summarized in Table 14.2. It is evident that the original analyses were strongly biased towards the high side. In order to rectify this situation, Micon used a 97 percentile to determine an upper top-cut value for the assays and this was established.

Figure 14.4
Scatter Plot of Half Core and Repeat Pulp Assays

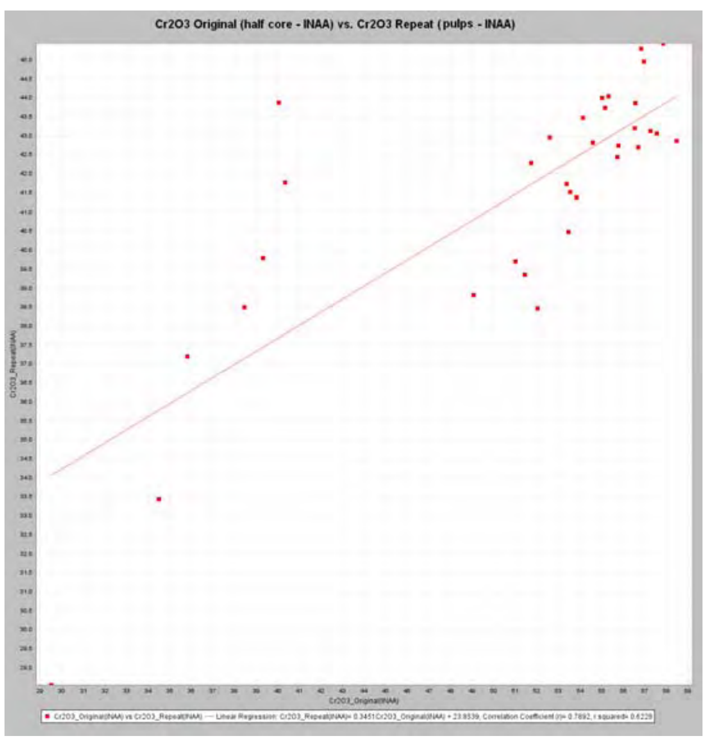


Table 14.2
Results of Repeat Pulp Analyses

Variable	Cr_2O_3 Original (Half Core - INAA)	Cr_2O_3 Repeat (Pulps - INAA)
Number of samples	33	33
Minimum value	29.53	28.54
Maximum value	58.46	45.42
Mean	50.93	41.43
Median	53.83	42.68
Geometric Mean	50.22	41.27
Variance	60.39	11.55
Standard Deviation	7.77	3.40
Coefficient of variation	0.15	0.08

14.4 ELECTRONIC DATABASE VALIDATION/AUDIT

Micon established the integrity of the resource database by:

- A review of its construction, and the categories of information contained in it, to ensure that all the data necessary for the proper estimation of the resources had been assembled.

- Data entry validation by checking assays against the original assay certificates.

Wherever repeat analyses had been conducted, the accepted value was obtained by averaging the two sets of assays.

15.0 ADJACENT PROPERTIES

There are no producing mines in the immediate vicinity of the James Bay Lowlands. The nearest existing mine (De Beer's Victor diamond mine) is located about 100 km to the east.

Much of the recent claim staking and exploration activity in the McFaulds area/James Bay Lowlands was activated initially by the discovery of two volcanogenic massive sulphide (VMS) deposits (McFaulds 1 and 3 Cu – Zn VMS deposits – see Figure 15.1), followed by an additional eight other VMS occurrences within a radius of about 20 km to the northeast and west of the Blackbird chromite deposits.

The most recent discoveries in the James Bay Lowlands are all hosted within the peridotite unit of the RFI, with the most noteworthy ones being:

- Noront's Eagle's Nest and Eagle 2 Ni-Cu-PGE magmatic massive sulphide (MMS) discoveries located immediately to the north and northwest of the Blackbird chromite deposits.

- Spider-KWG-Freewest Joint Venture's Big Daddy chromite deposit located about 6 km to the northeast of the Blackbird chromite deposits.

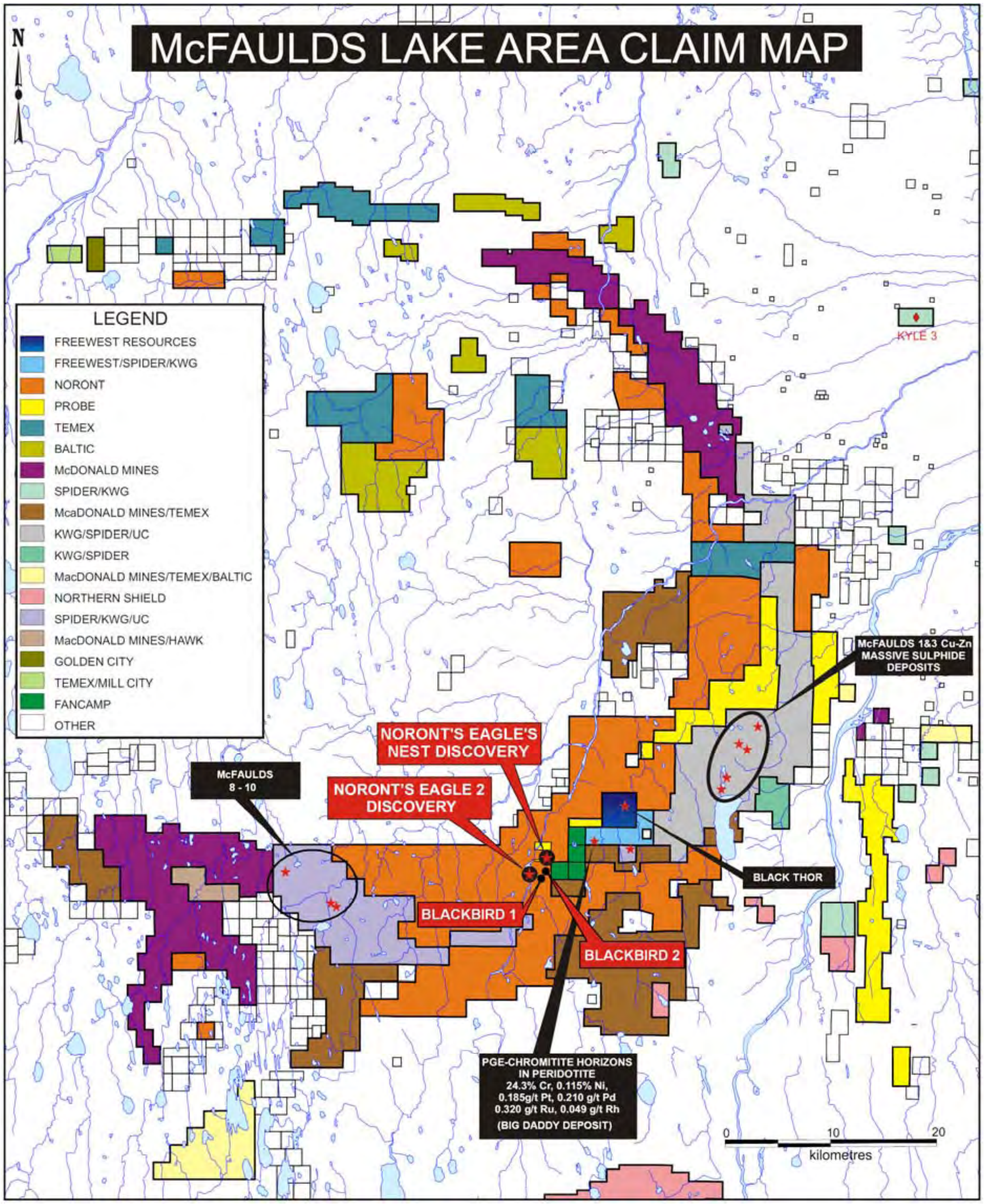
- Freewest's Black Thor and Black Label chromite deposits some 8 to 10 km to the northeast.

- Noront's AT12 Ni-Cu-PGE (MMS) deposit in the early stages of exploration and approximately 10 km to the northeast.

The land holdings and the most significant discoveries around the Blackbird chromite deposits are shown in Figure 15.1. Despite the absence of an operating mine, these diversified discoveries portray the James Bay Lowlands as one of the most active current exploration camps in Canada and, in the author's opinion, signal the emergence of a potential new metal district. As promising as these discoveries may appear, however, the essential ingredient of infrastructure would have to be established first before the area graduates into a mining district.

There is need to clarify that BB deposits were discovered when drilling at the AT2 target which ended up being the Eagle Two Ni-Cu deposit. Thus initial drilling did not target the Blackbird chromite. Subsequently the Triple J gold zone was discovered at the contact between the granodiorite and the RFI in the same area. There are also as yet to be spatially defined PGE zones present. The area is mineralogically complex, proximal to the Eagle's Nest (1km) and although this report is focused on the BB resources the development of other deposits will impact the economics of the project.

Figure 15.1
Land Holdings and Major Discoveries in the McFaulds Lake Area



16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Noront has completed a program of metallurgical testwork and mineralogy on mineralized samples from the Blackbird deposit.

The mineralogical work comprised Electron Microprobe Probe Analysis (EPMA) of chromite grains identified in thin sections prepared from drill core samples. This work was undertaken in 2008 at the Department of Geology, University of Toronto, Toronto, Canada.

Four composite samples from the Blackbird chromite deposits, comprising split drill core, were selected and prepared by Noront and forwarded for metallurgical testing to SGS Mineral Services (SGS), Lakefield, Ontario, in January, 2009. These composite samples were crushed, blended, assayed and tested to investigate chromite recovery and upgrading potential. The metallurgical program completed by SGS was scoping in nature. It was designed to provide a preliminary indication of the metallurgical performance with regard to chromite recovery and upgrading potential of the Blackbird mineralization.

16.1 EPMA

The samples used for the EPMA program undertaken in 2008 were selected from six drill cores. A total of 84 thin sections were prepared and between 6 and 14 readings taken from each thin section. Each analysis was performed on one of the three locations on the chromite grain, namely the core, the rim or the transect, which were run from the chromite grain core to the rim.

Table 16.1 presents the average results from the EPMA program.

Table 16.1
Composite Sample Comparative Assays

Grain Location	Number of Thin Sections	Total Number of Readings	Average Cr_2O_3 (%)	Average FeO (%)	Cr/Fe Ratio	Al_2O_3 (%)	MgO (%)
Core	48	482	50.94	24.92	1.80	13.56	9.20
Rim	23	232	44.86	32.47	1.22	10.74	8.33
Transect*	13	105	50.58	28.87	1.54	12.39	6.89
Total	84	819	49.22	27.60	1.60	12.61	8.61

*Measurements run from chromite core to chromite rim

Figure 16.1 presents the distribution of of the Cr:Fe ratios for the EPMA results and Figure 16.2 shows compares the MgO analysis with the Cr:Fe ratio for the core readings. The very low Cr:Fe ratios found on a number of rim analyses was considered to be due to the formation of iron oxide coatings on some of the chromite grains.

Figures 16.1 and 16.2 show that although the core measurements suggest an average Cr:Fe ratio of 1.8 there are a significant number of results with ratios of 2.0 or higher. Generally, chromite grains in disseminated intervals had lower Cr:Fe ratios than those in massive zones.

Figure 16.2 suggests that as the MgO content of the chromite increases then the Cr:Fe ratio also increases. This is probably due to the spinel nature of the chromite and the substitution of Fe with Mg.

Figure 16.1
Distribution of Cr:Fe Ratios From EPMA Results

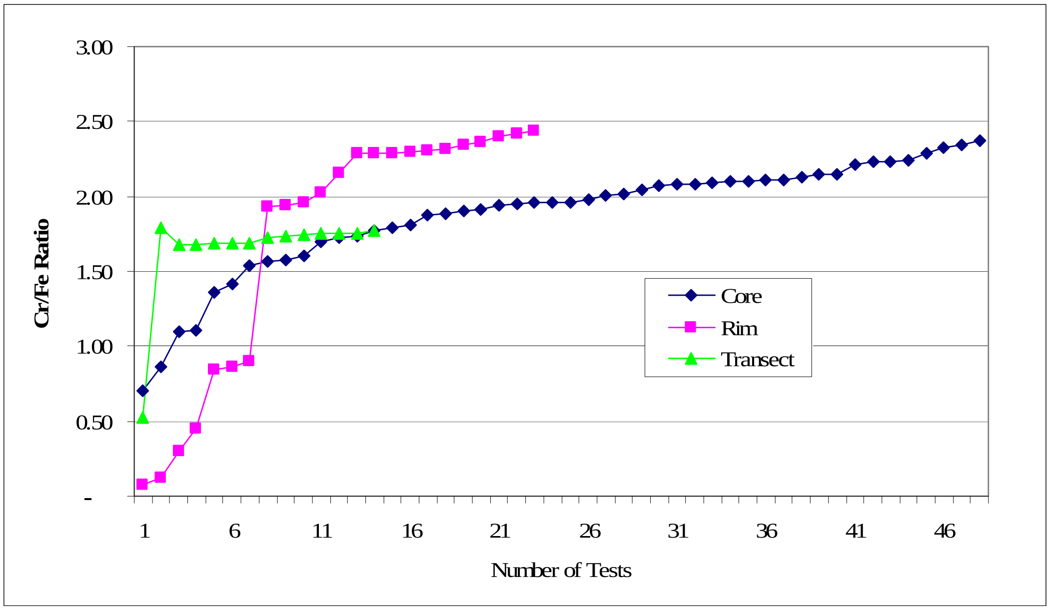
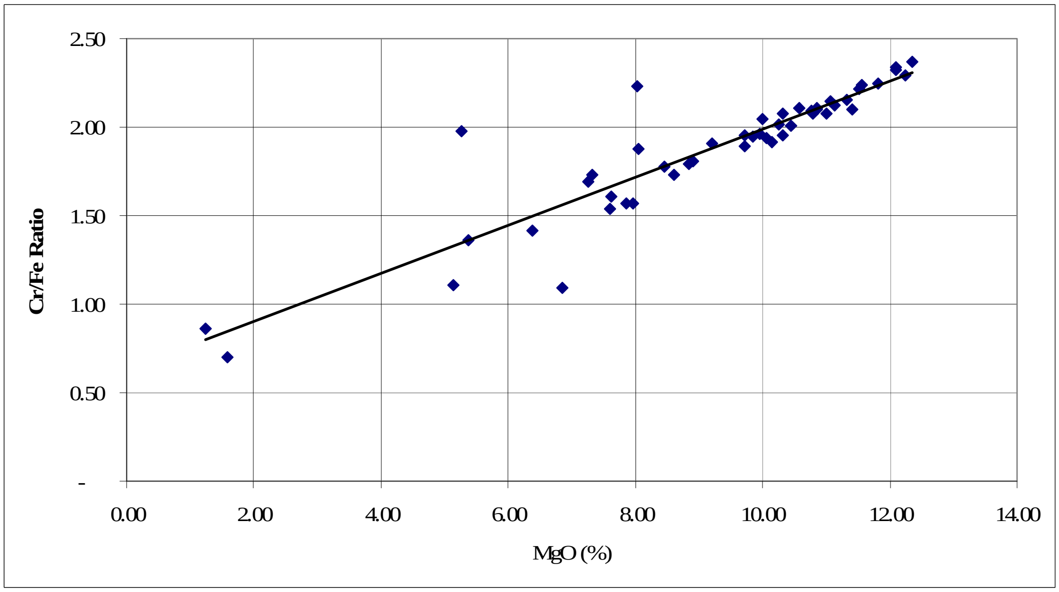


Figure 16.2
Chromite Grain Cr:Fe Ratios vs MgO Content



16.2 METALLURGICAL SAMPLES

Of the four composite samples submitted by Noront for metallurgical investigation, three were considered disseminated chromite and one was considered massive chromite mineralization. A comparison of the SGS assays and Noront's weighted average drill log assays is included in Table 16.2. Detailed analyses of these samples are presented in Table 16.3.

Table 16.2
Composite Sample Comparative Assays

	Units	Sample 1		Sample 2		Sample 3		Sample 4	
Drill hole		NOT-08-1G65		NOT-08-1G65		NOT-08-1G65		NOT-08-1G17	
DH interval	m	164 – 184		190 - 221		228 - 377		201 – 228	
Approx. Wt.	kg	20		20		23		39	
		SGS	**Noront**	**SGS**	**Noront**	**SGS**	**Noront**	**SGS**	**Noront**
Cr	%	1.64	1.82	24.0	20.4	4.22	3.95	29.9	31.0
Fe	%	8.11	8.69	12.0	13.4	8.39	9.01	13.4	11.6
Cr:Fe ratio		0.20	0.21	2.0	1.5	0.50	0.44	2.2	2.7
Ni	%	0.12	0.14	0.13	0.18	0.13	0.15	0.100	0.140
Pt	g/t	0.070	0.061	0.240	0.120	0.060	0.030	0.140	0.140
Pd	g/t	0.100	0.120	0.270	0.200	0.070	0.054	0.180	0.160
Au	g/t	0.020	0.004	0.100	0.058	0.050	0.002	0.100	0.036
Ag	g/t	<2	0.02	<2	2.33	<2	0.058	<2	3.09

SGS noted that chromite minerals are often difficult to digest when submitted for chemical analyses. For this test program, SGS used fusion for the digestion of the samples. Borate fusion was used for the whole rock assay suite (WRA), followed by x-ray fluorescence (XRF) analysis. For samples with greater than 15% Cr_2O_3 content the samples were submitted for a re-assay using a Na_2O_2 fusion, followed by analysis by atomic absorption (AA).

The samples were also submitted for asbestos determinations; no asbestos was detected in any of the samples.

Table 16.3
Composite Sample Detailed Assays

Element/Compound	Units	Sample 1	Sample 2	Sample 3	Sample 4
WRA (Borate - XRF)					
SiO_2	%	31.4	11.2	29.9	7.30
Al_2O_3	%	1.42	10.1	2.73	12.0
Fe_2O_3	%	11.6	17.2	12.0	19.2
MgO	%	34.1	18.8	30.5	14.5
CaO	%	0.47	1.18	0.96	0.060
Na_2O	%	0.020	<0.01	0.020	<0.01
K_2O	%	<0.01	0.010	<0.01	0.030
TiO_2	%	0.050	0.32	0.080	0.37
P_2O_5	%	<0.01	<0.01	<0.01	0.020
MnO	%	0.13	0.13	0.12	0.11
Cr_2O_3	%	2.40	35.1	6.17	43.7

Element/Compound	Units	Sample 1	Sample 2	Sample 3	Sample 4
V_2O_5	%	0.020	0.12	0.030	0.15
LOI %	%	16.7	6.57	16.3	2.06
Sum	%	98.4	100.0	98.9	98.0
ICP (Selection)					
Ba	g/t	1.5	1.7	0.3	1.5
Co	g/t	110	79	81	120
Cu	g/t	45	210	35	<10
Ni	g/t	1200	1300	1300	1000
Sr	g/t	10	13	11	4
Leco					
S	%	0.07	0.06	0.14	0.02
Na_2O_2 – AA					
Cr_2O_3	%		35.1		43.7

16.3 METALLURGICAL TESTING

16.3.1 Gravity Separation – Heavy Liquid Separation

Initial heavy liquid separation tests (HLS) were undertaken on each of the samples after they had been crushed to less than 10 mesh (2.0 mm). A coarse (-12.5 mm) test was also completed on Sample 4.

The fine HLS tests used liquids at two different densities, 2.9 and 3.3 g/cm^3. In order to simulate the dense media separation process, the material passing a 20 mesh (0.85 mm) was screened out before the HLS tests, which resulted in the removal of approximately 60 to 75% of the sample. Table 16.4 shows the analyses of the cumulative sink fraction for each test.

Table 16.4
Cumulative Sink Product of the +0.85 – 2.0 mm Fraction

Product	SG	Wt%	Assays (%)					Distribution (%)	
			Cr_2O_3	Cr	Fe	SiO_2	S	Cr	Fe
Sample 1									
Sink	3.3	0.4	6.9	4.7	23.4	25.0	0.22	1.0	1.1
Sink	2.9	21.6	3.3	2.2	9.3	25.0	0.11	29.6	25.9
HLS Feed		42.5	2.4	1.6	7.8	32.4	0.09	100.0	100.0
Sample 2									
Sink	3.3	19.3	42.1	28.8	12.7	8.5	0.04	88.7	84.6
Sink	2.9	26.6	34.0	23.3	10.7	11.6	0.06	98.9	98.6
HLS Feed		28.4	32.2	22.0	10.2	12.3	0.06	100.0	100.0
Sample 3									
Sink	3.3	2.6	28.6	19.6	21.2	12.2	0.07	37.9	18.3
Sink	2.9	44.5	8.4	5.7	10.1	23.7	0.19	74.5	58.5
HLS Feed		39.1	5.0	3.4	7.7	30.6	0.14	100.0	100.0
Sample 4									
Sink	3.3	23.9	44.1	30.2	14.0	7.0	0.01	96.5	96.7
Sink	2.9	25.4	42.8	29.3	13.6	8.0	0.01	99.6	99.7
HLS Feed		25.7	42.4	29.0	13.4	8.3	0.01	100.0	100.0

The results from the fine HLS tests show that samples 1 and 3 did not upgrade very well. Sample 1 recovered only 1% of the Cr in a concentrate that assayed 6.9% Cr_2O_3, while sample 3 recovered 38% of the Cr in a product assaying about 29% Cr_2O_3. For Sample 1 the Cr:Fe ratio of the concentrate was about 0.2, while for Sample 3 this ratio was approximately 0.9. These results suggest that the chromite minerals in these samples are not adequately liberated at this size range (+0.85 – 2.0 mm).

Samples 2 and 4 did upgrade well with high recoveries and good product Cr:Fe-ratios. The sink product (concentrate) for sample 2 had a grade of 42% Cr_2O_3 with a Cr:Fe-ratio of 2.3 and an 89% Cr recovery. Sample 4 recovered 96% of the Cr in a 44% Cr_2O_3 concentrate with a Cr:Fe-ratio of 2.2.

The coarse gravity separation tests using sample 4 comprised the HLS testing of five size fractions, from 12.5 mm to 0.3 mm, at a number of densities. The minus 0.3 mm fraction was removed from the sample. The results showed very little variation in terms of upgrading of the different size ranges which suggests that the chromite liberation of this sample is good.

Table 16.5 presents the calculated total recoveries and product qualities at the different heavy liquid SGs used for this series of tests.

Table 16.5
Cumulative Sink Product of the +0.3 – 12.5 mm Fraction – Sample 4

Product	SG	Wt%	Assays (%)				Distribution (%)		
			Cr_2O_3	Cr	Fe	SiO_2	Cr	Fe	SiO_2
Sinks	4.0	8.8	45.3	31.0	14.8	4.67	9.5	8.8	5.5
Sinks	3.8	68.2	43.6	29.8	14.3	5.92	71.0	68.3	53.8
Sinks	3.6	82.0	43.0	29.4	14.1	6.47	84.4	82.0	70.8
Sinks	3.2	88.9	42.3	28.9	13.8	7.10	89.9	89.0	84.2
Sinks	3.0	90.1	42.0	28.7	13.8	7.32	90.5	90.2	88.0
Sinks	2.9	90.7	41.8	28.6	13.7	7.51	90.7	90.8	90.9
Feed (calc)			41.8	28.6	13.7	7.49	100.0	100.0	100.0

16.3.2 Gravity Separation – Wilfley Tables and Mozley Separator

All four composite samples were stage ground to minus 212 µm and screened at 74 µm. The two size fractions, +74 µm and -74 µm, were fed separately to a Wilfley shaking table, the concentrates from which were upgraded using a Mozley mineral separator. The Wilfley tailings from the +74 µm test were stage ground to minus 74 µm and then also fed to a Mozley separator. The primary gravity tailings were passed through a wet high-intensity magnetic separator (WHIMS) at the highest magnetic strength of ~20,000 Gauss. Table 16.6 provides a summary of these test results.

Table 16.6
Summary of the Gravity Table Separation Test Results

Feed	Wt%	Assays (%)			Distribution (%)
		Cr_2O_3	Cr:Fe Ratio	SiO_2	Cr_2O_3
Sample 1	5.61	25.7	0.43	2.73	52.4
	9.15	19.6	0.36	7.59	65.2
Feed	100.0	2.40	0.20	31.4	100.0
Sample 2	56.3	51.9	2.19	2.78	80.7
	72.5	47.4	2.13	4.17	94.9
Feed	100.0	35.1	2.00	11.2	100.0
Sample 3	11.7	38.6	0.91	1.76	70.2
	14.1	34.3	0.84	4.83	75.1
Feed	100.0	6.17	0.50	29.9	100.0
Sample 4	74.5	53.4	2.40	2.12	87.6
	88.1	50.2	2.37	3.89	97.4
Feed	100.0	43.7	2.20	7.3	100.0

These gravity separation test results are similar to the HLS results. Samples 1 and 3 performed poorly and samples 2 and 4 performed well. It was noted, however, that the concentrates produced were generally lower in SiO_2 than from the HLS or magnetic separation tests.

A comparison between the coarser (+74 µm) and finer (-74 µm) size fractions showed that although the final concentrate grades were similar the chromite recovery was generally lower for the finer fraction.

16.3.3 Magnetic Separation

The magnetic separation test program included both low-intensity magnetic separation (LIMS) and high-intensity magnetic separation (HIMS) on a sample size fraction of 48 to 200 mesh (300 to 74 µm) from all four composites. The program also included the magnetic separation testing of -½ inch (-12.5 mm) material using sample 4. All the tests were performed using a dry belt magnetic separator.

In addition to the above, samples 3 and 4 were selected for magnetic separation testing of very fine material (-150 µm) to try and produce a low silica chromite product.

Fine Magnetic Separation

The results of the fine sample magnetic separation tests are presented in Table 16.7.

Table 16.7
Fine Magnetic Separation Test Results (+0.074 – 0.3 mm Size Fraction)

Product	Wt%	Assays (%)					Distribution (%)	
		Cr_2O_3	Cr	Fe	SiO_2	S	Cr	Fe
Sample 1								
LIMS mags	31.7	4.2	2.9	10.7	29.8	0.01	53.3	42.5
HIMS mags	19.4	0.3	0.2	3.7	35.6	0.01	2.48	9.06
Non mags	0.3	0.1	0.1	2.0	22.9	0.22	0.01	0.07
- 200 mesh	48.6	2.3	1.6	8.0	32.0	0.10	44.2	48.4
Feed (calc)	100.0	2.5	1.7	8.0	32.0	0.05	100.0	100.0
Sample 2								
LIMS mags	1.1	35.8	24.5	13.3	10.7	0.03	1.1	1.22
HIMS mags	60.0	47.1	32.2	14.6	6.3	0.01	78.0	75.7
Non mags	1.3	4.8	3.3	1.99	21.7	0.03	0.17	0.22
- 200 mesh	36.7	20.8	14.2	7.3	19.6	0.09	20.8	22.9
Feed (calc)	100.0	36.7	25.1	11.7	11.4	0.04	100.0	100.0
Sample 3								
LIMS mags	21.0	18.1	12.4	17.7	17.5	0.02	63.5	44.7
HIMS mags	29.3	2.2	1.5	5.3	30.4	0.06	10.8	18.5
Non mags	0.6	0.6	0.4	2.6	44.0	0.01	0.07	0.2
- 200 mesh	49.0	3.2	2.2	6.2	35.5	0.15	25.7	36.6
Feed (calc)	100.0	6.0	4.1	8.3	30.3	0.10	100.0	100.0
Sample 4								
LIMS mags	1.9	37.3	25.5	11.8	9.6	0.01	1.5	1.7
HIMS mags	74.1	50.1	34.3	14.1	4.5	0.01	81.9	82.2
Non mags	0.3	18.4	12.6	5.8	23.5	0.02	0.1	0.2
- 200 mesh	23.8	31.3	21.4	8.5	17.4	0.03	16.4	15.9
Feed (calc)	100.0	45.3	31.0	12.7	7.8	0.02	100.0	100.0

The feed to these tests was crushed to minus 48 mesh, screened to remove the minus 200 mesh material and fed to the LIMS stage. The non-magnetic fraction from the LIMS was then fed to the HIMS stage.

The magnetic strength of the LIMS tests was estimated to be equivalent to approximately 5,000 – 8,000 Gauss, while the HIMS was equivalent to about 15,000 – 20,000 Gauss.

These results are similar to the gravity separation (HLS) test results in that only limited upgrading could be achieved for samples 1 and 3 but good upgrading of samples 2 and 4. The highest chromite grades achieved for samples 1 and 3 were the LIMS magnetic products which assayed 4.2% and 18.1% Cr_2O_3, respectively. The highest chromite grades produced for samples 2 and 4 were the HIMS magnetic products which assayed 47.1% and 50.1% Cr_2O_3, respectively.

The results also show that the higher chromite recoveries for samples 1 and 3 were into the LIMS product while the higher chromite recoveries for 2 and 4 were into the HIMS product. This suggests that the chromite in samples 1 and 3 is associated with magnetite and/or contains a relatively low Cr:Fe ratio.

Very Fine Magnetic Separation

Testing was conducted on four size fractions, -150+74 μm, -74+53 μm, -53+38 μm and -38 μm. Each size fraction was subjected to seven stages of magnetic separation at increasing magnetic strength; from LIMS to 20 Amps WHIMS. Composite samples 3 and 4 were selected for these tests.

The results from the sample 3 tests showed that although significant Cr upgrading was achieved with a reduction in SiO_2 content, the best product grade was only around 30% Cr_2O_3 containing about 5% SiO_2.

Sample 4 tests produced a much higher product grade although the feed grade was already over 40% Cr_2O_3. The best silica product grade produced was less that 2% although chromite recovery into this product was low, about 20%.

Coarse Magnetic Separation

Sample 4 was used for a preliminary investigation into the potential of using magnetic separation to recover chromite from -½ inch material. The sample fed to the dry belt magnetic separator was first screened at 10 mesh (2 mm) to avoid dust problems. This fine fraction contained about 12% of the sample.

The test was performed using rare earth magnets, equivalent to a magnetic field strength of 1,400 and 5,000 Gauss.

The analyses for the different magnetic separation products produced were similar to each other and the feed. Only minor upgrading was achieved during this test.

16.4 CONCLUSIONS

Results from this very preliminary program of metallurgical testwork suggested that a good marketable chromite concentrate product can be produced from samples from Noront's Blackbird chromite deposits by using industry standard mineral separation technologies.

Concentrates grading in excess of 46% Cr_2O_3 and between 2 to 3% SiO_2 were obtained from samples 2 and 4, which comprised massive/semi-massive chromite containing approximately 35% and 45% Cr_2O_3, respectively. The Cr:Fe ratios of these concentrate products were 2.0 or higher. In achieving these results the metallurgical chromite recoveries were greater than 80%.

Although significant upgrading was achieved for samples 1 and 3, which comprised low grade disseminated chromite, a marketable product was not produced. The best results, using gravity table separation of ground material, upgraded sample 1 from 2.9% to 26% Cr_2O_3 and sample 3 from 6.9% to 39% Cr_2O_3. The chromite recoveries were 52% and 70%, respectively. The products contained less than 3% SiO_2 but the Cr:Fe ratios were less than 1.0 for both samples.

16.5 RECOMMENDATIONS

Micon recommends that a more detailed metallurgical test program be undertaken using representative samples from the Blackbird deposits. This program should include the following:

- Detailed mineralogy to investigate chromite grain liberation characteristics, chromite grain chemistry and gangue mineralogy.
- Beneficiation of a wide variety of chromite feed grades encompassing all chromite lithologies found at the Blackbird deposits.
- Establishment of product quality / recovery relationships for a variety of feed samples.
- Investigation of the occurrence, association and potential recovery of PGMs and base metal sulphides.
- Investigation of the marketing potential of Blackbird chromite concentrates.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

A detailed description of Micon's resource estimation methodology and the resultant estimates follows.

17.1 DATABASE DETAILS

17.1.1 Drill Hole Database

Mineral resources for the Blackbird 1 and Blackbird 2 deposits have been estimated exclusively from diamond drill holes. Utilizing collar elevations and lithology logs, the overburden contact was created. The resource estimate was completed using Surpac Version 6.1.3 Software. The Blackbird database consists of a total of 154 diamond drill holes completed over two drill campaigns (2008 – 2009). However, only 82 drill holes contain the relevant information that was used for geological and resource modeling. The majority of the drill holes are on a 50 m grid.

17.1.2 Sample and Assay Database

The assay database consists of a total of 13,564 samples for a total length of assayed core of 11,705.38 m. The principal analyses were conducted for Cr, Fe, Cr_2O_3, Al_2O_3, PGEs and SiO_2.

17.1.3 Lithology

Logging at Blackbird has included the identification and documentation (from-to interval format) of major rock types which include granodiorite, peridotite, pyroxenite, dunite, gabbro, mafic volcanic rock, fragmental mafic volcaniclastic rocks, and intermediate volcanic rocks. Less common and minor rock types in the database include felsic volcanic rocks and sedimentary rocks. The mineralized zone has been variably logged and recorded over the two drill campaigns; in some cases being broadly categorized. In other cases the mineralized intercepts have been described in the logs within the rock type in which they occur.

17.1.4 Specific Gravity

During the 2008/2009 drill campaigns specific gravity (SG) has been determined on a total of 7,209 samples at the Activation Laboratory in Ancaster during the course of sample analyses. The SG was determined using the ASTM D854 Standard Test Method for Specific Gravity of Soils. The crushed samples pass the 4.75 mm sieve and the SG determination is performed using a calibrated pycnometer.

The SG data set is representative of the range of Cr_2O_3 grades intersected at Blackbird and includes representative determination of the SG of the major rock types.

17.1.5 Surpac Database

The Surpac database used for the Blackbird resource estimate was imported from the Excel spreadsheet provided by Noront. This database was utilized for data management, geological interpretation/modeling, and block modeling during the estimation process. The main tables in the database include:

1. Collar - Drill hole collar coordinates in the local Blackbird grid system.
2. Survey – Downhole survey data including dip and grid azimuth.
3. Assay – Sample intervals, and SG data entries.
4. Lithology – Rock type intervals.

In addition to the above major tables, other tables created during the 2008/2009 drilling include core recovery and geotechnical data tables.

17.1.6 Validation

The integrity of the entire database was validated as per the methodology described in Section 14 of this report.

17.2 ESTIMATION DETAILS

17.2.1 Estimation Methodology

The Blackbird resource estimate has been prepared using a conventional approach that includes block modeling based on a geological interpretation. The main elements of the procedure and sequence of estimation are contained in Table 17.1.

Table 17.1
Summary of Estimation Methodology

Procedure	Description
Geological Modeling	Sectional interpretation of geology and mineralization; verification of interpretation in plan, creation of geological surfaces and wireframes; includes application of cut-off grade and minimum width parameters; creation of surface and overburden wireframe models; creation of excavation models based on similar deposits
Statistics and Geostatistics	Statistical analyses of assay data; evaluation of assay populations within and related to geological and mineralization solids; determination of appropriate top cut value; calculation and evaluation of composites for grade interpolation; variography
Block Modeling:	Creation of block model; grade estimation of blocks (interpolation) using ID^3; and parallel estimation using kriging methods; estimation of block density; estimation of percent of block within (and outside of) geological or mineralogical domains (wireframes); estimation of tonnage; tabulation of tonnage and grade
Classification	Evaluation of the block model; extraction of overburden volume and otherwise non-resource blocks; classification of resource blocks based on geological, data density, and statistical/geostatistical criteria
Validation	Various procedures and tests to ensure model validity

17.2.2 Geological Interpretation/ Model

The local geological map (Figure 7.2) clearly shows that the RFI intrusion is tightly folded in the area where the Blackbird deposits are located. This deformation (folding) is largely responsible for the geometry, orientation and discontinuous nature of the Blackbird chrome deposits. Being brittle, chromite bodies would be expected to be broken up during bending arising from the folding action and thus, there is no apparent relationship between Blackbird 1 (BB1) and Blackbird 2 (BB2). The layout of the Blackbird deposits as interpreted by Micon is shown in Figure 17.1. Despite being broken up and disoriented the genetic model is the same as described in Section 8.2 and must not be confused with podiform deposits characteristic of ophiolite complexes.

BB1 consists of one isolated deep-seated massive chromite layer/lenticular body located between 160 and 500 m below surface. The deposit is best developed along section line 1450E and is oriented in a west-northwest to east-southeast direction corresponding to the "kink folded" part of the RFI (Figure 7.2).

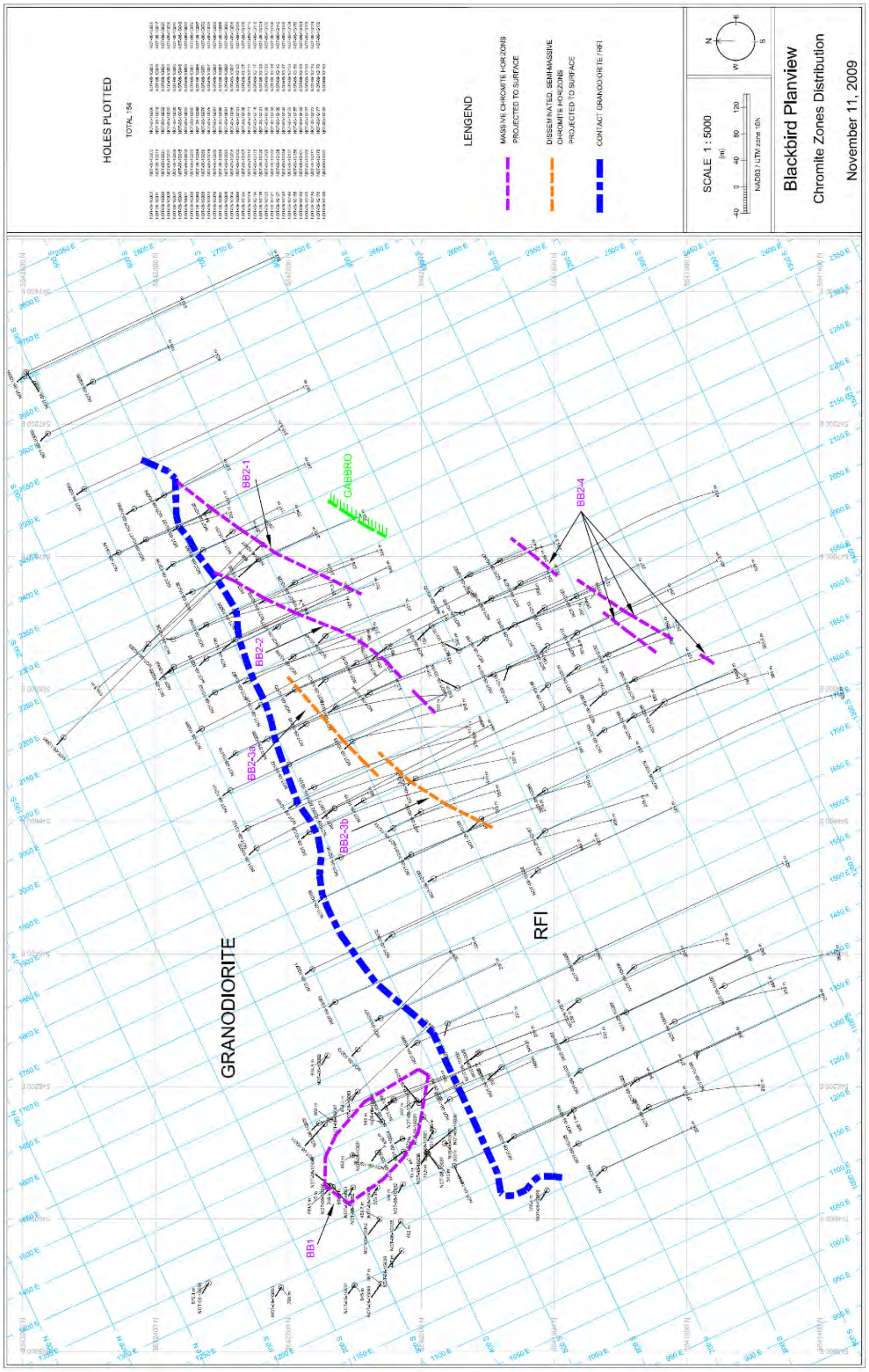
BB2 comprises five linear chromite zones/layers designated as BB2-1, BB2-2, BB2-3(a), BB2-3(b) and BB2-4 (Figure 17.1). The general orientation/strike of these bodies/layers is in the south-southwest to north-northeast (020 degrees) direction with sub-vertical dips varying between -65 and -90 degrees to the north-northwest. All components of BB2 are open ended at depth. A series of lenses/pods occur immediately to the south and west of BB2-3(b) and BB2-2, respectively. Other isolated pods are encountered to the south of BB1.

In so far as the resources are concerned, the geometrical attributes and mineralization styles of the Blackbird deposits are summarized in Table 17.2.

Table 17.2
Summary of the Major Characteristics of the Blackbird Chromite Deposits

Zone	Approx. Strike (m length)	Bearing	Dip (deg.)	Mineralization	Max. T.T. (m)	Min. T.T. (m)	Avg. T.T. (m)	Remarks
BB1	280	175	-65 NW	Massive	31.9	1.6	17.66	Lenticular; deep seated
BB2-1	320	200	-77 NW	Massive	17.6	2.7	10.5	Compact; open down dip
BB2-2	300	205	-72 NW	Massive	17.1	3	6.8	Compact; open down dip
BB2-3a	175	230	-78 NW	Disseminated/banded	17.9	3.4	7.6	Fragmented; open down dip
BB2-3b	175	220	-90 NW	Semi-massive/banded	14.6	4.45	9.3	Fragmented; open down dip
BB2-4	250 (Sum of 3 lenses)	210	-73 NW	Massive	26.8	1.2	11.4	Three lenticular zones; open down dip

Figure 17.1
Plan Showing the Blackbird Chromite Zones Projected to Surface



Sketches of the longitudinal sections of the BB2 components are shown in Figures 17.2 through 17.5. (Note that in Figures 17.2 through 17.5 the drill hole (DH) numbers have been written in short to avoid congestion; DH numbers 89 and below should be preceded by NOT-08-1G while those from 90 and above should be preceded by NOT-09-1G)

The geometrical attributes (Table 17.2 and Figure 17.1) combined with the longitudinal sections (Figures 17.2 – 17.5) were utilized to provide geological control in the computer-based resource modeling.

Figure 17.2
Sketch of Longitudinal Section of BB2-1 Looking Northwest

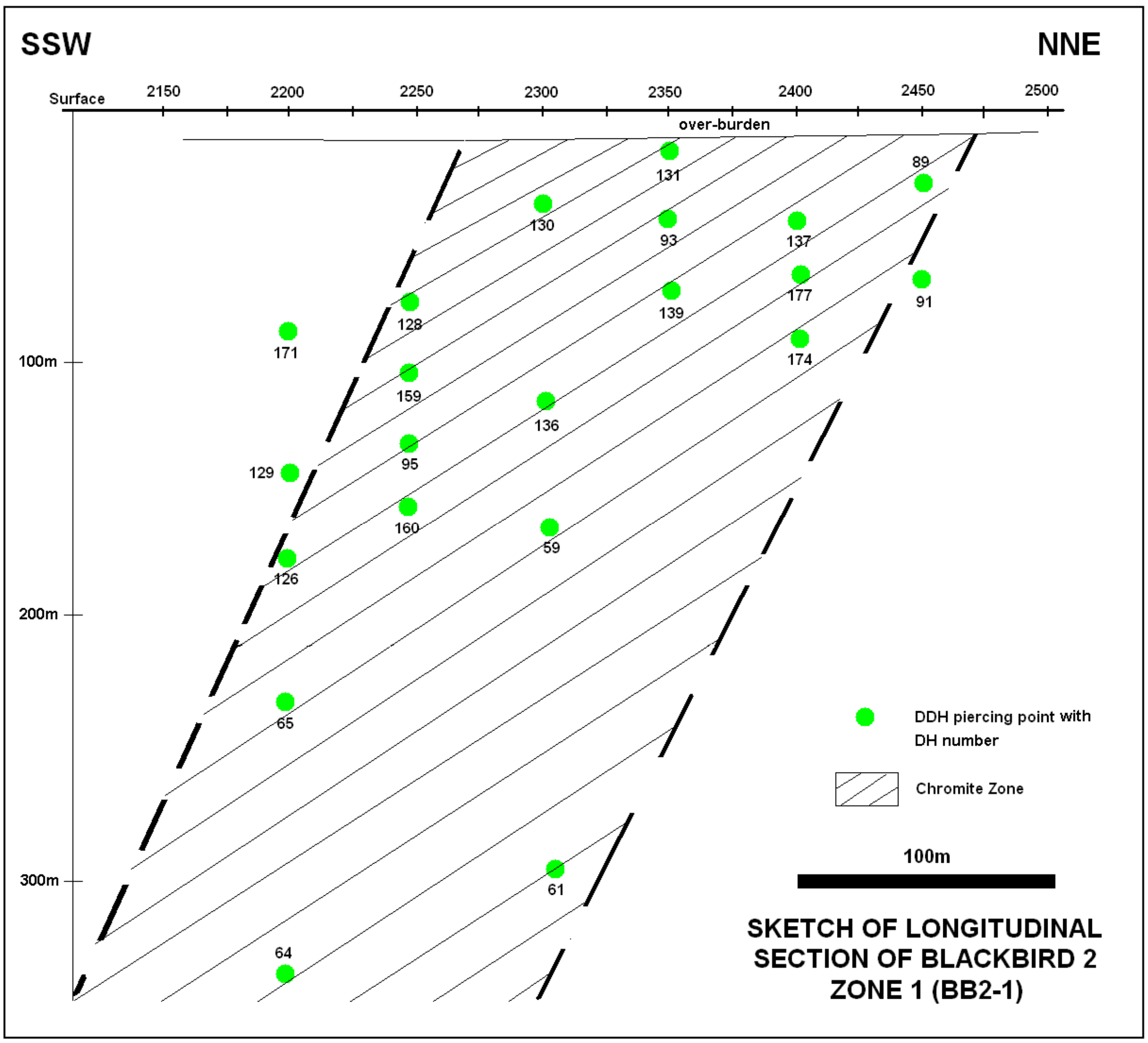


Figure 17.3
Sketch of Longitudinal Section of BB2-2 Looking Northwest

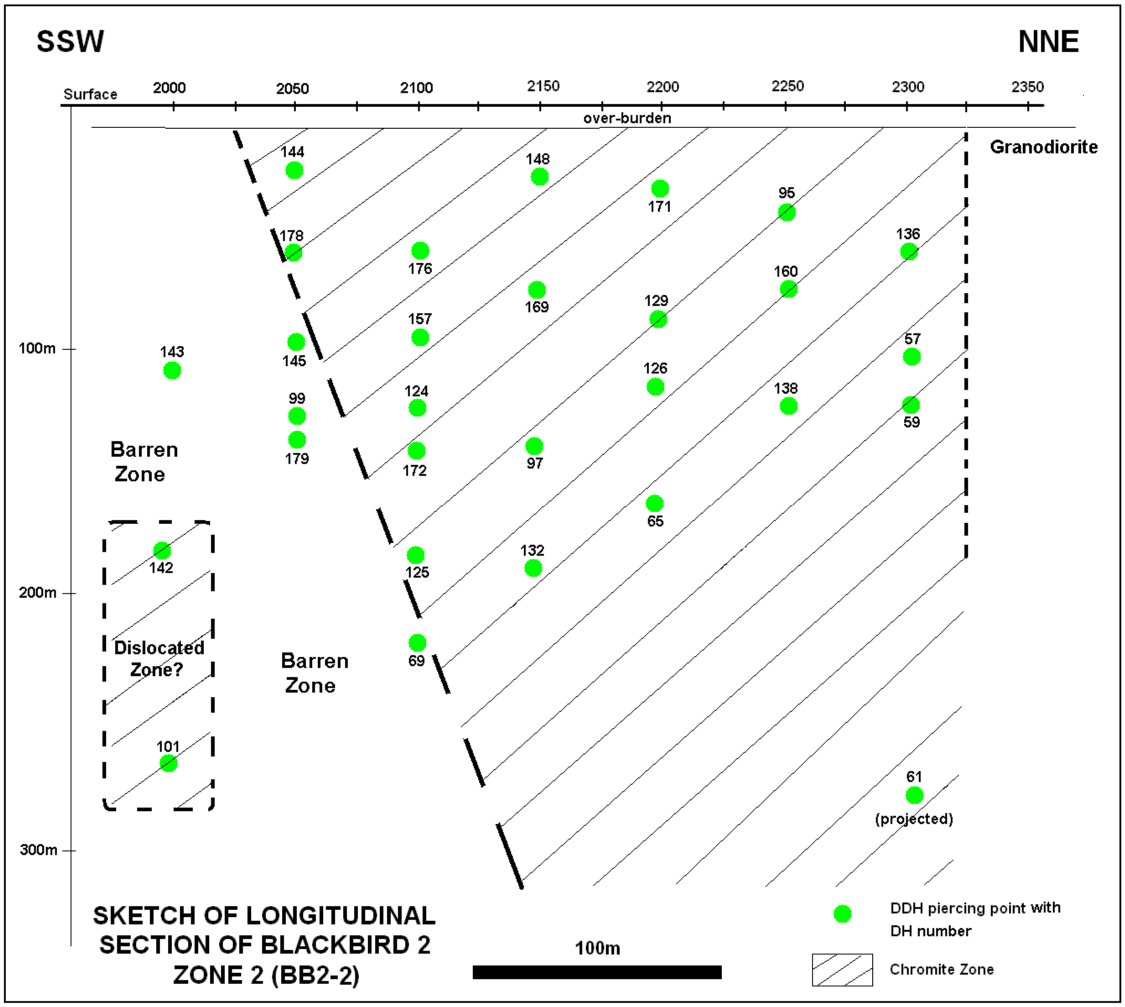


Figure 17.4
Sketch of Longitudinal Section of BB2-3(a+b) Looking Northwest

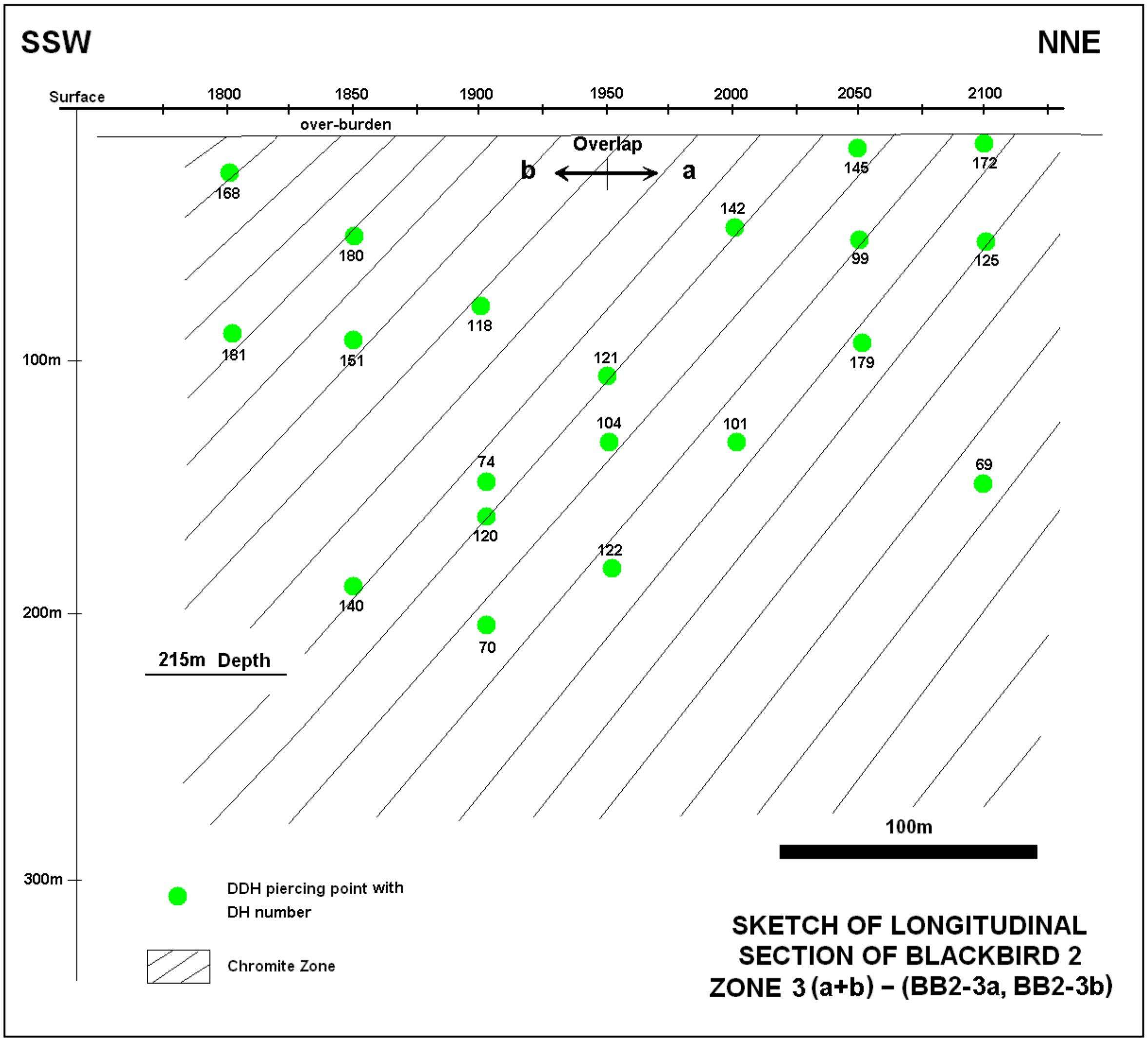
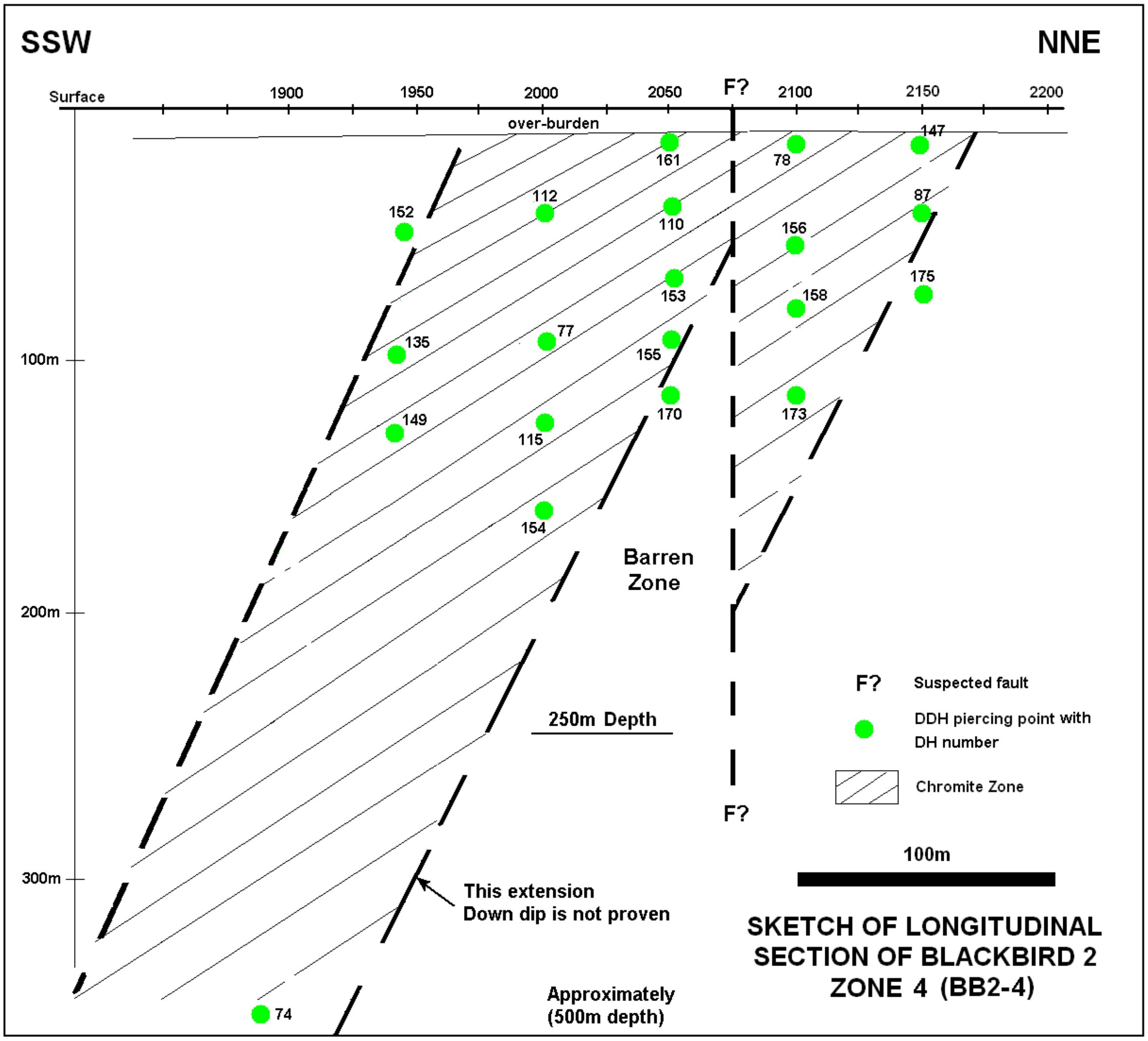


Figure 17.5
Sketch of Longitudinal Section of BB2-4 Looking Northwest



17.2.3 Geological/Mineralization Domains

All of the chromite mineralization is hosted in peridotite and as previously mentioned (Section 8) occurs in four inter-related forms: disseminated, banded, semi-massive and massive. The global statistics of Cr_2O_3 for the entire database are presented in Table 17.2 from which the top-cut 43% Cr_2O_3 value has been established at the 97th percentile. The mineralization domains have been established on the basis of the cumulative frequency curve (Figure 17.6).

Table 17.3
Table Showing the Global Statistics of the Entire Database

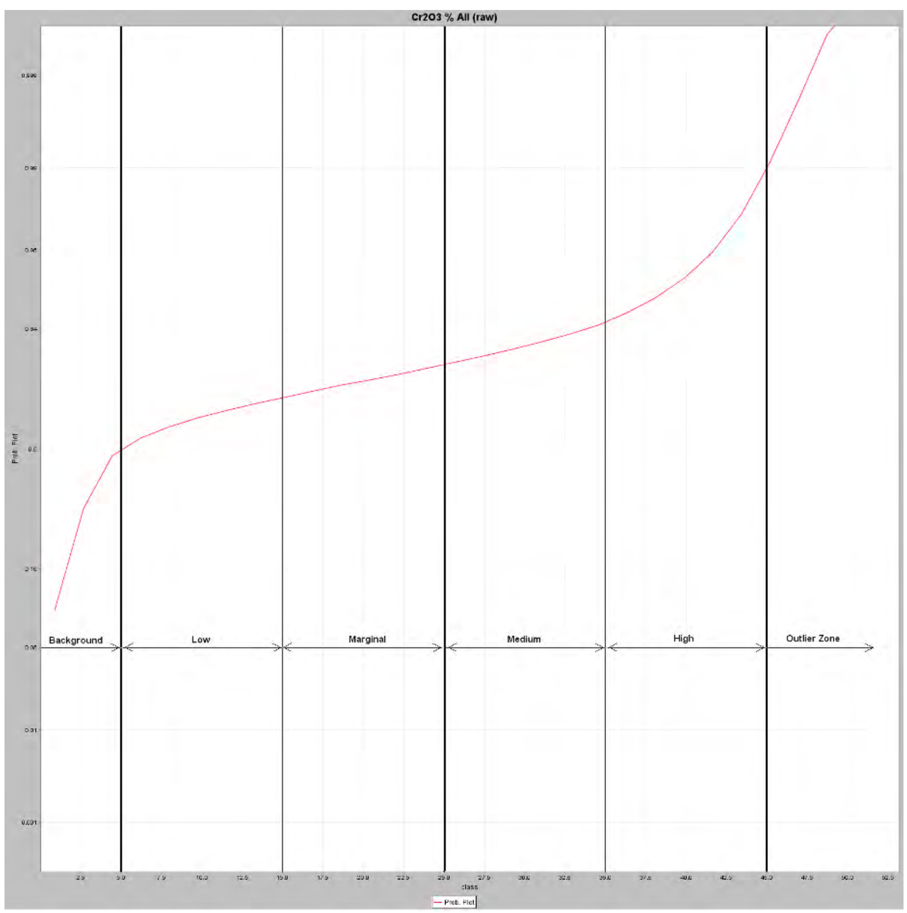
File	Assay All Sep17 55.str
String range	10
Variable	Cr_2O_3 %
Number of samples	13564
Minimum value	0.002000
Maximum value	53.190000
	Ungrouped Data
Mean	13.187056
Median	4.864000
Geometric Mean	5.658230
Variance	209.031439
Standard Deviation	14.457920
Coefficient of variation	1.096372
Moment 1 About Arithmetic Mean	0.000000
Moment 2 About Arithmetic Mean	209.031439
Moment 3 About Arithmetic Mean	2868.171975
Moment 4 About Arithmetic Mean	103417.724879
Skewness	0.949047
Kurtosis	2.366856
Natural Log Mean	1.733111
Log Variance	2.365343
5.0 Percentile	0.604000
10.0 Percentile	1.100000
20.0 Percentile	1.870000
30.0 Percentile	2.308000
40.0 Percentile	3.022000
50.0 Percentile (median)	4.864000
60.0 Percentile	9.620000
70.0 Percentile	18.460000
80.0 Percentile	29.750000
90.0 Percentile	38.470000
95.0 Percentile	41.810000
96.0 Percentile	42.400000
97.0 Percentile	43.025000
97.5 Percentile	43.380000
98.0 Percentile	43.870000
98.5 Percentile	44.285000
99.0 Percentile	44.810000
99.5 Percentile	45.610000
100.0 Percentile	53.190000
Trimean	8.967000
Biweight	10.351648
MAD	8.471648
Alpha	-0.001980
Sichel-t	18.459742

17.2.4 Assay and Composite Data

A total of 7,341 samples (raw data) occur within the mineralization zones of the Blackbird 1 and 2 deposits from which 3,079 composites were obtained. The assays were composited to a target length of 1.5 m using the Surpac compositing tool. The length of 1.5 m was chosen based on the sample length statistics and inspections of total drill hole intervals within the main massive zones, as a compromise between the requirements of compositing to a standard length (support), maintaining variability across the zones as established by the geological sampling criteria, and combining samples as opposed to dividing samples. Approximately 94% of the samples in the massive mineralized zones have a length equal/close to 1.5 m.

Based on the frequency distribution of the combined Blackbird 1 and 2 data sets (Figure 17.6) those assays greater than 43% Cr_2O_3 have been deemed as an outlier population and 43% Cr_2O_3 is the top-cut value applied for interpolation.

Figure 17.6
Cumulative Frequency Plot of the Entire Database



From Figure 17.6, the mineralization indicator grade which defines the boundary between mineralized and un-mineralized samples is 5% Cr_2O_3.

17.2.5 Economic Parameters and Cut-off Grade

Due to the current volatile nature of metal prices on the world market, the economic parameters have been derived mainly by comparison with established chrome mines. The most comparable established chrome mine to the Blackbird deposits in the northern hemisphere is the Kemi mine in Finland, with declared reserves according to 2006 estimates of 41 Mt @ 27% Cr_2O_3 with a Cr:Fe ratio of 1.8. The Kemi operations are mainly open pit. South African and Zimbabwean underground mines have reserves grading >40% Cr_2O_3. Metallurgical tests on the Blackbird chromite are incomplete although the preliminary results are encouraging. To be competitive, the Blackbird chrome should aim to produce a concentrate to match the South African product or possibly higher grades by means of beneficiation to produce a high grade concentrate. Thus, until metallurgical testwork proves otherwise, an economic cut-off grade of 30% Cr_2O_3 to yield material with an overall grade of around 35% Cr_2O_3 is considered prudent for the Blackbird chromite deposits, at this stage. Metallurgical advances in the treatment of chromium ores may result in economic exploitation of low grade chromium mineralization. Accordingly, Micon has categorized various grade ranges as "background", "low grade', "marginal grade", "medium grade" and "high grade" (Figure 17.6 and Table 17.4) based on the major inflexion points in the cumulative frequency plot.

Table 17.4
Grade Domains of the Blackbird Chromite Deposit

Grade Interval (%Cr_2O_3)	Description	Remarks
0 < 5	Background	
5 < 15	Low grade	Disseminated chromite
15 < 25	Marginal grade	Intercalated zones (disseminated & semi-massive chromite)
25 < 35	Medium grade	Intercalated zones incorporating some massive chromite
35 – 45	High grade	Mainly massive chromite

It must be noted that the descriptions used in Table 17.4 above are not universal and may therefore not be applicable to other deposits elsewhere.

17.2.6 Statistics

The statistics of the major components of the of the Blackbird deposit using 1.5 m sample composites are summarized in Table 17.5.

A small coefficient of variation as that for BB2-1 is indicative of a very uniform domain. If the coefficient of variation is greater than 1, it reflects local variation of grades within the domain which may influence the results of grade estimation using blanket estimation strategies.

Table 17.5
Summary Statistics of the Major Components of the Blackbird Deposit

Zone	Cut-Off $\%Cr_2O_3$	No. Of Samples	Min. Value	Max. Value	Mean	Median	Var.	Std	Coef. Var	Remarks
BB1	30	266	0	50	36.91	40.98	94.14	9.7	0.26	Includes internal waste (max.2 m)
BB2-1	30	182	6.62	45.93	39.24	41.42	50.71	7.12	0.18	Includes internal waste (max.2 m)
BB2-2	30	137	0	46.56	34.53	36.72	99.57	9.98	0.29	Includes internal waste (max.2 m)
BB2-3a	15	61	0.65	43.13	21.9	21.46	106.2	10.3	0.47	Mixed population
BB2-3b	15	73	0	45.65	27.73	30.87	159.1	12.6	0.45	Mixed population
BB2-4	30	183	0	43.41	35.6	38.35	90.76	9.52	0.27	Includes internal waste (max.2 m)

17.2.7 Geostatistics

Meaningful spatial analysis requires that the variography be conducted on data comprising a single population and that separate bodies should be treated individually. Thus, in accordance with this principle, the bodies comprising the Blackbird chromite have been treated separately. However, it must be noted that the requirement for a single population is only strictly met for BB1, BB2-1, BB2-2 and BB2-4 which are characterized by very low coefficients of variation (Table 17.5). BB2-3a and BB2-3b are mixed zones and thus the applicable/relevant variograms are better termed indicator variograms.

For each chrome body/zone, three variograms were computed to cover the principal geometrical directions, viz: x (along strike), y (down dip) and z (across) width. In the latter case, down-hole variograms were found to be equally representative. The experimental variograms and their fitted models are presented in appendix 4. The variogram models were fitted giving weight to the number of pairs in each lag and using the variance to establish the sill. The most stable variograms are those computed down the hole (i.e. representing the minor axis across the widths of the layers). This is due to the dense continuous sampling at very regular intervals of 1.5 m. In the other directions, however, the representations of spatial continuity tend to be more erratic due to the low densities of sample information. This is particularly the case with BB1, BB2-3a, BB2-3b and BB2-4. The hole effect which appears as a ‘bump’ in most of the variograms (see Appendix 4) is an artifact of the sampling used, lack of pairs, etc. The nugget effect is attributable to short scale structures.

A summary of the results arising from the variographic analysis is presented in Table 17.6.

Table 17.6
Summary Results of the Variographic/Spatial Analysis of the Blackbird Deposits

Zone	Axis	Direction	Nugget	Structure1	Structure2	Range	Bearing	Dip	Dip Direction
BB1	Major	Downdip	17	57.7	19.7	100	175	-65	265
	Semi-major	Along strike	17	57.7	19.7	45			
	Minor	Downhole	25	68.3	0	25.7			
BB2-1	Major	Downdip	5.4	45.6	0	224	200	-77	290
	Semi-major	Along strike	5.4	45.6	0	224			
	Minor	Downhole	11	34.6	0	21			
BB2-2	Major	Along strike	17	75.6	0	216	205	-72	295
	Semi-major	Downdip	17	75.6	0	216			
	Minor	Downhole	19.3	80.3	0	15			
BB2-3a	Major	Along strike	37.38	74.13	0	95	230	-78	320
	Semi-major	Downdip	37.38	74.13	0	73			
	Minor	Downhole	0	108.53	0	6			
BB2-3b	Major		48	123.92	0	71	220	-90	310
	Semi-major		48	123.92	0	56			
	Minor	Downhole	13.8	148.14	0	15.8			
BB2-4	Major	Downdip	37.8	77.2	0	150	210	-73	300
	Semi-major	Along strike	37.8	77.2	0	75			
	Minor	Downhole	0	91.9	0	10.5			

17.2.7.1 Interpretation and Application of Geostatistical Results

The range of influence is the maximum distance over which samples or drill hole intersections may be correlated and therefore an effective means of establishing the adequacy of a drilling grid in defining the continuity of mineralization. Considering the major axes in Table 17.6, the range of influence in every case is well in excess of 50 m. Hence the spacing of 50 m between drill hole lines is considered adequate for resource definition. Furthermore, the ranges of influence for BB2-1, BB2-2 and BB2-4 appear to suggest that the continuity of the mineralization could have been established at between 100 m and 200 m spacing between drill holes lines. However, a wider grid than 50 m would have failed to establish geological continuity due to the broken nature and limited strike extent of the tabular bodies. Thus, to cope with structural disruptions, the 50m grid is considered prudent and most appropriate for the Blackbird environment.

The variogram ranges in Table 17.6 represent the maximum search ellipse radii for grade interpolation using moving average techniques. (Kriging and inverse distance methods are collectively referred to as weighted moving average techniques.). Although the ranges appear to be extremely large, similar stratiform chromite deposits in Southern Africa have even larger ranges.

The variography results have been used for kriging to validate the ID^3 generated resource (See appendix 5). In addition, the authors have used the variogram ranges to complement the resource categorization criteria. As a general rule of thumb, mineral resources are categorized as follows:

- Measured Resource when the drill hole spacing is less than the variogram range of influence at 66% or less of the sill. This translates to approximately 100 m for BB2-1 and BB2-2; 50 m for BB2-4. The variograms for the lensoid body (BB1) and intercalated zones (BB2-3a and BB2-3b) are rather erratic due to the low densities of sample information and cannot be used reliably to define measured resources.

- Indicated Resource when drill hole spacing is less than the variogram range of influence at between 66% and 100% of the sill. (100% of the sill corresponds to the maximum range of influence beyond which there is no spatial correlation between samples). This translates to 200 m for BB2-1 and BB2-2; 95 m for BB2-3a; 71 m for BB2-3b; 150 m for BB2-4 and 100m for BB1.

- Inferred Resource when drill hole spacing is beyond the range of influence.

17.2.7.2 Choice of Interpolation Technique

The ranges of influence established from the variography indicate a high level of continuity in the mineralization which is typical of stratiform chromite deposits. For all the zones the ranges along the major and semi-major axes are larger than the drill hole line spacing of 50 m. This being the first initial resource estimate for Blackbird deposit, Micon decided to take a prudent approach and apply more stringent measures. Thus the ID^3 method which gives a high level of selectivity was selected as the main method to estimate the resource. The variography results were subsequently used to run a parallel estimate using ordinary kriging to validate the ID^3 resource.

17.2.8 Block Modeling Description

On the basis of the geological interpretation, block model solids were created to encompass the limits of the deposits. The block size of 12.5 m x 4 m x 10 m selected was based on drill hole spacing, and ideal minimum width and height in a mechanized bulk mining situation, respectively.

The search ellipse configuration was defined using variography as a guide combined with the geometry of the deposits and drill hole spacing. The searching parameters selected are well within the limits of the ranges of influence and are summarized in Table 17.7.

Table 17.7
Summary of Searching parameters

Attribute	Pass 1	Pass 2	Pass 3
Major axis search radius (m)	50	100	150
Semi-major axis search radius (m)	50	100	150
Minor axis search radius (m)	5	10	15
Maximum # of samples/drill hole	4	4	4
Minimum # of samples/interpolation	4	7	4
Maximum samples/interpolation	12	14	28
Interpolation method	ID^3	ID^3	ID^3

For all passes, the maximum number of samples per drill hole is designed to manage and control the number of drill holes in the interpolation.

For Pass 1, the minimum and maximum samples for each interpolation are designed to ensure that the nearest sample(s) is/are accorded the highest weighting and that a maximum of the three closest holes are used in the interpolation.

For Pass 2, the minimum number of samples for interpolation is designed to ensure a minimum of two drill holes in the interpolation while the allowable maximum samples per interpolation are increased to fourteen to go beyond the limits of Pass 1.

For Pass 3, the minimum number of samples for interpolation allows the interpolation to fill all the space in the solid/wireframe. The maximum number of samples per interpolation has been doubled from that of Pass 2 to allow the bigger ellipse to find a second hole for interpolation.

17.2.9 Tonnage Factor and Tonnage Estimate

The specific gravity was determined for 7,209 samples during the 2008 and 2009 drill campaigns at Blackbird. The SG data have been evaluated by Cr_2O_3 content as shown in Table 17.8.

Table 17.8
Average Specific Gravity Determinations (SG) by Cr_2O_3 Content

Category of Mineralization	% Cr_2O_3	Density
Background	0 – 5	2.8
Marginal	5 – 15	2.9
Low Grade	15 – 25	3.2
Medium Grade	25 – 30	3.4
High Grade	> 30	3.8

17.3 BLOCK MODELING RESULTS AND CLASSIFICATION

17.3.1 Statement of Results

The results of the Blackbird chrome block model are summarized in Table 17.9 which includes the total tonnage of the model, the net tonnage of the model where the overburden has been extracted, and the classified tonnages and average grades. The Mineral Resource estimate is effective as of December 31, 2009, and is compliant with the current CIM standards and definitions required by NI 43-101. The Qualified Persons responsible for the estimate are Messrs Richard Gowans, P.Eng., Alan San Martin MAusIMM, and Charley Murahwi, MSc., P.Geo.

Table 17.9
Summary of the Blackbird Chromite Block Model Mineral Resources

BLACKBIRD MINERAL RESOURCE SUMMARY REPORT BY CATEGORY					
(i) MASSIVE CHROMITE RESOURCES					
a) RESOURCES MEASURED AND INDICATED					
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-1	Measured	1,635,000	38.42	1.97
	BB2-2	Measured	881,000	35.35	1.95
	BB2-4	Measured	1,675,000	35.36	1.90
	Sub-total Measured		**4,191,000**	**36.55**	**1.94**
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 1	BB1	Indicated	1,895,000	36.56	1.97
BLACKBIRD 2	BB2-1	Indicated	816,000	36.75	1.94
	BB2-2	Indicated	438,000	32.91	1.88
	BB2-4	Indicated	223,000	35.76	1.85
	Sub-total Indicated		**3,371,000**	**36.08**	**1.94**
Grand Total Measured and Indicated			**7,562,000**	**36.34**	**1.94**
b) RESOURCES INFERRED					
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-1	Inferred	2,142,000	36.07	1.95
	BB2-2	Inferred	624,000	24.83	1.65
	BB2-4	Inferred	722,000	40.26	2.19
	Total Inferred		**3,488,000**	**34.93**	**1.95**

Note: All resources have been rounded to the nearest thousand.
Constraining was at 30% Cr_2O_3 allowing for maximum internal dilution of 3 m down the hole

(ii) INTERCALATED CHROMITE RESOURCES (FRAGMENTED ZONES)					
a) RESOURCES MEASURED AND INDICATED					
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-3a (301)	Measured	450,000	20.35	1.39
	BB2-3b (302)	Measured	537,000	29.63	1.79
	Total Measured		**987,000**	**25.40**	**1.60**
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-3a (301)	Indicated	245,000	25.42	1.55
	BB2-3b (302)	Indicated	61,000	28.31	1.67
	Total Indicated		306,000	**26.00**	**1.57**
Total Measured and Indicated			**1,293,000**	**25.54**	**1.60**
b) RESOURCES INFERRED					
Deposit	**Zone**	**Category**	**Tonnes**	**Avg. Cr_2o_3 (%)**	**Cr:Fe Ratio**
BLACKBIRD 2	BB2-3a (301)	Inferred	121,000	22.38	1.37
	BB2-3b (302)	Inferred	185,000	30.51	1.84
	BB2-Lenses (50)	Inferred	2,280,000	31.94	1.78
	Total Inferred		**2,586,000**	**31.39**	**1.77**

Note: Intercalated includes disseminated, semi-massive and thin bands of chromite.
All resources have been rounded to the nearest thousand.
Constraining was based on mineralization and geological trends.

Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing or other relevant issues. Micon cannot guarantee that Noront will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise for the project. There are currently no mineral reserves on the Blackbird property and there is no assurance that the project will be placed into production.

There are no known mining, metallurgical, infrastructure, or other factors that materially affect this mineral resource estimate, at this time.

The block model is shown in Figure 17. 7. Sections and level plans are in Appendix 6.

An overview of the BB1 and BB2 combined chromite mineralization is presented as a grade-tonnage curve in Figure 17.8.

17.3.2 Comments/Remarks

BB1

BB1 demonstrates good geological and grade continuity. However, the prospects for economic extraction remain doubtful due to the small size and deep-seated nature of the deposit. Hence the entire deposit has been categorized as an Indicated Resource despite all blocks receiving an interpolated grade in Passes 1 and 2. However, it should be noted that the Eagle Two Ni-Cu-PGE discovery adjacent to BB1 may in future improve the economics of extraction.

Figure 17.7
Block Model of the Blackbird Deposits

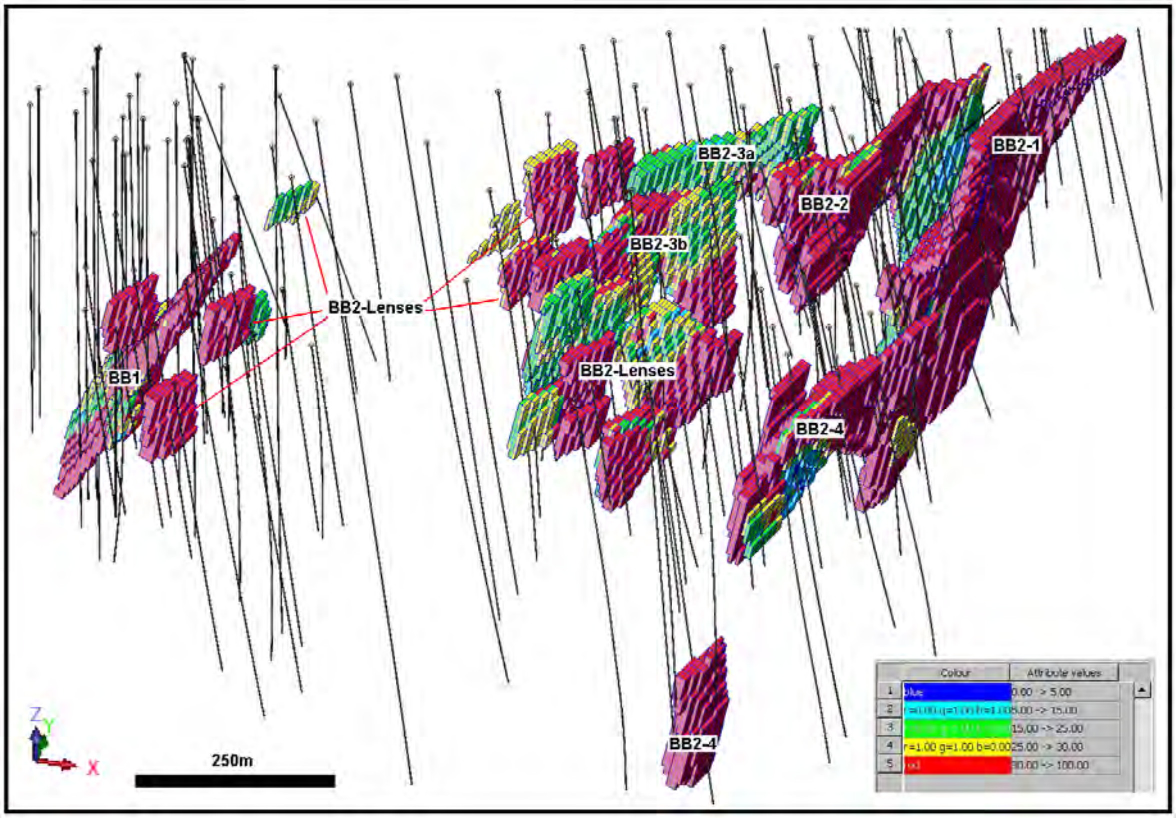
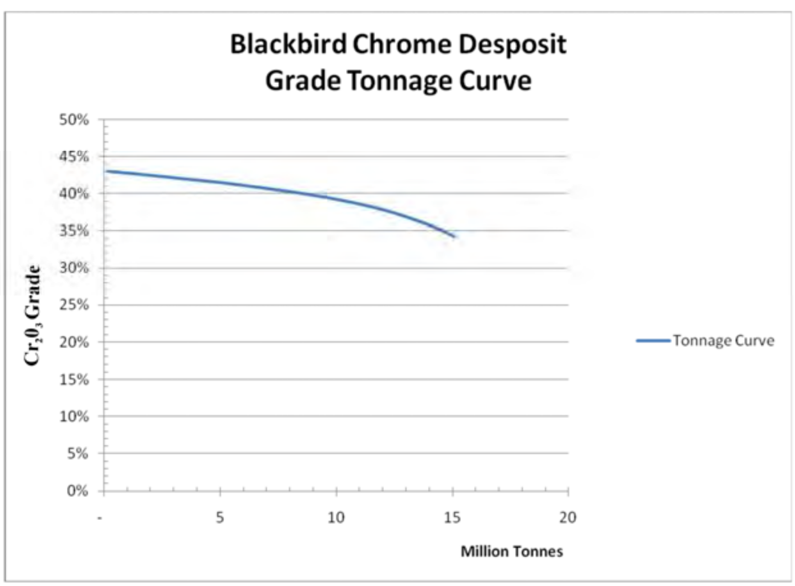


Figure 17.8
Grade-tonnage Curve for the Combined Blackbird Deposits



BB2-1, BB2-2 and BB2-4

These are the best developed in terms of quality, grade and geological continuity. These attributes are complemented by the proximity of the deposits to surface. Thus the resources have been categorized into:

Measured for Pass 1.
Indicated for Pass 2.
Inferred for Pass 3.

BB2-2 and BB2-3

These are intercalated zones. However, the drill spacing of 50 m is considered adequate and though they may be low grade, they have been classified on the basis of the passes as for BB2-1, BB2-2 and BB2-4.

17.3.3 Block Model Validation

The block model was validated using four different approaches as follows:

Visual Validation

The block model when sectioned in plan, cross section, or long-section broadly reflects the grades seen in intersecting drill holes.

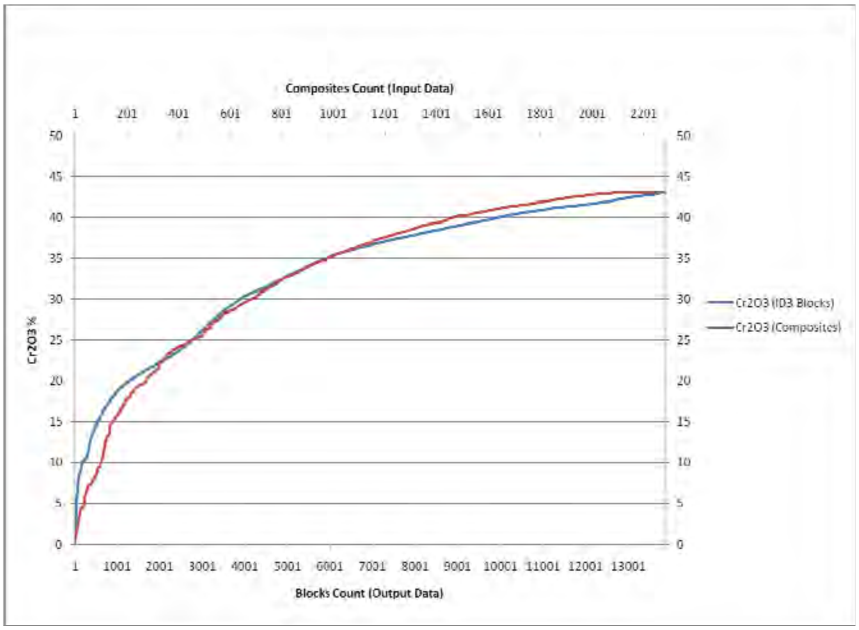
Block model versus Geological model

A comparison of the block model (Figure 17.7) with the geological interpretation (Figure 17.1 and Table 17.2) shows that the block model wholly conforms to the geological interpretation.

Domain statistical validation

A comparison of the input data of composite grades with the output data of block grades (Figure 17.9) shows a very close conformance. Furthermore, comparing the block grades with the global means as established for each deposit in Table 17.5 shows no significant differences.

Figure 17.9
Comparison of Input Data (Composite Grades) Versus Output Data (Block Grades)



Parallel Estimate

A parallel estimate using ordinary kriging yielded broadly similar results to the resources obtained using the ID^3 (Figure 17.10). The similarity is further supported by a good correlation coefficient of 0.88 (Figure 17.11).

Figure 17.10
Comparison of the Blackbird Block Grades: ID^3 versus OK

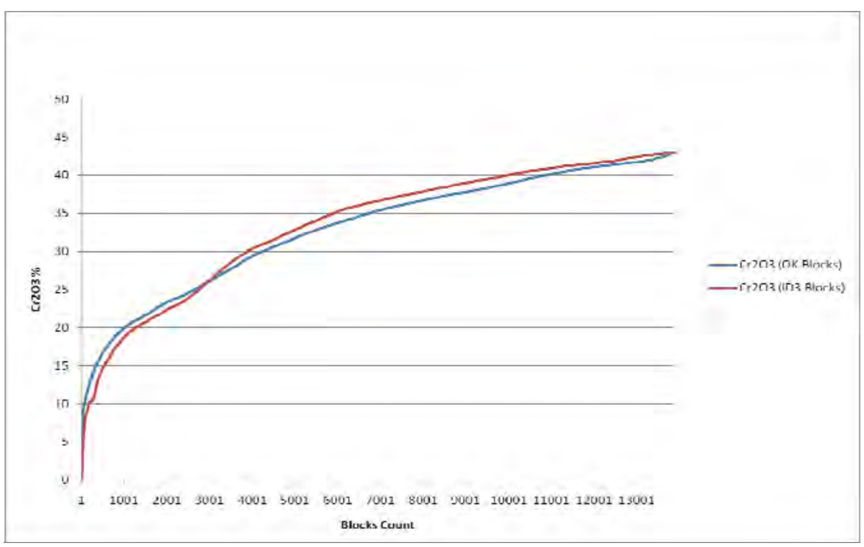
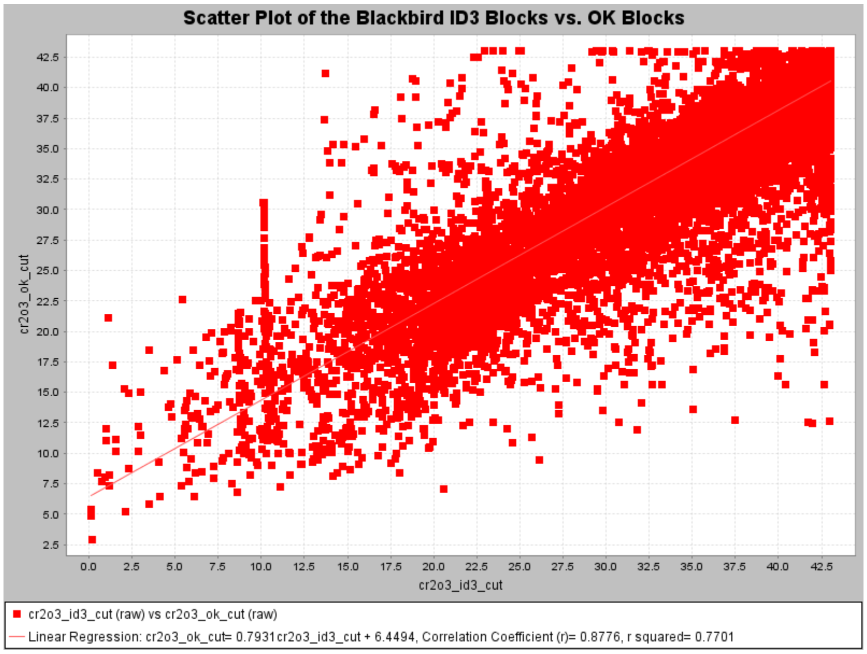


Figure 17.11
Scatter Plot of the Blackbird ID^3 Blocks Versus OK Blocks



The scatter plots of the best mineralized/developed zones are presented in Appendix 5 and all reflect correlation coefficients of >0.9. In Micon's opinion, this supports the validity of the block model. Also included in Appendix 5 are the histograms representing the ID^3 and OK blocks.

18.0 OTHER RELEVANT DATA AND INFORMATION

18.1 THE MARKET FOR CHROMITE

18.1.1 MINED CHROMITE

Metallurgical testwork indicates that potentially marketable concentrates, suitable for production of ferrochromium, can be produced from the Blackbird deposits with chromium content of over 50% Cr_2O_3, chromium to iron ratio of 2.2-2.4 and silica content of less than 3% SiO_2. (See Section 16.0).

18.2 OVERVIEW

Chromite is the source of the metallic element chromium which is used in a wide range of applications in metallurgy, refractory materials and chemicals. The principal end uses are in stainless steel and non-ferrous alloys, and stainless steel accounts for approximately 94% of output of chromite. Metallurgical grade chromite is converted to ferrochromium which is then added to steel and iron melts. The foundry sands sector accounted for approximately 3% of output in 2007, followed by chromium chemicals at 2% of output and refractories at less than 1%.

Chromite is produced in metallurgical, chemical, refractory and foundry grades for which the general specifications are shown in Table 18.1.

Table 18.1
General Specifications for Chromite Grades

	Metallurgical Grade	Chemical Grade	Refractory Grade	Foundry Grade
Cr_2O_3 (%)	>46	>44	30-40	44
Cr:Fe	>2:1	>1.5	2-2.5:1	
SiO_2 (%)	<10	<3.5	6	<4

Specific end-use sectors require additional physical and chemical characteristics. In metallurgical applications, phosphorus, sulphur and other minor elements should not exceed certain levels. Foundry sands require silica at less than 1%, sub-angular grains and specific grain sizes. Premium refractory grades are relatively coarse-grained.

The majority of chromite used in metallurgical applications is smelted to ferrochromium before it is added to the steel melt. The principal ferrochromium alloys are high-carbon ferrochromium (HCFeCr) for which the chromite ores should have a Cr:Fe ratio of 2.0-3.6, chromium (Cr) content greater than 60% and carbon content of 4-6%, and charge chrome which is produced from lower grade ores with Cr:Fe ratio of 1.3-2.0, 50-55% chromium and 6-8% carbon. High-carbon ferrochromium and charge chrome are sometimes referred to, together, as high-carbon ferrochromium. Medium-carbon (less than 5% carbon) and low-carbon (less than 0.1% carbon and less than 1% silica) are used where steels require lower carbon levels. Direct shipping, or lumpy ore, has grain size over 6 mm and is a premium product since it can be fed directly to the ferroalloy smelter. Fine grained chromite (less than 6 mm) must be pelletized before use. The International Chromium Development Association (ICDA) reported that 7.6 Mt of high-carbon ferrochromium was produced in 2007, compared with 681,000 t of medium- and low-carbon ferrochromium. The alloy, ferrochromium-silicon, is also used in steel-making. (The 2008 edition of the ICDA Statistical Bulletin provides statistics to 2007).

Refractory chromite is further divided into magnesia-chromite (20-70% Cr_2O_3), chromite (>30% Cr_2O_3) and picrochromite (>70% Cr_2O_3), depending on the specific end use.

18.3 PRODUCTION OF CHROMITE AND FERROCHROMIUM

World production of chromite reached 22.5 Mt gross weight in 2008, having increased steadily since 2000. Table 18.2 shows the 10 largest producers in 2008 and world output for the five years from 2004 to 2008. Production in both Russia and Turkey has increased significantly since the early 2000s.

Table 18.2
World Chromite Production
(Thousand t gross weight)

	2004	2005	2006	2007	2008[1]
South Africa	7,310	7,244	6,865	8,720	8,646
Kazakhstan	3,290	3,581	3,366	3,687	3,940
India	2,949	3,255	3,600	3,320	2,895
Turkey	506	859	1,060	1,679	1,890[1]
Russia	320	772	966	777	1,020
Brazil	623	677	604	626	712
Zimbabwe	621	820	713	664	528
Finland	580	571	549	556	500
Pakistan	130	148	199	323	385
Oman	19	18	71	338	355
Others	1,254	1,196	1,248	1,464	1,656
Total	**17,602**	**19,141**	**19,241**	**22,154**	**22,527**

[1] Industrial Minerals, March, 2009 (reporting ICDA).
Source, ICDA, 2008, Statistical Bulletin.

There has been a general trend towards production of ferrochromium within the vicinity of chromite output, and away from the major stainless steel production centres, although China has emerged as a significant producer of both ferrochromium and stainless steel based primarily on imported feedstocks. Eurasian Natural Resources Corp. (ENRC, 2009) estimates that nearly 80% of metallurgical grade chromite was used in integrated ferrochromium smelters. China has the largest non-integrated ferrochromium capacity

Production of ferrochromium (high carbon charge grade) between 2004 and 2008 is given in Table 18.3 which shows the rapid increase in output in China.

Table 18.3
World Production of Ferrochromium
(Thousand t gross weight)

	2004	2005	2006	2007	2008[1]
South Africa	2,960	2,506	2,818	3,536	3,260
Kazakhstan	820	908	928	1,070	1,040
China	532	680	858	1,060	1,250
India	527	611	634	820	750
Russia	147	295	304	345	320
Finland	264	235	243	242	240
Zimbabwe	218	257	214	201	210
Brazil	185	170	141	164	175
Sweden	128	127	136	124	115
Turkey	25	16	56	59	60
Others	60	54	39	18	42
Total	**5,866**	**5,859**	**6,371**	**7,639**	**7,462**

[1] Industrial Minerals, March, 2009 (reporting ICDA).
Source, ICDA, 2008, Statistical Bulletin.

Medium and low carbon ferrochromium production was reported by ICDA at 683,000 t in 2008. The principal producers of these grades are Russia and China.

18.4 END-USE SECTORS

The breakdown for the principal uses of chromite ores and concentrates is given in Table 18.4. ICDA notes that production figures are assumed to be 100% for metallurgical use where no breakdown is available. The use of chromite in foundry sands has increased steadily since 2000 while, generally, chromium chemicals have accounted for a declining share of output. Use of chromite in refractories was strong in 2006 and 2007 compared with earlier years.

Table 18.4
Principal Uses for Chromite Ores and Concentrates
(Thousand t gross weight)

	2004	2005	2006	2007	2008
Metallurgical	16,254	17,878	17,723	20,756	21,400
Refractory	101	125	189	180	180
Chemical	753	595	672	531	450
Foundry sands	495	542	657	688	500
Total	**17,602**	**19,141**	**19,241**	**22,154**	**22,530**

Source, ICDA, 2008, Statistical Bulletin.

Refractory chromite is used in products for the linings of iron and steel furnaces, flash and continuous smelters, rotary cement kilns, and glass manufacture.

Chromite is used to manufacture a wide range of chromium chemicals of which chromic acid, sodium dichromate, sodium chromate and sodium chromate tetrahydrate are the most important. The uses of chromium chemicals include metal finishing (corrosion resistance, promotion of adhesion of paint), wood preservative, dyes, oxidizing agents, pigments, leather tanning, oil well drilling and catalysts. However, a number of chromium compounds are hazardous or toxic (particularly hexavalent chromium) and the use of chromite in chromium chemicals has declined significantly with increasing control on usage and on the disposal of chromium-containing wastes.

Chromite foundry sands have good thermal conductivity, resist metal penetration and slag attack, resist thermal shock and have low coefficient of thermal expansion. They are used in manganese-, carbon- and alloy-steel casting and non-ferrous casting.

Production of chromium metal was reported by ICDA at 35,000 t in 2008. It is valued for its resistance to chemical corrosion.

Stainless Steel

Chromium is the only element which results in steels having stainless properties. Stainless steels contain a minimum of 10.5% chromium (International Stainless Steel Forum, ISSF) and are divided into ferritic, martensitic, austenitic and duplex types. All are corrosion resistant. Ferritic steels contain 13-17% chromium and martensitic steels contain around 12% chromium. Austenitic steels contain the highest proportion of chromium, typically 18%. Duplex steels combine austenitic and martensitic structures and contain 18-28% chromium, plus nickel and molybdenum and are used in particularly stringent corrosion conditions.

The ISSF reports production of stainless and heat resisting steels, as shown in Table 18.5. World output exceeded 20 Mt in 2002. Although output in the first two quarters of 2008 exceeded 7 Mt, recessionary conditions resulted in sharply lower production in the third quarter and fourth quarters, at 6.3 Mt and 4.9 Mt, respectively.

Table 18.5
Production of Stainless Steel by Region
(Thousand t ingot/slab equivalent)

Region	2004	2005	2006	2007[1]	2008[1]
Western Europe/Africa	9,422	8,823	9,972	8,669	8,272
Central and Eastern Europe	318	310	363	364	333
Americas	2,933	2,688	2,951	2,604	2,315
Asia	11,897	12,498	15,074	16,200	15,011[2]
Total	**24,570**	**24,319**	**28,359**	**27,836**	**25,930**

[1] Preliminary.
[2] In 2008, China's output reported separately at 6,943,000 t.
Source: ISSF, www.worldstainless.org/Statistics/Crude/2008.htm

18.5 INDUSTRY STRUCTURE

The proportion of mined chromite production by independent, non-integrated companies has generally decreased over the past decade and the majority of mine capacity is now owned and operated by companies in the ferrochromium, chromium chemicals or chromite refractory sectors.

There remains, however, significant international trade in chromite concentrates, directly between producers and end-users or through trading houses.

As shown in Tables 18.2 and 18.3, South Africa dominates production of both chromite and ferrochromium. Xstrata plc (79.5%) and Merafe Resources Ltd. (20.5%) own four chromite mining operations with a combined capacity of approximately 5.6 Mt/y and three ferrochromium operations with combined capacity of over 1.9 Mt/y. Xstrata/Merafe is the world's largest producer of ferrochrome. Samancor Chrome Ltd. (owned by Kermas SA) operates two groups of mines in South Africa with capacity of approximately 3.5 Mt/y and operates three ferrochromium facilities with combined capacity of approximately 1 Mt/y. Assmang Ltd., ASA Metals (Pty) Ltd., Merafe Resources Ltd., Hernic Ferrochrome (Pty) Ltd. and International Ferro Metals Ltd. are smaller integrated producers of ferrochromium. Non-integrated chromite producers are Bayer (Pty) Ltd. and National Manganese Mines (Pty) Ltd. Tata Steel Ltd., of India, is constructing a smelter at Richards Bay to operate on imported chromite feedstock from India and Iran to produce high carbon ferrochromium.

Chromite mining and ferrochromium production in Kazakhstan are carried out by Kazkhrome, founded in 1995 to operate mines based on the Donskoye deposits and the Aktyubinsk and Aksu ferrochromium smelters. Kazkhrome is the world's second largest chromite producer after Xstrata/Merafe and the third largest producer of ferrochromium after Xstrata/Merafe and Samancor. Kazkhrome is owned by Eurasian Natural Resources Corp. (ENRC). The Voskhod chromite deposit was developed by Oriel Resources plc to supply the Tikhvin ferrochromium smelter in Russia. In 2008, the project was taken over by Mechel of Russia which will take it to completion.

In India, integrated chromite and ferrochromium producers are Ferro Alloys Corporation Ltd. (FACOR), IMFA Group and Tata Steel Limited. These companies account for the majority of India's output of both chromite and ferrochromium.

Eti Krom AS (part of the Yildrim Group) has integrated facilities for production of chromite and ferrochromium. Dedeman Madencilik Sanayi ve Ticaret AS has similar chromite output to Eti Krom (approximately 700,000-750,000 t/y). Pema Madencilik Enerji Kimya Sanayi ve Ticaret AS has somewhat lower output, at around 300,000 t/y lump or and concentrate.

The principal ferrochromium producers in Russia are the Kermas Group at Serov and MDM Group at Chelyabinsk and Kuznetsk.

Total import trade reported by the ICDA for 2007 was just under 8.5 Mt, of which China accounted for 6.3 Mt. The largest suppliers to China were South Africa, Turkey and India (4 Mt in total), but smaller volumes were exported by over 10 other countries including Oman and the Philippines. Russia was the second largest importer of chromite in 2007, at just under 1 Mt. This was supplied primarily from Kazakhstan. Imports to the United States were 145,000 tonnes in 2007, essentially all of which was from South Africa. (ICDA, 2008).

18.6 PRICES

There is no terminal market, such as the London Metal Exchange, for chromite and ferrochromium and prices are negotiated between buyers and sellers, either on the spot market or under contract. Representative prices are reported by industry publications. Prices for chromite are quoted monthly by Industrial Minerals journal based on data from industry participants (producers, traders and consumers). It should be noted that such prices are indicative of market activity and do not represent actual transactions. Unit values may also be calculated from trade statistics although it should be noted that these represent value at the point of export or import and not at the mine gate. See Table 18.6.

Table 18.6
Representative Prices for Chromite
(US$/t)

	2004	2005	2006	2007[1]	2008	2009[2]
Metallurgical grade						
South African[3] 40% Cr_2O_3, fob	75-90	65-95	100-145	240-290	320-350	110-130
Turkish 40-402%, 2.5:1				200-300	350	350
Kazakh 40-41% min				200-300	350	350
46% Cr_2O_3, wet bulk, fob						
South African chemical grade	85-125	105-125	175-183	270-350	560-570	210-230
South African foundry grade	130-150	170-195	195-220	300-350	510	240-270
South African refractory grade	100-120	100-120	215-235	455	880	390-410

[1] Turkish and Kazakh metallurgical grades quoted starting January, 2007.
[2] September, 2009.
[3] Friable lumpy grade.
Source: Industrial Minerals, December issues.

Chromite prices in 2009 reflected the sharp slowdown in industrial and economic activity due to the recession. Prices for all South African grades started to fall at the beginning of 2009. The apparent lack of movement in prices for Turkish and Kazakh material may reflect a paucity of business in the first half of the year. In the third quarter, however, companies started to announce higher ferrochromium capacity utilization and to report firming prices.

18.7 POTENTIAL DESTINATIONS FOR CHROMITE FROM THE BLACKBIRD PROPERTY

As noted above, China has become the largest import market for chromite to feed its growing ferrochromium industry. Although South Africa, Turkey and India were by far the largest suppliers, in 2007, Albania, Australia, Oman, Pakistan and the Philippines each exported over 200,000 t to China. Also relatively distant from a potential new source of chromite in Canada, Russia imported approximately 120,000 t from Turkey in 2007 although the principal source is Kazakhstan. Swedish ferroalloy producer, Vargön Alloys AB, owned by the Yildrim Group of Turkey, reported that it imports feedstock from Albania, Brazil, Madagascar and Turkey. The plant is located in southwest Sweden accessible by rail from tidewater at Uddevalla and has a capacity of 180,000 t/y charge chrome and high carbon ferrochromium. Total imports of chromite to Sweden, as reported by ICDA, were 350,000 t gross weight in 2007.

19.0 INTERPRETATION AND CONCLUSIONS

Noront's 2008 – 2009 drilling campaigns at Blackbird 1 and 2 have enabled the definition of chromite resources which, in conjunction with the nearby Eagle's Nest and Eagle 2 MMS deposits, warrant the commissioning of studies into infrastructural development. The broad conclusions from this resource estimate are outlined as follows.

Geological Interpretation and Mineral Resources

BB1 has been adequately tested and the limit of the resource, both vertically and laterally, is established. The chances of expanding this resource in its immediate vicinity are low as several drill holes surrounding this deposit (Figure 11.1 and Figure 17.1) are barren.

BB2 remains open at depth but the lateral extents for all the sub-zones (i.e. BB2-1 to BB2-4) appear to have been well defined by the completed drilling. Micon believes that closer drilling than the existing 50 m grid would not significantly affect the geological interpretation and/or confidence in grade distribution. Infill drill holes where the grid is > 50m, will upgrade the resource while deeper drilling may expand the resources for all the BB2 zones.

The incomplete sampling particularly in BB2-2 and BB2-3 might have culminated in the grades being slightly understated, as zero values have been allocated wherever sampling information is missing within the limits of the solid/mineralization wireframe. However, the incomplete sampling is of small intervals of visibly barren zones between the mineralized bands and/or intervals.

The drilling pattern and grid have provided enough coverage of the Blackbird claims area and Micon believes that all major chromite layers/zones within a depth 300 m of surface have been identified. However, the possibility of a deep-seated body similar to BB1 or larger cannot be ruled out.

Metallurgy and Marketing

Mineralogical and metallurgical work conducted to date is encouraging. Of most significance is the conclusion that a good marketable chromite concentrate product could be produced (using industry standard mineral separation technologies) from the initial samples submitted by Noront. However, the work conducted on the initial samples is inconclusive. More detailed studies are required using representative bulk samples and variability test work.

A review of the current chromite markets worldwide indicates reasonable potential for likely new entrants like Noront's Blackbird deposits.

20.0 RECOMMENDATIONS

In order for Noront to advance the project to the next stage, Micon makes the following recommendations.

For the Short-Medium Term

Infill and deeper drilling to upgrade and expand the resource should focus on the high quality segments of the deposits, i.e. BB2-1, BB2-2 and BB2-4. The areas for infill drilling are easily discernible from Figures 17.2 through 17.5. In every case the deepest hole(s) show strong continuation of high grade mineralization as presented in Table20.1; and this, in Micon's view, is a very strong incentive.

Table 20.1
Table Showing Grade Intercepts of the Deepest Drill holes

Zone	Deepest Drill hole	From (m)	To (m)	Length (m)	%Cr2O3	Cr:Fe Ratio
BB2-1	NOT-08-1G061	502.00	526.00	24.00	35.56	2.03
	NOT-08-1G064	510.00	527.00	17.00	43.84	2.00
BB2-2	NOT-09-1G125	112.40	141.02	28.62	34.13	1.74
BB2-4	NOT-08-1G074	640.22	676.42	36.20	40.8	2.23

For BB2-3a and BB2-3b, drill intercepts not previously sampled should be sampled with emphasis on zones from those areas falling within the limits of the defined mineralization wireframes. It should be noted that even background values as low as 1 to 5% Cr_2O_3 will raise the overall grade, since zero values were allocated wherever there was missing sample information during the estimation process.

Detailed metallurgical work supported by mineralogical studies should be conducted on representative bulk samples. Other than establishing a treatment process for the mineralization this will also define the minimum grade of material acceptable for transformation into economic grade concentrates. This program should include the following:

- Detailed mineralogy to investigate chromite grain liberation characteristics, chromite grain chemistry and gangue mineralogy.
- Beneficiation of a wide variety of chromite feed grades encompassing all chromite lithologies found at the Blackbird deposit.
- Establishment of product quality / recovery relationships for a variety of feed samples.
- Investigation of the occurrence, association and potential recovery of PGMs and base metal sulphides.
- Investigation of the marketing potential of Blackbird chromite concentrates.

Basic engineering studies for infrastructural requirements should be initiated taking into account the Eagle's Nest and Eagle 2 Ni-Cu-PGE deposits and the recently discovered Triple J gold deposit, all of which are owned by Noront. The possible synergies from cooperation with third parties holding prospective mining interests in the McFaulds Lake area should be investigated.

Following the completion of detailed metallurgical work, feasibility studies should follow, if warranted.

For the Medium-Long Term

Depending on the potential for an underground operation, deep drilling should be conducted with the objective of increasing the resource for BB2 (1 to 4).

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22.0 CERTIFICATES

CERTIFICATE OF AUTHOR
RICHARD M. GOWANS P.Eng.

As a co-author of this report entitled "Technical Report on the Mineral Resource Estimate for the Blackbird Chromite Deposits, James Bay Lowlands, Northern Ontario, Canada" dated December 31, 2009, I, Richard M. Gowans, P. Eng. do hereby certify that:

1. I am employed by, and carried out this assignment for
   Micon International Limited
   Suite 900, 390 Bay Street
   Toronto, Ontario
   M5H 2Y2
   tel. (416) 362-5135 fax (416) 362-5763
   e-mail: rgowans@micon-international.com

2. I hold the following academic qualifications:
3.
   B.Sc. (Hons) Minerals Engineering, The University of Birmingham, U.K. 1980

3. I am a registered Professional Engineer of Ontario (membership number 90529389); as well, I am a member in good standing of the Canadian Institute of Mining, Metallurgy and Petroleum.

4. I have worked as an extractive metallurgist in the minerals industry for over 28 years.

5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes the management of technical studies and design of numerous metallurgical testwork programs and metallurgical processing plants.

6. I have not visited the project site.

7. I am responsible for the preparation of Section 16 of this report entitled "Technical Report on the Mineral Resource Estimate for the Blackbird Chromite Deposits, James Bay Lowlands, Northern Ontario, Canada" dated December 31, 2009.

8. I am independent of the parties involved in the Blackbird property, other than providing consulting services.

9. I have had no prior involvement with the mineral property in question.

10. I have read NI 43-101 and the portions of this report for which I am responsible have 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.

Effective Date: December 31, 2009
Signing Date: January 22, 2010

"Richard M. Gowans" {signed and sealed}

Richard M. Gowans, P.Eng.

CERTIFICATE OF AUTHOR
JANE SPOONER, M.Sc., P.Geo.

As a co-author of this report entitled "Technical Report on the Mineral Resource Estimate for the Blackbird Chromite Deposits, James Bay Lowlands, Northern Ontario, Canada" dated December 31, 2009, I, Jane Spooner, P.Geo., do hereby certify that:

4. I am employed by, and carried out this assignment for

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5. I hold the following academic qualifications:

B.Sc. (Hons) Geology, University of Manchester, U.K.	1972
M.Sc., Environmental Resources, University of Salford, U.K.	1973

12. I am a member of the Association of Professional Geoscientists of Ontario (membership number 0990); as well, I am a member in good standing of the Canadian Institute of Mining, Metallurgy and Petroleum.

13. I have worked as a specialist in mineral market analysis for over 30 years.

14. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes the analysis of markets for base and precious metals, industrial and specialty minerals, coal and uranium.

15. I have not visited the project site.

16. I am responsible for the preparation of Section 18 of this report entitled "Technical Report on the Mineral Resource Estimate for the Blackbird Chromite Deposits, James Bay Lowlands, Northern Ontario, Canada" dated December 31, 2009.

17. I am independent of the parties involved in the Blackbird property, other than providing consulting services.

18. I have had no prior involvement with the mineral property in question.

19. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.

20. 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.

Effective Date: December 31, 2009
Signing Date: January 22, 2010

"Jane Spooner" {signed and sealed}

Jane Spooner, M.Sc., P.Geo.

CERTIFICATE OF AUTHOR
ALAN J. SAN MARTIN

As a co-author of this report entitled "Technical Report on the Mineral Resource Estimate for the Blackbird Chromite Deposits, James Bay Lowlands, Northern Ontario, Canada" dated December 31, 2009, I, Alan J. San Martin do hereby certify that:

1) I am employed by Micon International Limited, Suite 900, 390 Bay Street, Toronto, Ontario M5H 2Y2, tel. (416) 362-5135, fax (416) 362-5763, e-mail asanmartin@micon-international.com;

2) I hold the following academic qualification:

   Bachelor Degree in Mining Engineering (equivalent to B.Sc.) National University of Piura, Peru, 1999;

3) I am a registered Mining Engineer with The Australasian Institute of Mining & Metallurgy, membership #301778;

4) I have worked as a mining engineer in the minerals industry for 10 years;

5) I am familiar with NI 43-101, as member of a recognized association and designation accordingly with the 43-101 regulation; I am Qualified Person in Canada. My work experience includes 8 years as a DBA in Exploration Projects in Peru and Ecuador, carrying out mineral resource estimates. My work has been discussed and agreed with Charley Murahwi, the main author and Qualified Person for this report;

6) I have not visited the Blackbird property;

7) As of the date of this certificate to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make this report not misleading;

8) I am independent of the parties involved in the Blackbird Property, other than providing consulting services;

9) I assisted in the preparation of section 17 of this Technical Report dated December 31, 2009 and entitled "Technical Report on the Mineral Resource Estimate for the Blackbird Chromite Deposits, James Bay Lowlands, Northern Ontario, Canada"

Effective Date: December 31, 2009
Signing Date: January 22, 2010

"Alan J. San Martin"

Alan J. San Martin, MAusIMM.

CERTIFICATE OF AUTHOR
CHARLEY Z. MURAHWI

As a co-author of this report entitled "Technical Report on the Mineral Resource Estimate for the Blackbird Chromite Deposits, James Bay Lowlands, Northern Ontario, Canada" dated December 31, 2009, I, Charley Z. Murahwi do hereby certify that:

1) I am employed as an Senior Geologist by, and carried out this assignment for, Micon International Limited, Suite 900, 390 Bay Street, Toronto, Ontario M5H 2Y2, telephone 416 362 5135, fax 416 362 5763, e-mail cmurahwi@micon-international.com.

2) I hold the following academic qualifications:
B.Sc. (Geology) University of Rhodesia, Zimbabwe 1979
Diplome d´Ingénieur Expert en Techniques Minières, Nancy, France 1987
M.Sc. (Economic Geology), Rhodes University, South Africa, 1996.

3) I am a registered Professional Geoscientist of Ontario (membership # 1618), a registered Professional Natural Scientist of South Africa (SACNASP membership # 400133/09) and a registered member of the AusIMM (membership # 300395).

4) I have worked as a mining and exploration geologist in the minerals industry for over 28 years;

5) I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 12 years on Cr-Ni-Cu-PGE deposits (on and off-mine), and the balance on a wide variety of other mineral commodities including gold, silver, copper, nickel, tin, and tantalite.

6) I visited the Blackbird chrome project area from 6 to 9 July, 2009 and the Activation Laboratory in Thunder Bay on 10 July, 2009.

7) I have had no prior involvement with the mineral property in question.

8) As of the date of this certificate to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make this report not misleading.

9) I am independent of the parties involved in the Blackbird property, other than providing consulting services.

10) I have read the NI 43-101 and the portions of this Technical Report for which I am responsible have been prepared in compliance with this Instrument.

11) I am responsible for the preparation of all sections except Sections 16 and 18 of this Technical Report dated December 31, 2009 and entitled "Technical Report on the Mineral Resource Estimate for the Blackbird Chrome Deposits, James Bay Lowlands, Northern Ontario, Canada".

Effective Date: December 31, 2009.
Signing Date: January 22, 2010

"Charley Z. Murahwi" {signed and sealed}

Charley Z. Murahwi, M.Sc., P. Geo., Pr.Sci.Nat, MAusIMM

APPENDICES

APPENDIX 1

FULL EXTRACT OF GEOLOGICAL DESCRIPTION FROM J. E. MUNGALL'S REPORT DATED MAY, 2009

FULL EXTRACT FROM NORONT'S 2009 INTERNAL REPORT BY PROFESSOR JIM MUNGALL, P.GEO., CHIEF GEOLOGIST

Geology and Geophysics

Superior Province

The McFauld's Lake area is underlain by Precambrian rocks of the northwestern part of the Archean Superior Province. The Superior Province forms the nucleus of the Canadian Shield and is the world's largest contiguous exposed Archean craton. The northwestern Superior Province is composed of a series of major Mesoarchean volcanic and plutonic belts trending from west to east that each formed as separate microcontinents < 3.0 Ga and are separated by younger Neoarchean metasedimentary belts and crustal-scale faults. These continental fragments underwent rifting and lateral transport through processes widely considered to have been essentially the same as the plate tectonic processes presently operative in largely oceanic domains such as the western Pacific Ocean. Subduction of the oceanic crust between these protocontinents eventually led to their collision and amalgamation to form the current fabric of the Superior Province.

The McFauld's Lake area lies within a domain of the western Superior Province formerly called the Sachigo Subprovince but later renamed the North Caribou Superterrane (Rayner and Stott, 2005; Percival et al., 2006) or more recently, Sachigo Superterrane (Fig. 4; Stott, 2007; this terminology is adopted here). The core of the Sachigo Superterrane is the North Caribou terrane, an amalgamation of volcanic, metasedimentary, and plutonic rocks that was originally formed prior to 3.0 Ga but underwent repeated episodes of deformation and plutonism between 3.0 and 2.7 Ga (Percival et al., 2006). Around the margins of the North Caribou terrane there are remnants of a platformal sedimentary succession comprising quartzite, arkose, and iron formation, and overlain by mafic to komatiitic lavas thought to have resulted from rifting of the protocontinental landmass ca. 2990 Ma .

Subsequent to the rifting event, the North Caribou terrane experienced intermittent episodes of arc volcanism, sedimentation, accretion of fragments of intra-oceanic island arcs and obduction of oceanic crust as a result of subduction of oceanic crust underneath it on both its northern and southern margins. The largely juvenile crust accreted onto the margins of the North Caribou terrane in an upper plate configuration during this period is recognized as the Island Lake Domain on its north margin and the Uchi Domain (formerly Uchi Subprovince) on its south margin.

The Oxford-Stull Domain (Thurston et al., 1991; Oxford-Stull Subprovince of Rayner and Stott, 2005), which contains the McFauld's Lake greenstone belt, runs east-southeastward along the northern margin of the North Caribou terrane from northwestern Manitoba to north-central Ontario where it extends under the Paleozoic cover rocks of the James Bay Lowlands. It is distinguished from the North Caribou terrane by its lack of pre-3.0 Ga crustal age as determined by U-Pb dating or Sm-Nd isotope systematics. Its southern boundary is a series of major ductile shear zones that separate it from the rest of the Sachigo Superterrane. In the McFauld's Lake region this boundary is called the Stull-Wunnummin fault; it passes immediately south of the Big Trout Lake greenstone belt to the northwest and immediately north of the Wunnummin greenstone belt closer to McFauld's Lake. The northern boundary of the Oxford-Stull Domain is the North Kenyon fault, a major ductile strike-slip deformation corridor (Stone et al., 1998) that separates the entire Sachigo Superterrane from the Northern Superior Superterrane to the north, which is recognized as another older (> 3.0 Ga) continental fragment.

The detailed tectonic history of the McFauld's Lake greenstone belt has yet to be determined. As recently as 1999 (Percival et al., 1999) no such greenstone belt was recognized there due to the near-total absence of outcrops of supracrustal rocks in the region. The discovery of the McFauld's Lake VMS deposits in 2003 attracted attention to the area and it is now recognized that a significant greenstone belt exists at the eastern limit of exposure of the Oxford-Stull Domain where it disappears under the Paleozoic cover. Preliminary U-Pb dating of 11 plutonic and volcanic rocks in the area allow a general idea of its evolution to be proposed (Rayner and Stott, 2005).

The oldest known rock within 100 km of McFauld's Lake is a tonalite to granodiorite gneiss with an igneous emplacement age of 2813±4 (Rayner and Stott, 2005). The 7 other plutonic rocks from within the Oxford-Stull Domain dated by Rayner and Stott (2005) range in age from 2727 to 2683 Ma. Some of the plutonic rocks in this age range contain inherited zircon cores as old as 2886, consistent with the apparent crust-formation ages of 2.7 to 2.95 Ga. A sample of intermediate volcanic rock from drill core at the McFauld's Lake VMS deposits gave a U-Pb age of 2737 Ma and a crust-formation age of 2.84 Ga.

McFauld's Lake region

Knowledge of the local geology in the McFauld's Lake greenstone belt is constrained almost exclusively through airborne geophysical surveys and diamond drilling, both motivated by exploration for diamonds and base and precious metals. Outcrops are scarce, being concentrated mostly along water courses that have scoured down through Pleistocene overburden. Outcrops are almost exclusively erosion-resistant granitoid rocks even in areas known from diamond drilling to contain abundant supracrustal sequences. The most useful data at the regional scale are the airborne magnetometer survey results compiled in Figure 5.

A key feature of this image is the formational magnetic high that forms a half-circle 60 km in diameter in the middle of the figure. This feature was named the Ring of Fire (ROF) early in the exploration history of the area in recognition of its proximity to several newly discovered mineral deposits, including the McFauld's Lake VMS deposits and the Eagle One and Eagle Two magmatic sulfide deposits. Numerous diamond drill hole intersections of the ROF show that the high magnetic susceptibility is in most cases produced by the presence of silicate- and oxide-facies iron formation that locally contains highly conductive pyrrhotite laminae. The iron formation is interpreted to face outward from the ROF, based on such features as layering in ultramafic-mafic sills and the settling of magmatic sulfides within ultramafic intrusions. This prominent marker horizon separates older highly deformed rocks within the ROF from younger rocks outside the ROF that show relatively simple aeromagnetic fabric indicative of a simpler deformational history.

The preponderance in outcrop of plutonic felsic intrusive rocks within the ROF has led to its historical classification as a purely plutonic domain. Recently at least five different VMS deposits have been discovered through diamond drilling in the area. These, combined with high quality airborne geophysical data, make it plain that this region comprises a complexly folded and refolded package of metasediments and metavolcanic rocks whose volume has been tremendously inflated by younger felsic intrusions but whose ultimate origin as a supracrustal belt is undeniable.

Away from the ROF, where diamond drilling has been sparser, it is difficult to interpret the aeromagnetic fabric with any confidence. A plausible interpretation of the information available to to date is that the crust inside the ROF and similar domal bodies is the oldest crust in the region. These bodies, volumetrically dominated by felsic plutonic rocks in the McFauld's Lake region, were first formed ca. 2.85 to 2.95 Ga as an amalgamation of juvenile volcanic rocks, sediments, and coeval plutons in an intra-oceanic island arc. These later underwent deformation, perhaps during accretion onto the Sachigo Superterrane, and following a period of erosion were covered by a regionally extensive iron formation (the ROF), which was covered in turn by a sedimentary and volcanic package (the McFauld's Lake greenstone belt). Both the older polydeformed rocks within the ROF and the younger rocks of the McFauld's Lake greenstone belt were intruded and inflated by subvolcanic felsic to intermediate plutons during the period from 2727 to 2683 Ma.

At some time after the deposition of the ROF iron formation a major episode of ultramafic magmatism was marked by the emplacement of peridotitic to dunitic dikes and sills of the Double Eagle Intrusive Complex. These bodies cut older tonalitic to granodioritic intrusions that are structually beneath the iron formation, and they also cut up through the iron formation and into the overlying mafic to intermediate lava flows. The ultramafic dikes below the iron formation are host to several magmatic Ni-Cu-PGE sulfide occurences, notably including the Eagle One deposit. The ultramafic intrusions above the dikes were preferentially developed at the horizon formerly occupied by the ROF iron formation, which has been replaced by extensive layered sills of dunite, harzburgite, orthopyroxenite, and chromitite, probably through a process of magmatic assimilation. The Blackbird, Big Daddy, and Black Thor chromitite deposits are hosted by examples of these ultramafic sills. Further diamond drilling may eventually indicate that these deposits are all hosted by the same regionally extensive ultramafic intrusion.

Subsequent, and as yet undated, igneous activity in the region included the intrusion of a suite of ultrapotassic mafic dykes possibly correlative with the shoshonitic volcanic rocks of the Oxford Lake assemblage (Percival et al. 2006), and the late-tectonic to post-tectonic intrusion of leucogranites and rare element-rich pegmatites into all older lithologies.

The current dome and basin structure of updomed older volcano-plutonic massifs surrounding synclinal keels of younger greenstones is typical of Archean greenstone belts and probably formed during a compressional stage of the continental collisional orogeny that accreted the Northern Superior Superterrane onto the Sachigo Superterrane ca. 2720 Ma (Percival et al., 2006).

Property

The Double Eagle property straddles the E-NE trending boundary between a large felsic intrusive complex to the northwest and the overlying ROF sequence of iron formation, mafic to intermediate lavas, and metasediments on the southeastern rim of the Ring of Fire. The majority of the inferred strike extent of the Double Eagle Intrusive Complex falls within Noront-owned claims along the upper contact of the felsic intrusion and partially replacing the ROF. A geological map of the part of the Double Eagle property and surrounding claims on which the bulk of exploration has been conducted appears in Figure 6.

APPENDIX 2

PETROGRAPHIC REPORT OF THE HOST ROCKS OF THE BLACKBIRD DEPOSITS

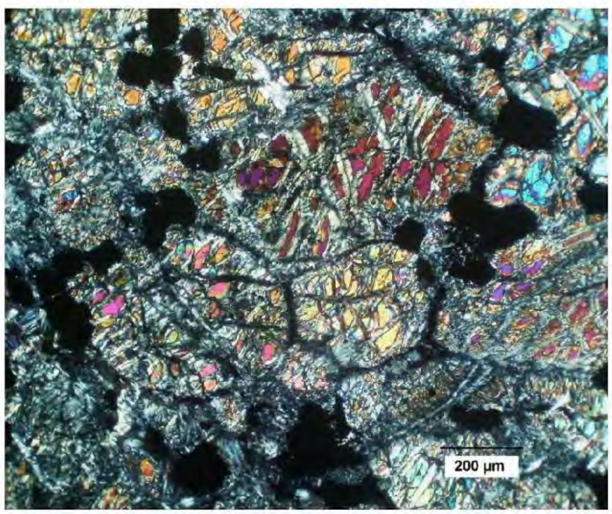
(ONLY THE INTRODUCTION, DISCUSSION & SUMMARY ARE APPENDED HERE)

micon INTERNATIONAL LIMITED | mineral industry consultants

Noront Resources Ltd.

Final Report

Petrographic Report of the Host Rocks of the Blackbird Deposits, Ring of Fire, ON.



by Bronwyn Azar, HBSc

August 4, 2008

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Table of Contents

Introduction

The Blackbird deposits are situated in northern Ontario, Canada, to the north west of the Attawapiskat River, 250 kilometres west of James Bay in the Western James Bay Lowlands and approximately 250 kilometres west of the community of Attawapiskat on James Bay. The property is currently under exploration by Noront Resources Limited. The property lies within the Ring of Fire Intrusion (RFI), an ultramafic intrusion. The RFI was emplaced along the margin of a large granodiorite pluton (footwall) which caused doming of Sachigo greenstone belt rocks (hanging wall). Currently, the footwall and hanging wall are structurally reversed due to overturning of the RFI. The purpose of this report is to determine whether the host rocks of the Blackbird chromite deposits display a distinct fractionation and confirm the younging direction of the sill.

A suite of 20 samples representing 3 different drill holes were analyzed in this study. The suite was chosen by Charley Murahwi, P Geo, who was contacted to produce a NI 43-101 compliant resource estimate for the Blackbird deposits in the summer of 2009.

Sample	Hole Number	Depth	Location	Easting	Northing	Elevation	Azimuth (°)	Plunge (°)
1G025 171	NOT-09-1G025	171	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G025 249	NOT-09-1G025	249	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G025 299	NOT-09-1G025	299	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G025 309	NOT-09-1G025	309	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G025 319	NOT-09-1G025	319	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G025 329	NOT-09-1G025	329	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G025 339	NOT-09-1G025	339	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G025 349	NOT-09-1G025	349	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G025 359	NOT-09-1G025	359	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G025 369	NOT-09-1G025	369	Blackbird 1	546101.9	5842026.1	169.2	0	-90
1G130 67	NOT-09-1G130	67	Blackbird 2	546996	5842245	172	155	-50
1G130 147.35	NOT-09-1G130	147.35	Blackbird 2	546996	5842245	172	155	-50
1G130 154.85	NOT-09-1G130	154.85	Blackbird 2	546996	5842245	172	155	-50
1G130 172	NOT-09-1G130	172	Blackbird 2	546996	5842245	172	155	-50
1G130 182	NOT-09-1G130	182	Blackbird 2	546996	5842245	172	155	-50
1G130 204.75	NOT-09-1G130	204.75	Blackbird 2	546996	5842245	172	155	-50
1G130 241.15	NOT-09-1G130	241.15	Blackbird 2	546996	5842245	172	155	-50
1G136 80.25	NOT-09-1G136	80.25	Blackbird 2	546947	5842344	170	155	-50
1G136 301.9	NOT-09-1G136	301.9	Blackbird 2	546947	5842344	170	155	-50
1G136 312	NOT-09-1G136	312	Blackbird 2	546947	5842344	170	155	-50

Table 1: List of sample locations and corresponding drill hole information, all values are reported in metres unless indicated otherwise

4

Discussion and Summary

The purpose of this study is to examine the mineralogy of three holes in the Blackbird deposits to determine if differentiation of the sill is evident. The two holes NOT-09-1G130 and NOT-09-1G130 showed evidence supporting this hypothesis, whereas, the third hole NOT-08-1G025 did not. The holes in Blackbird 2 display the transition from peridotite/dunite to gabbro downhole, indicating that the Blackbird 2 deposit is overturned. Folding and pinching off of the sill in Blackbird 1 may account for the lack of differentiation observed in hole NOT-08-1G025.

NOT-08-1G025

The first sample collected in this hole is representative of the “footwall” of the ultramafic-mafic intrusion, being a monzodiorite mainly composed of plagioclase. The first ultramafic sample is talc-magnesite altered peridotite. Following that sample, samples were taken every 10m from 299m to 369m. There is little variability between the samples taken 10m apart. All of these samples are serpentine-magnetite-magnesite altered peridotites to dunites with one notable exception at 359m which still has some olivine preserved; the following sample also has trace olivine remaining. There is also variation in the magnetite content of the rocks, which is likely reflected as a colour change in the rock. Where the olivine pseudomorphs are visible they represent between 80-95% of the rock, corresponding with peridotite to dunite compositions. These are examples of olivine cumulates that would have formed at the bottom of the sill when it was intruded.

NOT-09-1G130

The first sample collected is a talc-carbonate altered peridotite or dunite. The talc-carbonate assemblage can only be found in highly magnesian rocks with excess of 25% MgO. Downhole the prevalence of biotite increased as did the presence of amphiboles in the samples. Between 172m and 182m there is a significant mineralogical change where plagioclase appears and talc disappears from the rocks. This is where there is an ultramafic to mafic transition. It is likely that some of the talc-altered rocks prior to this transition were once pyroxenites, but the alteration and metamorphism has destroyed the original textures. Downhole, the prevalence of feldspars increases as does the presence of chlorite as the main mafic replacement mineral.

NOT-09-1G136

The first sample collected is a talc-carbonate altered peridotite or dunite. The talc-carbonate assemblage can only be found in highly magnesian rocks with excess of 25% MgO. The following sample taken was a pyroxenite largely consisting of unaltered pyroxene. Between 301.90m and 312, plagioclase becomes a part of the mineral assemblage marking the transition from ultramafic to mafic rocks downhole.

APPENDIX 3

EXAMPLE OF QC REPORT FOR THE DOUBLE EAGLE PROJECT

MEMORANDUM

TO: J. Mungall, J. Atkinson, M. Downey

CC: J. Harvey, P&E

FROM: Tracy Armstrong, P. Geo., Jarita Barry

DATE: July 07, 2009

SUBJECT: May 2009 Quality Control Report for Double Eagle Project, James Bay Lowlands, Ontario

Noront has implemented a thorough quality assurance/quality control (QC) program for the 2008-2009 drill programs at the Double Eagle Project with the insertion of certified reference materials (standards), field blanks and field duplicates. For May 2009, the QC results for the batches listed in Table 1 are described. All samples were sent to Activation Laboratories ("Actlabs") in Thunder Bay, Ontario for sample preparation and forwarded to Actlabs in Ancaster, Ontario for analysis. The last batch for which results had been received and detailed in this report is Batch 497c. Note that there are batches missing in the sequence.

Table 1: List of Analytical Certificates Included in the May QC Report

Batch No.	Laboratory	Lab Certificate No.	Date green light	No. of samples
363	Actlabs	A09-0945final	May 5	35
423	Actlabs	A09-1406final	May 5	35
428	Actlabs	A09-1408final	May 5	35
415	Actlabs	A09-1369xrf	May 5	35
355	Actlabs	A09-0955	May 5	35
432	Actlabs	A09-1438	May 5	35
449	Actlabs	A09-1536final	May 5	35
453	Actlabs	A09-1546final	May 5	35
479	Actlabs	A09-1791final	May 5	34
485c	Actlabs	A09-1823final	May 5	35
480	Actlabs	A09-1824final	May 5	35
481	Actlabs	A09-1825final	May 5	35
483	Actlabs	A09-1827final	May 5	35
486c	Actlabs	A09-1866final	May 5	35
487s	Actlabs	A09-1868final	May 5	35
489c	Actlabs	A09-1869final	May 5	35
490c	Actlabs	A09-1871final	May 5	35
497c	Actlabs	A09-1887final	May 5	35
375	Actlabs	A09-1032final	May 19	35
374	Actlabs	A09-1035final	May 19	35
404	Actlabs	A09-1273final	May 19	35
425	Actlabs	A09-1399final	May 19	35
424	Actlabs	A09-1400final	May 19	35
426	Actlabs	A09-1401final	May 19	35
427	Actlabs	a09-1403final	May 19	35
429	Actlabs	a09-1409final	May 19	35

430	Actlabs	a09-1410final	May 19	35
422	Actlabs	a09-1411final	May 19	35
431	Actlabs	A09-1437final	May 19	35
433	Actlabs	a0-9-1439final	May 19	35
436	Actlabs	A09-1440final	May 19	35
434	Actlabs	A09-1441final	May 19	35
435	Actlabs	A09-1442final	May 19	35
440	Actlabs	A09-1445final	May 19	35
441	Actlabs	A09-1447final	May 19	35
442	Actlabs	A09-1448final	May 19	35
443	Actlabs	A09-1518final	May 19	35
444	Actlabs	A09-1522final	May 19	35
445	Actlabs	A09-1526final	May 19	35
446	Actlabs	A09-1530final	May 19	35
447	Actlabs	A09-1532final	May 19	35
448	Actlabs	A09-1533final	May 19	35
450	Actlabs	A09-1542final	May 19	35
452	Actlabs	A09-1543final	May 19	35
461	Actlabs	A09-1557final	May 19	35
460	Actlabs	A09-1558final	May 19	35
459	Actlabs	A09-1559final	May 19	35
458	Actlabs	A09-1562final	May 19	35
457	Actlabs	A09-1563final	May 19	35
456	Actlabs	A09-1574final	May 19	35
455	Actlabs	A09-1577final	May 19	35
454	Actlabs	A09-1579final	May 19	35
462	Actlabs	A09-1620final	May 19	35
463	Actlabs	A09-1624final	May 19	35
465	Actlabs	A09-1631final	May 19	35
466	Actlabs	A09-1632final	May 19	35
468	Actlabs	A09-1636final	May 19	35
469	Actlabs	A09-1639final	May 19	35
471	Actlabs	A09-1641final	May 19	35
475	Actlabs	A09-1706final	May 19	35
473	Actlabs	A09-1707final	May 19	35
467	Actlabs	A09-1634final	May 20	35
437	Actlabs	A09-1443final	May 29	35
438	Actlabs	A09-1444final	May 29	35
439	Actlabs	a09-1446final	May 29	35
451	Actlabs	A09-1537final	May 29	35
464	Actlabs	A09-1625final	May 29	35
TOTAL				**2344**

A total of 67 batches and 2344 samples were sent to Actlabs for analysis. This number includes the QC samples inserted in each batch. Samples were assembled into batches of 35 samples (except where stated in Table 1) which included two certified reference materials, two blank samples until batch 426 and one blank sample from batch 427 comprised of sterile rock, one pulp duplicate, one coarse reject duplicate and one field (1/4 core) duplicate. Noront discontinued the testing of pulp replicate duplicate samples during the month of May.

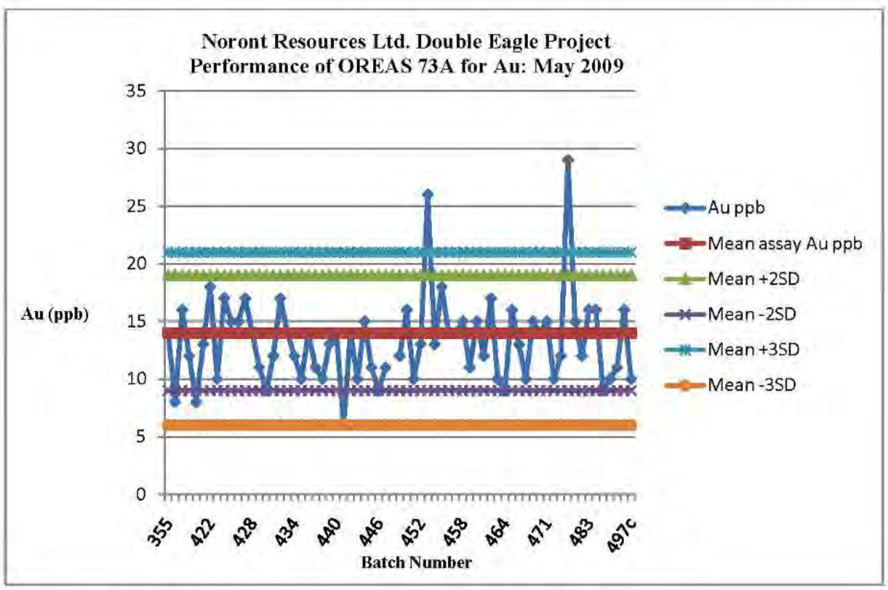
Noront also commenced separating their batches into three different types to monitor for chromium, sulphide and magnetite during the month of May. The certified reference materials that are inserted into each batch vary according to the batch type, with the chromium ('c') batches containing one OREAS 73A and one SARM8 standard, the sulphide ('s') batches containing an OREAS 73A and one of the PGMS-11 or PGMS-16 standards and the magnetite ('m') batches containing one OREAS 73A and one AMIS 0129 standard.

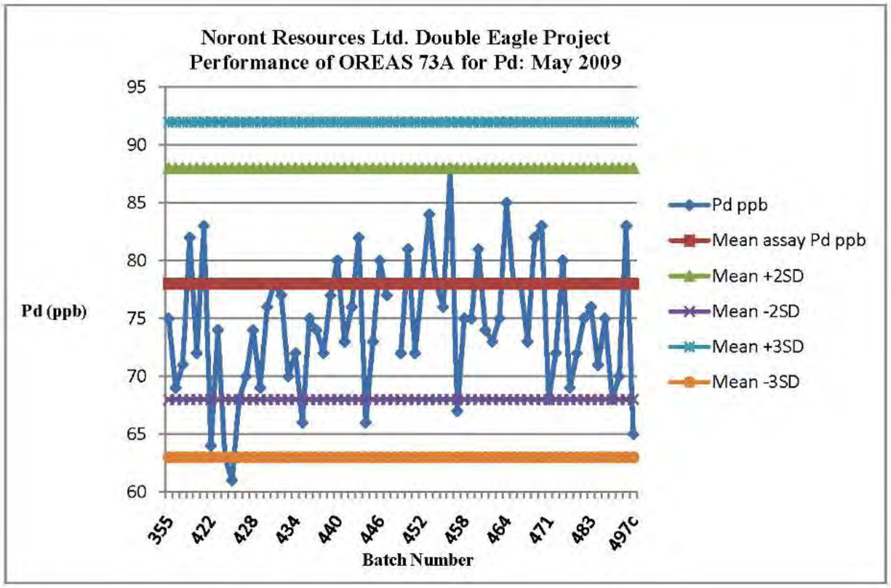
OREAS 73A Reference Material

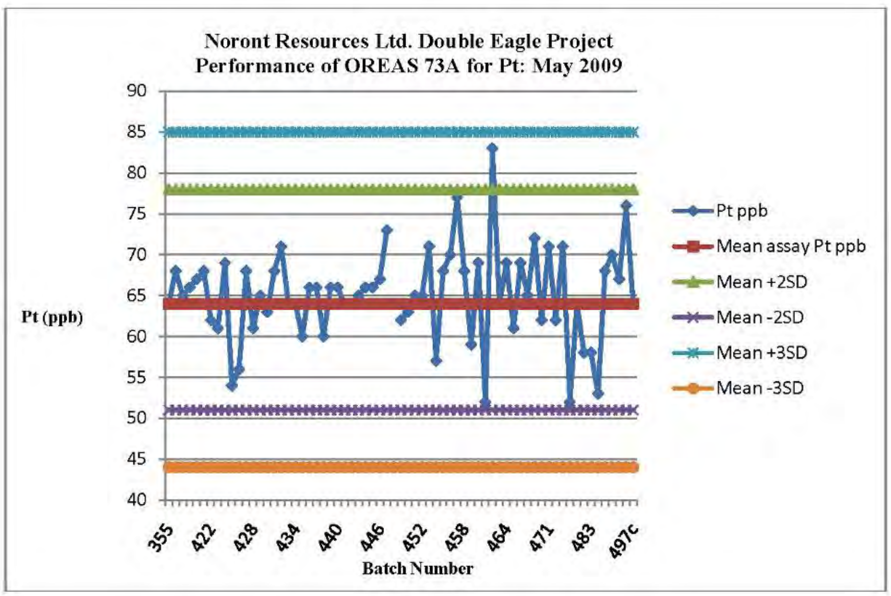
The OREAS 73A certified reference material was purchased from Analytical Solutions Ltd. ("ASL") in Toronto, Ontario. The supplier is Ore Research & Exploration Pty Ltd. in Australia. The standard is made from a blend of ore from the Cosmos Nickel Mine in Western Australia and barren ultramafic material. It is certified for Au, Pd, Pt, Cu and Ni. There were 67 data points for this reference material.

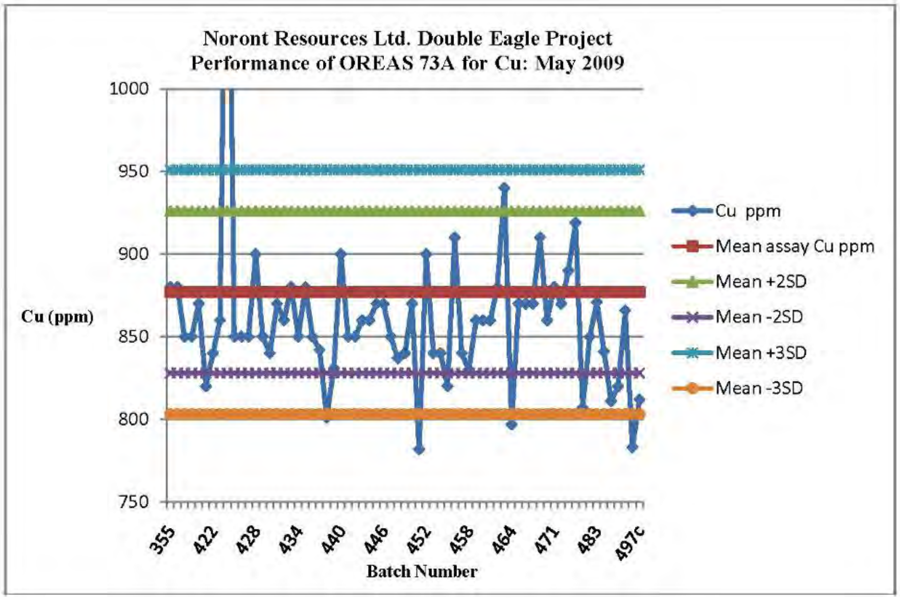
There were 5 failures for Cu, 4 failures for Ni, 3 failures for Au, 2 failures for Pd and no failures for Pt. There were also 8 missing results for Ni and one missing result for each of Au, Pd and Pt (i.e. an OREAS 73A sample was inserted into these batches however not all elements were assayed).

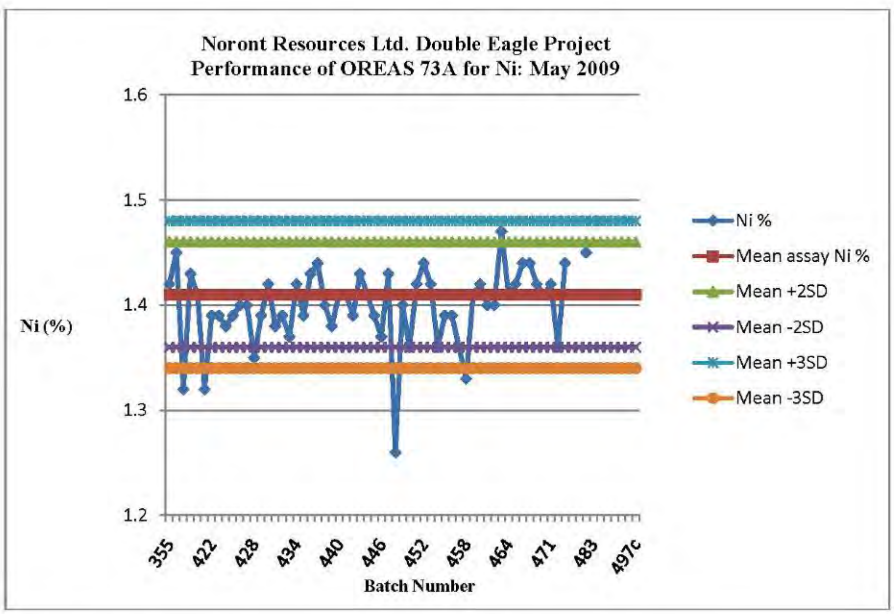
The following graphs present the data for all five elements. All certificates as represented by the data in these graphs have been given the green light for use in the master database. Any failures demonstrated in the graphs below were resolved, due to the other standard in the same batch passing the QC and/or very low-grade results within a particular batch and/or conformance of the lab's QC. Batches with missing OREAS 73A assay results were similarly passed due to the other standard in the same batch passing the QC and/or very low-grade results within a particular batch and/or conformance of the lab's QC.




Noront Resources Ltd. Double Eagle Project
Performance of OREAS 73A for Pd: May 2009
Pd (ppb)
95
90
85
80
75
70
65
60
355
422
428
434
440
446
452
458
464
471
483
497c
Batch Number
Pd ppb
Mean assay Pd ppb
Mean +2SD
Mean -2SD
Mean +3SD
Mean -3SD

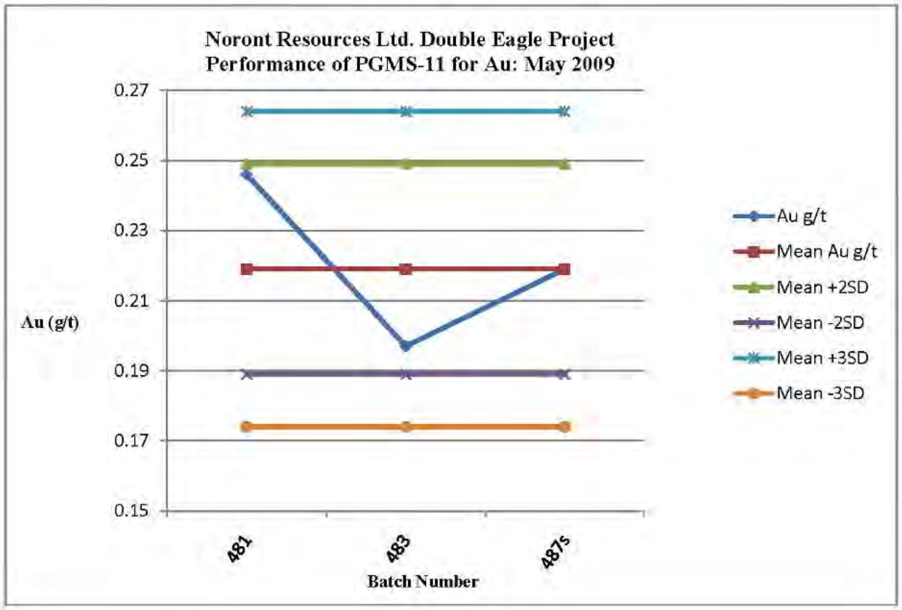

Noront Resources Ltd. Double Eagle Project
Performance of OREAS 73A for Pt: May 2009
Pt (ppb)
90
85
80
75
70
65
60
55
50
45
40
355
422
428
434
440
446
452
458
464
471
483
497c
Batch Number
Pt ppb
Mean assay Pt ppb
Mean +2SD
Mean -2SD
Mean +3SD
Mean -3SD

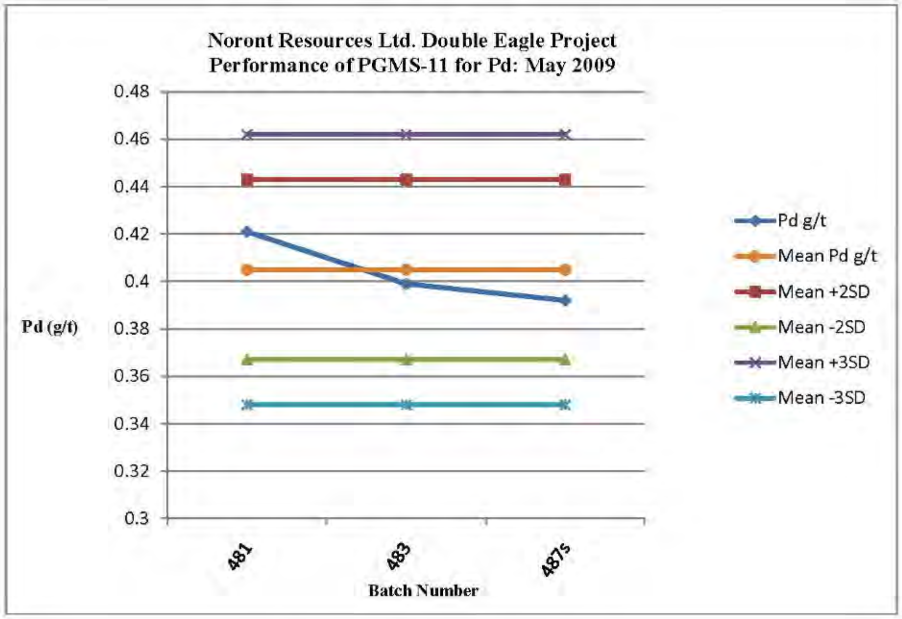

Noront Resources Ltd. Double Eagle Project
Performance of OREAS 73A for Cu: May 2009
1000
950
900
850
800
750
Cu (ppm)
355
422
428
434
440
446
452
458
464
471
483
497c
Batch Number
Cu ppm
Mean assay Cu ppm
Mean +2SD
Mean -2SD
Mean +3SD
Mean -3SD

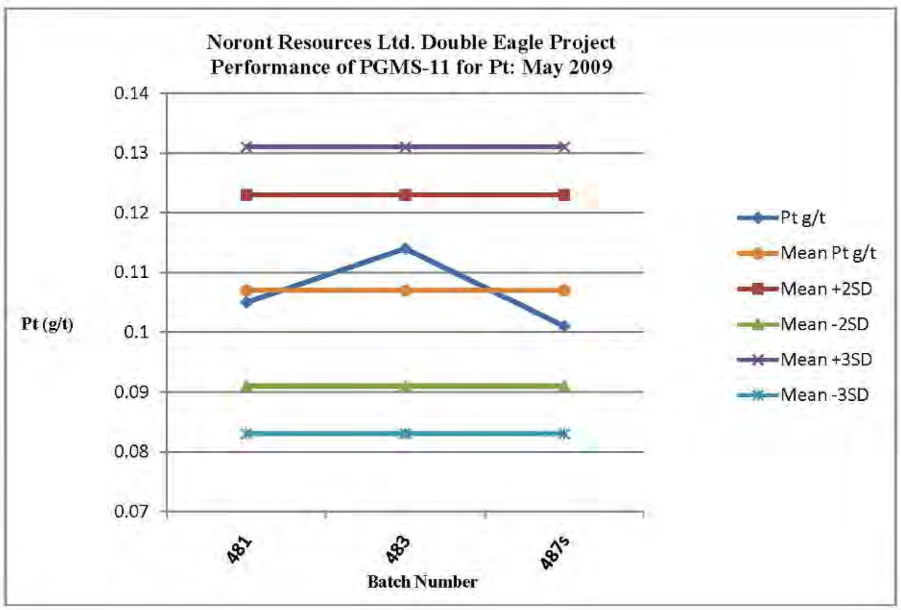

Noront Resources Ltd. Double Eagle Project
Performance of OREAS 73A for Ni: May 2009
1.6
1.5
1.4
1.3
1.2
Ni (%)
355
422
428
434
440
446
452
458
464
471
483
497c
Batch Number
Ni %
Mean assay Ni %
Mean +2SD
Mean -2SD
Mean +3SD
Mean -3SD

PGMS-11 Reference Material

The PGMS-11 certified reference material was purchased from CDN Resource Labs in Delta, British Columbia, who made and certified the standard. It is made from ore supplied by Stillwater Mining Corporation from the Stillwater Complex in Montana. It is certified for Au, Pd and Pt. There were three data points for this reference material and all points passed on all three elements. Results are graphed below.




Noront Resources Ltd. Double Eagle Project
Performance of PGMS-11 for Pd: May 2009
Pd (g/t)
0.48
0.46
0.44
0.42
0.4
0.38
0.36
0.34
0.32
0.3
481
483
487s
Batch Number
Pd g/t
Mean Pd g/t
Mean +2SD
Mean -2SD
Mean +3SD
Mean -3SD


Noront Resources Ltd. Double Eagle Project
Performance of PGMS-11 for Pt: May 2009
Pt (g/t)
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
481
483
487s
Batch Number
Pt g/t
Mean Pt g/t
Mean +2SD
Mean -2SD
Mean +3SD
Mean -3SD

PGMS-16 Reference Material

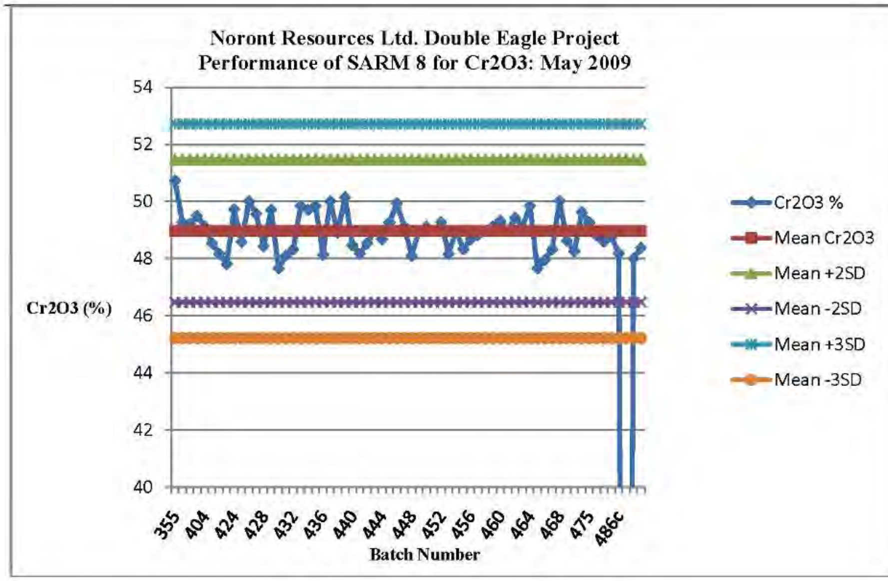
The PGMS-16 certified reference material was purchased from CDN Resource Labs in Delta, British Columbia, who made and certified the standard. It is made from ore supplied by Stillwater Mining Corporation from the Stillwater Complex in Montana. It is certified for Au, Pd and Pt. There were no data points for this reference material for the month of May.

SARM 8 Reference Material

The SARM 8 reference material is made from chromium ore from the basal zone of the Bushveld Complex, South Africa and was prepared and supplied by Mintek in South Africa. This reference material is certified for C_2O_3.

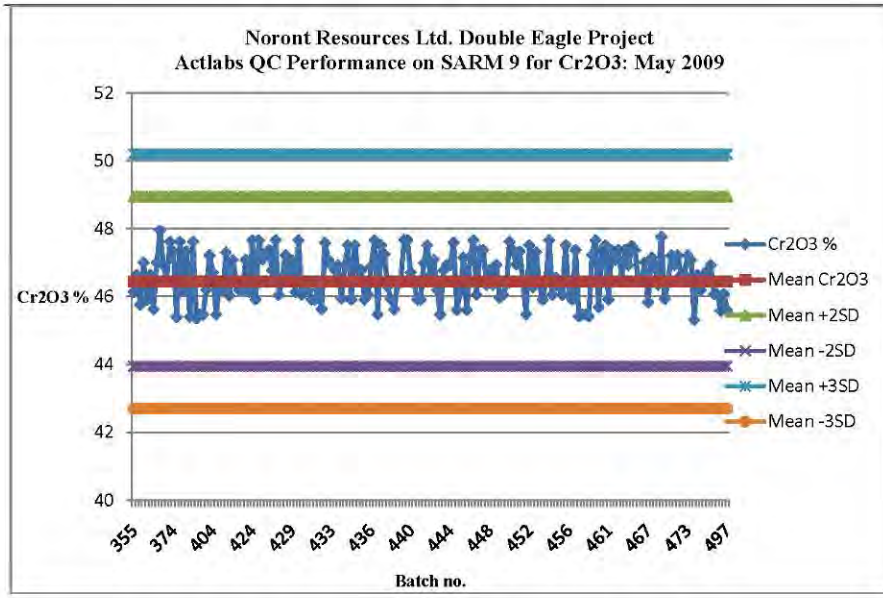
After many initial failures, it was decided to recalculate the certified SARM 8 performance gates for Cr_2O_3 as the existing limits were thought to be too stringent. A new standard deviation was calculated using the results from 196 pulp pairs analysed by INAA at Actlabs, by plotting them on a Thompson-Howarth chart. The results indicated a precision of 1.7%, which also equates to the standard deviation. After discussion with J. Mungall from Noront (who had also performed his own calculations) it was decided that a reasonable value for the new standard deviation would be 1.25%. (The Thompson-Howarth plot and corresponding calculations can be viewed in the Excel file named "*Duplicate Statistics Template Cumulative 2008_2009 Double Eagle Cr only.xlsx*" – please note that the "*Post July 2008*" worksheets only document the precision at the pulp level of 1.7%).

Results for the SARM 8 standard are represented graphically below. There were 64 data points, with only two failures in batches 479 and 489c, of which batch 479 (A09-1791) was re-run and the new result found to be within normal limits. The other failure in batch 489c (A09-1869), as shown in the graph below, was due to the insertion of an incorrect standard and this issue has been followed up by Eric Hoffman at Actlabs with a review of sample insertion protocol undertaken. This batch was approved due to the conformance of the lab's internal QC.



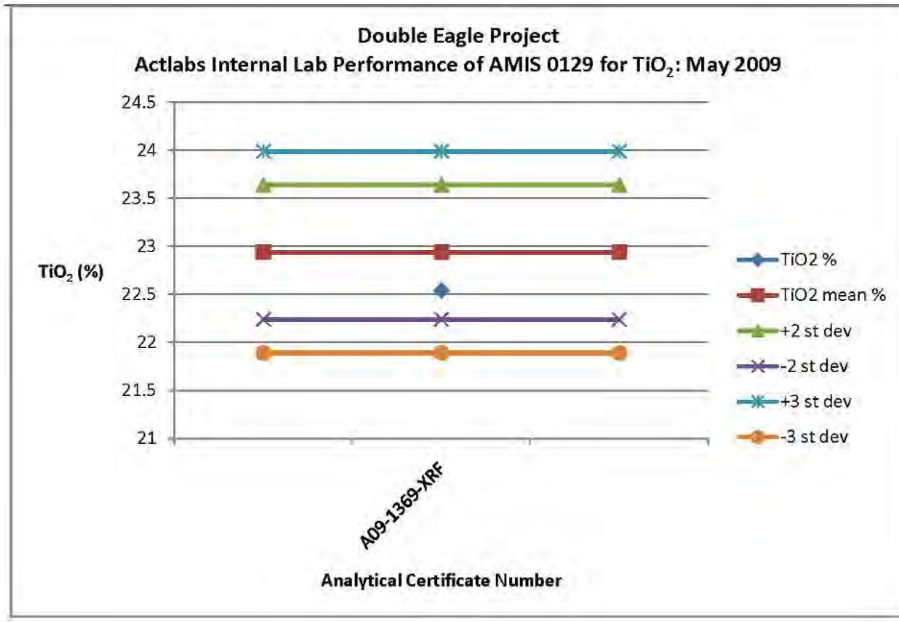
Actlabs' Performance for SARM 9 Reference Material

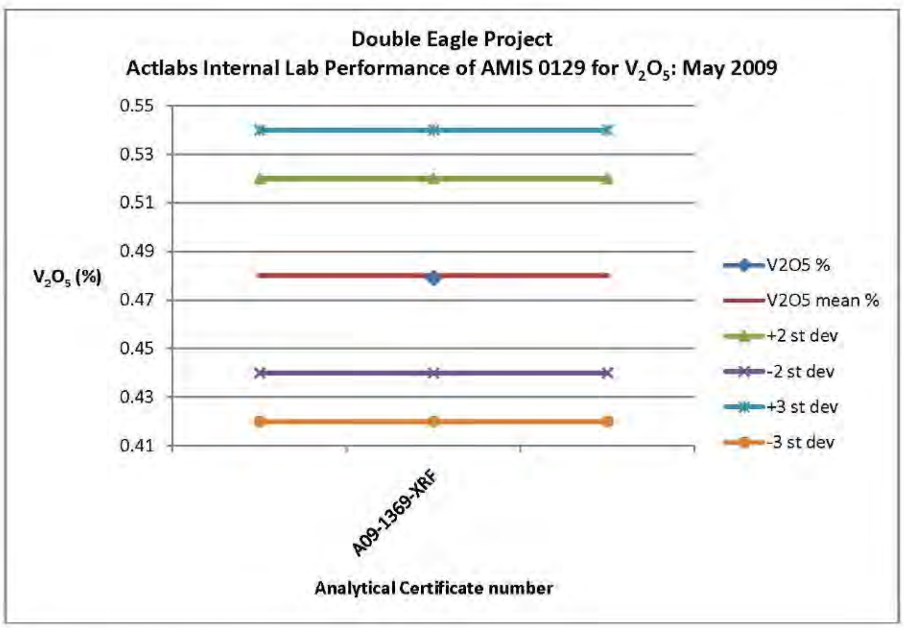
Examination of the internal lab QC for the SARM 9 standard continued for the certificates finalised in May but not for the SARM 8 standard. There are 181 data points for SARM 9 and there were no failures. The results for both standards are represented graphically below.



Actlabs' Performance for AMIS 0129 Standard

Monitoring of the internal lab QC of the AMIS 0129 standard continued for the month of May, however only one XRF batch was approved during this period and therefore there is only one data point for the TiO_2 and V_2O_5 graphs presented below. There were no failures for either element.


Double Eagle Project
Actlabs Internal Lab Performance of AMIS 0129 for TiO2: May 2009
24.5
24
23.5
23
22.5
22
21.5
21
TiO2 (%)
TiO2 %
TiO2 mean %
+2 st dev
-2 st dev
+3 st dev
-3 st dev
A09-1369-XRF
Analytical Certificate Number


Double Eagle Project
Actlabs Internal Lab Performance of AMIS 0129 for V2O5: May 2009
0.55
0.53
0.51
0.49
0.47
0.45
0.43
0.41
V2O5 (%)
V2O5 %
V2O5 mean %
+2 st dev
-2 st dev
+3 st dev
-3 st dev
A09-1369-XRF
Analytical Certificate number

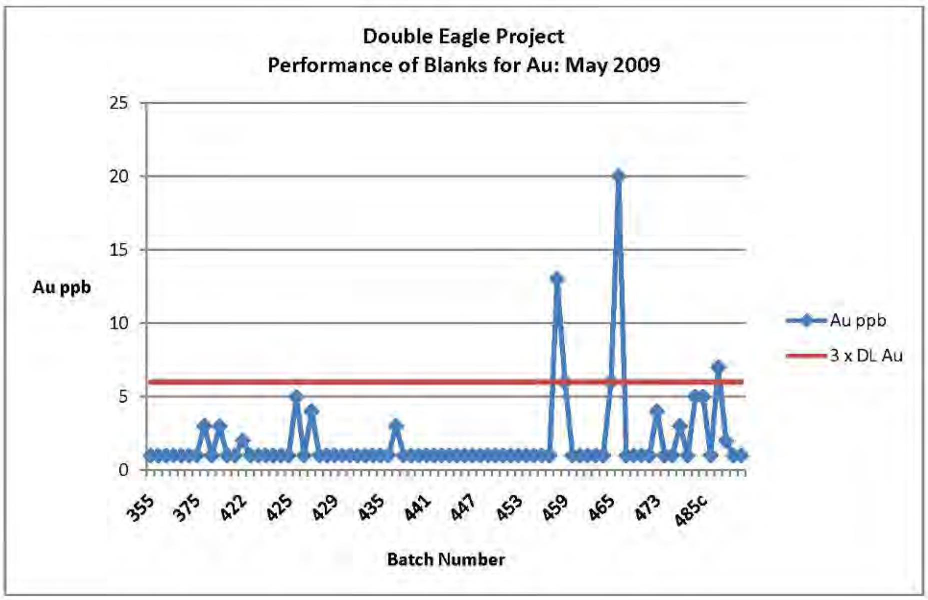
Blanks

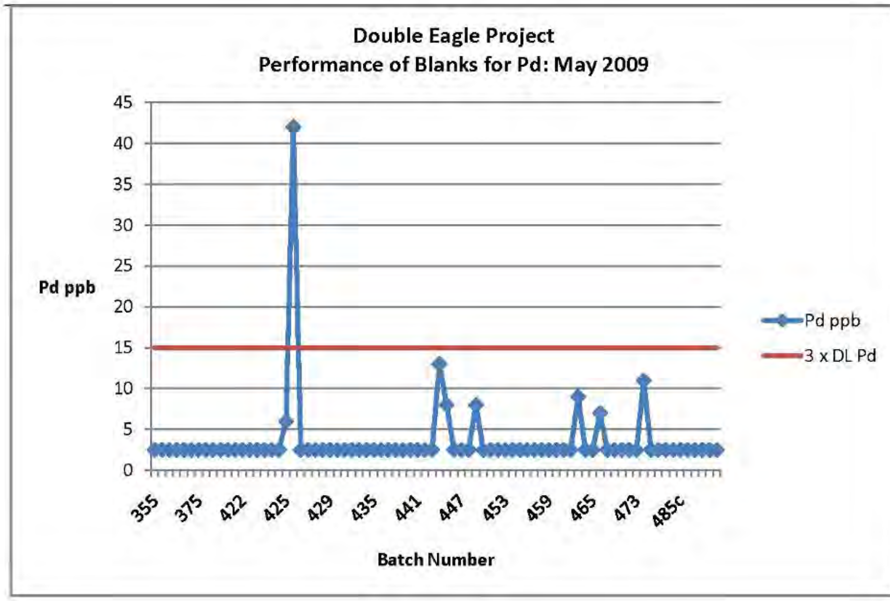
The blank material used for the project is sterile drill core from a granitic body.

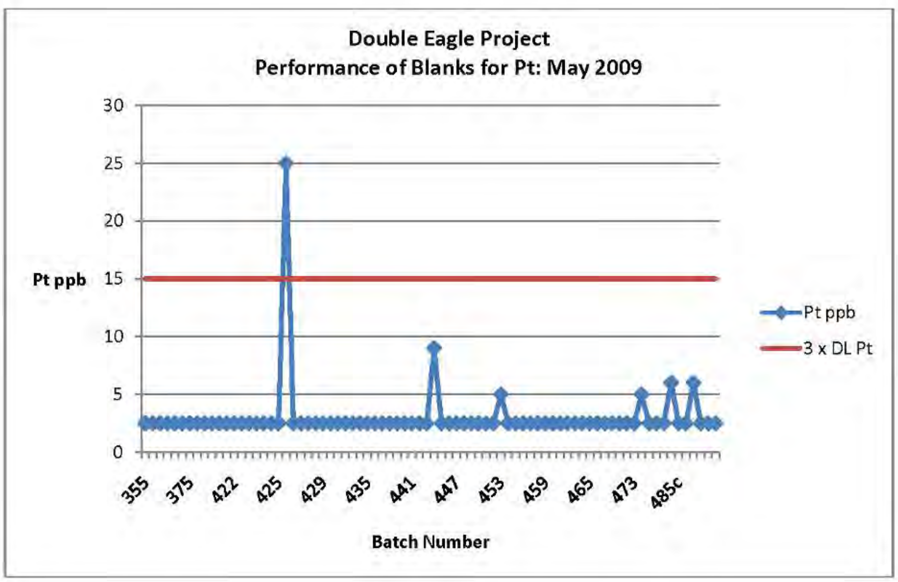
For each batch of 35 samples, one or two blank samples were inserted (two blanks from batch 355 to 426 and one blank from batch 427 to 497). All blank data for Au, Pd, Pt, Cu and Ni were graphed. An upper tolerance limit of three times the detection limit (3xDL) was indicated for each element. If the assayed value in the certificate was indicated as being less than the detection limit the value was assigned the value of half the detection limit for data treatment purposes. There were five failures for Au, one failure each for Pd, Pt and Cu and eight failures for Ni. For each of the failures, the other blank in the batch passed and/or the failures were still of such low grade that no further action was required and/or the internal lab QC blanks passed.

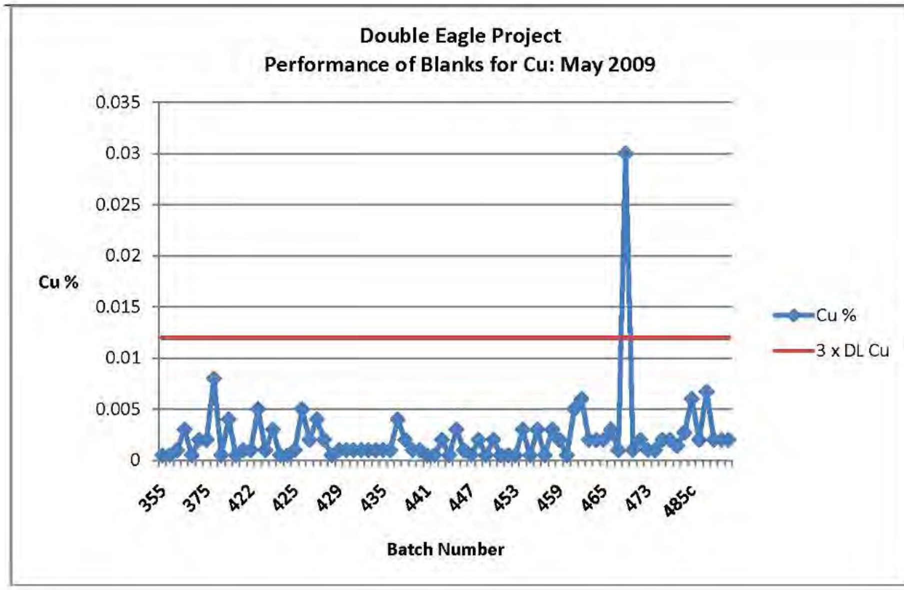
It was noted that the values in the Ni graph below show a distinct increase to greater than three times the detection limit towards the end of the month, which coincides with the test method being changed from Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP/OES) to X-ray Fluorescence Spectroscopy (XRF).

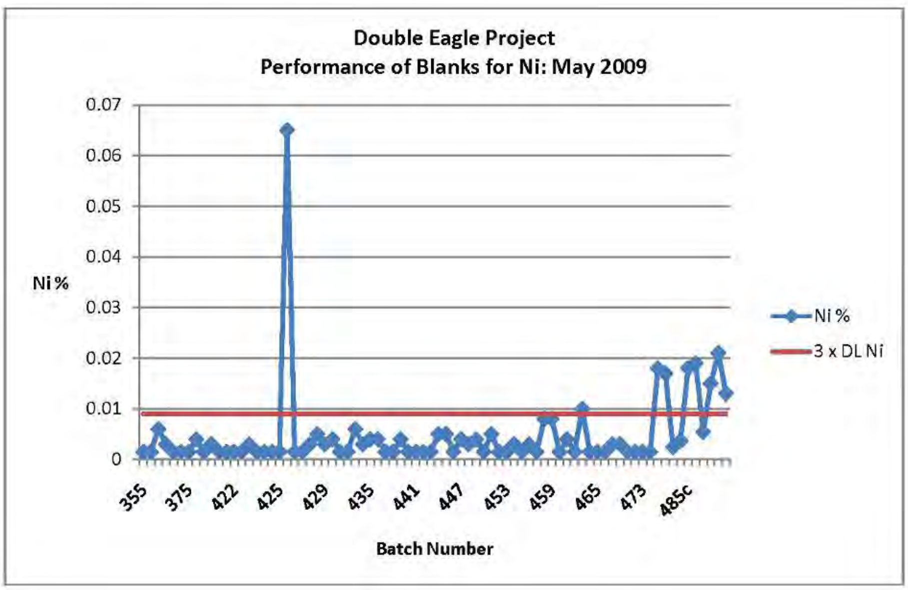
The Cr, Cr_2O_3, TiO_2 and V_2O_5 blanks were also monitored during the month and, when results were available, these were consistently greater than three times the detection limit. More data needs to be collected on the blank material as there appears to be background levels for Cr, Cr_2O_3, TiO_2 and V_2O_5. Request was made for a background check to Noront, by adding ten blank samples to a regular batch of 35 samples and tested by XRF.




Double Eagle Project
Performance of Blanks for Pd: May 2009
Pd ppb
45
40
35
30
25
20
15
10
5
0
355
375
422
425
429
435
441
447
453
459
465
473
485c
Batch Number
Pd ppb
3 x DL Pd


Double Eagle Project
Performance of Blanks for Pt: May 2009
Pt ppb
30
25
20
15
10
5
0
355
375
422
425
429
435
441
447
453
459
465
473
485c
Batch Number
Pt ppb
3 x DL Pt


Double Eagle Project
Performance of Blanks for Cu: May 2009
Cu %
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
355
375
422
425
429
435
441
447
453
459
465
473
485c
Batch Number
Cu %
3 x DL Cu


Double Eagle Project
Performance of Blanks for Ni: May 2009
Ni %
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
355
375
422
425
429
435
441
447
453
459
465
473
485c
Batch Number
Ni %
3 x DL Ni

Duplicates

Cumulative field, coarse reject and pulp replicate duplicate data were plotted for the period of January to May 2009 for Ni, Cu, Pd, Pt and Au. There were a total of 483 pairs, with new data from May (67 pairs) added to the data set. Cumulative field, coarse reject and pulp replicate duplicate data for Cr were also plotted for the period from post-July 2008 to May 2009, with 51 pairs being added to the data set making a new total of 339 pairs. Data were graphed using the Thompson-Howarth (T-H) precision plot for all elements, as well as a plot of the sample pair Mean versus the Absolute Relative Difference (ARD) of the sample pair for comparison for of Au, Pt and Cr only. There was good conformance between the T-H and ARD plots and generally an increase in precision displayed as grain size decreased.

The Cu, Ni and Cr pulp replicates displayed excellent precision with T-H values of 3.6%, 3.8% and 4.3% respectively, while both Pd and Pt displayed moderate precision with T-H values of 6.2% and 8.8% respectively. The nuggety Au showed poor precision, with a T-H value of 19.7%.

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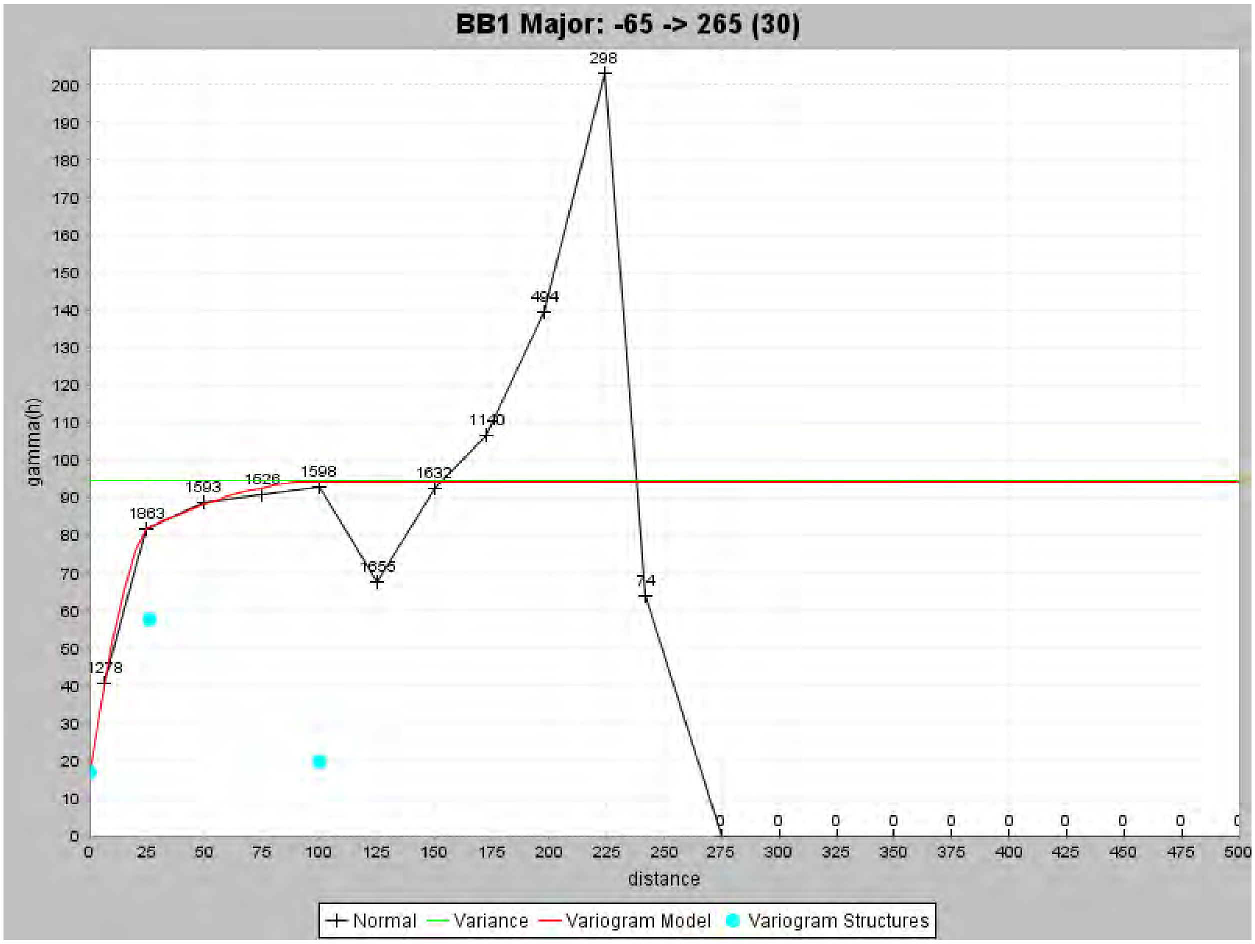
APPENDIX 4

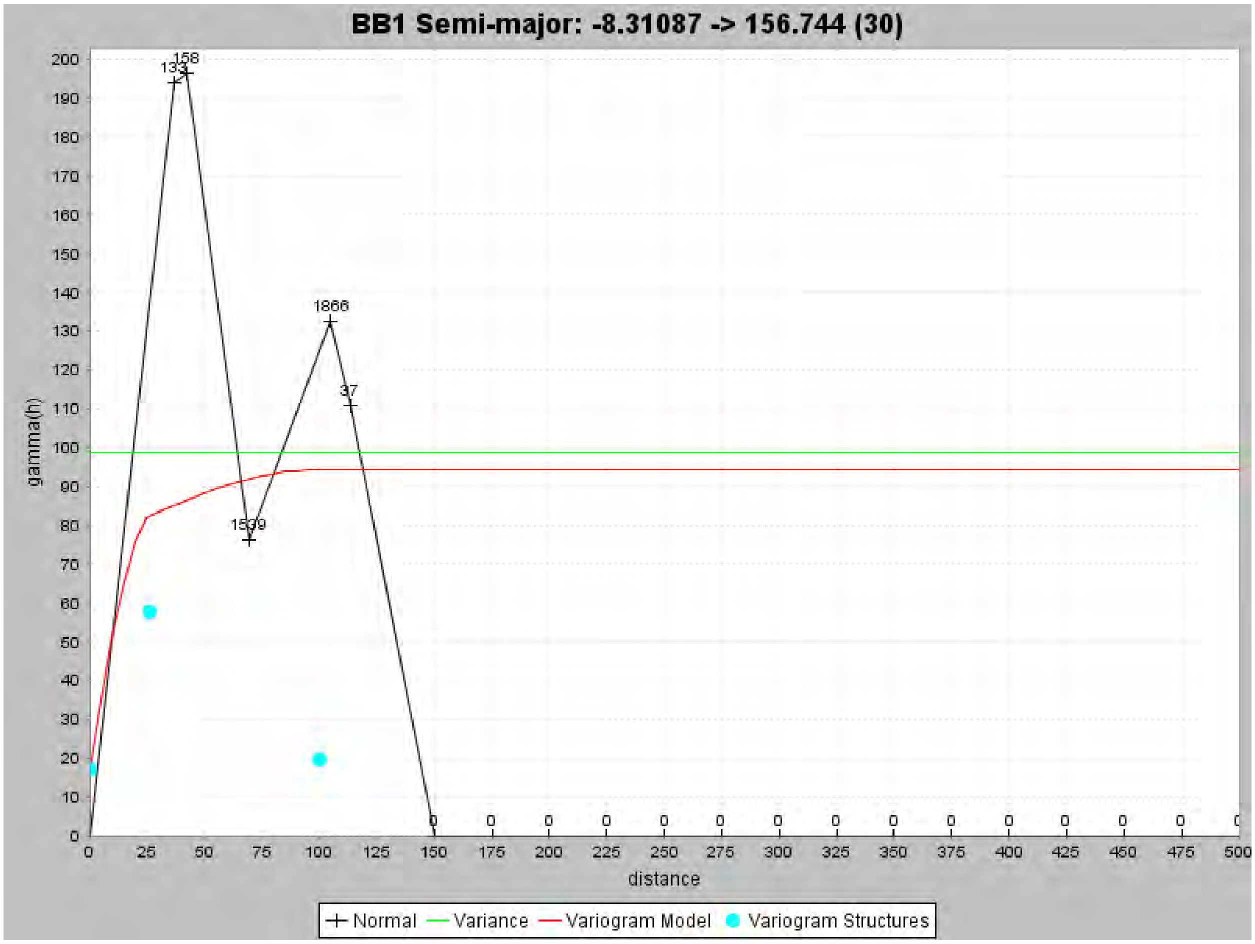
FULL RESULTS OF VARIOGRAPHIC ANALYSIS



Current variogram model parameters

Model Type : Spherical
Nugget : 16.997089

Structure	Sill	Range
1	57.691140	26.238
2	19.692050	100.011

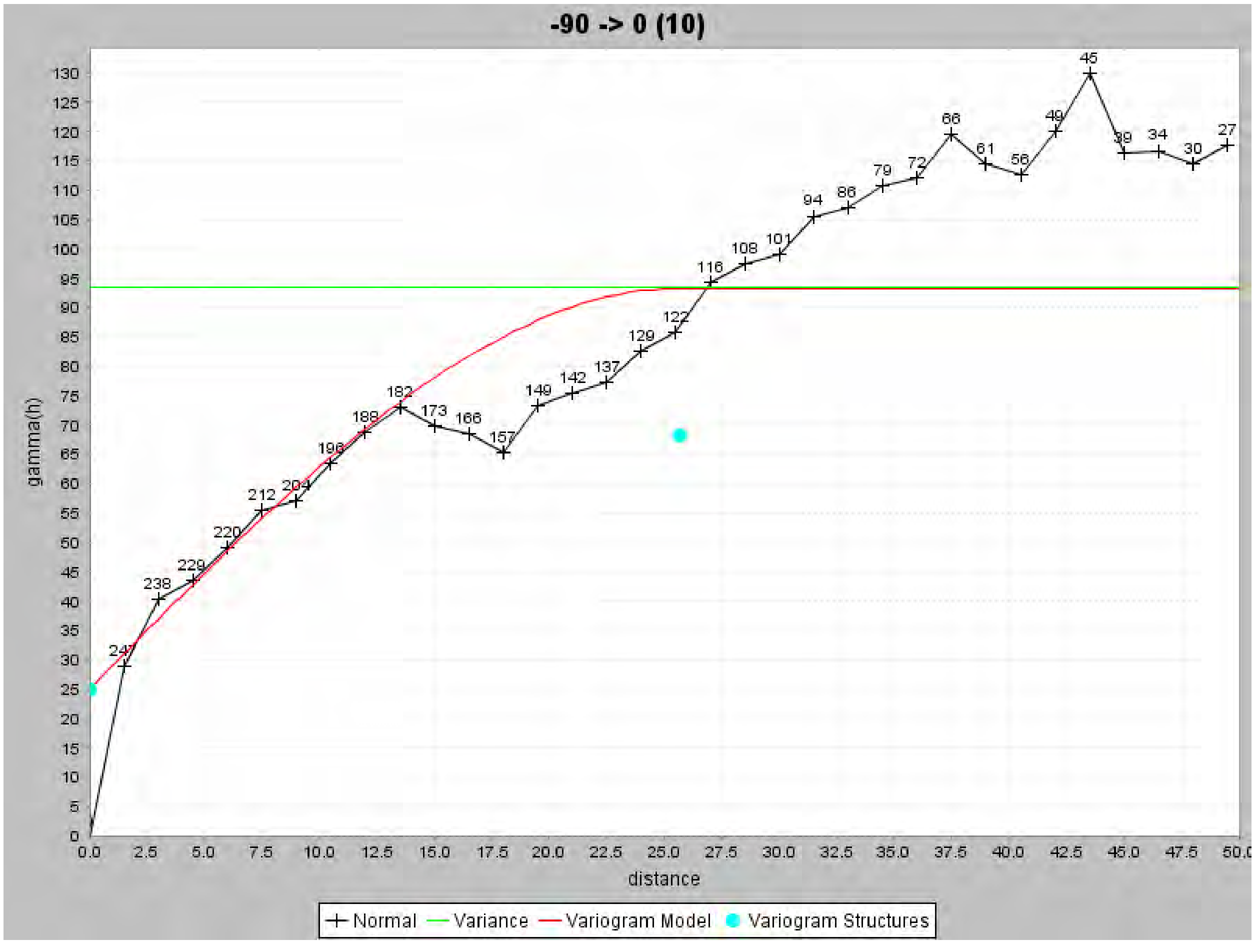


Current variogram model parameters

Model Type : Spherical
Nugget : 16.997089

Structure	Sill	Range
1	57.691140	26.238
2	19.692050	100.011

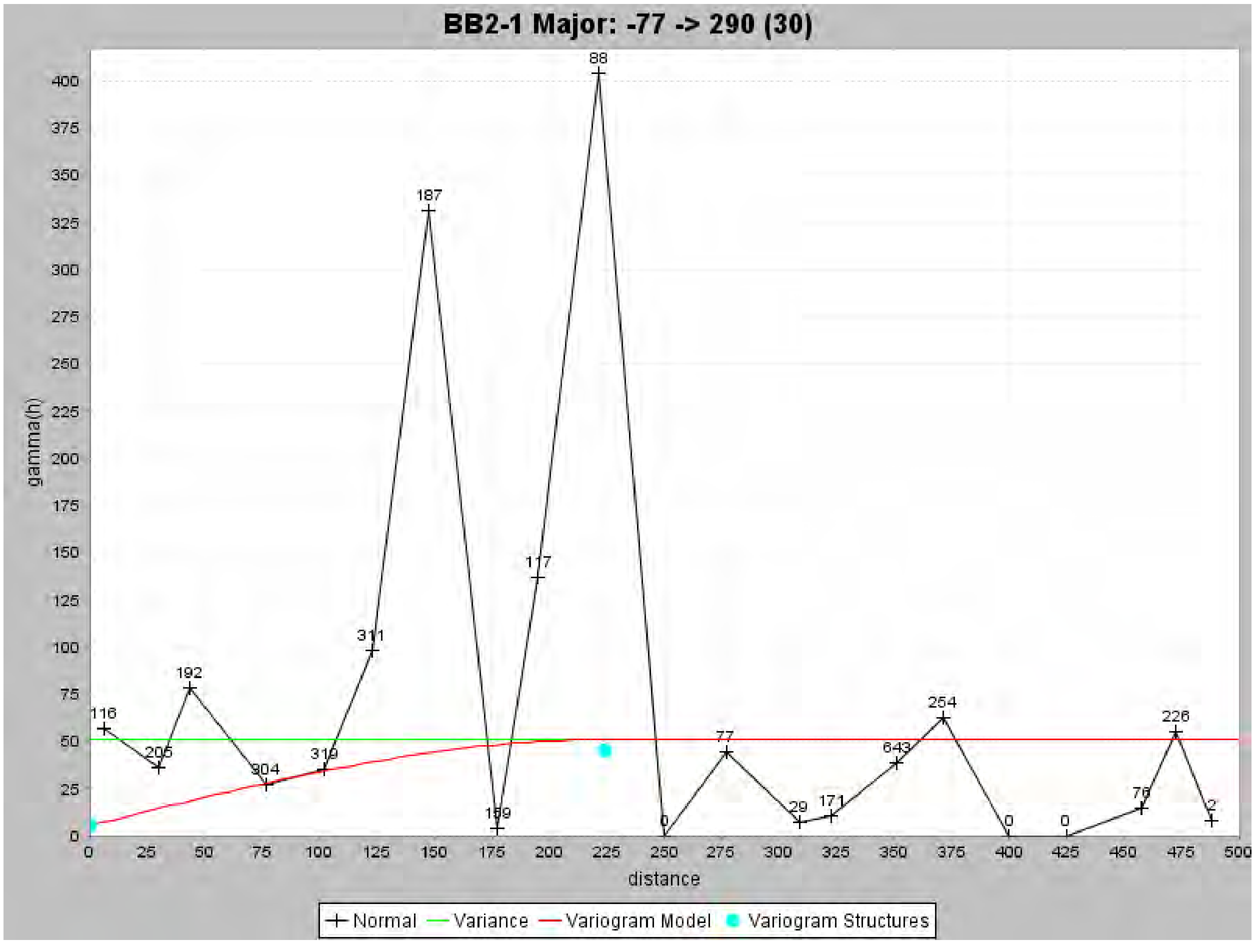
BB1 Downhole Variogram



Current variogram model parameters

Model Type : Spherical
Nugget : 25.013681

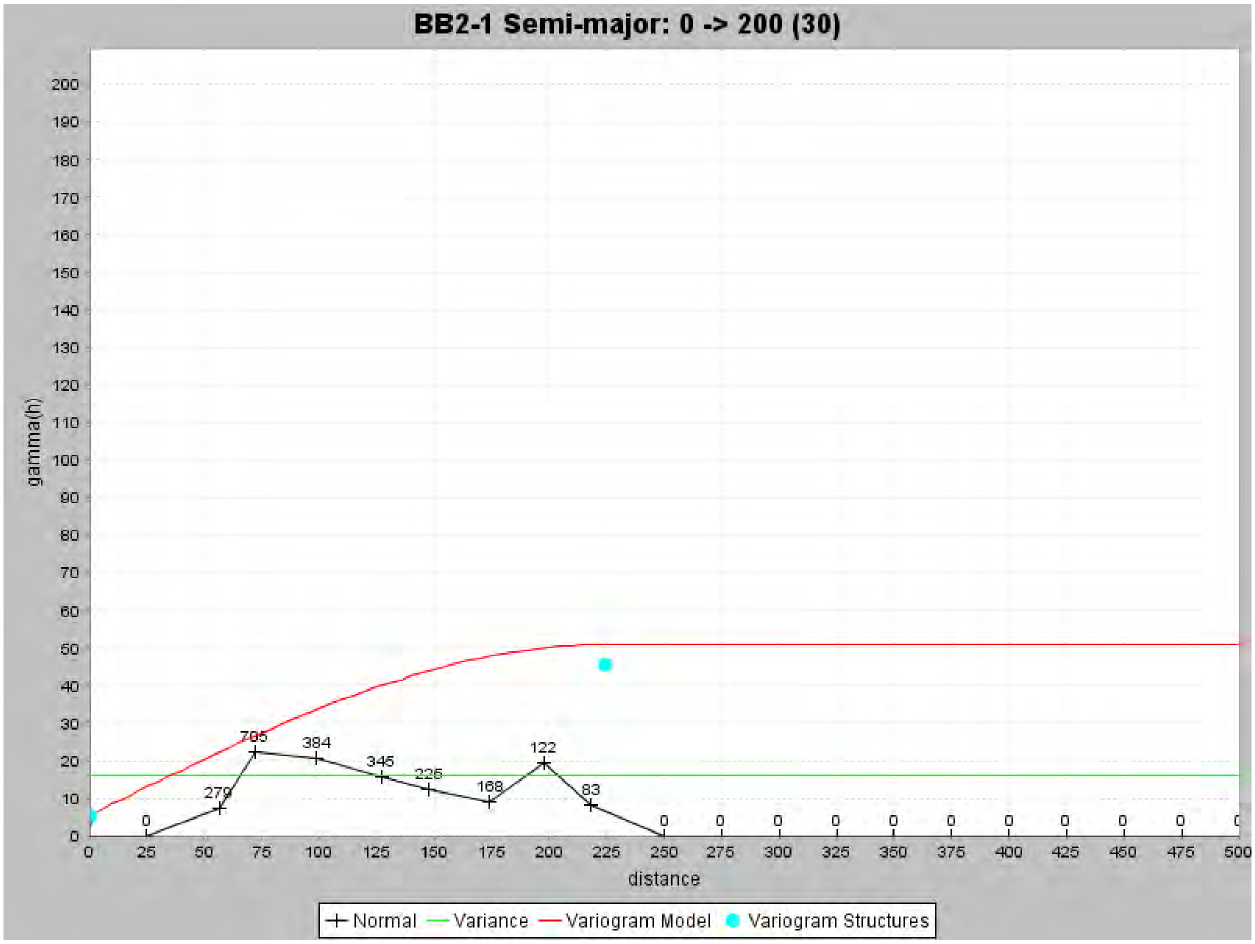
Structure	Sill	Range
1	68.29243	25.697



Current variogram model parameters

Model Type : Spherical
Nugget : 5.397754

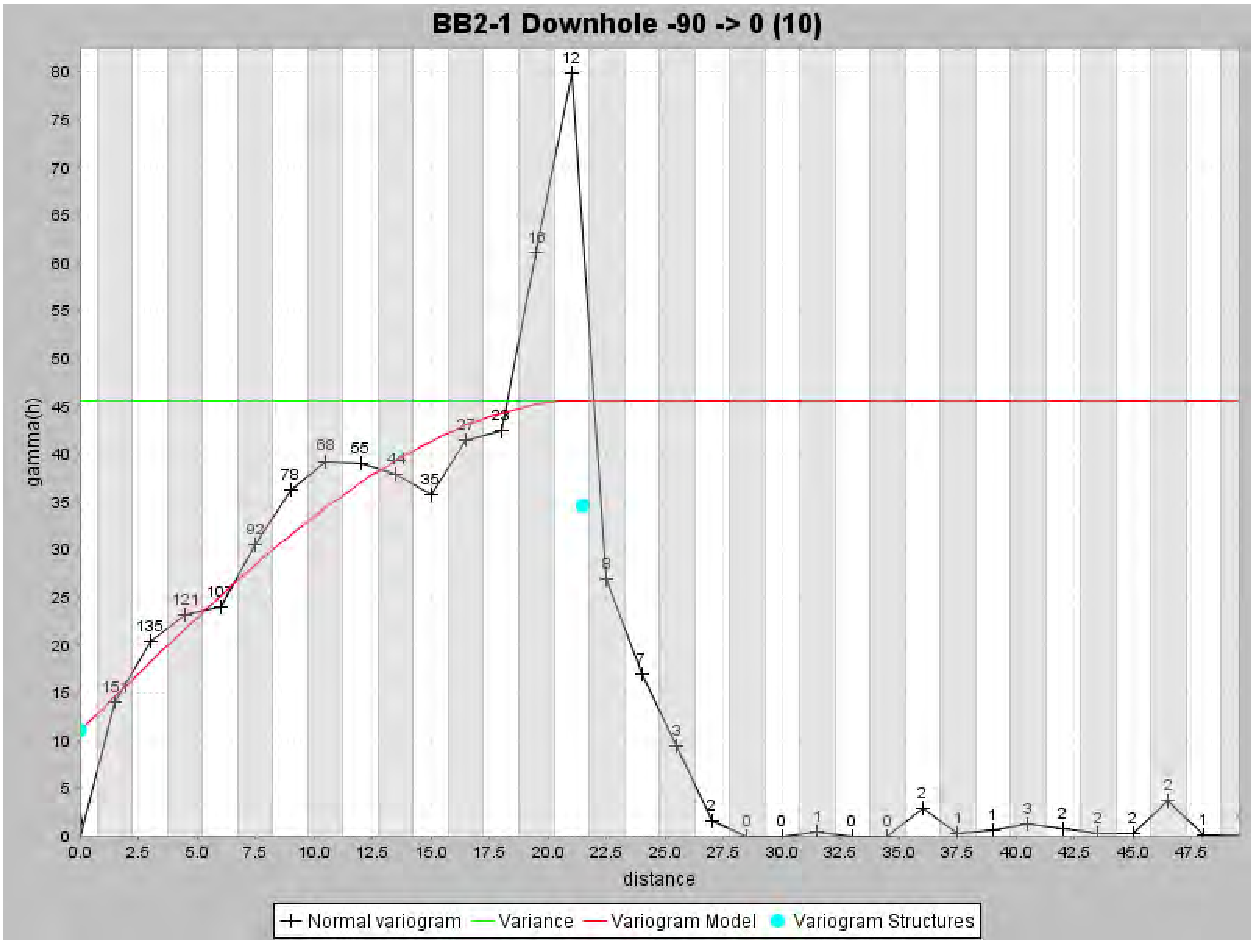
Structure	Sill	Range
1	45.600850	224.415



Current variogram model parameters

Model Type : Spherical
Nugget : 5.397754

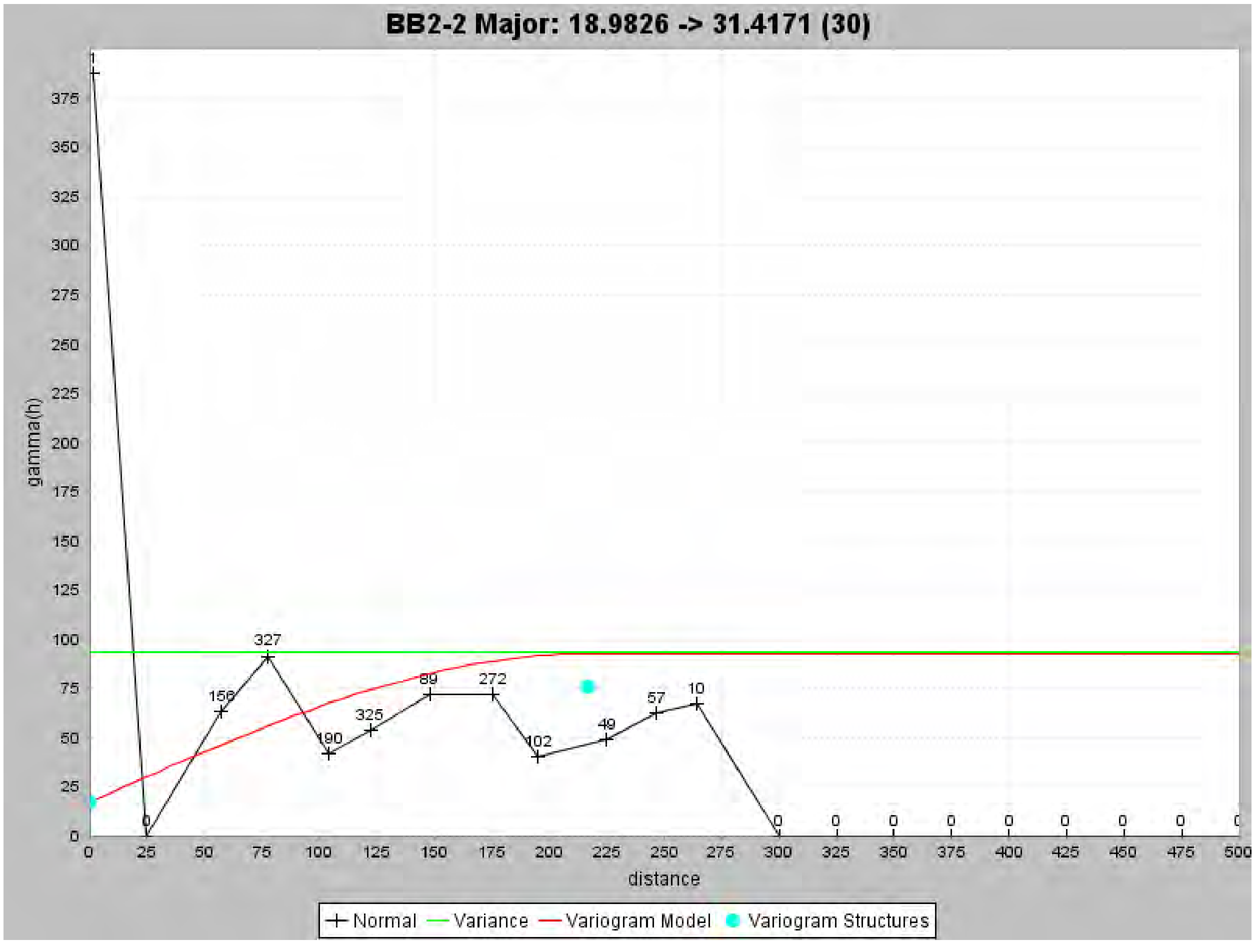
Structure Sill Range
1 - 45.600850 224.415



Current variogram model parameters

Model Type : Spherical
Nugget : 11.021036

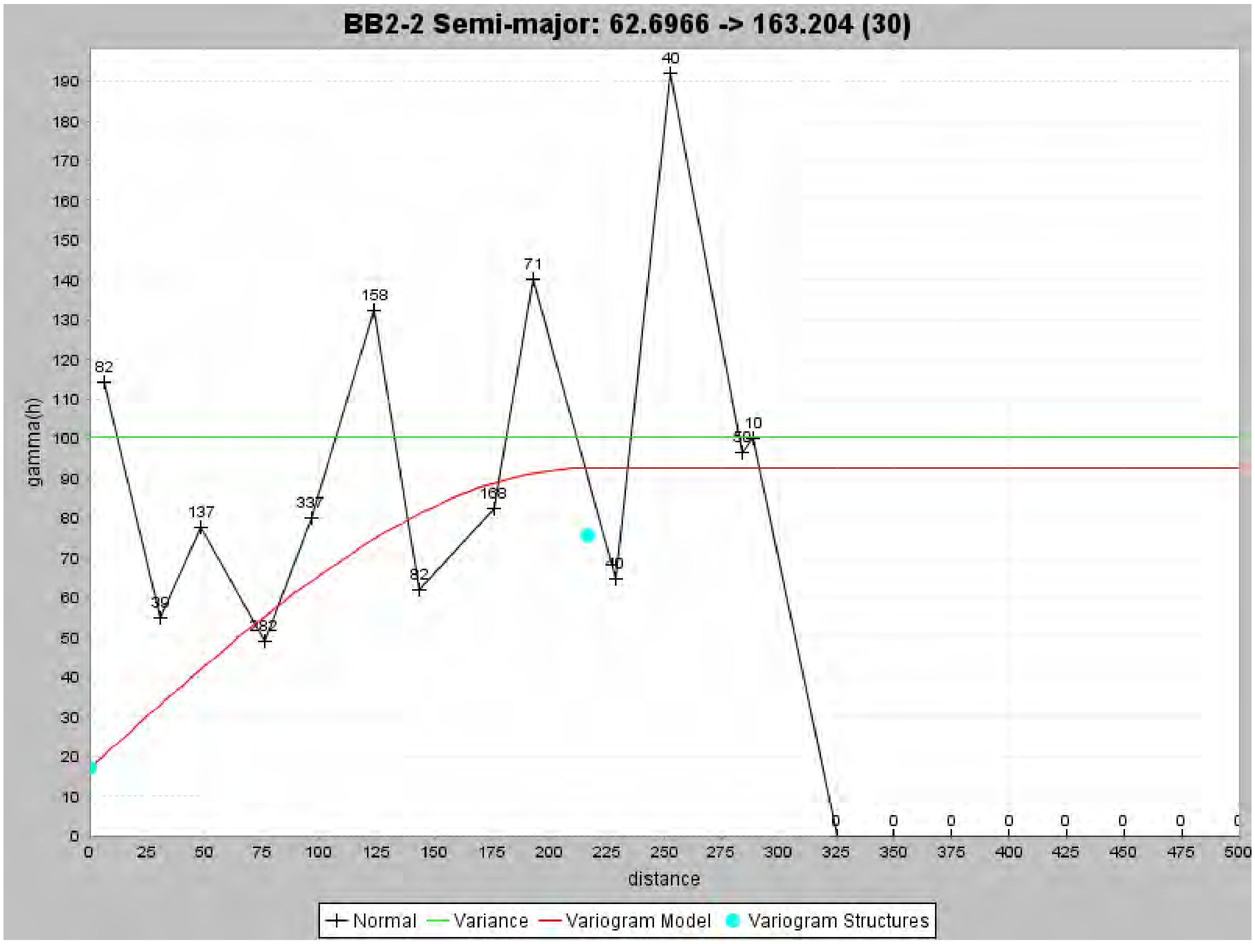
Structure	Sill	Range
1	34.56630	21.458



Current variogram model parameters

Model Type : Spherical
Nugget : 17.001394

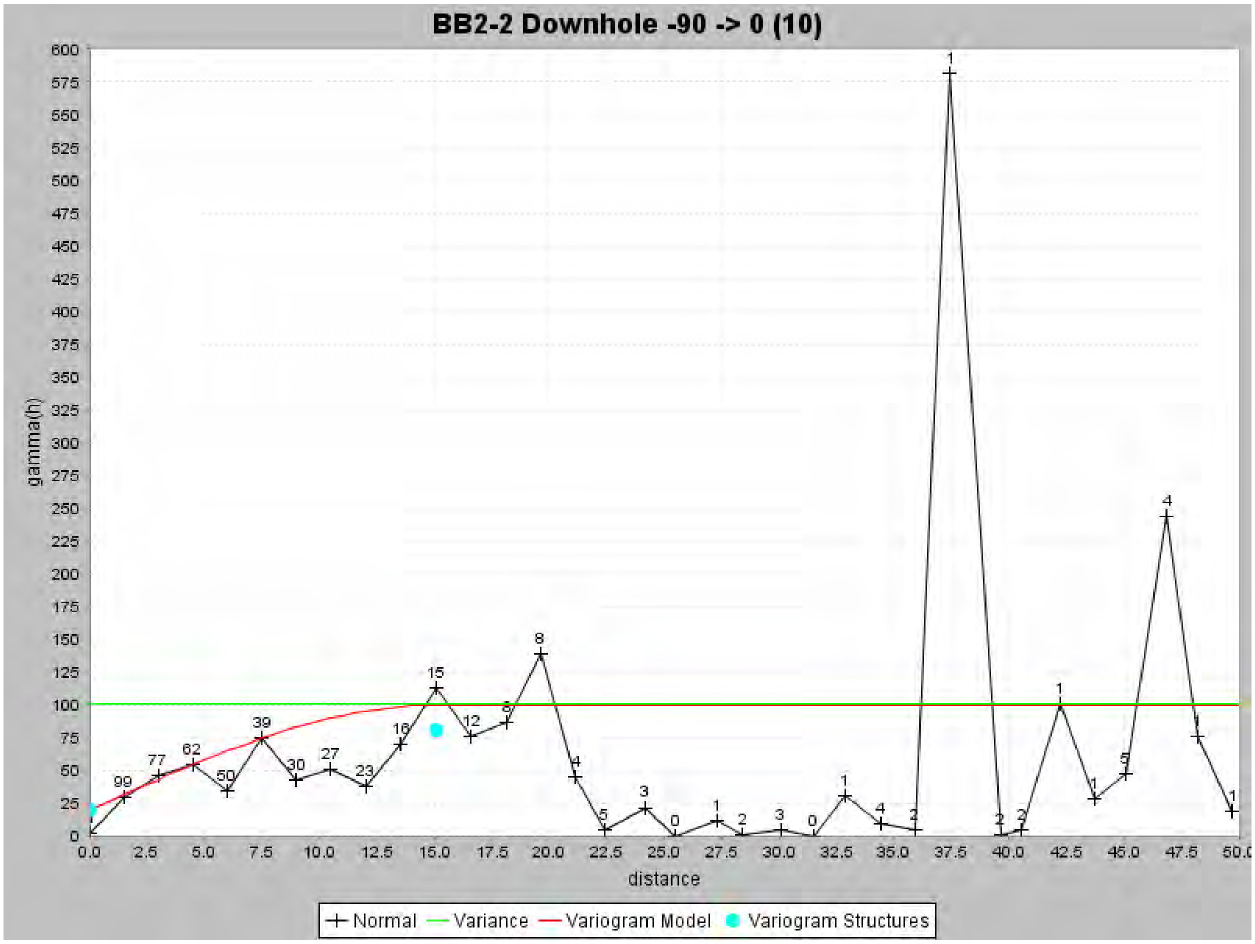
Structure	Sill	Range
1	75.609760	216.726



Current variogram model parameters

Model Type : Spherical
Nugget : 17.001394

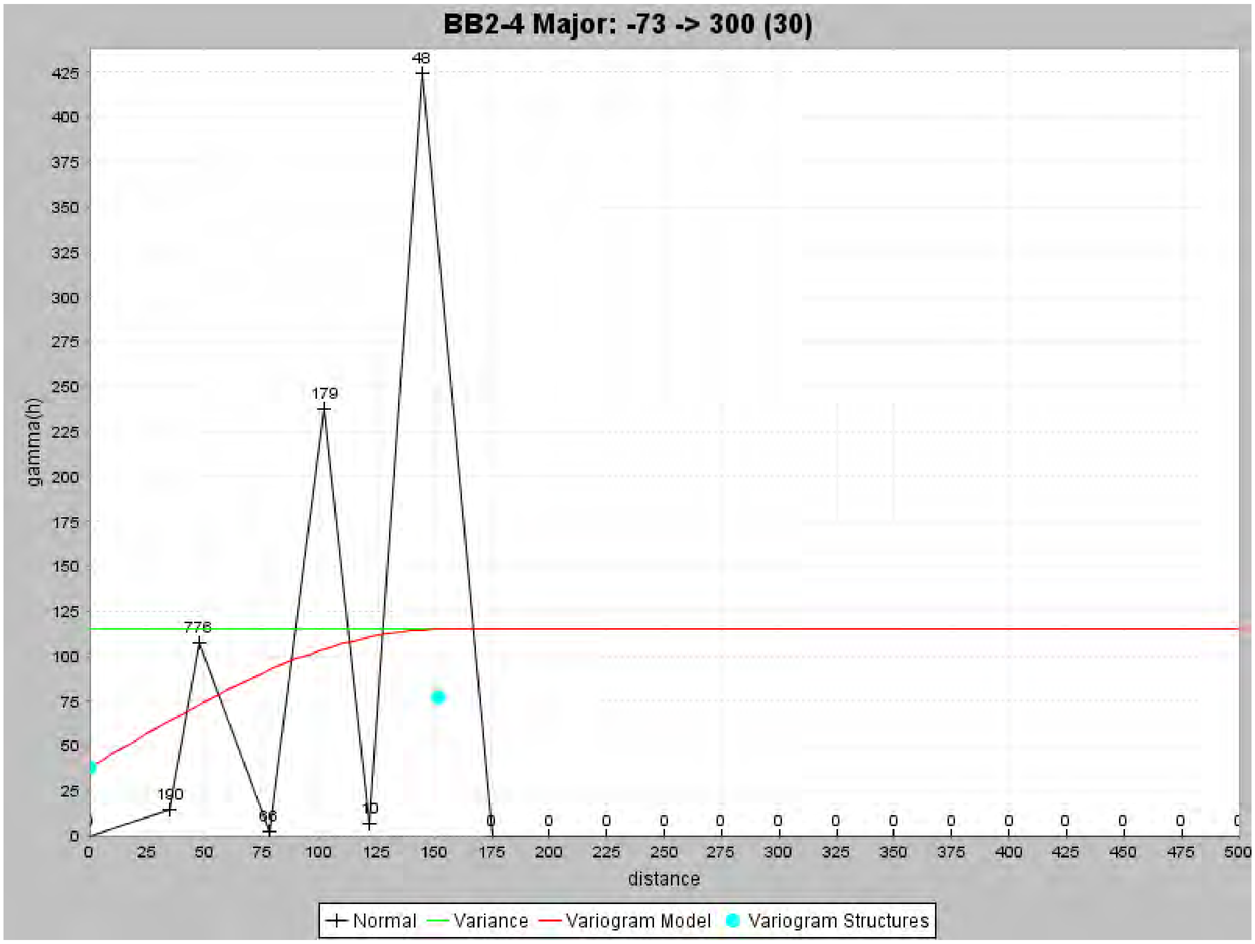
Structure Sill Range
1 75.609760 216.726



Current variogram model parameters

Model Type : Spherical
Nugget : 19.349187

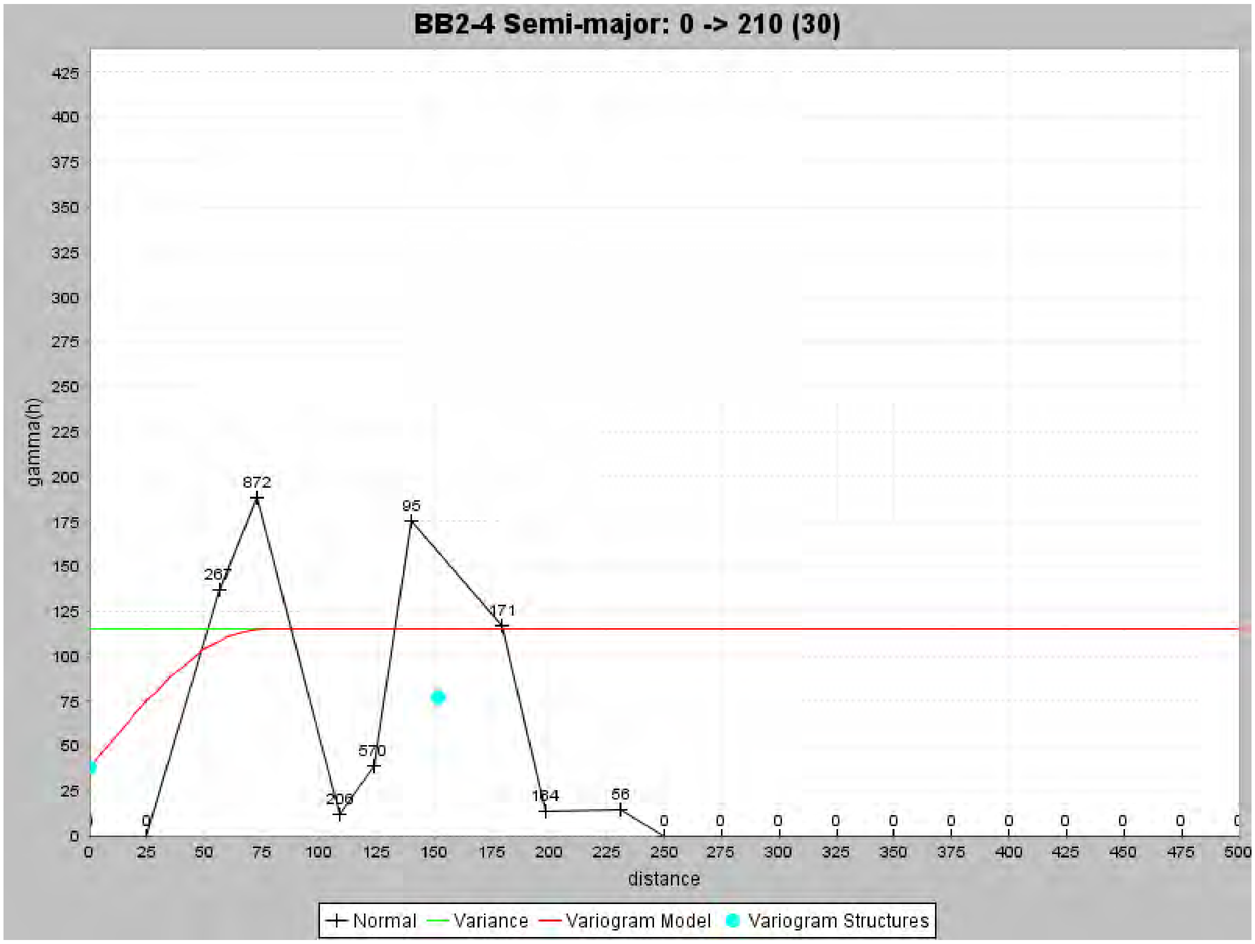
Structure	Sill	Range
1	80.32271	15.102



Current variogram model parameters

Model Type : Spherical
Nugget : 37.784013

Structure	Sill	Range
1	77.218840	151.717

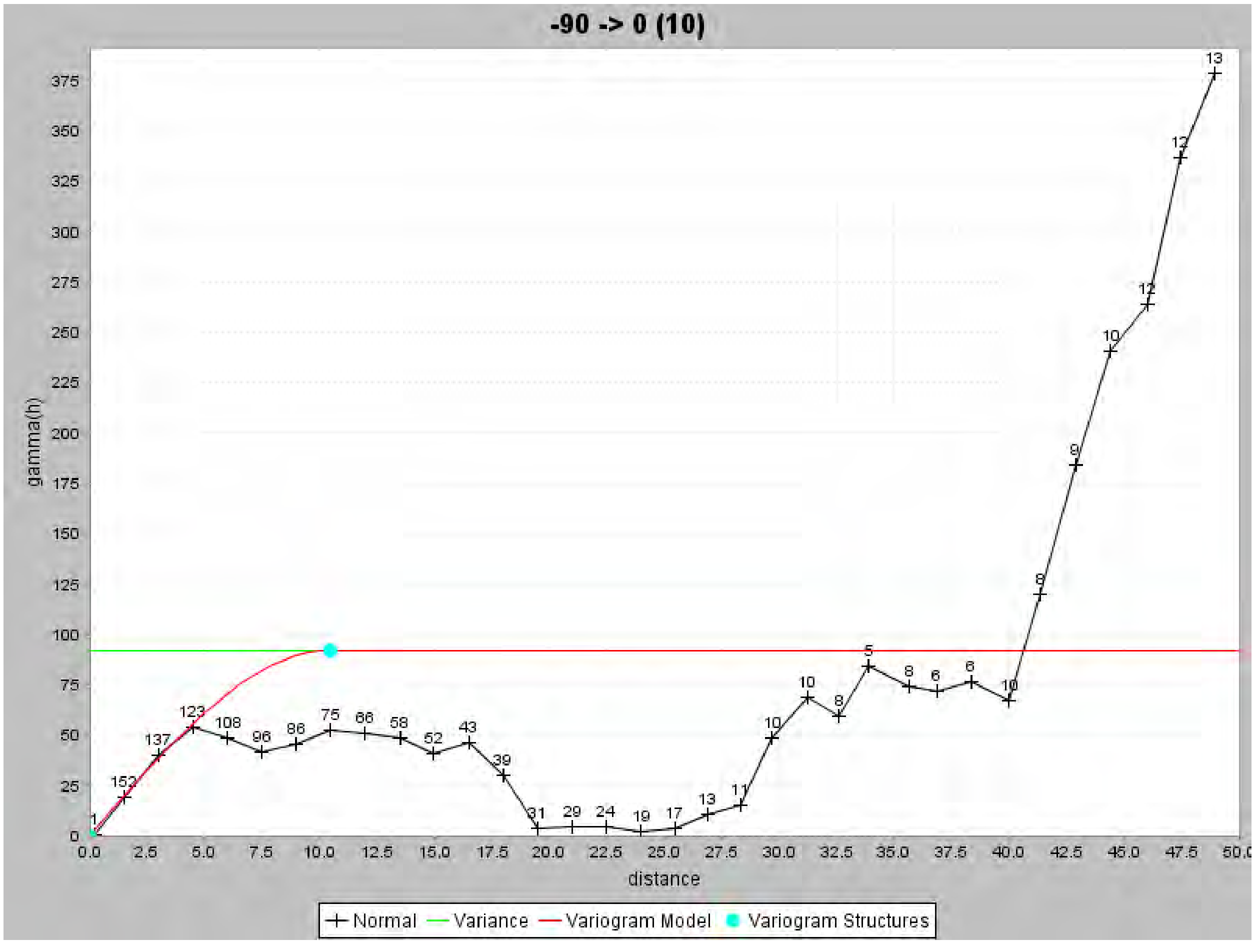


Current variogram model parameters

Model Type : Spherical
Nugget : 37.784013

Structure	Sill	Range
1	77.218840	75.115

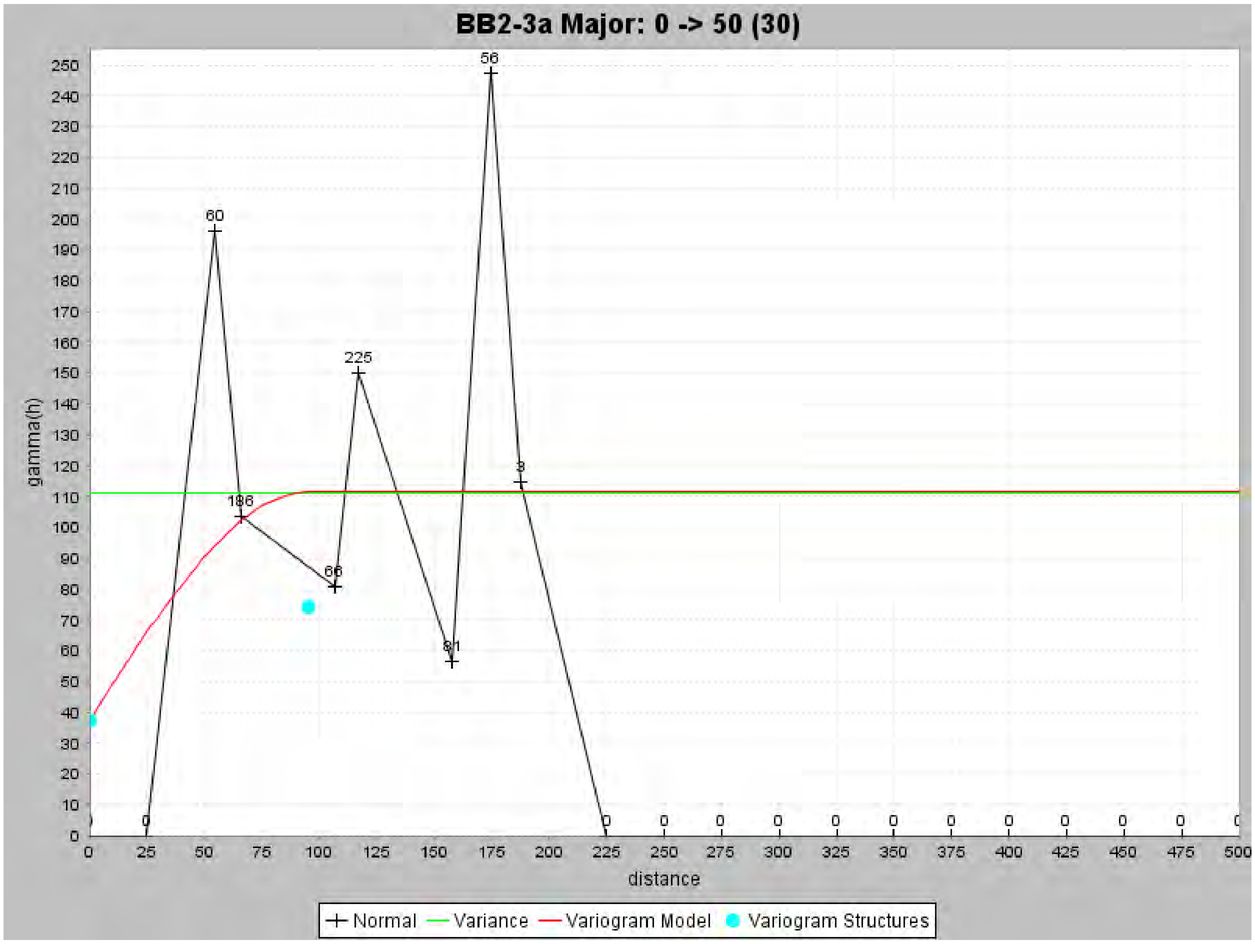
BB2-4 Downhole Variogram



Current variogram model parameters

Model Type : Spherical
Nugget : 0.00000

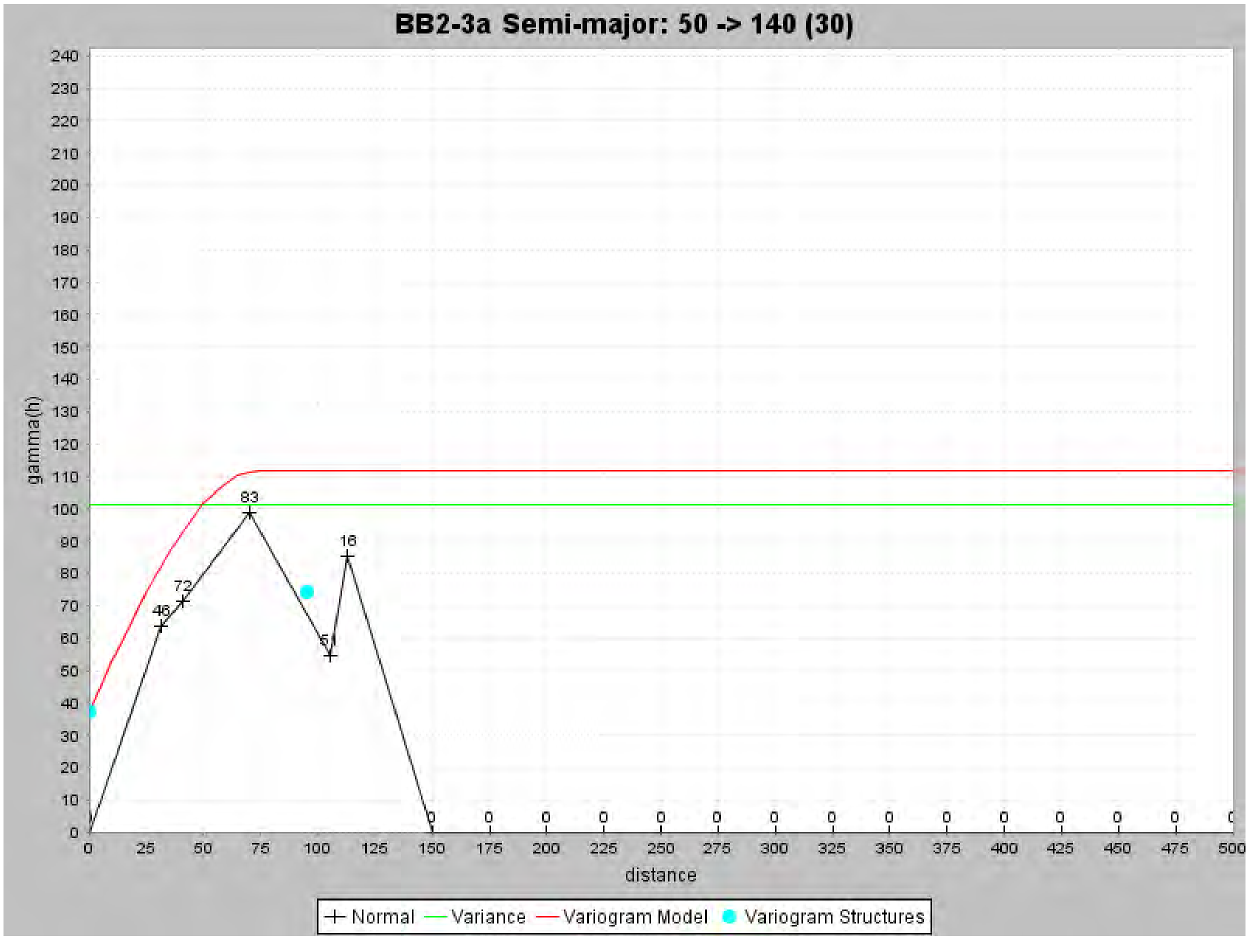
Structure	Sill	Range
1	91.94102	10.453



Current variogram model parameters

Model Type : Spherical
Nugget : 37.388556

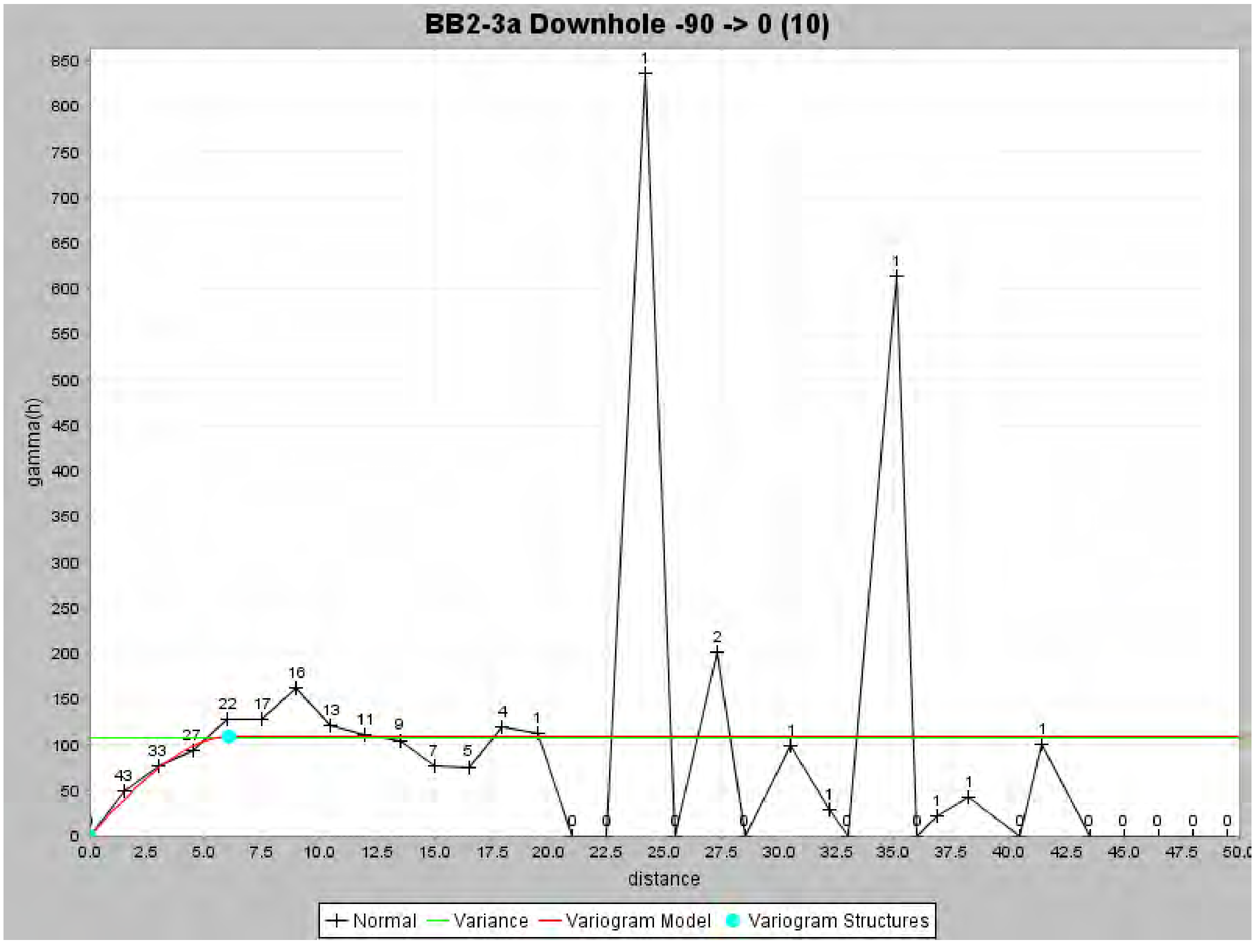
Structure	Sill	Range
1	74.128410	95.096



Current variogram model parameters

Model Type : Spherical
Nugget : 37.388556

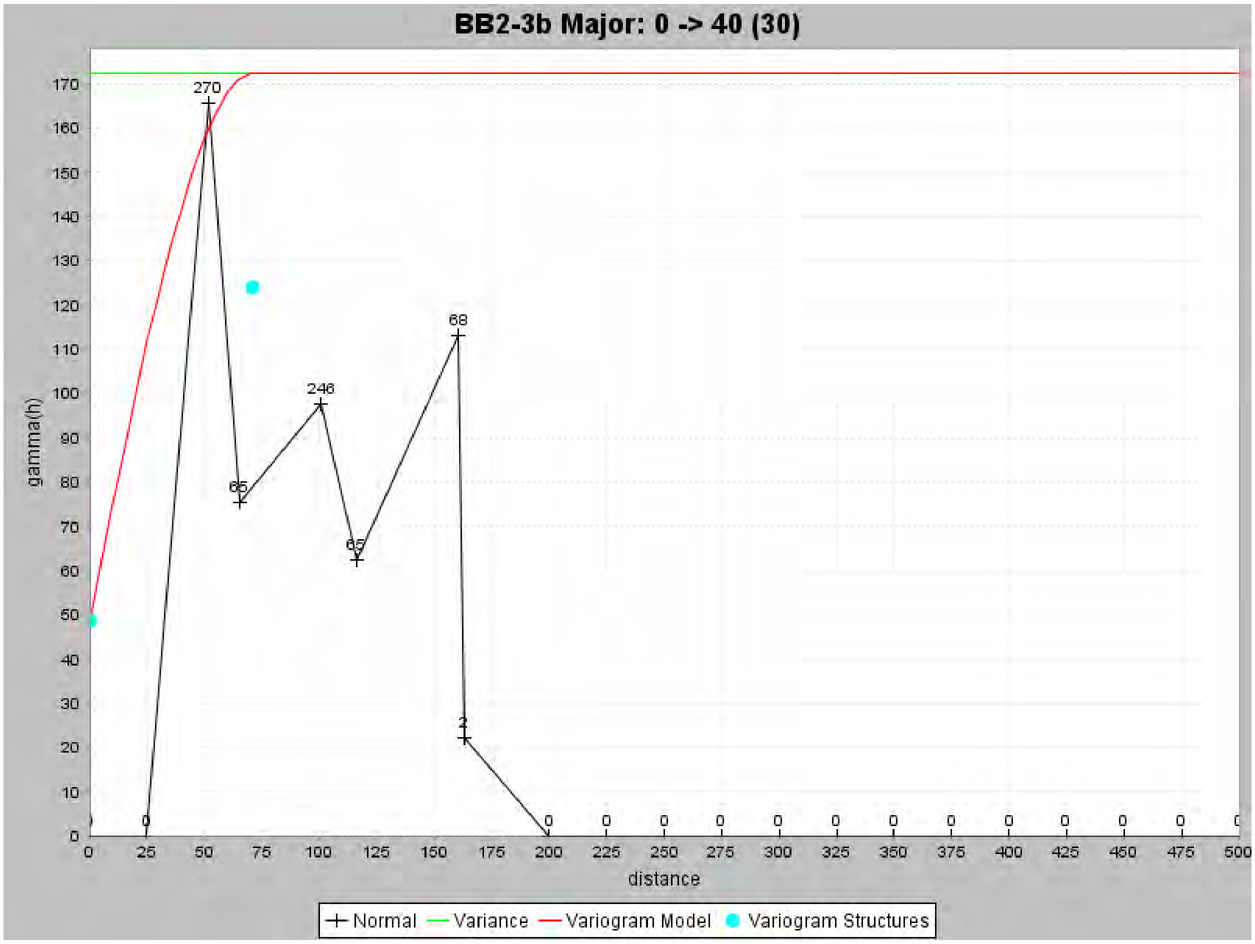
Structure	Sill	Range
1	74.128410	73.096



Current variogram model parameters

Model Type : Spherical
Nugget : 0.0000

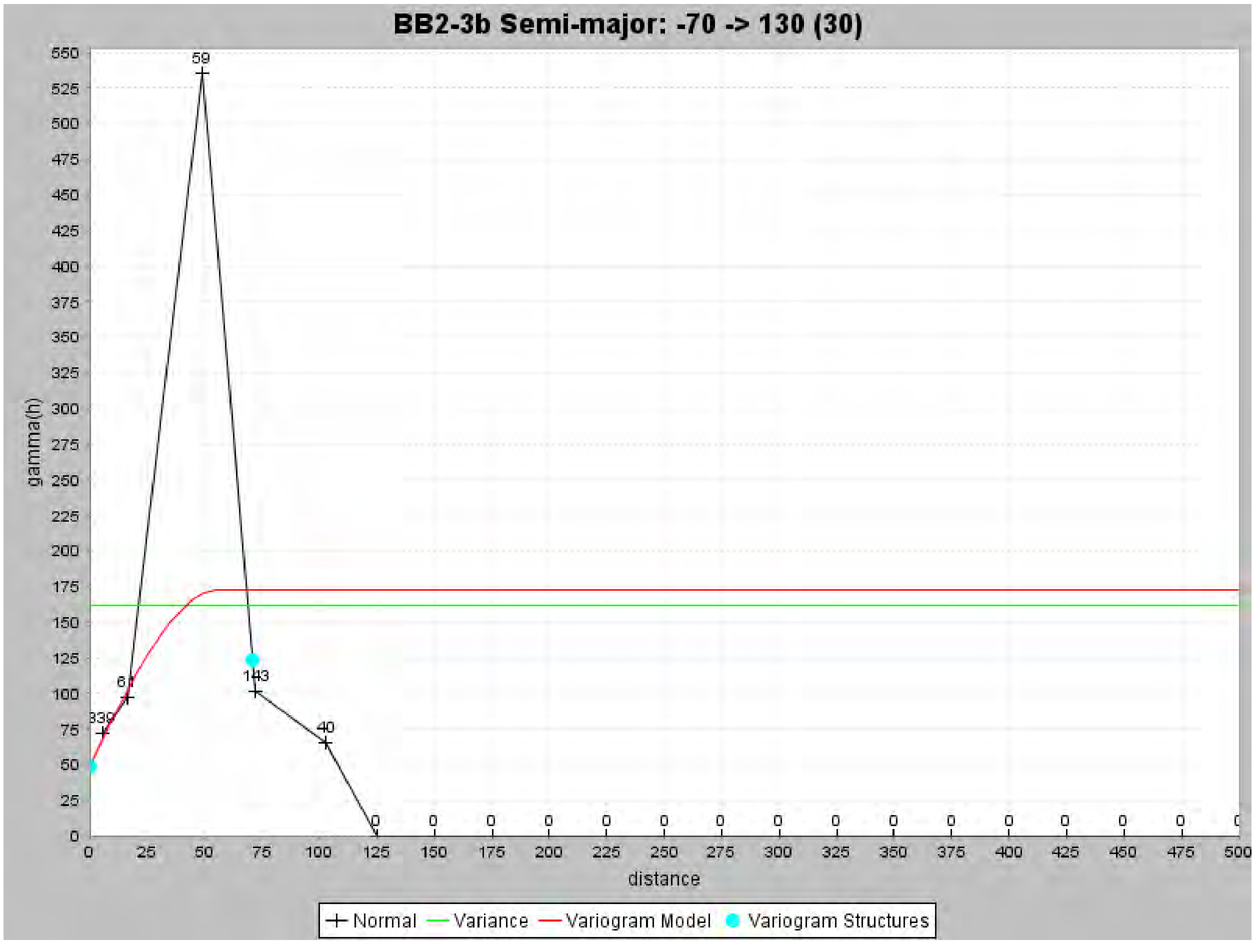
Structure	Sill	Range
1	108.5315	6.053



Current variogram model parameters

Model Type : Spherical
Nugget : 48.454489

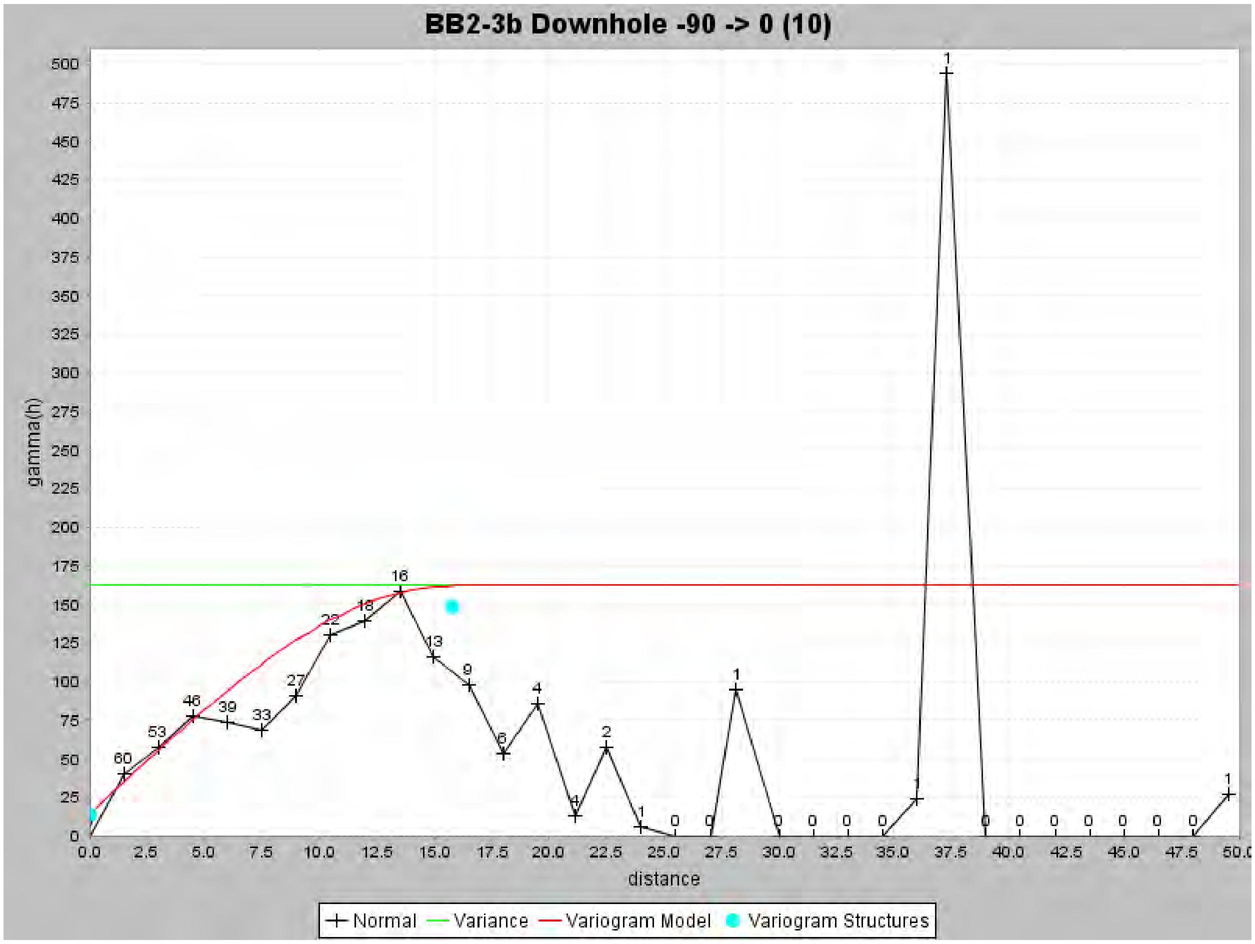
Structure	Sill	Range
1	123.919400	70.980



Current variogram model parameters

Model Type : Spherical
Nugget : 48.454489

Structure	Sill	Range
1	123.919400	56.198



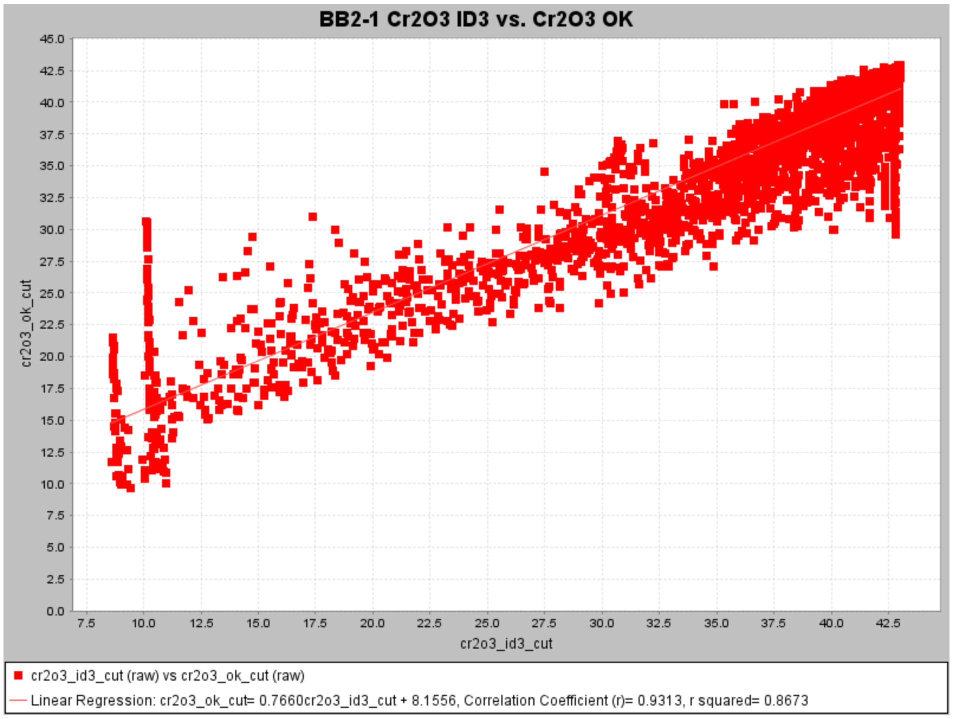
Current variogram model parameters

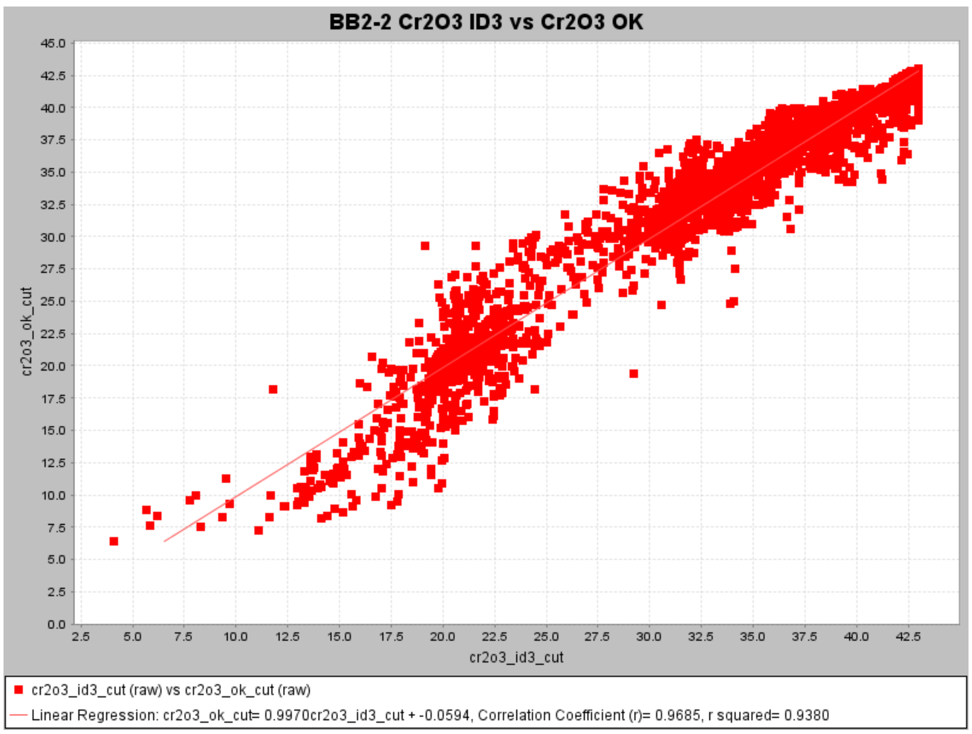
Model Type : Spherical
Nugget : 13.806556

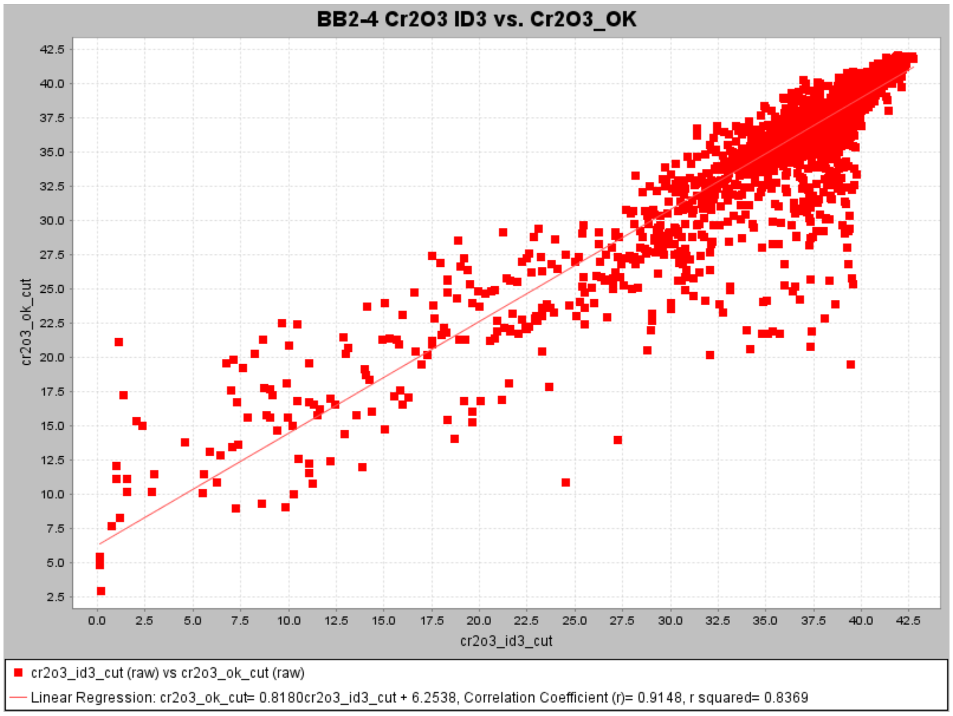
Structure	Sill	Range
1	148.1392	15.801

APPENDIX 5
SCATTER PLOTS AND HISTOGRAMS FOR RESOURCE VALIDATION

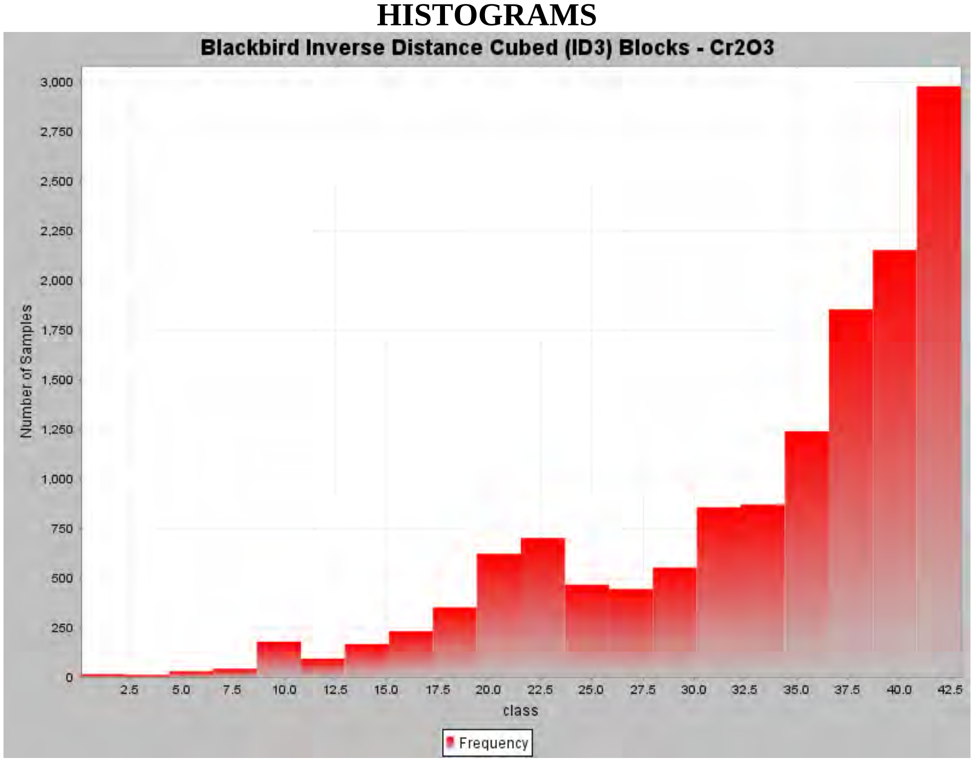
SCATTER PLOTS OF ID3 BLOCKS VERSUS OK BLOCKS

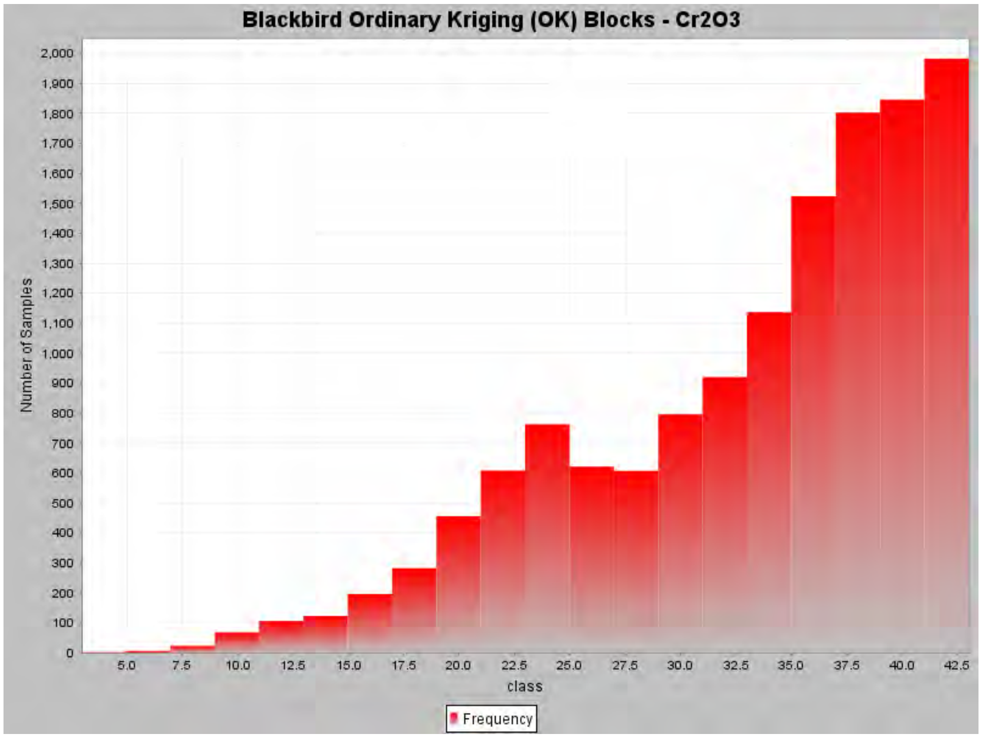





BB2-4 Cr2O3 ID3 vs. Cr2O3_OK
cr2o3_ok_cut
cr2o3_id3_cut
cr2o3_id3_cut (raw) vs cr2o3_ok_cut (raw)
Linear Regression: cr2o3_ok_cut= 0.8180cr2o3_id3_cut + 6.2538, Correlation Coefficient (r)= 0.9148, r squared= 0.8369

HISTOGRAMS


Blackbird Inverse Distance Cubed (ID3) Blocks - Cr2O3
Number of Samples
class
Frequency


Blackbird Ordinary Kriging (OK) Blocks - Cr2O3
Number of Samples
2,000
1,900
1,800
1,700
1,600
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
5.0
7.5
10.0
12.5
15.0
17.5
20.0
22.5
25.0
27.5
30.0
32.5
35.0
37.5
40.0
42.5
class
Frequency

APPENDIX 6

LEVEL PLANS AND SECTIONS

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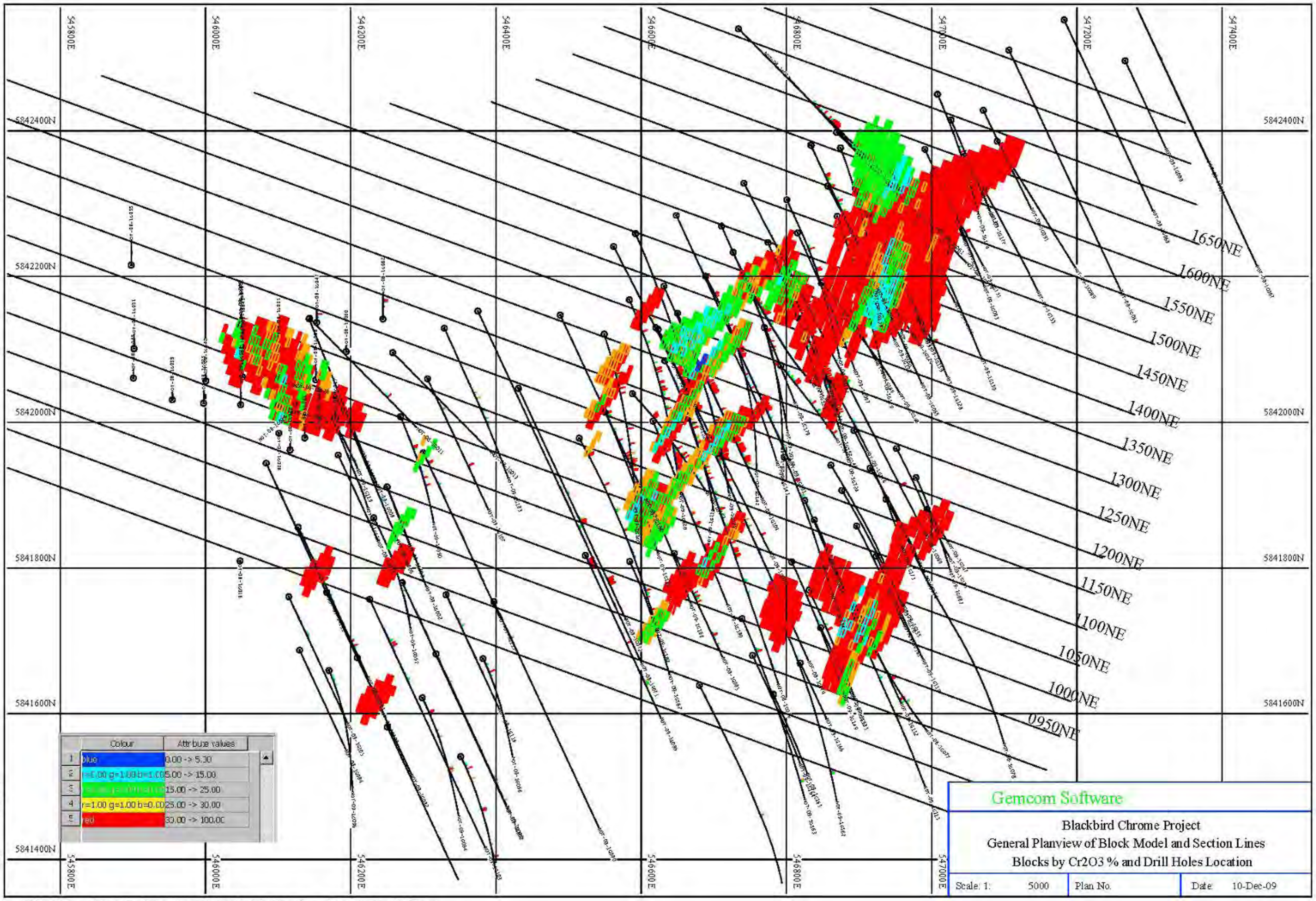
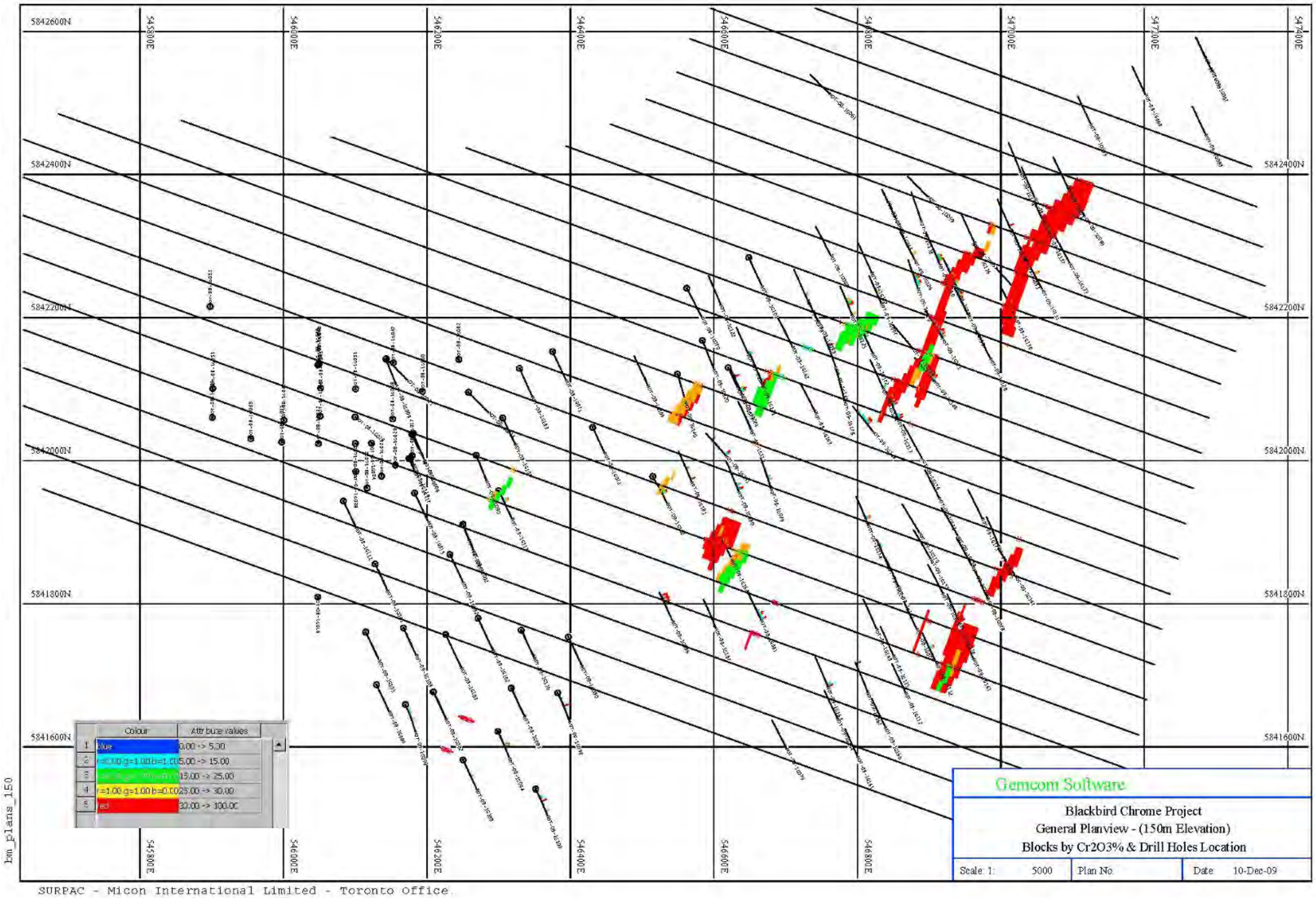
bm_generalplan



SURPAC - Micon International Limited - Toronto Office.



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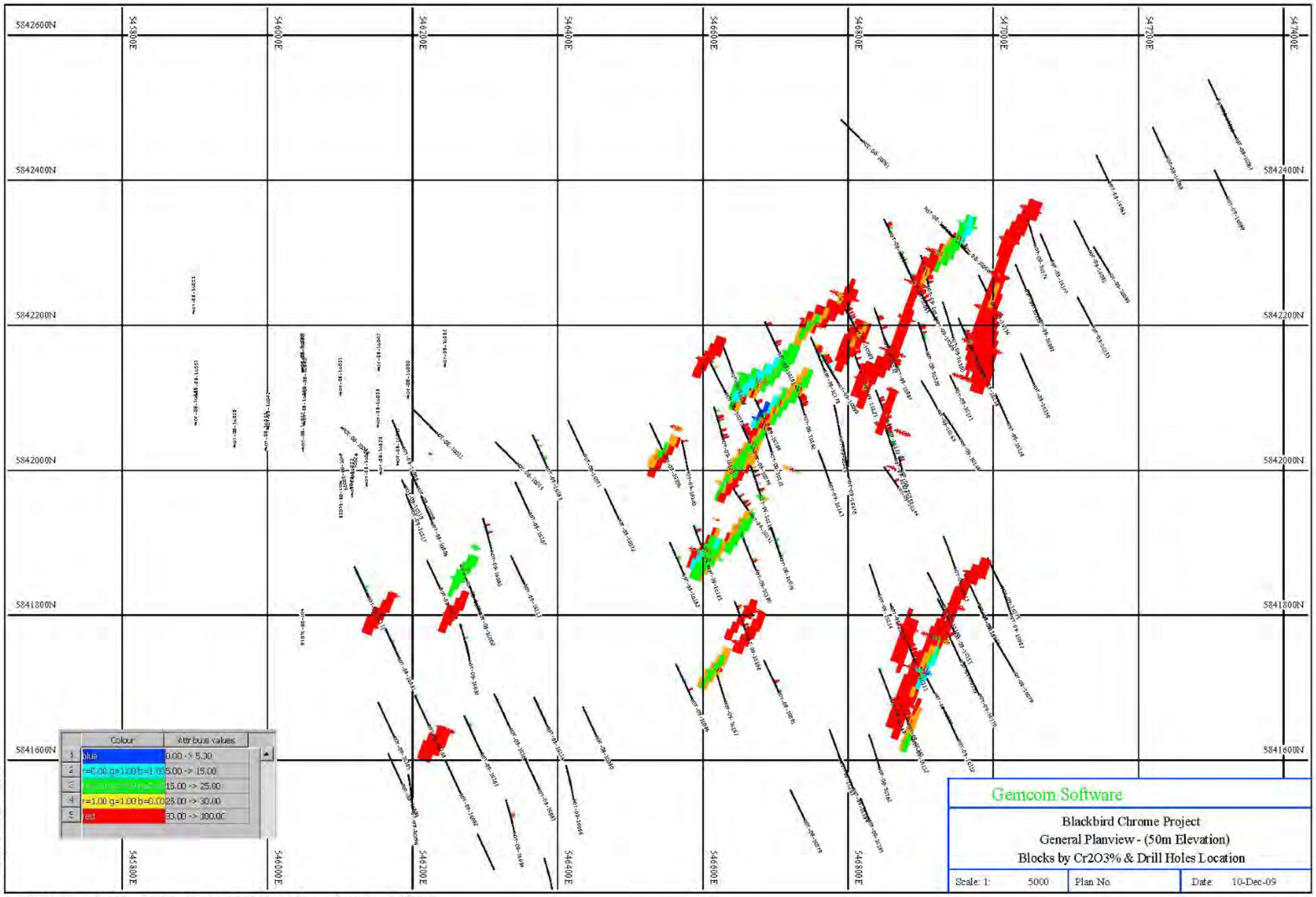

SURPAC - Micon International Limited - Toronto Office.

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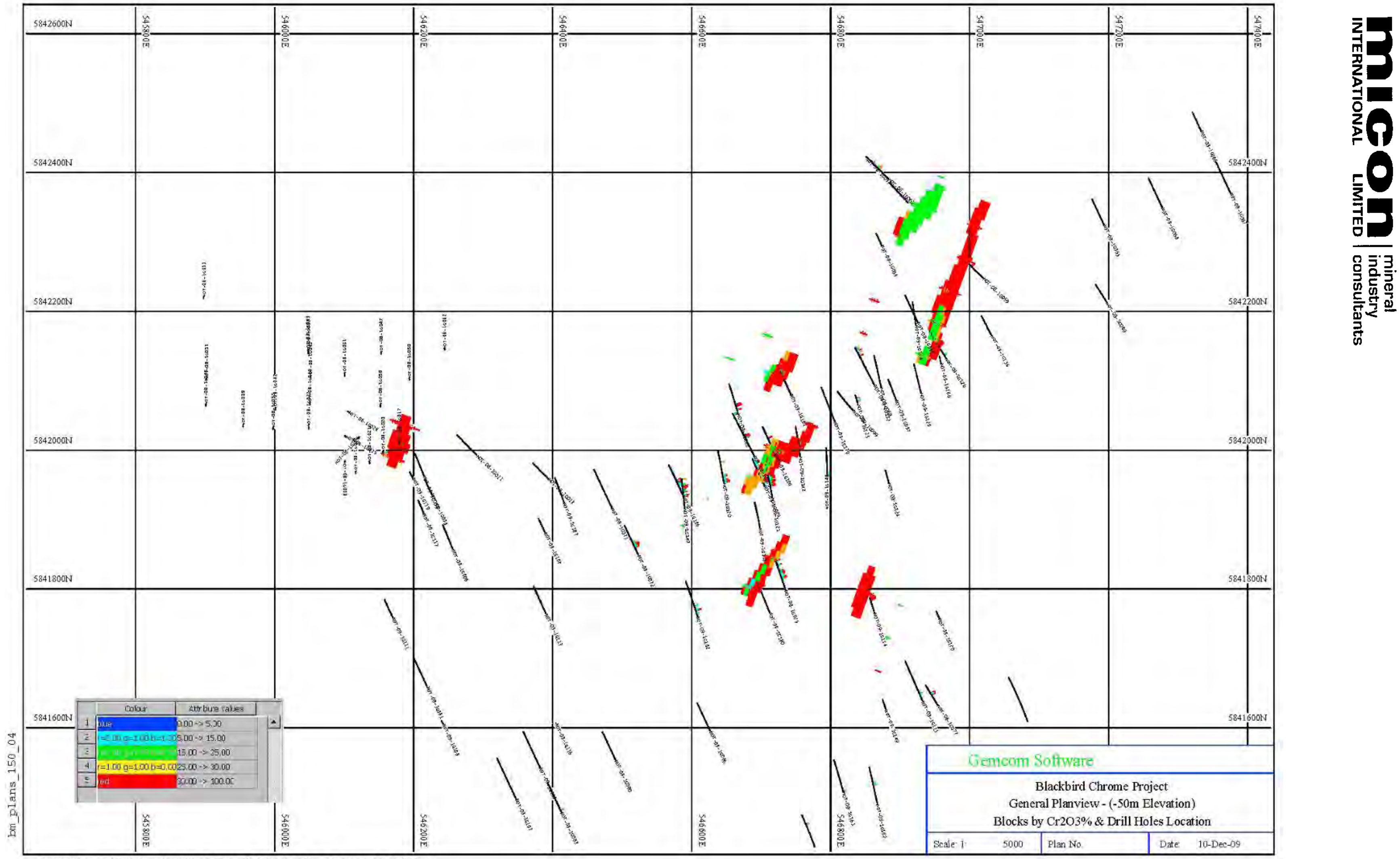
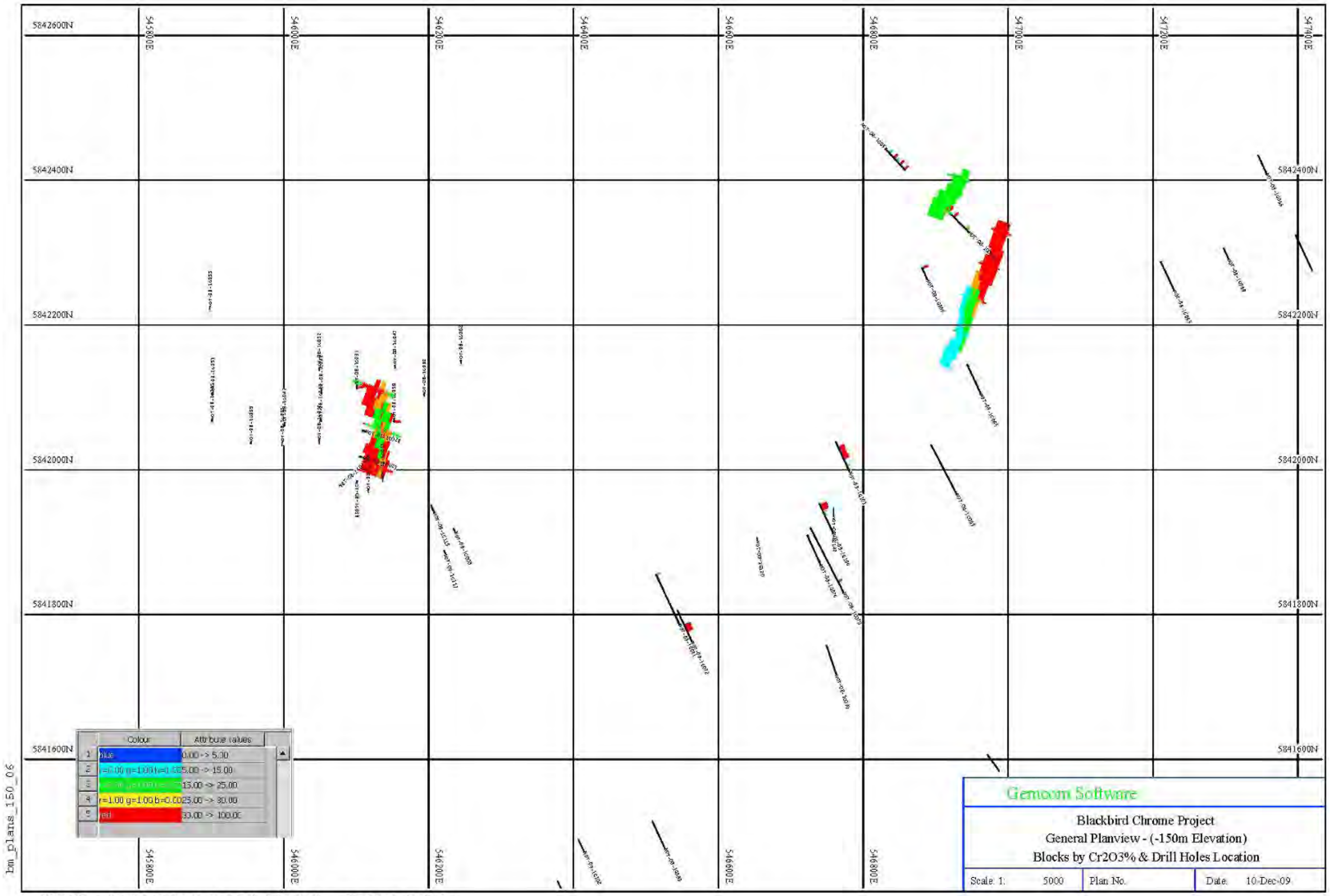


SURPAC - Micon International Limited - Toronto Office.



SURPAC - Micon International Limited - Toronto Office.

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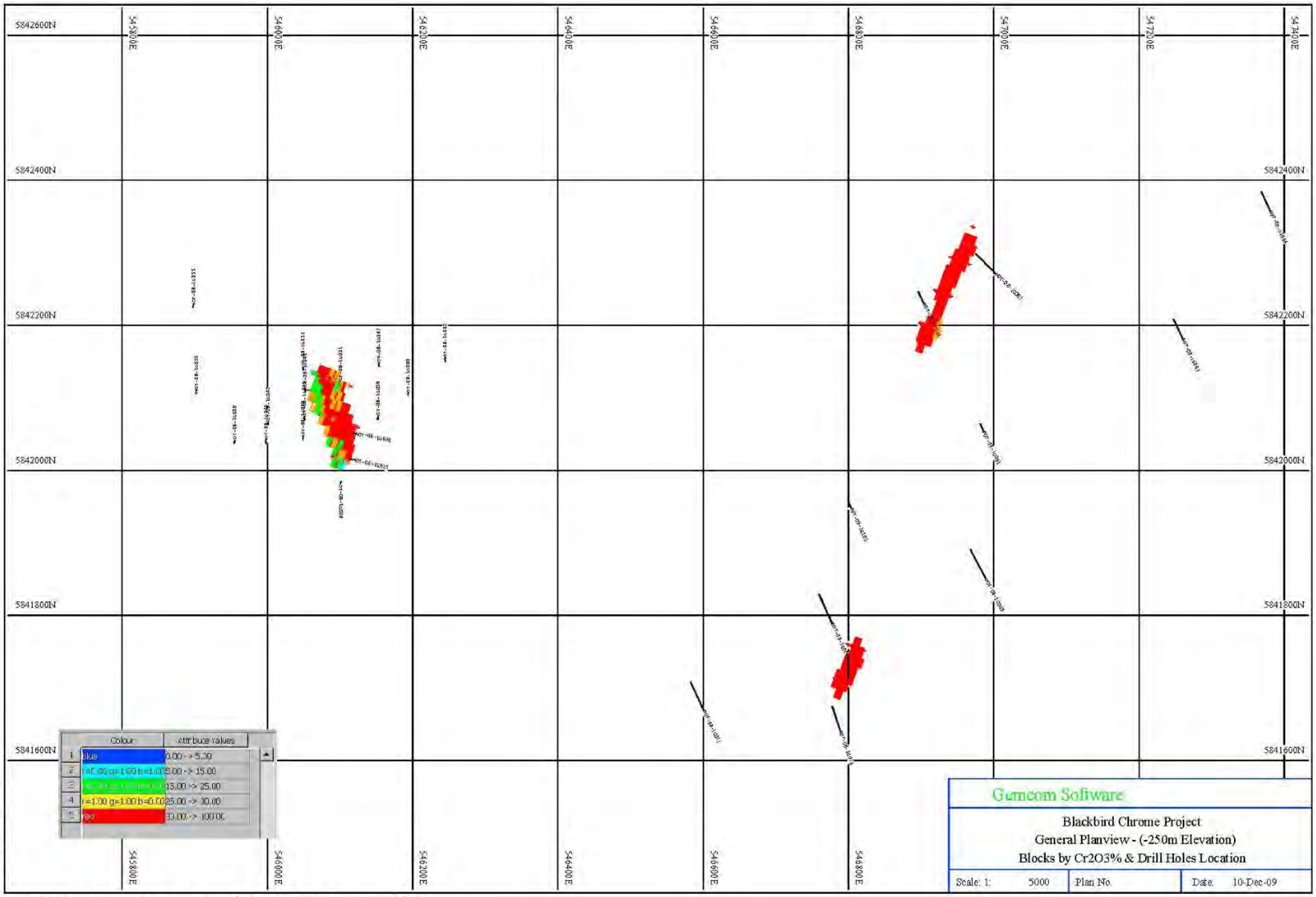

SURPAC - Micon International Limited - Toronto Office.

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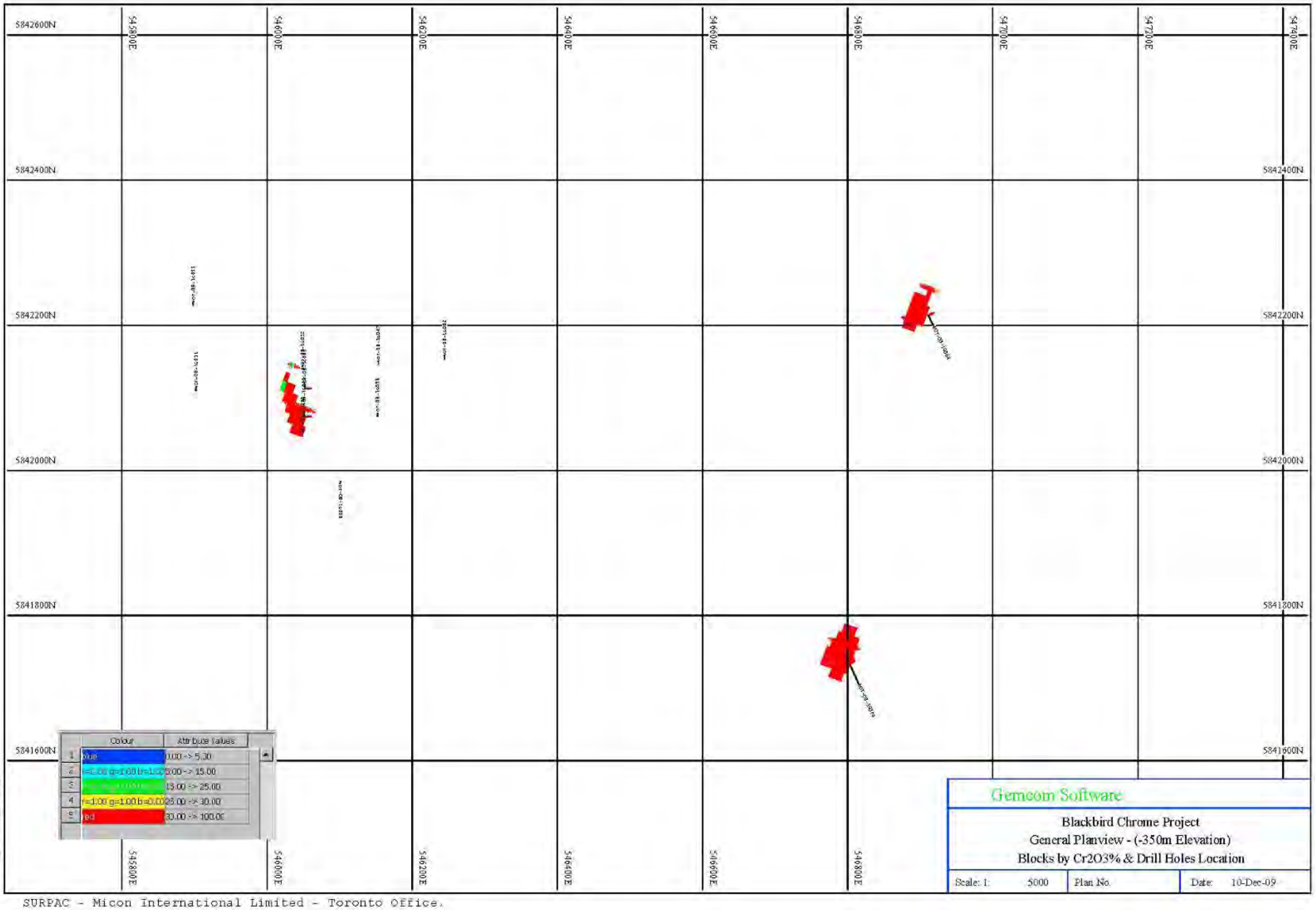
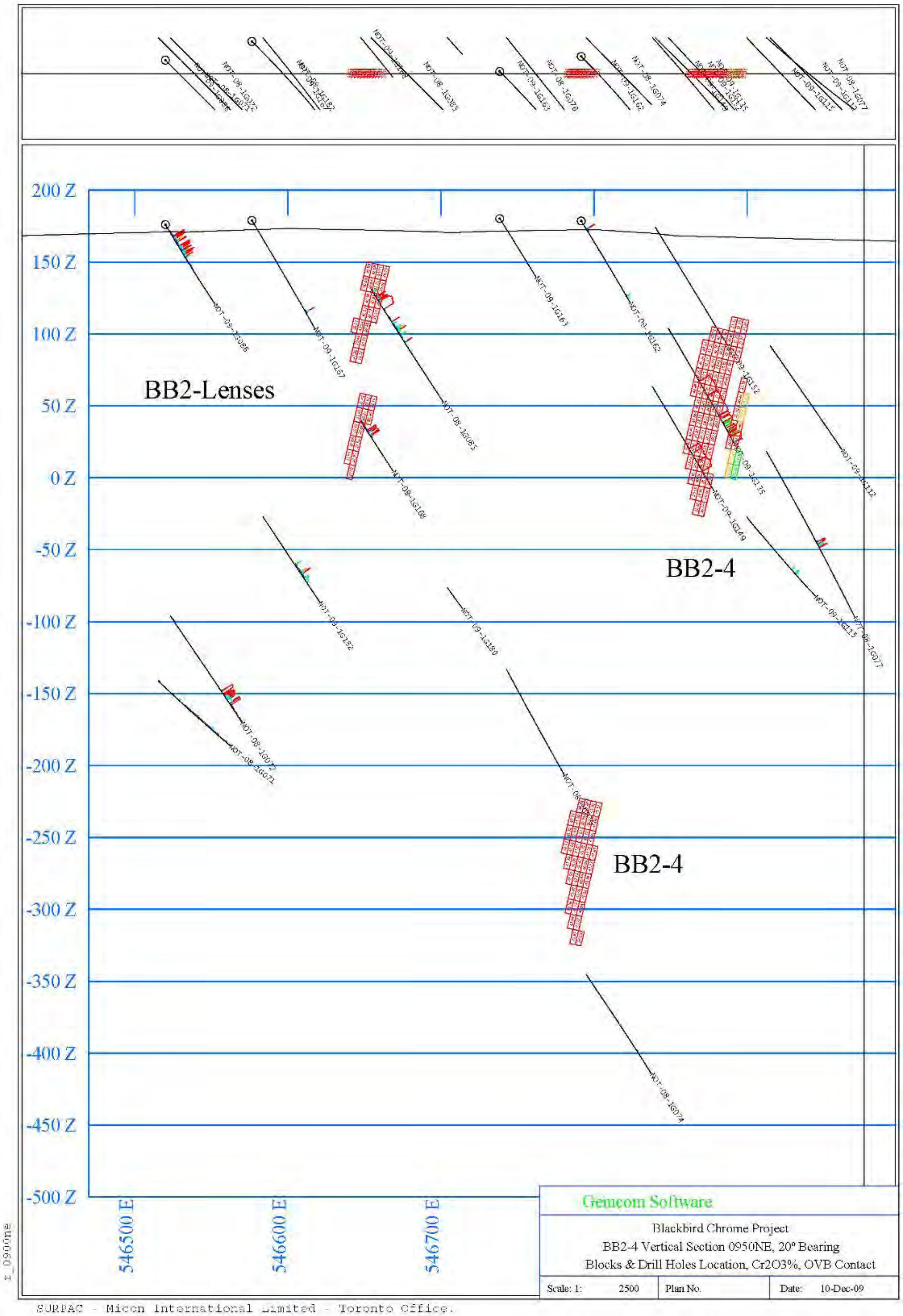

5842600N
5842400N
5842200N
5842000N
5841800N
5841600N
545800E
546000E
546200E
546400E
546600E
546800E
547000E
547200E
547400E
Colour
Attribute Values
blue
0.00 -> 5.30
r=1.00 g=1.00 b=1.00
5.00 -> 15.00
15.00 -> 25.00
r=1.00 g=1.00 b=0.00
25.00 -> 30.00
red
30.00 -> 100.00
Gemcom Software
Blackbird Chrome Project
General Planview - (-350m Elevation)
Blocks by Cr2O3% & Drill Holes Location
Scale: 1: 5000
Plan No.
Date: 10-Dec-09
bm_plans_150_10
SURPAC - Micon International Limited - Toronto Office.



200 Z
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100 Z
50 Z
0 Z
-50 Z
-100 Z
-150 Z
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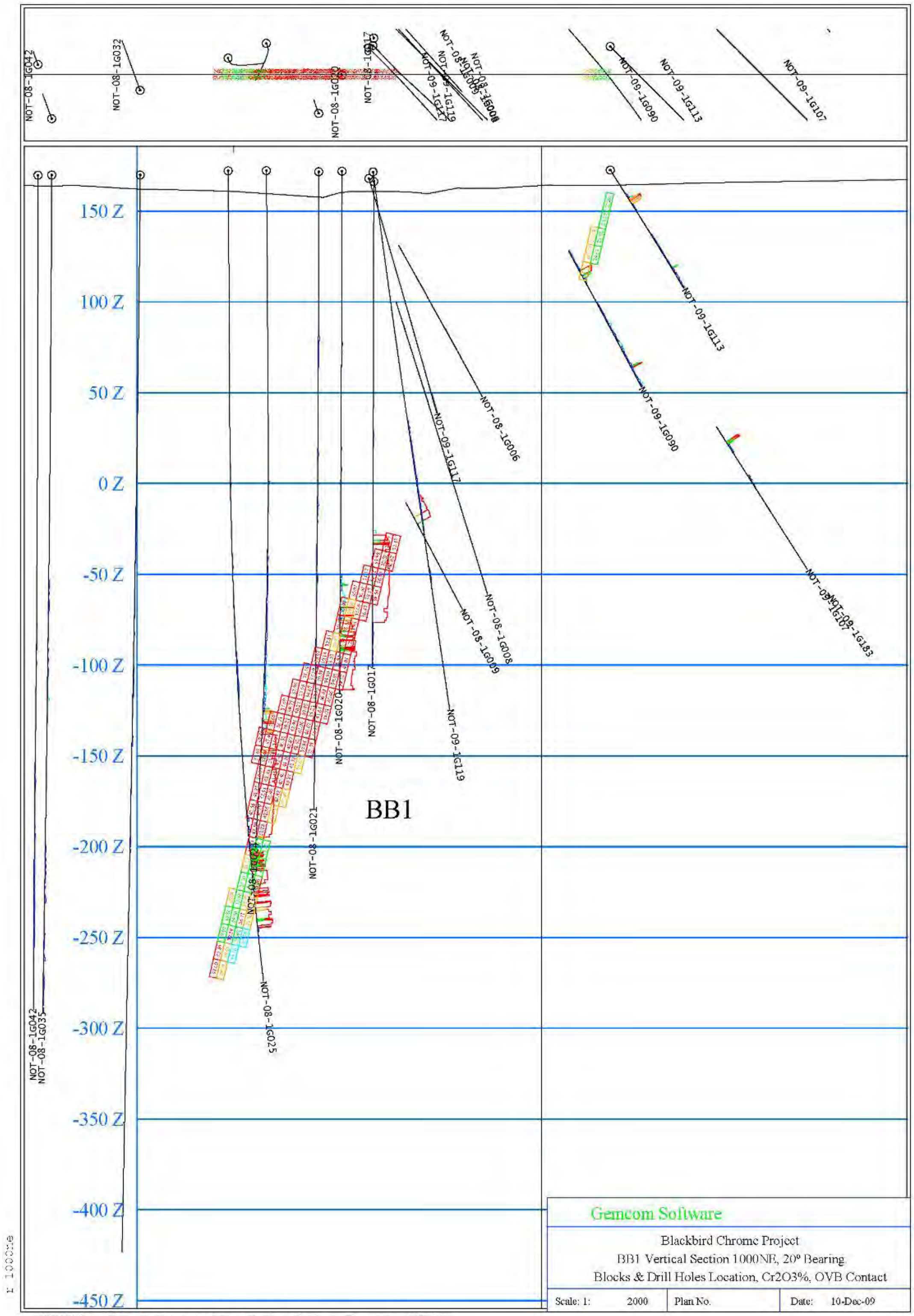
-300 Z
-350 Z
-400 Z
-450 Z
-500 Z
546500 E
546600 E
546700 E
BB2-Lenses
BB2-4
BB2-4
Gemcom Software
Blackbird Chrome Project
BB2-4 Vertical Section 0950NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2500
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.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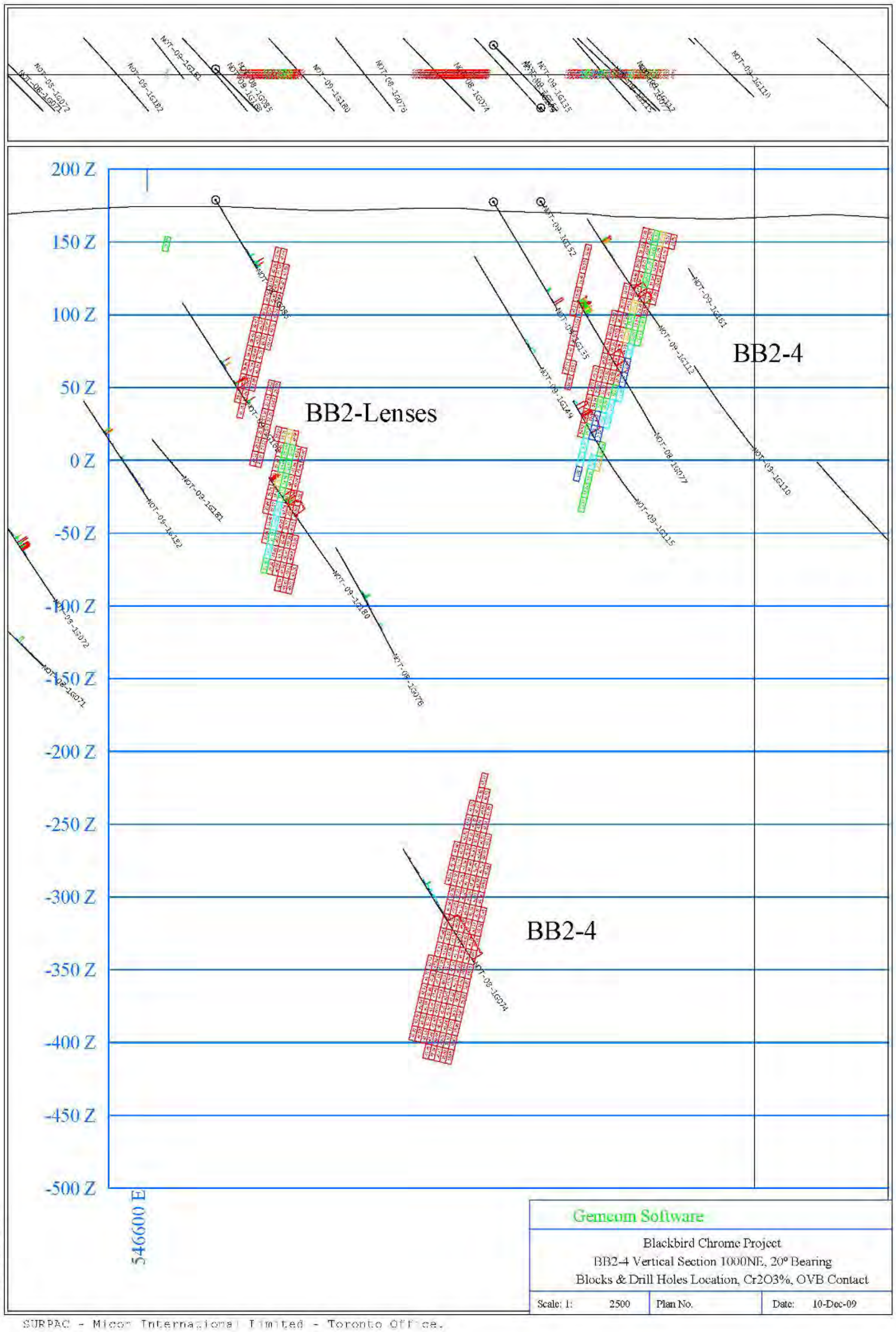
NOT-08-1G008
NOT-08-1G009
NOT-09-1G117
NOT-09-1G119
NOT-09-1G090
NOT-09-1G113
NOT-09-1G107
NOT-08-1G183
150 Z
100 Z
50 Z
0 Z
-50 Z
-100 Z
-150 Z
-200 Z
-250 Z
-300 Z
-350 Z
-400 Z
-450 Z
BB1
Gemcom Software
Blackbird Chrome Project
BB1 Vertical Section 1000NE, 20º Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.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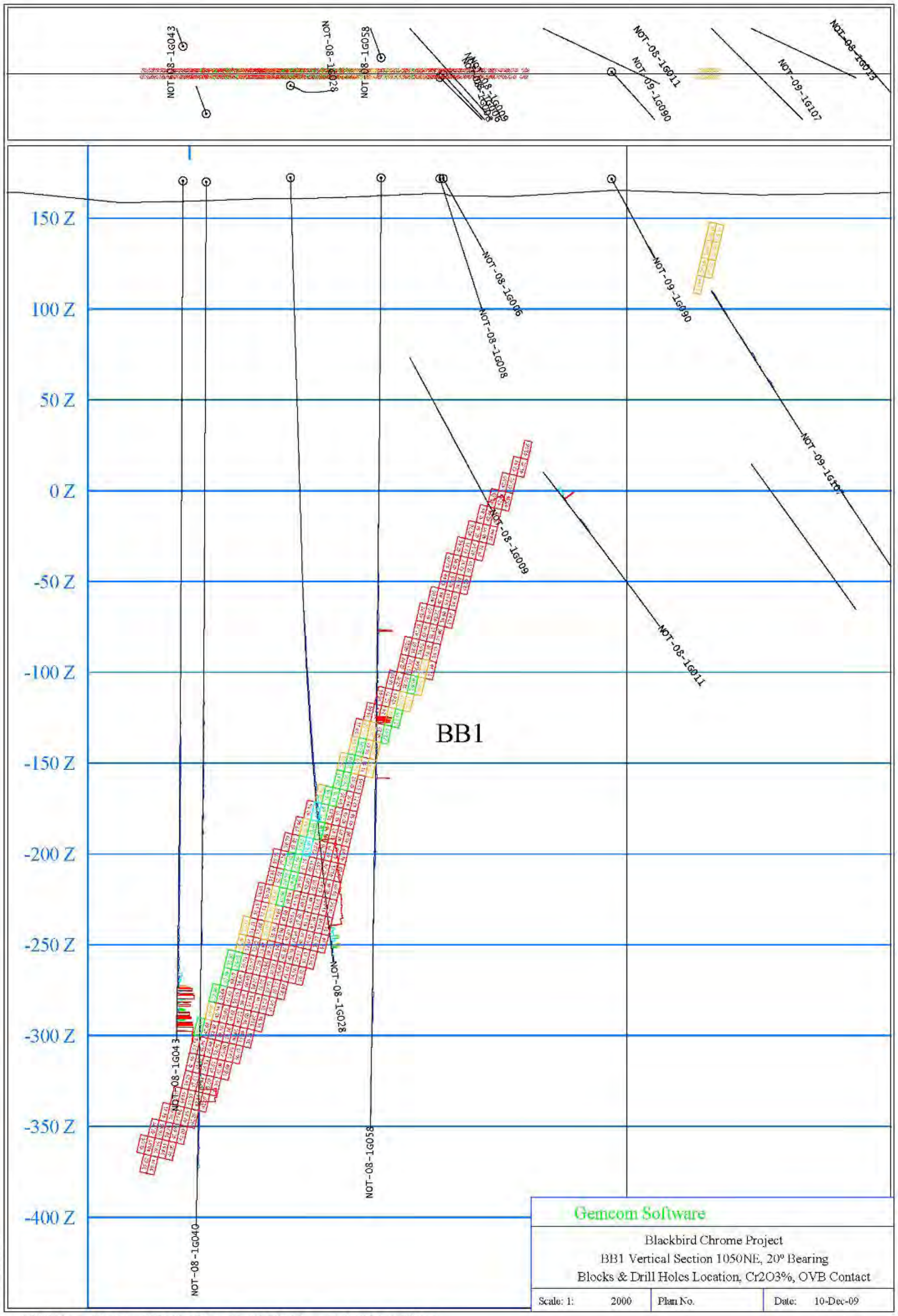
-450 Z
-500 Z
BB2-Lenses
BB2-4
BB2-4
546600 E
Gemcom Software
Blackbird Chrome Project
BB2-4 Vertical Section 1000NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2500
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.



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NOT-08-1G008
NOT-08-1G009
NOT-08-1G011
NOT-09-1G090
NOT-09-1G107
NOT-08-1G040
150 Z
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50 Z
0 Z
-50 Z
-100 Z
-150 Z
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-250 Z
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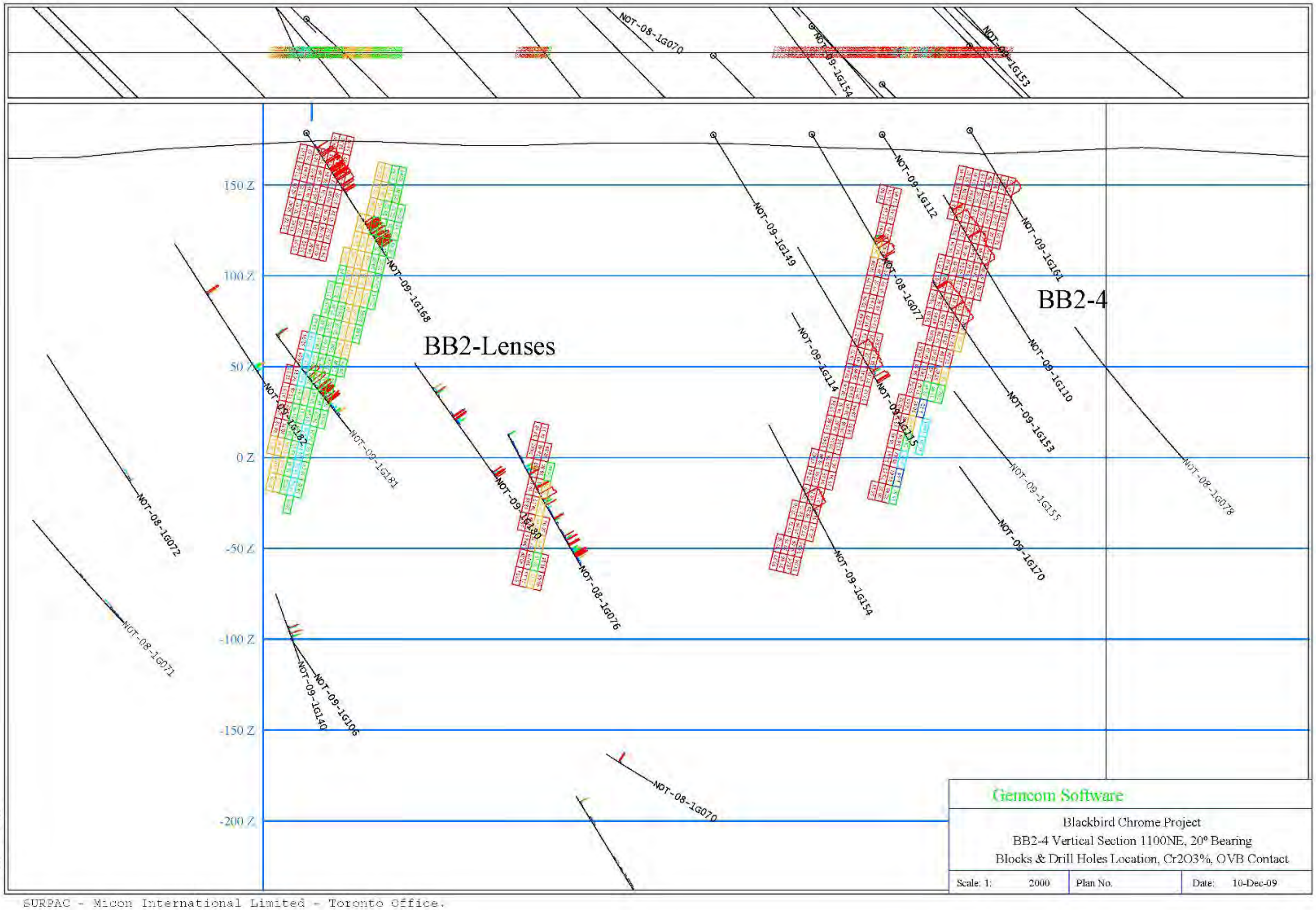
-400 Z
BB1
Gemcom Software
Blackbird Chrome Project
BB1 Vertical Section 1050NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.



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50 Z
0 Z
-50 Z
-100 Z
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NOT-09-1G154
NOT-09-1G153
NOT-09-1G168
NOT-09-1G149
NOT-09-1G112
NOT-09-1G161
NOT-08-1G077
NOT-09-1G114
NOT-09-1G110
NOT-09-1G115
NOT-09-1G153
NOT-09-1G155
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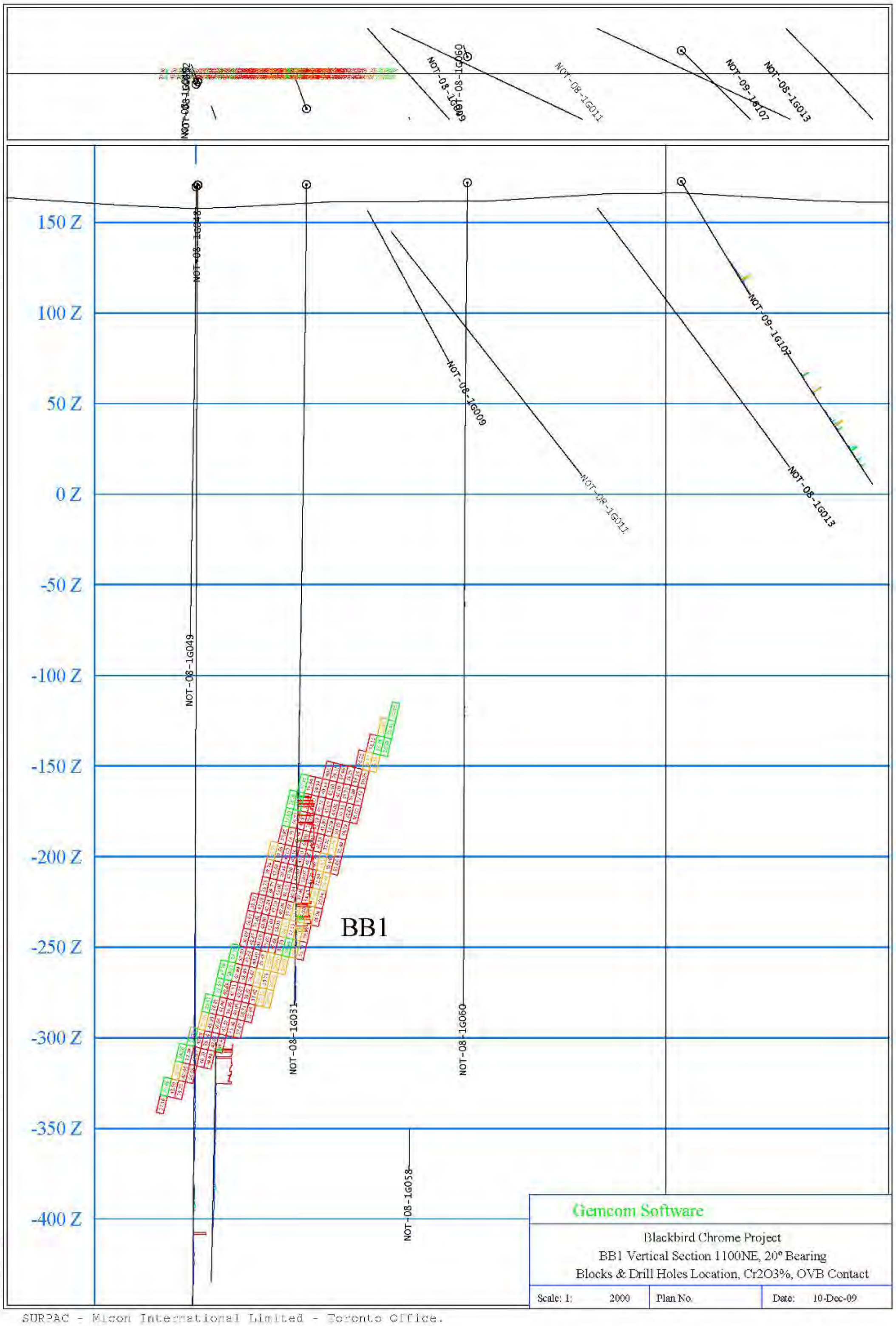
NOT-09-1G170
NOT-09-1G182
NOT-09-1G181
NOT-08-1G072
NOT-09-1G130
NOT-08-1G076
NOT-08-1G071
NOT-09-1G140
NOT-09-1G106
NOT-08-1G070
r_1100ne_02
Gemcom Software
Blackbird Chrome Project
BB2-4 Vertical Section 1100NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.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0 Z
-50 Z
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NOT-09-1G107
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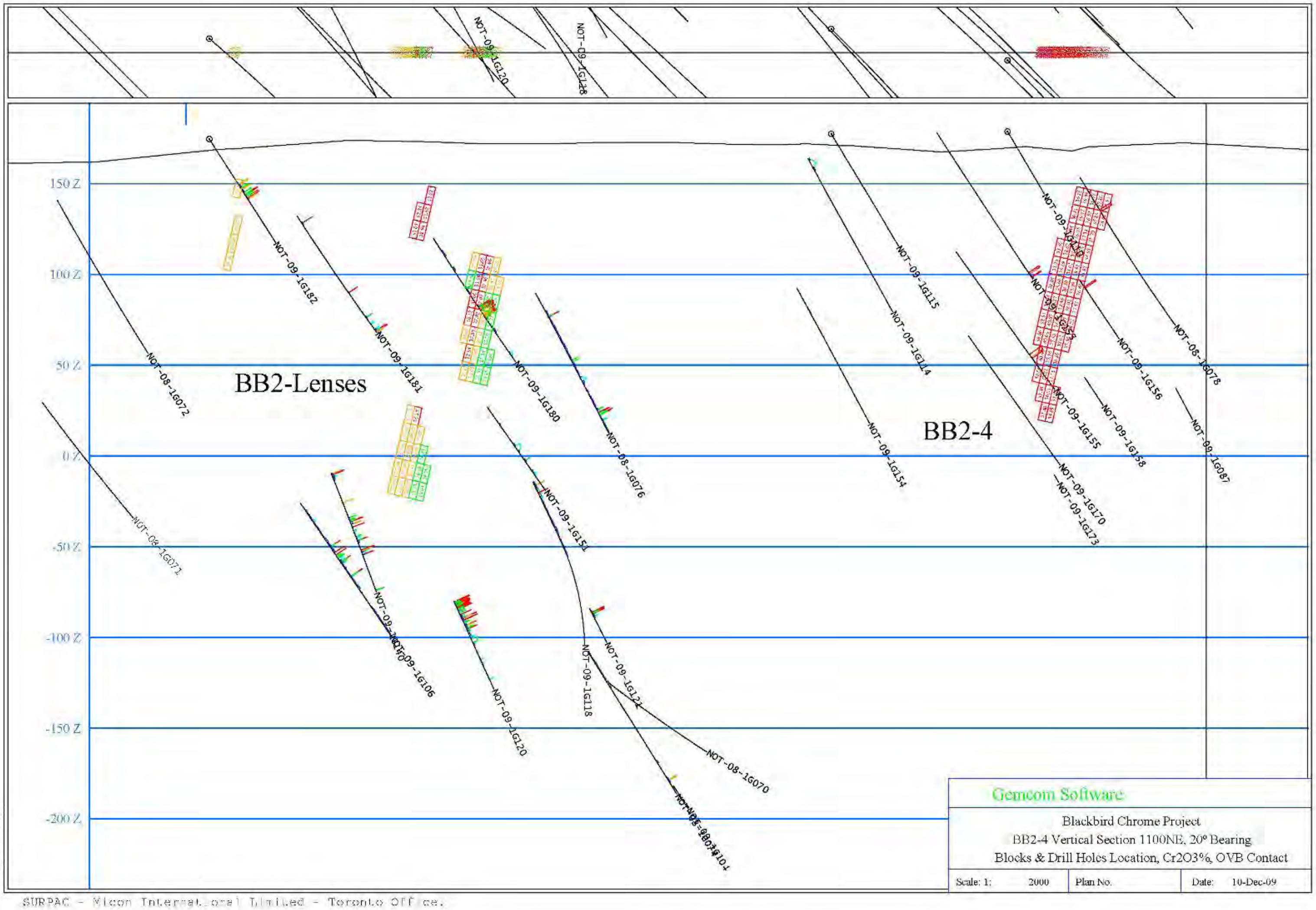
NOT-08-1G031
NOT-08-1G060
NOT-08-1G058
BB1
Gemcom Software
Blackbird Chrome Project
BB1 Vertical Section 1100NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.


BB2-Lenses
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NOT-08-1G071
NOT-09-1G182
NOT-09-1G181
NOT-09-1G180
NOT-09-1G120
NOT-09-1G128
NOT-08-1G076
NOT-09-1G151
NOT-09-1G106
NOT-09-1G118
NOT-09-1G121
NOT-08-1G070
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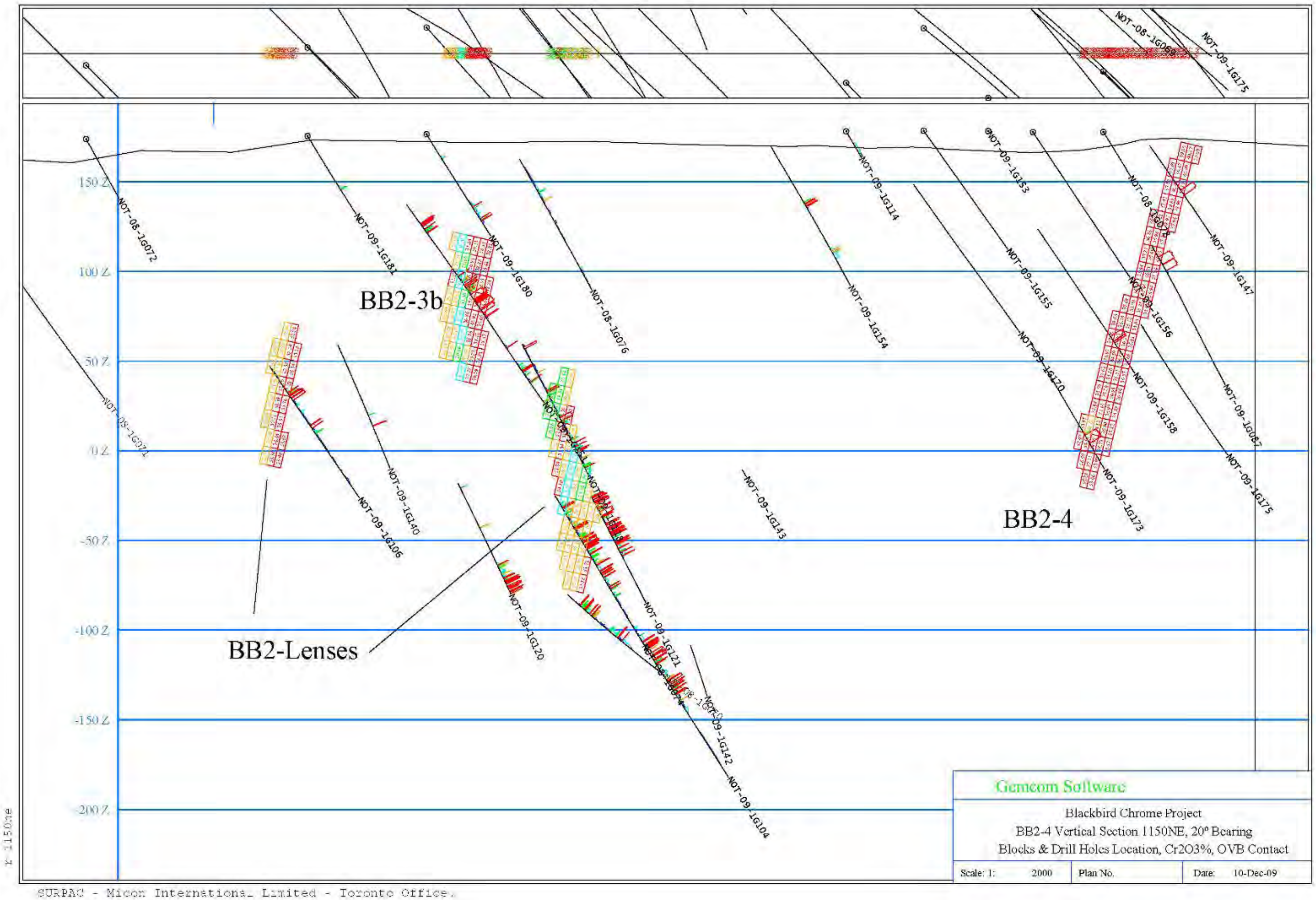
NOT-09-1G155
NOT-09-1G156
NOT-09-1G158
NOT-08-1G078
NOT-09-1G087
NOT-09-1G170
NOT-09-1G173
Gemcom Software
Blackbird Chrome Project
BB2-4 Vertical Section 1100NE, 20º Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.


BB2-3b
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BB2-Lenses
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0 Z
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-100 Z
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NOT-09-1G181
NOT-09-1G180
NOT-08-1G076
NOT-09-1G114
NOT-09-1G154
NOT-09-1G153
NOT-09-1G155
NOT-09-1G120
NOT-08-1G078
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NOT-09-1G087
NOT-09-1G173
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NOT-08-1G068
NOT-09-1G140
NOT-09-1G106
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NOT-09-1G142
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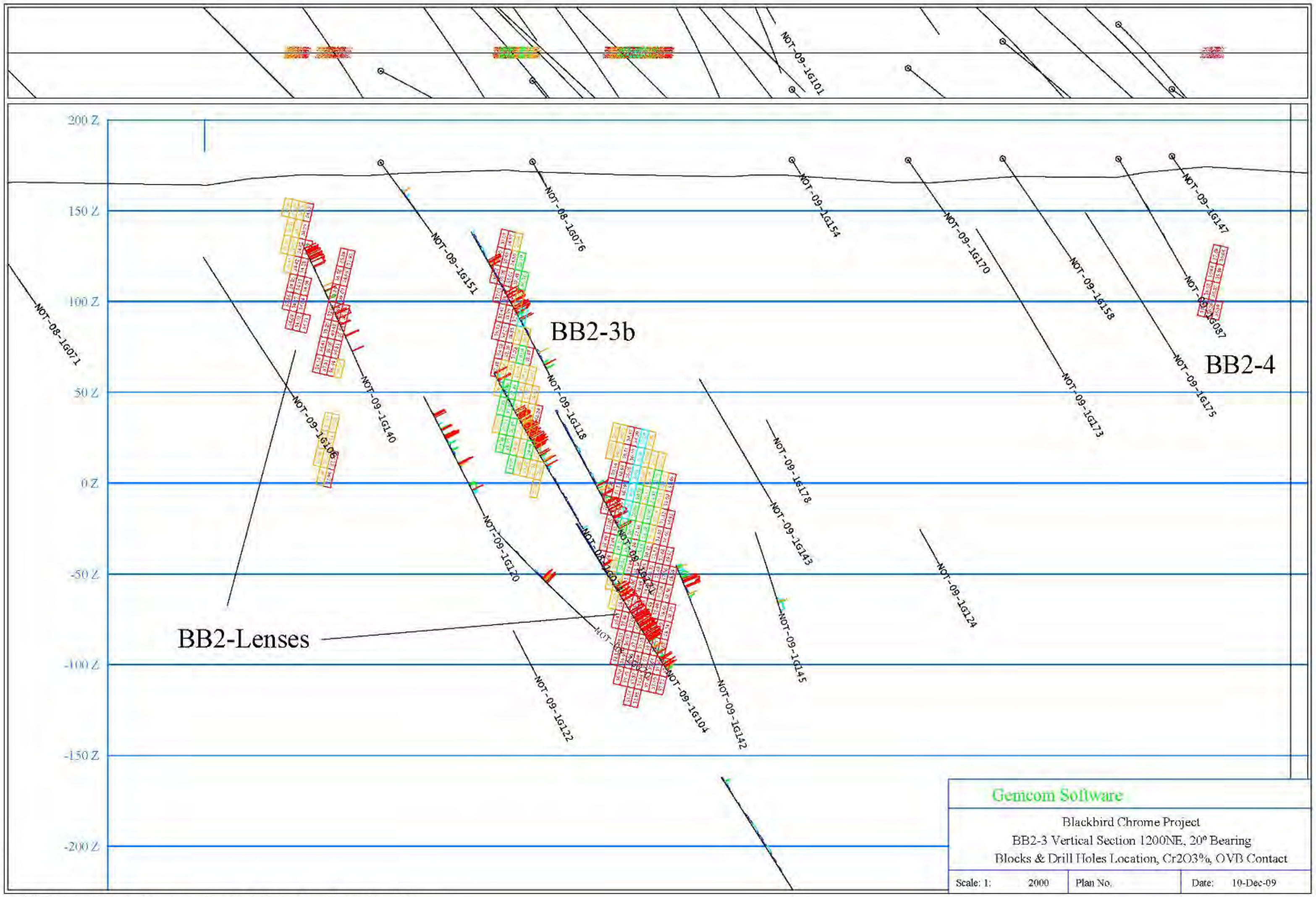
Gemcom Software
Blackbird Chrome Project
BB2-4 Vertical Section 1150NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
r 1150ne
SURPAC - Micon International Limited - Toronto Office.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-200 Z
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NOT-09-1G140
NOT-09-1G151
NOT-08-1G076
NOT-09-1G118
NOT-09-1G120
NOT-09-1G122
NOT-09-1G104
NOT-09-1G142
NOT-09-1G101
NOT-09-1G154
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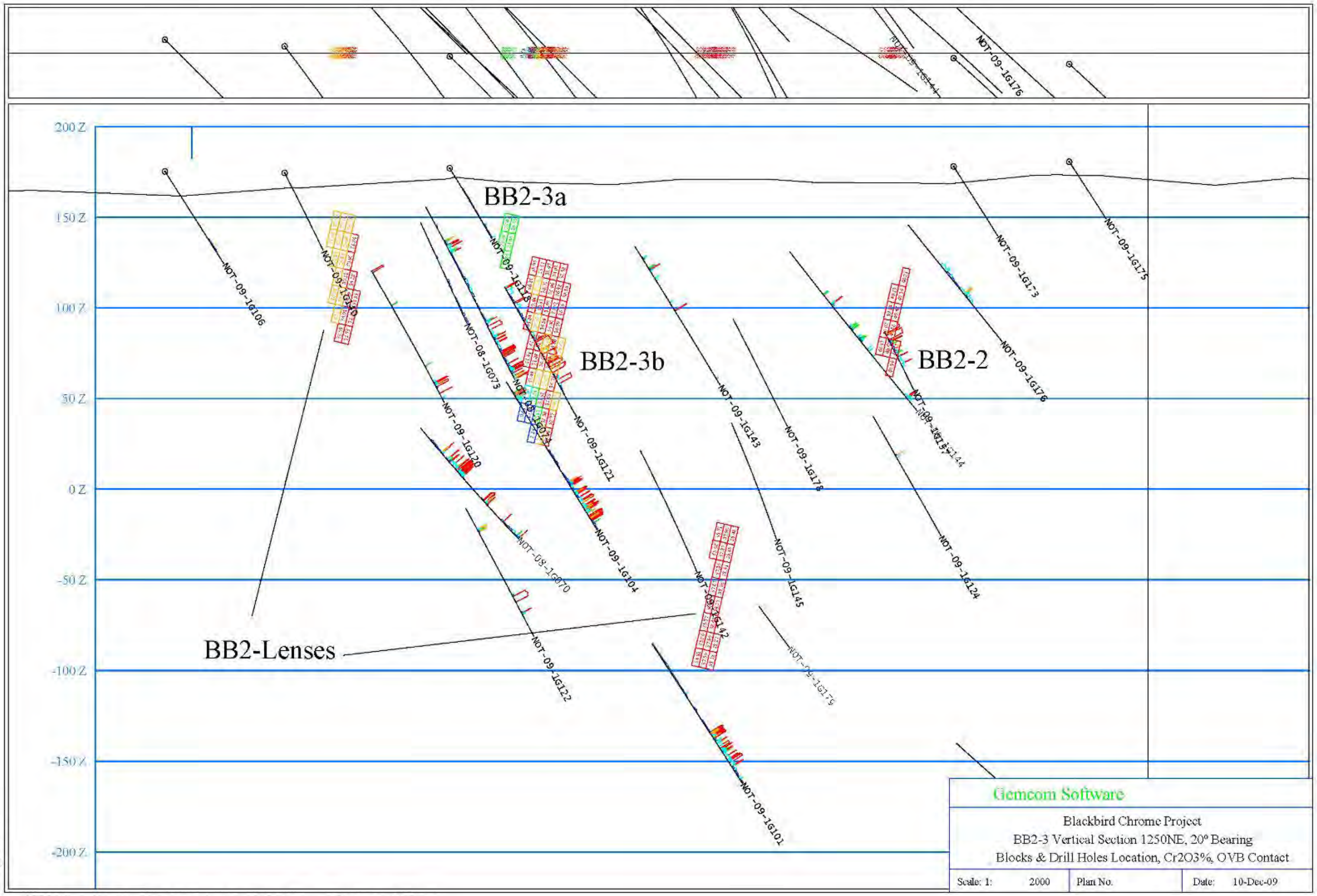
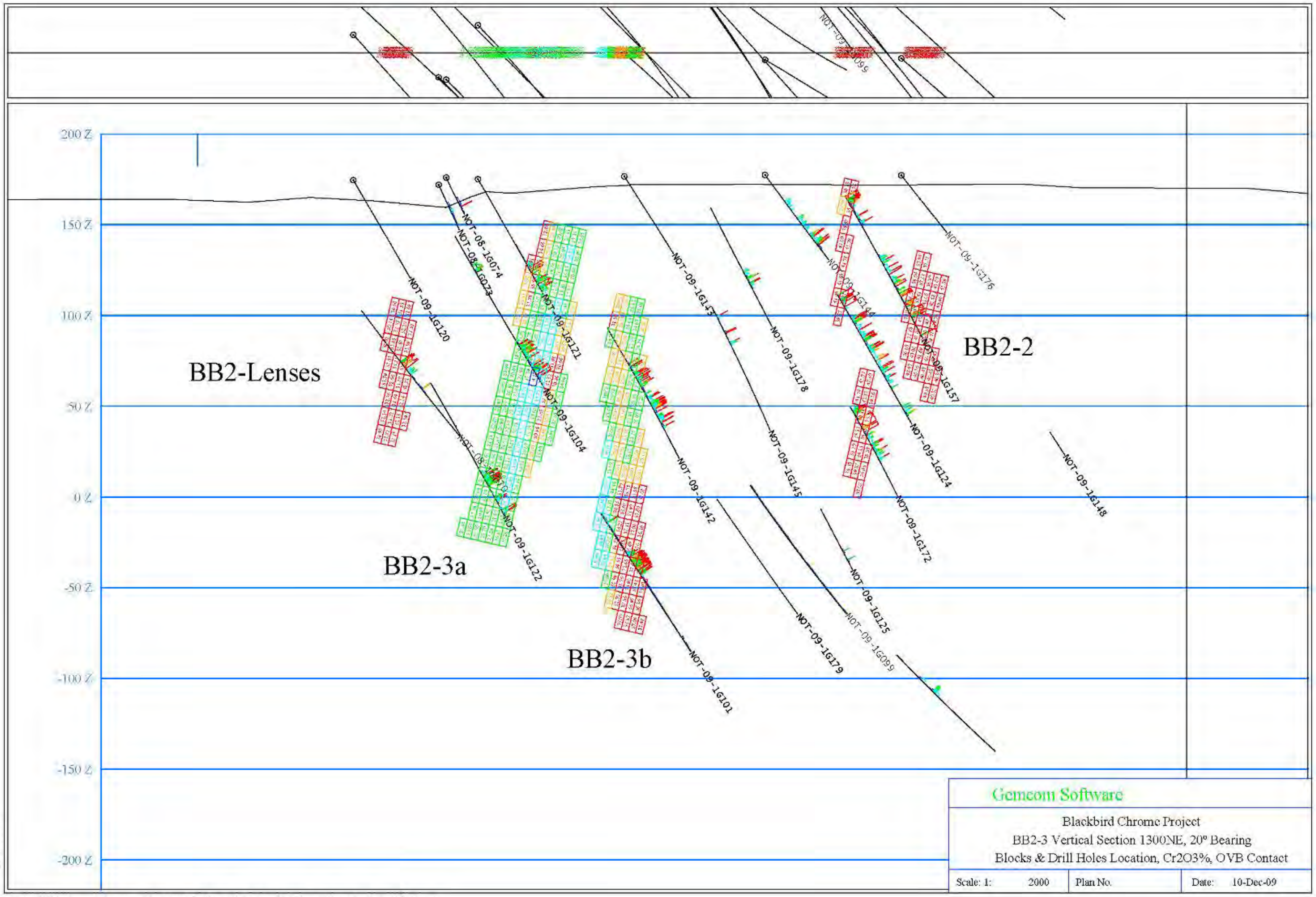
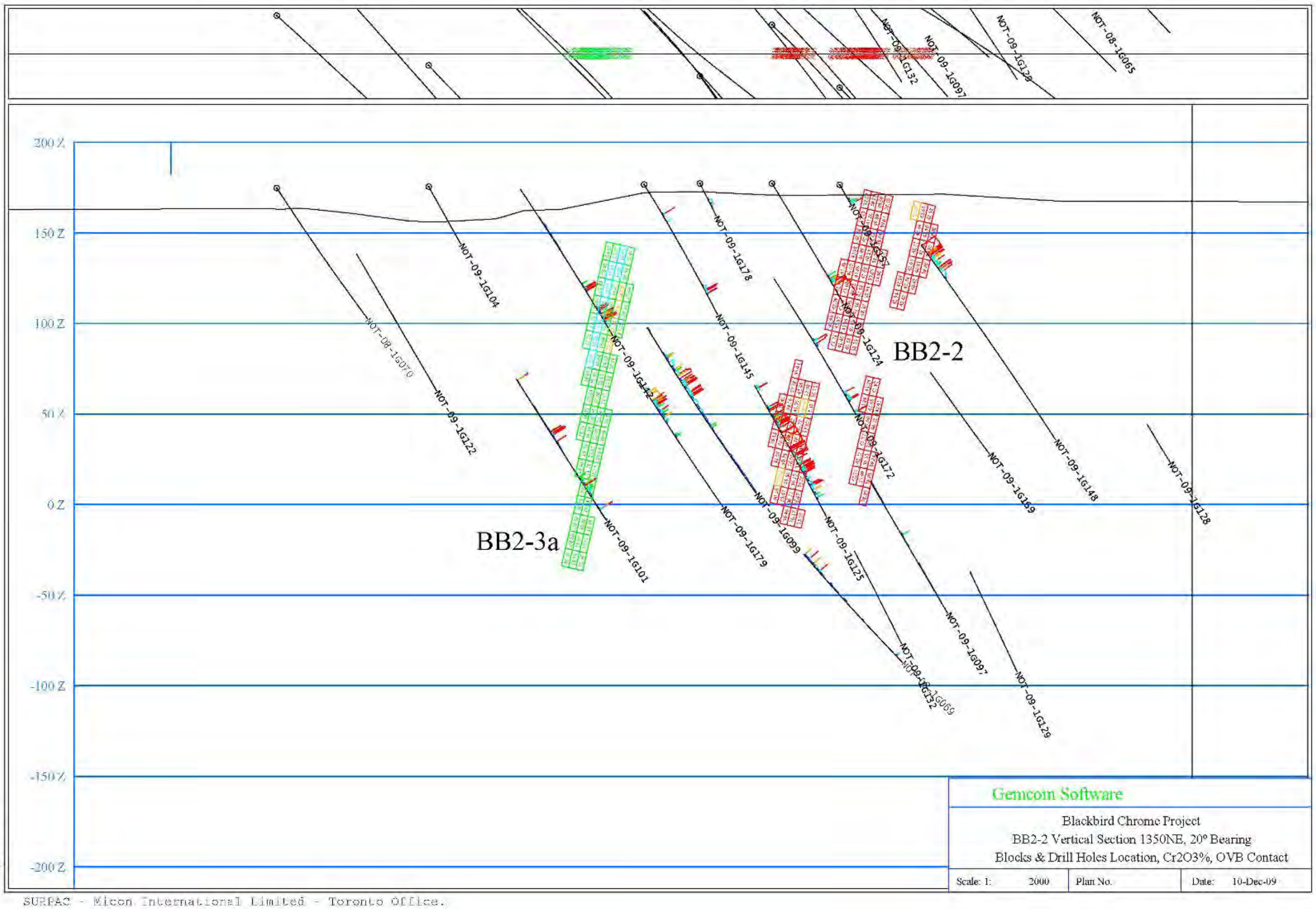
NOT-09-1G170
NOT-09-1G124
NOT-09-1G158
NOT-09-1G173
NOT-09-1G175
NOT-09-1G147
BB2-3b
BB2-4
BB2-Lenses
Gemcom Software
Blackbird Chrome Project
BB2-3 Vertical Section 1200NE, 20º Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
r_1200ne
SURPAC - Micon International Limited - Toronto Office.



SURPAC - Micon International Limited - Toronto Office.



SURPAC – Micon International Limited – Toronto Office.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BB2-3a
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50 Z
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-50 Z
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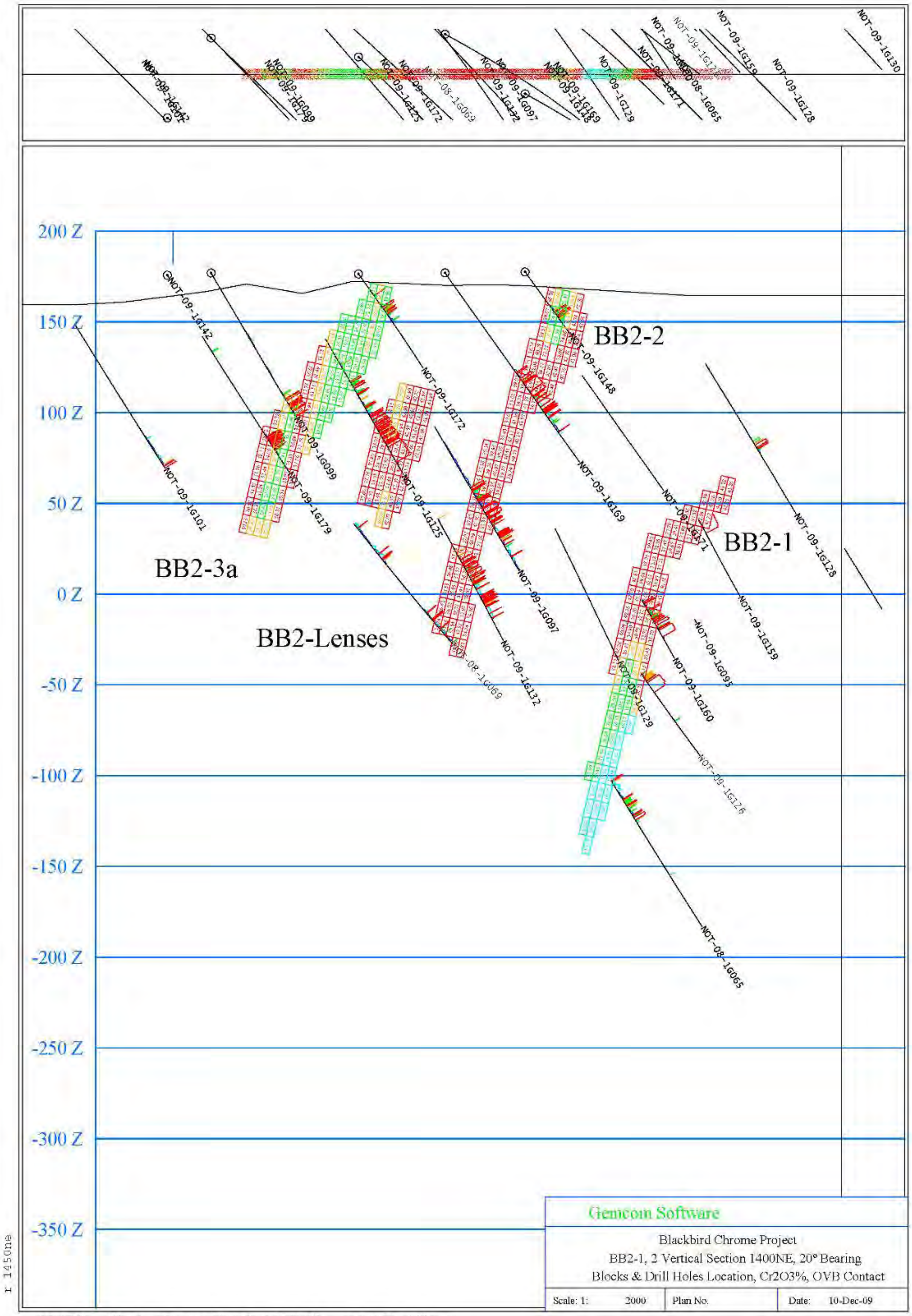
NOT-09-1G104
NOT-09-1G122
NOT-09-1G178
NOT-09-1G145
NOT-09-1G101
NOT-09-1G179
NOT-09-1G099
NOT-09-1G125
NOT-09-1G124
NOT-09-1G172
NOT-09-1G159
NOT-09-1G148
NOT-09-1G128
NOT-09-1G097
NOT-09-1G129
NOT-09-1G132
NOT-08-1G065
Gemcom Software
Blackbird Chrome Project
BB2-2 Vertical Section 1350NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
r_1350ne
SURPAC - Micon International Limited - Toronto Office.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-100 Z
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-200 Z
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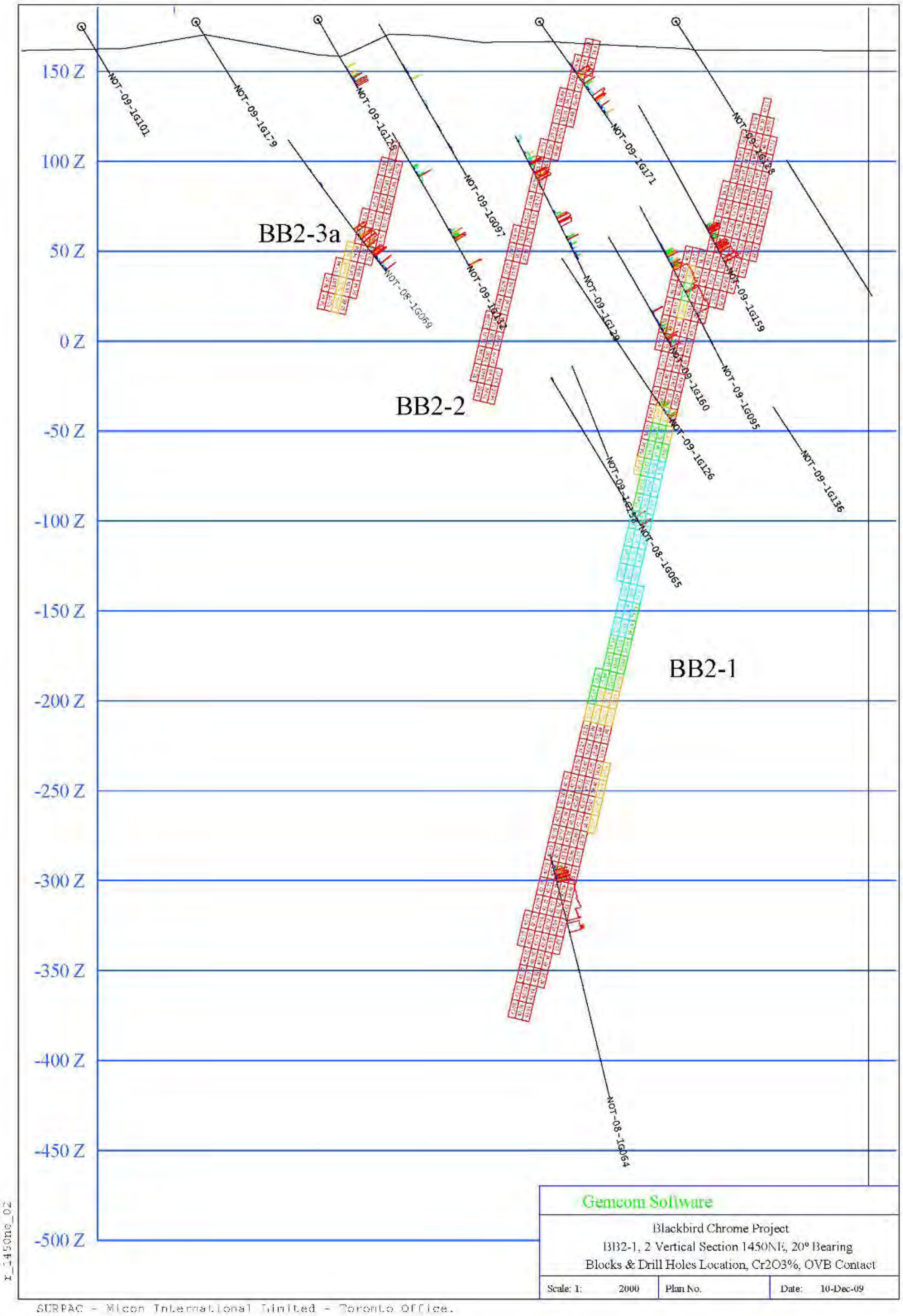
-300 Z
-350 Z
BB2-2
BB2-1
BB2-3a
BB2-Lenses
Gemcom Software
Blackbird Chrome Project
BB2-1, 2 Vertical Section 1400NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
SURPAC Micon International Limited Toronto Office.



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100 Z
50 Z
0 Z
-50 Z
-100 Z
-150 Z
-200 Z
-250 Z
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-350 Z
-400 Z
-450 Z
-500 Z
BB2-3a
BB2-2
BB2-1
NOT-09-1G101
NOT-09-1G179
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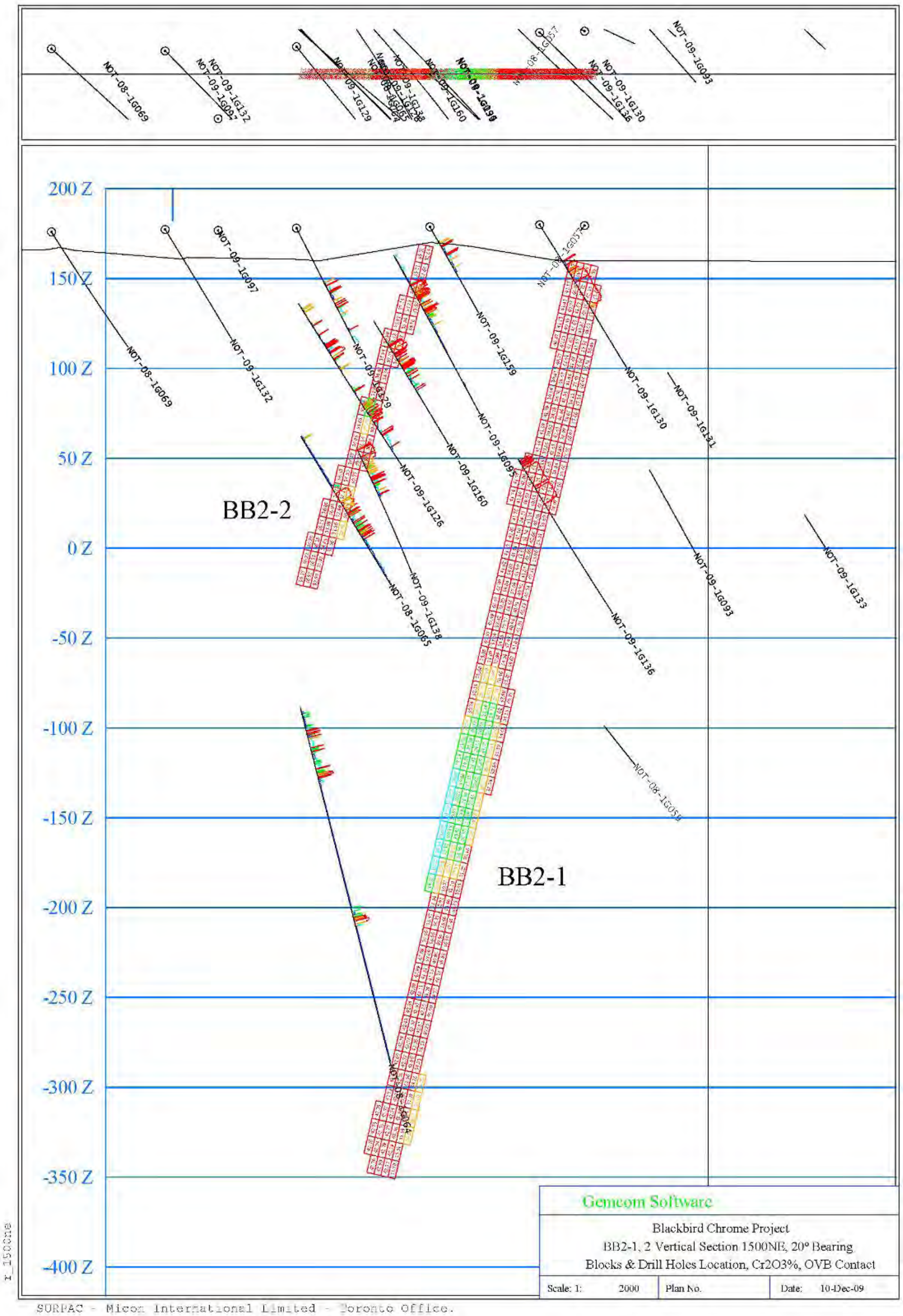
NOT-09-1G097
NOT-09-1G171
NOT-08-1G069
NOT-09-1G159
NOT-09-1G160
NOT-09-1G095
NOT-09-1G126
NOT-09-1G136
NOT-08-1G065
NOT-08-1G064
Gemcom Software
Blackbird Chrome Project
BB2-1, 2 Vertical Section 1450NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
r_1450ne_02
SURPAC - Micon International Limited - Toronto Office.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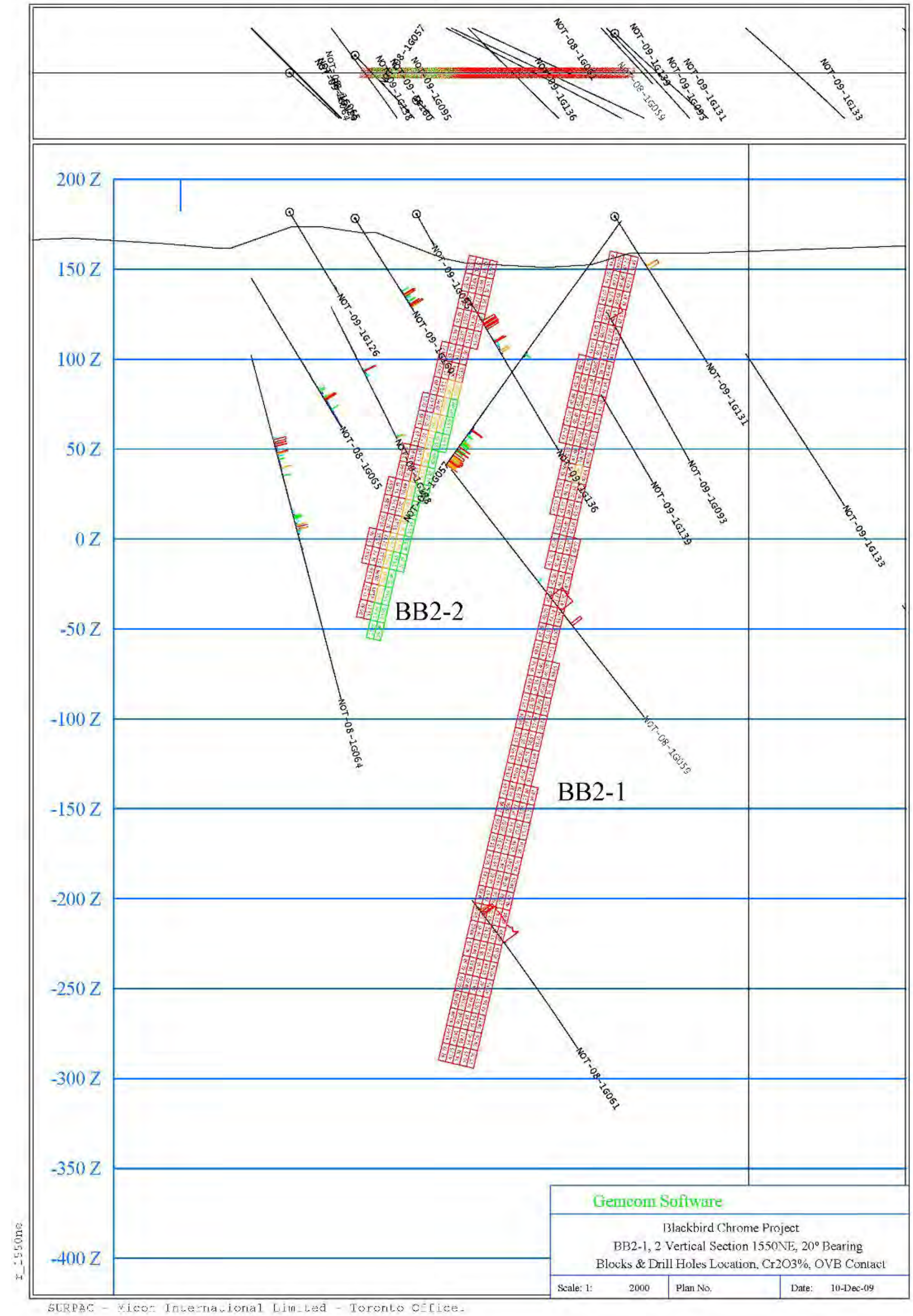
0 Z
-50 Z
-100 Z
-150 Z
-200 Z
-250 Z
-300 Z
-350 Z
-400 Z
BB2-2
BB2-1
Gemcom Software
Blackbird Chrome Project
BB2-1, 2 Vertical Section 1500NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.



200 Z
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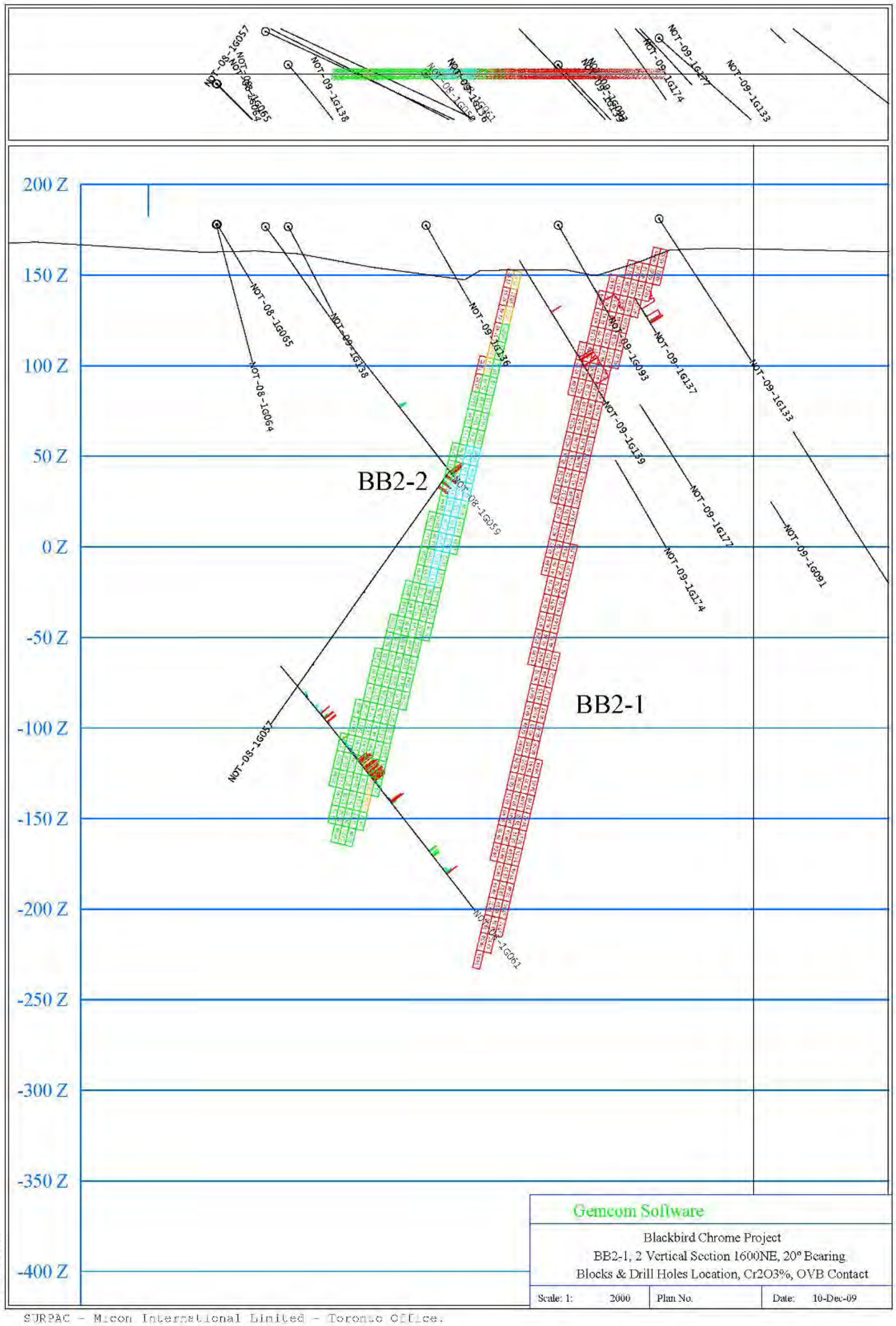
100 Z
50 Z
0 Z
-50 Z
-100 Z
-150 Z
-200 Z
-250 Z
-300 Z
-350 Z
-400 Z
BB2-2
BB2-1
NOT-09-1G126
NOT-08-1G065
NOT-08-1G064
NOT-08-1G059
NOT-08-1G061
NOT-09-1G136
NOT-09-1G139
NOT-09-1G093
NOT-09-1G131
NOT-09-1G133
Gemcom Software
Blackbird Chrome Project
BB2-1, 2 Vertical Section 1550NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.



200 Z
150 Z
100 Z
50 Z
0 Z
-50 Z
-100 Z
-150 Z
-200 Z
-250 Z
-300 Z
-350 Z
-400 Z
BB2-2
BB2-1
NOT-08-1G065
NOT-08-1G064
NOT-09-1G138
NOT-09-1G136
NOT-09-1G093
NOT-09-1G137
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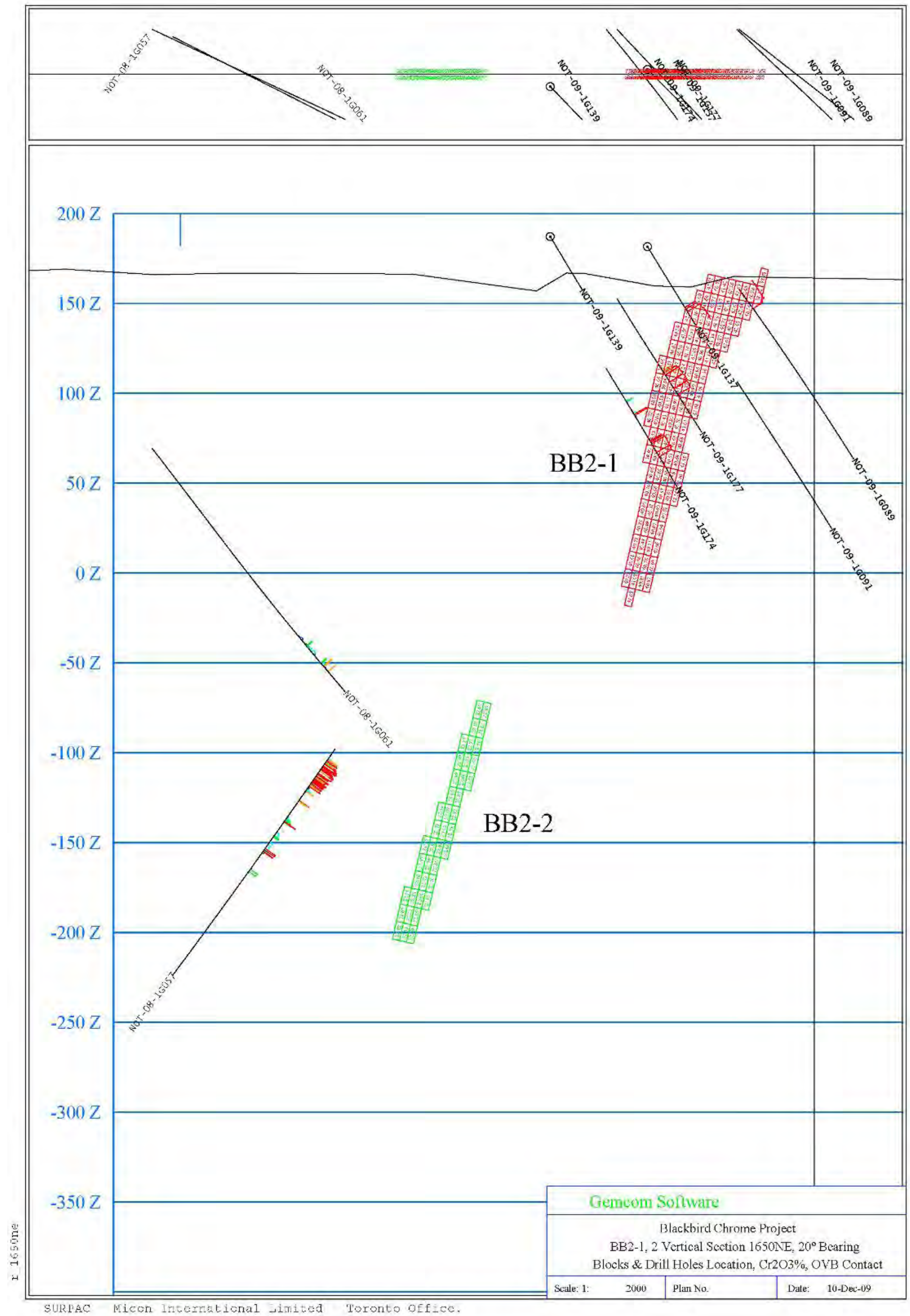
NOT-08-1G059
NOT-09-1G177
NOT-09-1G174
NOT-09-1G091
NOT-08-1G057
NOT-08-1G061
Gemcom Software
Blackbird Chrome Project
BB2-1, 2 Vertical Section 1600NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
SURPAC - Micon International Limited - Toronto Office.



NOT-08-1G057
NOT-08-1G061
NOT-09-1G139
NOT-09-1G137
NOT-09-1G177
NOT-09-1G174
NOT-09-1G089
NOT-09-1G091
200 Z
150 Z
100 Z
50 Z
0 Z
-50 Z
-100 Z
-150 Z
-200 Z
-250 Z
-300 Z
-350 Z
BB2-1
BB2-2
Gemcom Software
Blackbird Chrome Project
BB2-1, 2 Vertical Section 1650NE, 20° Bearing
Blocks & Drill Holes Location, Cr2O3%, OVB Contact
Scale: 1: 2000
Plan No.
Date: 10-Dec-09
r 1650ne
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