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NORONT RESOURCES LTD.

NI 43-101 TECHNICAL REPORT
FEASIBILITY STUDY
McFAULDS LAKE PROPERTY
EAGLE'S NEST PROJECT
JAMES BAY LOWLANDS
ONTARIO, CANADA

Harry Burgess, P.Eng.
Richard Gowans, P.Eng.
Christopher Jacobs, C.Eng., MIMMM
Charley Murahwi, M.Sc., P.Geo., MAusIMM
Bogdan Damjanović, P.Eng.

Effective Date: September 4, 2012
Signing Date: October 19, 2012

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1.0 SUMMARY

1.1 INTRODUCTION

The McFaulds Lake Project is located in the James Bay Lowlands of northern Ontario in an area recently named The Ring of Fire. Since August, 2007, Noront Resources Ltd. (Noront) has completed several major exploration programs of drilling and geophysics in the region, targeting several multi-metal deposits.

The Feasibility Study referred to in this NI43-101 Technical Report is focused on the development of the Eagle's Nest deposit, which is a high grade nickel-copper-platinum-palladium mineralized pipe up to 60 m across and 200 m in length and extending to depths beyond 1,600 m.

Micon International Limited (Micon) has been retained by Noront as lead consultant for the Feasibility Study on the McFaulds Lake Project. The other team participants the Feasibility Study referred to in this Technical Report are:

- Cementation Canada Inc. (Cementation), a leading mine development contractor and engineering company, provided initial mine design.
- Penguin Automated Projects Inc. (Penguin API), a leading robotics and mine automation company with capabilities in mine design and costing, undertook mine design, scheduling, design of the backfill facility, ventilation and cost estimation.
- Tetra Tech, Inc. (Tetra Tech), a consulting engineering company with significant mining project experience. Its scope included infrastructure and utilities, including the power plant, and concentrate drying and loading, as well as the railcar loading facility design and cost estimation. Tetra Tech also costed the installation of the process equipment.
- Outotec (Finland) Oy (Outotec), a globally leading supplier of process equipment and the control systems to operate process plants. Outotec also tested the concentrate and tailings for thickening and filtration characteristics.
- SGS-Mineral Services (SGS-MS), a leading mineral laboratory, performed mineral extraction tests and aided with defining the process flowsheet.
- Golder Associates Ltd. (Golder), a leading consulting engineering company, led the geotechnical drilling and assessment.
- Knight Piésold Consulting (Knight Piésold), a global environmental and engineering consulting company, performed the environmental baseline studies and is preparing documentation for the environmental assessment.

- Nuna Logistics Limited (Nuna), a designer and constructor of facilities in remote areas of Canada, has particular experience of construction in wetland areas. It designed road access and the airstrip.

- Ausenco PSI (Ausenco), a leading designer of concentrate pipeline systems, provided designs for a proposed concentrate pipeline.

In May, 2012, the Ontario Government announced support for a north-south access road from Nakina to the Noront project site and the Feasibility Study is based on this route. However, Noront has retained the originally designed all-season road from the Pickle Lake area to site (known as the east-west corridor) as an alternative and is utilizing the route from the Pickle Lake area for winter road access during project development.

1.2 TERMS OF REFERENCE

Noront has retained Micon International Limited (Micon) to prepare a Feasibility Study for the Eagle's Nest nickel-copper-platinum-palladium deposit within the Eagle's Nest-Blackbird (ENB) Complex in the McFaulds Lake area of the James Bay Lowlands of northern Ontario, Canada.

This Technical Report presents the Feasibility Study for the Eagle's Nest deposit.

1.2.1 Qualified Persons and Site Visits

The qualified persons (QPs) for the Technical Report are:

Charley Murahwi, P.Geo.
Harry Burgess, P.Eng.
Bogdan Damjanović, P.Eng.
Richard M. Gowans, P.Eng.
Christopher Jacobs, C.Eng.

Each of the qualified persons is independent of Noront as defined in Section 1.5 of NI 43-101.

Bogdan Damjanović is responsible for preparing and supervising the preparation of the Technical Report.

Charley Murahwi visited the Eagle's Nest site on 6-9 July, 2009 and 30 June, 2011, and Richard Gowans visited the site on 5 May, 2010.

1.3 PREVIOUS TECHNICAL REPORTS

The previous Technical Reports on the Eagle's Nest deposit are listed as follows:

- P&E Mining Consultants Inc. Technical Report and Resource Estimate on the Eagle One Deposit, Double Eagle Property, McFaulds Lake Area, James Bay Lowlands, Ontario, effective date 3 July, 2008, (P&E, 2008a).

- P&E Mining Consultants Inc. Technical Report and Preliminary Economic Assessment on the Eagle One Deposit Double Eagle Property, McFaulds Lake Area, James Bay Lowlands, Ontario, effective date October 20, 2008, (P&E, 2008b).

- Golder Associates Ltd. Technical Report and Resource Estimate, McFaulds Lake Project, James Bay Lowlands, Ontario, Canada, dated April 23, 2010, (Golder, 2010).

- Micon International Limited. NI 43-101 Technical Report, Preliminary Assessment, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada, effective date 9 September, 2010, (Micon, 2010).

- Micon International Limited, NI 43-101 Technical Report, Updated Mineral Resource Estimate, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada, effective date March 4, 2011, (Micon, 2011a).

- Micon International Limited, NI 43-101 Technical Report, Pre-feasibility Study, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada, effective date August 23, 2011, (Micon, 2011b).

1.4 LOCATION

The McFaulds Lake project area, which includes the Eagle's Nest deposit, is located at approximately UTM 5844000 N and 547000 E, and between approximately 52º42' and 52º50' N latitude and 86º06' and 86º24' W longitude, approximately 250 km west of the community of Attawapiskat on James Bay and 575 km northwest of Timmins. The closest all-season accessible community to the McFaulds Lake project area is Nakina, 300 km to the south, where there is a paved airstrip, in addition to all weather road and railroad access (see Figure 1.1).

The First Nations communities of Webequie and Ogoki/Marten Falls are located 90 km west and 120 km south southeast of McFaulds Lake, respectively. Both communities are served by regularly scheduled air service, primarily from Thunder Bay; both Thunder Bay and Timmins serve as support centres for the James Bay communities and the exploration projects in the area.

The Eagle's Nest, Eagle Two, Blackbird and Triple J occurrences are located within a 4 km^2 surface area and are defined as the Eagle's Nest-Blackbird (ENB) Complex. The AT12 and Thunderbird mineral occurrences are 10 and 14 km to the northeast of the ENB Complex, respectively.

Figure 1.1
McFaulds Lake Project Location

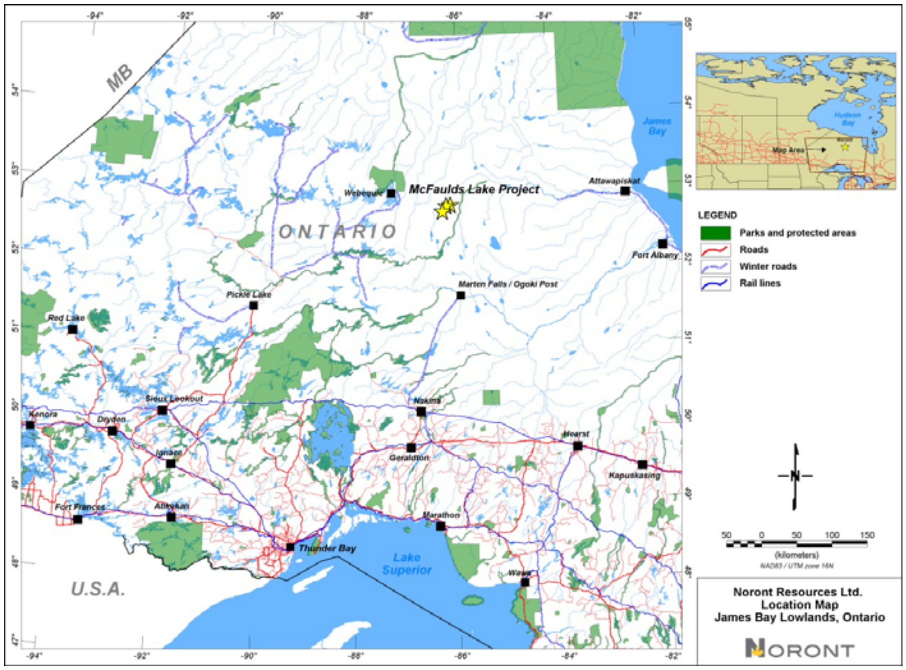
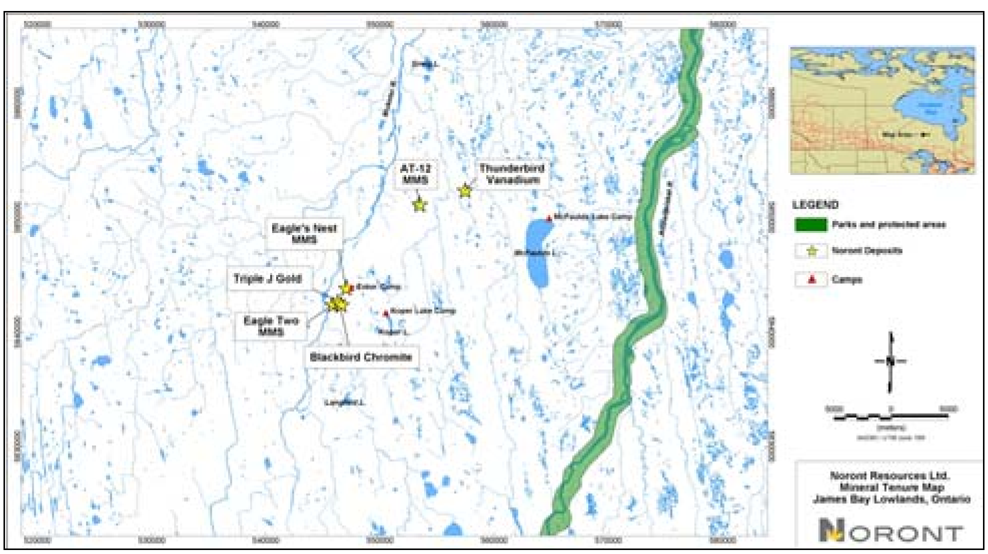


Figure 1.2 presents Noront's mineral tenure for the McFaulds Lake area showing the location of the Noront's Eagle's Nest and Blackbird chromite deposits and the Eagle Two, Triple J, AT12, and Thunderbird mineral occurrences.

Figure 1.2
Locations of Noront Properties, McFaulds Lake Area



1.5 CLAIMS

As of the effective date of this report, Noront controls 351 claims of approximately 80,016 ha. Of these claims, there are 14 claims hosting the Eagle's Nest, Blackbird, Eagle Two and Triple J deposits and the AT12 and Thunderbird mineral occurrences, consisting of approximately 3,136 ha.

1.6 HISTORY

Early geological work in the McFaulds Lake area was conducted by the Geological Survey of Canada and the Ontario Department of Mines. In the 1990s, joint venture partners Spider Resources Inc. (Spider) and KWG Resources Inc. (KWG) conducted an airborne magnetic survey throughout the northern part of the James Bay Lowlands. The first volcanogenic massive sulphide deposits (McFaulds No. 1 and No. 3) were discovered in 2001 by follow-up drilling. The discovery of these deposits and the recognition of the region as a poorly exposed greenstone belt suggested good prospective potential for further discoveries of base metal deposits in the area. Noront discovered the Eagle's Nest magmatic massive sulphide deposit in 2007.

The first mineral resource estimate completed in the area was for the Eagle One (Eagle's Nest) deposit, it was prepared by P&E Mining Consultants Inc. (P&E) in 2008. The Eagle's Nest deposit mineral resource estimate was updated by Golder Associates Ltd. (Golder) in 2010.

1.7 GEOLOGY AND MINERALIZATION

The McFaulds Lake area is underlain by Precambrian rocks of the northwestern part of the Archean Superior Province. Within the area, volcanogenic massive sulphide deposits are collectively recognized as being within a significant greenstone belt located at the eastern limit of exposure of the Oxford-Stull Domain, where it disappears under the Paleozoic cover.

A key feature of the McFaulds Lake area is the formational magnetic high that forms a half-circle, 60 km in diameter, in the area labeled as the Ring of Fire (ROF) Intrusive, which hosts the Eagle's Nest Deposit. The Eagle's Nest deposit is a sub-vertically dipping body of disseminated, net-textured and massive magmatic sulphide (pyrrhotite, pentlandite, chalcopyrite, magnetite) in a pipe-like form approximately 200 m long, up to several tens of metres thick, and at least 1,650 m deep. It strikes northeast-southwest and occupies the northwestern margin of a vertically-inclined serpentinized peridotite dyke that is present in subcrop over a north-south strike length of about 500 m, with a maximum width of about 75 m. The Eagle's Nest deposit is composed of massive and net-textured sulphides with little to no disseminated sulphides.

The Eagle's Nest deposit is komatiitic. Proterozoic komatiitic deposits of the Thompson Nickel Belt in Manitoba account for one-quarter to one-third of current nickel production in Canada. Archean komatiitic deposits at Kambalda and elsewhere in Western Australia yield most of that country's produced nickel. Several small nickel mines in the Abitibi greenstone belt of Ontario and Quebec are also Archean komatiitic deposits.

1.8 EXPLORATION

Since Noront acquired the claims that include the ENB Complex, AT12 and Thunderbird occurrences in 2003 and 2006, there have been a total of 13 geophysical surveys undertaken, as well as an 11-hole diamond drill program completed by Probe Mines Ltd. (Probe) in 2006, as well as continuous and on-going drilling by Noront since 2007. Noront's drilling campaigns have been complemented by down-hole geophysics.

Up until 31 May, 2012, Noront has drilled a total of 451 holes and 190,477 m in the McFaulds Lake area since mobilizing drills onto the property in 2007.

1.9 SAMPLING METHOD AND APPROACH, SAMPLE PREPARATION, ANALYSES AND SECURITY

It is Micon's opinion that the sampling method and approach and the procedures for sample preparation, analyses and security at the Eagle's Nest deposit are appropriate and have been carried out to industry standards.

1.10 DATA VERIFICATION

Data verification has been carried out by the QPs who have prepared previous Technical Reports on the Eagle's Nest deposit. This has been reviewed and updated by Micon's QP in connection with the present updated mineral resource estimate.

The quality assurance and quality control (QA/QC) protocols associated with drilling, sampling and assaying data used in the present mineral resource estimate have been reviewed and are considered appropriate.

1.11 MINERAL PROCESSING AND METALLURGICAL TESTWORK

SGS-Mineral Services (SGS-MS) undertook preliminary metallurgical testing between 2009 and 2010 at the Lakefield testing facility on two composite samples submitted by Noront. These composites, which were selected by Noront, were labelled "Comp 1", which was made up of massive sulphide mineralization and "Comp 2", which was designated disseminated mineralization. The scope of the testing program included grinding testwork, comprehensive mineralogical analysis, a series of developmental flotation testwork, flotation product (concentrates and tailings) characterization testwork and preliminary magnetic separation tests.

A second program of work commenced in the second half of 2010 was completed by June, 2011. This work was used in the preparation of Feasibility Study process design criteria and final flowsheet selection used by Outotec.

An additional phase of work was completed at SGS-MS during the latter part of 2011 and early 2012. This phase included variability testing of samples representing the lower portion (below 750 m L) of the mineral reserves at Eagle's Nest.

The metallurgical test programs were managed by Noront and the results from this work were used to develop the final Feasibility Study flowsheet, design criteria and equipment selection.

1.12 MINERAL RESOURCE ESTIMATE

The Eagle's Nest updated resource estimate has been conducted using a systematic and logical approach involving geological interpretation, conventional statistics on raw data, solid creation, statistics on composites, geostatistics, creation of interpolation parameters, block modelling using the Gems software, block model validation and classification.

A summary of the updated resource is presented in Table 1.1.

Table 1.1
Summary Table of the Eagle's Nest Deposit Resources

Zone	Tonnes	Ni (%)	Cu (%)	Pt (g/t)	Pd (g/t)	Au (g/t)
Main Zone						
Measured	5,346,000	2.08	1.07	1.04	3.55	0.20
Indicated	5,643,000	1.50	0.89	0.94	3.27	0.20
Total Measured plus Indicated	**11,000,000**	**1.78**	**0.98**	**0.99**	**3.41**	**0.20**
Inferred	8,966,000	1.10	1.14	1.16	3.49	0.3
East Zone						
Inferred	1,615,000	0.31	0.09	0.12	0.45	0.04

(1) 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, sociopolitical, marketing, or other relevant issues.
(2) The quantity and grade of reported inferred resources in this estimation are conceptual in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.

The effective date of the estimate is 4 March, 2011 and is based on drilling and assay data up to 31 December, 2010.

Micon believes that at present there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues which would adversely affect the mineral resources estimated above.

1.13 MINERAL RESERVE ESTIMATE

The mineral reserve estimates were derived from the measured and indicated mineral resources. The reserves are summarized in Table 1.2.

Table 1.2
Table of Mineral Reserves

Category	Tonnes	Ni (%)	Cu (%)	Pt (g/t)	Pd (g/t)	Au (g/t)
Proven	5,264,000	2.02	1.04	1.01	3.45	0.19
Probable	5,867,000	1.38	0.72	0.78	2.76	0.18
Total Proven plus Probable	11,131,000	1.68	0.87	0.89	3.09	0.18

1) At present Micon is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues which would adversely affect the mineral reserve estimated above. However, there is no assurance that Noront will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise, for the project. As regards the reserve parameters, higher mining dilutions, poor metallurgical recoveries and low metal prices could individually and/or collectively impact negatively on the reserve estimates.

1.14 MINING METHODS

The Feasibility Study considers extraction of the measured and indicated resources described above using bulk underground stoping techniques.

The deposit is a high grade nickel-copper-platinum-palladium mineralized pipe up to 60 m across and 200 m length on strike. The host rock is a strong to very strong granodiorite. The designs assume the underground location of many facilities, including mineral processing, utilizing the competent host rock around the deposit.

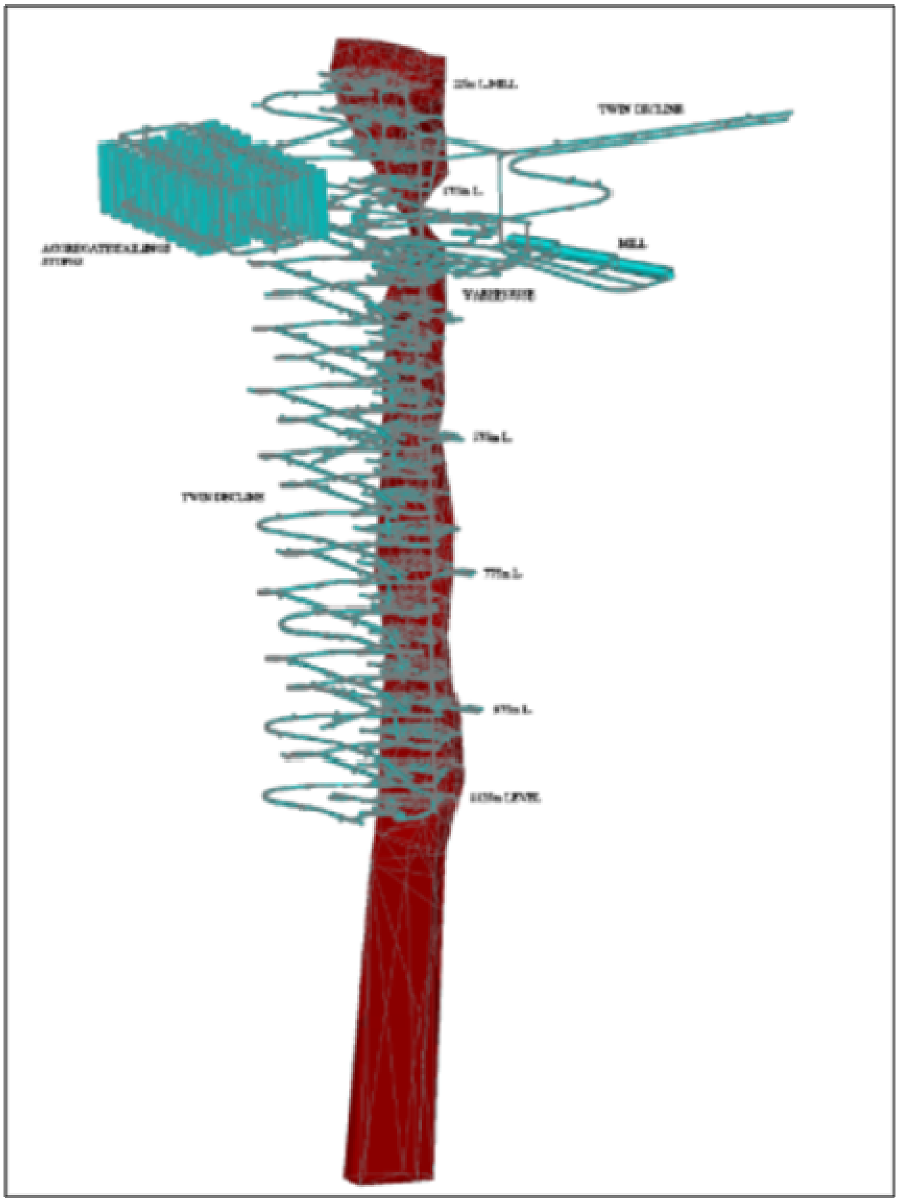
The project will commence with the mining of aggregate from underground development. The Eagle's Nest deposit will be mined using highly automated underground mining techniques and paste tailings will be used to fill mined voids. Aggregate stopes will be used for additional storage of tailings.

The deposit is well-suited to vertical bulk mining using blast hole stoping techniques. Initial underground access will be by twin ramps from surface to the processing plant level, followed by continuing twin ramps to the lower production levels. The process plant will be constructed underground 175 m below surface on 175 m L (mine levels measured from surface).

A schematic section of the underground infrastructure is shown in Figure 1.3.

The mine plan allows for defining the massive ore and mining it separately from the net-textured ore and the mining method will use the most advanced proven technology available. Due to its geometry, moderate grade and strong host rock, the deposit is ideally suited for vertical bulk mining using blast hole stoping techniques.

Figure 1.3
Schematic Section of Underground Infrastructure



1.15 RECOVERY METHODS

The Eagle's Nest project is envisaged to be a 3,000 t/d (1,095,000 t/y) nickel-copper ore processing facility. The process comprises conventional crushing, grinding, flotation and concentrate dewatering to produce a single concentrate containing typically 10.2% Ni, 5.7 % Cu, 19 g/t Pd, 5 g/t Pt, 1 g/t Au and 13 g/t Ag.

The life-of-mine average metallurgical recoveries are estimated to be 83.1% for Ni, 89.7% for Cu, 82.3% for Pd, 74.0% for Pt and 76.7% for Au.

1.16 PROJECT INFRASTRUCTURE

The Eagle's Nest Project will require the following key surface infrastructure components and site services to support construction, commissioning and production for the planned operations:

- Site roads.
- Process plant buildings (mine site).
- Ancillary buildings (offices, truck shop, warehouse et cetera).
- Maintenance complex.
- Camp facilities.
- Explosives storage area.
- Airstrip building.
- Fuel storage and distribution.
- Power supply and distribution.
- Concentrate handling, storage and load out (Nakina).
- Waste management facility.
- Water supply and distribution.
- Surface water management.
- Sewage treatment and disposal.

On May 9, 2012, the Ontario Government announced support for a north-south all-season road to the Ring of Fire area. Subsequently, Noront adopted this as its base case for site access, and retained the original east-west corridor as an alternative for accessing the site.

1.17 MARKET STUDIES AND CONTRACTS

For the purpose of this Feasibility Study, it has been assumed that the bulk nickel-copper concentrate will be sold and shipped to a smelter in North America. Treatment and refining charges, metal payability and settlement terms are assumed on the basis of a confidential off-take agreement received by Noront.

1.18 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

The Eagle's Nest Project is subject to both the Canadian Environmental Assessment Act (CEAA) and the Ontario Environmental Assessment Act (OEAA). Noront submitted a Project Description to the CEAA in July 2011. The two levels of government have indicated a willingness to follow the coordinated EA process for this Project. Therefore, the Environmental Assessment (EA) document will address the requirements of both the provincial Terms of Reference (ToR) and the federal Environmental Impact Statement (EIS) Guidelines.

Environmental baseline studies were initiated by Noront in 2009 and are ongoing. Also, an assessment of alternatives is being conducted as part of the EA for the Project.

A closure plan has been developed in accordance with the requirements of the Mining Act in Ontario. A monitoring framework will be developed during preparation of the EA and presented in that document.

Environmental and Social Management Plans will be prepared as part of the EA to manage impacts. Environmental and Social Monitoring Plans will also be prepared specifically to verify the predictions of the impact assessment and to inform the preparation of management strategies.

1.19 CAPITAL AND OPERATING COSTS

1.19.1 Capital Costs

Capital costs have been assessed for the purposes of this Feasibility Study. The estimates are expressed in second quarter 2012 Canadian dollars, without escalation. The expected accuracy of the estimates is ±15%.

The total estimated pre-production cost of capital is $609 million comprising $195 million for mining, $113 million for processing, $100 million for infrastructure, $158 million for indirect costs, and contingencies of $44 million, as shown in Table 1.3.

Table 1.3
Initial Capital Cost Summary

Area	Cost ($ 000)
Mining	195,026
Processing	112,756
Infrastructure	100,178
Indirects	157,806
Contingency	43,675
Total	**609,440**

This estimate assumes that the costs for transport infrastructure will be shared with other users through a public-private partnership (P3) arrangement, so that the project bears only its freight-related proportion of annual service charges.

Sustaining capital required through the life-of-mine period subsequent to expenditure of initial capital totals $160 million for direct mining costs, made up of replacement equipment ($115 million) and development costs ($45 million).

1.19.2 Operating Costs

Estimated average cash operating costs for the life-of-mine (10.2 years) of the Project are summarized in Table 1.4.

Table 1.4
Summary of Life-of-Mine Operating Costs

Area	Life-of-mine Cost ($ 000)	Unit Cost ($/t ore milled)
Mining	**382,334**	**34.35**
Processing	**367,636**	**33.03**
All Season Road Usage Charges	**95,953**	**8.62**
G&A	**233,994**	**21.02**
Total Operating Costs	**1,079,917**	**97.01**

1.20 ECONOMIC ANALYSIS

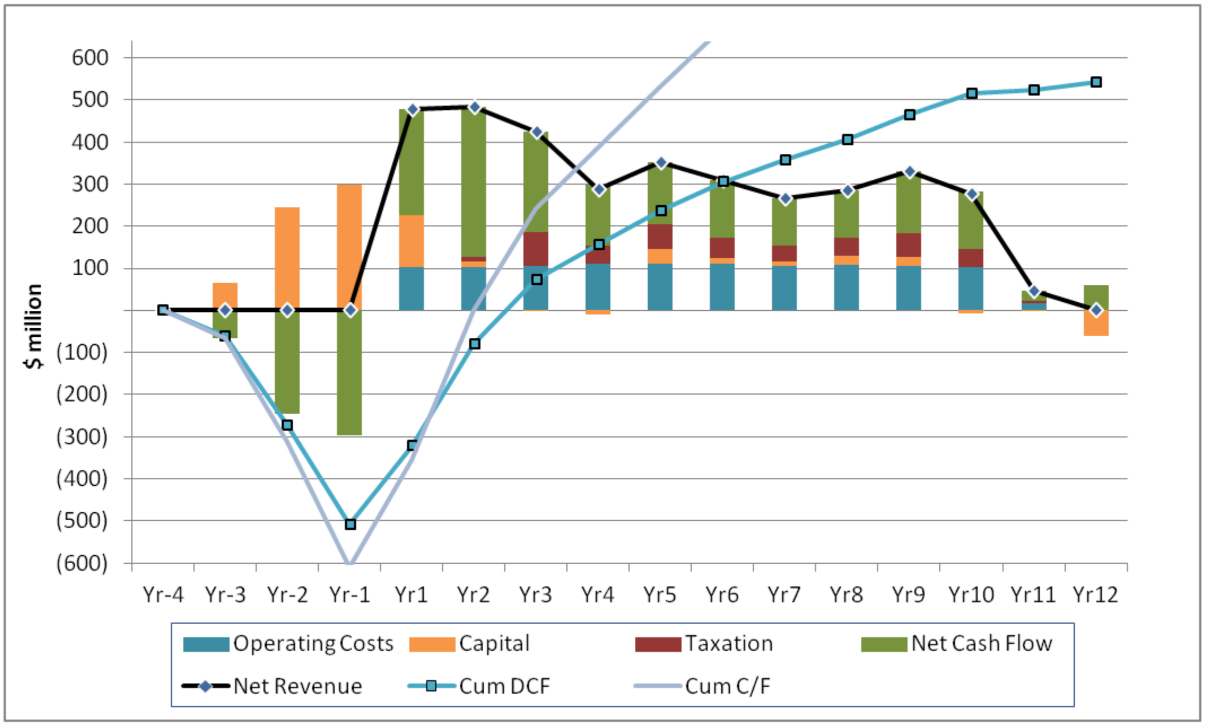
Micon has prepared its assessment of the Project on the basis of a discounted cash flow model, from which Net Present Value (NPV), Internal Rate of Return (IRR), payback and other measures of project viability can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested. All results are expressed in Canadian dollars.

The LOM base case project cash flow is presented in Table 1.5 and Figure 1.4. The Project demonstrates an undiscounted pay back of around 2 years, or approximately 2.5 years discounted at 8.0%, leaving a production tail of more than 7 years. The base case evaluates to an IRR of 33.1% before tax and 28.3% after tax. At a discount rate of 8.0%, the net present value (NPV_8) of the cash flow is $756 million before tax and $543 million after tax.

Table 1.5
Life-of-Mine Cash Flow Summary

	LOM total $ 000	$/t Milled	US$/lb Ni
Net revenue (Nickel only)	2,365,911	212.54	7.60
Mining costs	382,334	34.35	1.23
Processing costs	367,636	33.03	1.18
Infrastructure (P3 road usage)	95,953	8.62	0.31
General & Administrative costs	233,994	21.02	0.75
Total Cash Operating Cost	**1,079,917**	**97.01**	**3.47**
Less NSR on By-Products	(1,174,652)	(105.53)	(3.77)
Net operating margin	2,460,647	221.05	7.90
Capital expenditure	769,665	69.14	2.47
Net cash flow (before tax)	1,690,982	151.91	5.43
Taxation	423,184	38.02	1.36
Net Cash Flow (After Tax)	**1,267,798**	**113.89**	**4.07**

Figure 1.4
Life-of-Mine Cash Flows



The base case cash flow was evaluated at a discount rate of 8.0%/y, as shown in Table 1.6, which also presents the results at comparative discount rates of 6%/y, 10%/y and 12%/y.

Table 1.6
Base Case Cash Flow Evaluation

$ million	LOM Total	Discounted at 6%/y	Base Case Discounted at 8%/y	Discounted at 10%/y	Discounted at 12%/y	IRR (%)
Net Revenue (Nickel only)	2,365,911	1,503,874	1,308,616	1,144,858	1,006,668	
Net Revenue (By-Products)	1,174,652	744,750	647,292	565,559	496,603	
Net revenue (total)	3,540,564	2,248,624	1,955,908	1,710,417	1,503,271	
Mining costs	382,334	236,481	203,885	176,733	153,983	
Processing costs	367,636	224,214	192,481	166,167	138,280	
Infrastructure	95,953	59,021	50,810	43,986	38,280	
G&A costs	233,994	143,930	123,908	107,267	93,352	
Total cash operating cost	1,079,917	663,646	571,083	494,154	429,831	
Cash operating margin	2,460,647	1,584,978	1,384,825	1,216,264	1,073,440	
Capital expenditure	769,665	632,285	596,055	563,426	533,883	
Working capital	-	28,757	32,544	35,745	35,821	
Net Cash Flow (Before Tax)	**1,690,982**	**923,936**	**756,225**	**618,092**	**503,735**	**33.1**
Taxation	423,184	251,027	213,230	182,030	156,134	
Net Cash Flow (After Tax)	**1,267,798**	**672,909**	**542,996**	**436,062**	**347,601**	**28.3**

1.21 INTERPRETATION AND CONCLUSIONS

This Feasibility Study is based on the proposed mining and processing of the Eagle's Nest measured and indicated mineral resources previously defined by Micon in a mineral resource estimate reported in April, 2011.

Mineral resources for the Eagle's Nest deposit comprise measured and indicated resources of 11.0 Mt grading 1.78% Ni, 0.98% Cu, 0.99 g/t Pt, 3.4 g/t Pd and 0.2 g/t Au and an inferred resource of 9.0 Mt grading 1.10% Ni, 1.14% Cu, 1.16 g/t Pt, 3.49 g/t Pd and 0.3 g/t Au.

A feasibility mine plan has been developed using the combined measured and indicated resources; no inferred resources have been used. The mining schedule reflects mining of the measured and indicated resource base with a 7% dilution and a 95% mining recovery. The proven and probable reserves derived from the mining plan and economic evaluation contained in this Feasibility Study comprise 11.1 Mt averaging 1.68% Ni, 0.87% Cu, 0.89 g/t Pt, 3.09 g/t Pd and 0.18 g/t Au.

The Feasibility Study is based on the following:

- The Eagle's Nest Ni-Cu-PGM mineralization will be extracted using standard underground mining methods.
- Mine access will be from twin portals and ramps. Twin production ramps will be developed throughout the mine life to the bottom of the orebody to access the orebody.
- Nominal throughput rate of 1.1 Mt/y ore.
- The life of the operating mine is approximately 10.2 years.
- Conventional mineral processing technology will be used to produce a single concentrate product containing nickel, copper, platinum, palladium and gold.
- Estimated life-of-mine nickel recovery of 83.1% and copper recovery of 89.7%.
- Production of a 10% Ni product containing copper, PGMs and gold.
- Major facilities will be located underground.
- All tailings will be stored underground.
- The Project is designed for minimal surface disturbance.
- Aggregate for construction will be sourced from underground, supplemented by surface borrow material for road construction.

- Access to site will be via an all-season road from Nakina to site.
- Electrical power will be provided by a diesel power plant located at mine site.
- The planned off-site infrastructure will benefit other companies and local communities.

Sensitivity analyses indicate that the Project economics is most sensitive to revenue factors and is less sensitive to capital and operating costs.

1.22 RECOMMENDATIONS

It is recommended that Noront continues to develop the Project beyond Feasibility Study. During Detailed Design the following areas of work should be considered:

1. Identification of sources of borrow material, particularly for road construction.
2. Continue planned stakeholder engagement.
3. Continue with preparation of environmental and social impact studies to meet provincial, federal and international standards.
4. Conduct additional mineralogical studies to determine the manner in which talc occurs in the orebody for mine planning purposes.
5. Conduct additional metallurgical testwork to clarify reagent consumption rates for both massive and net-textured ores.
6. Conduct additional metallurgical testwork in order to ensure acceptable levels of talc and other deleterious minerals/elements report to the final concentrate.
7. Determine the extent of future geotechnical studies to support mine planning and implement if deemed necessary.
8. Pursue the potential opportunities listed above.
9. Additional grindability tests to confirm the sizing of the SAG mills.
10. Continued evaluation of producing separate copper and nickel flotation concentrates.
11. Preliminary testing of hydrometallurgical treatment of the concentrate.
12. Large scale bulk tests to prepare bulk concentrates suitable for marketing purposes.

13. More detailed MgO deportment study and continued evaluation of depressants to optimize reagent costs and control of MgO reporting to the final concentrate.

1.22.1 Budget for Further Work

Noront's budget for on-going work during the next 12 months amounts to $18.3 million and is broken down as shown in Table 1.7.

Micon believes that the proposed budget is reasonable and recommends that Noront proceeds with the proposed work program.

Table 1.7
Budget for On-going Work

Item	Cost $ Millions
Mine Design	6.0
Metallurgical Testwork	0.3
Mill Process Design	1.3
Infrastructure	7.8
Project Management	1.0
Contingency	1.9
Total	**18.3**

2.0 INTRODUCTION

The McFaulds Lake Project is located in the James Bay Lowlands of northern Ontario in an area recently named the Ring of Fire. The area is dominated by peak bog and muskeg, exhibiting minimal topographic relief. Given the challenges to access or reside in this area, there has not been a great deal of exploration activity in the region.

This Feasibility Study for the McFaulds Lake Project is focused on the development of the Eagle's Nest deposit, which is a high grade nickel-copper-platinum-palladium mineralized pipe up to 60 m across and 200 m in length and extending to depths beyond 1,600 m.

With 80,016 ha of mineral claims, Noront is the largest mineral claim holder in this region. Since August, 2007, Noront has completed several major exploration programs of geophysics and drilling in the Ring of Fire area, targeting several multi-metal deposits. Mineral deposits and occurrences that Noront has discovered since 2007, and continues to investigate, include:

- The Eagle's Nest deposit, Eagle Two and AT12 mineral occurrences which are multiple high grade nickel-copper-PGM deposits.
- The Blackbird deposits which are a series of massive to intercalated chromite deposits.
- The Thunderbird mineral occurrence which is a vanadium-titanium zone.
- The Triple J mineral occurrence which is a gold zone.

This Feasibility Study has been completed as part of on-going development of the McFaulds Lake Project. The Eagle's Nest deposit is hosted within what is believed to be one of the conduit feeder pipes to the McFaulds Lake sill. It is a near-vertical structure that underlies up to 20 m of saturated vegetative matter, glacial till, sand and gravel. The deposit exhibits proven and probable reserves of 11.1 million tonnes of high grade nickel sulphide with significant copper and platinum group metal contents, extending to a depth of 1,125 m below surface. The deposit has been categorized as inferred resource down to 1,600 m and likely continues below this depth.

The project design for the Feasibility Study is based on an underground mine capable of consistently delivering 3,000 t/d of ore to a processing facility also located underground. The design incorporates the underground location of many facilities, including storage of tailings. Another salient feature of the project design is the development of stopes within the granodiorite host rock adjacent to the mine workings to produce crushed aggregate for the site, as well as for other potential construction projects within the region. The main project design features are:

- Minimized surface footprint by maximizing the installation of facilities below surface.

- The use of proven technology for both underground hard rock mining and the processing of nickel-copper-PGM mineralization.

- Process operating criteria: 24 h/d, 365 d/y.

- The project will be designed, constructed and operated to international environmental standards in order to minimize potentially negative environmental and social impacts.

- Local First Nation communities will be engaged proactively through development of the project in order to ensure sustainable benefits to the First Nation communities.

2.1 TERMS OF REFERENCE

Micon International Limited (Micon) has been retained by Noront as lead consultant for the Feasibility Study on the McFaulds Lake project. The Feasibility Study is a continuation of the design and cost assessment of the Eagle's Nest Mine project, as reported in the Pre-feasibility Study.

Participants in the study and the areas for which they are responsible are listed in Table 2.1.

Table 2.1
Participants in McFaulds Lake Project Feasibility Study

Work Area	Company
Mineral resource estimate – Eagle's Nest	Micon
Mine design, schedule, mine equipment selection, mine facilities, mining cost estimates	Cementation Penguin API
Geotechnical and hydrological characterization	Golder
Metallurgical testing and flowsheet development	SGS-MS Outotec Micon
Process selection, design and engineering	Outotec Micon
On site surface infrastructure design, capital expenditures and operating costs	Tetra Tech
Process plant capital cost estimate	Tetra Tech
Tailings backfill design and costing	Penguin API
Access road design, engineering and costing	Nuna
Concentrate load-out facility design and costing	Tetra Tech
Environmental baseline studies	Knight Piésold
Environmental assessment	Knight Piésold
Economic evaluation	Micon
Overall study management	Noront Micon
Concentrate market analysis	Noront

Backfill testing was completed by Dr. Sun of Yantai Tianhe Science and Technology Limited.

The results of the Feasibility Study were published by Noront in a press release dated September 4, 2012. Micon has been retained to review and compile the results of Feasibility Study work carried out for Noront and to prepare a Technical Report in accordance with the reporting requirements of National Instrument (NI) 43-101, which discloses the results.

2.2 QUALIFIED PERSONS

The qualified persons (QPs) for the Technical Report are:

Charley Murahwi, P.Geo.
Harry Burgess, P.Eng.
Bogdan Damjanović, P.Eng.
Richard M. Gowans, P.Eng.
Christopher Jacobs, C.Eng.

Each of the qualified persons is independent of Noront as defined in Section 1.5 of NI 43-101.

Bogdan Damjanović is responsible for preparing and supervising the preparation of the Technical Report.

2.2.1 Site Visits

Charley Murahwi visited the Eagle's Nest project site on 6-9 July, 2009 when he examined drill core and reviewed sampling and QA/QC procedures for both the Eagle's Nest deposit and the adjacent Blackbird deposit in connection with the preparation of the mineral resource estimate for the Blackbird deposit (Micon, 2009). He subsequently visted the Eagle's Nest and Blackbird deposits on 30 June, 2011 (Micon, 2012). Richard Gowans visited the site on 5 May, 2010 in connection with Micon's preliminary assessment (Micon, 2010).

2.2.2 Use of Report

This report is intended to be used by Noront subject to the terms and conditions of its agreement with Micon. That agreement 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.

2.2.3 Sources of Information

The principal sources of data for the Feasibility Study are listed below.

- Micon International Limited, NI 43-101 Technical Report, Pre-feasibility Study, McFaulds Lake Project, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada, effective date August 23, 2011, (Micon 2011).

- Golder Associates Ltd. Draft Geotechnical Design Report – Eagle's Nest Deposit – Report Number: 10-1117-0045 (3000), January 2011.

- Penguin Automated Projects Inc. Noront Resources Limited, Mining Feasibility Study, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada, June 7, 2012.

- SGS Mineral Services. An Investigation into Metallurgical Testing on the Eagle One Deposit, prepared for Noront Resources Ltd., Project 12055-002 Final Report, March 11, 2010 and Addendum, July 12, 2010.

- SGS Mineral Services. An Investigation into the Recovery of Nickel, Copper, and PGMs from Samples of the Eagle's Nest Deposit., Project 12055-003-DRAFT-Final Report, March 9, 2012.

- NesseTech Consulting Services Inc. Self-Heating Tests – Noront Resources Eagle's Nest LCT Samples, June 19, 2011.

- Outotec (Finland) Oy. Eagle's Nest Underground Mill Process and Plant Description, Version 2. May 30, 2012.

- Tetra Tech – Wardrop. Interim Report "Project Infrastructure", June 1, 2012.

- Golder Associates Ltd. McFaulds Lake Project Aggregates Testing Results, various reports and communications, 2010.

- Knight Piésold Consulting. Eagle's Nest – Final Closure Measures and Cost Estimate, May 7, 2012.

2.3 PREVIOUS TECHNICAL REPORTS

The previous Technical Reports pertaining to the Eagle's Nest deposit and other Ring of Fire area properties are listed below. These can be found in the filings of Noront on the System for Electronic Document Analysis and Retrieval (SEDAR), www.sedar.com:

2.3.1 Eagle's Nest

- P&E Mining Consultants Inc. Technical Report and Resource Estimate on the Eagle One Deposit, Double Eagle Property, McFaulds Lake Area, James Bay Lowlands, Ontario, effective date 3 July, 2008, (P&E, 2008a).

- P&E Mining Consultants Inc. Technical Report and Preliminary Economic Assessment on the Eagle One Deposit Double Eagle Property, McFaulds Lake Area, James Bay Lowlands, Ontario, effective date October 20, 2008, (P&E, 2008b).

- Golder Associates Ltd. Technical Report and Resource Estimate, McFaulds Lake Project, James Bay Lowlands, Ontario, Canada, dated April 23, 2010, (Golder, 2010).

- Micon International Limited. NI 43-101 Technical Report, Preliminary Assessment, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada, effective date September 9, 2010, (Micon, 2010).

- Micon International Limited, NI 43-101 Technical Report, Updated Mineral Resource Estimate, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada, effective date March 4, 2011, (Micon, 2011a).

- Micon International Limited, NI 43-101 Technical Report, Pre-feasibility Study, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada, effective date August 23, 2011, (Micon, 2011b).

2.3.2 Other Properties

- Micon International Limited. Technical Report on the Mineral Resource Estimate for the Blackbird Chrome Deposits, James Bay Lowlands, Northern Ontario, Canada, effective date of December 31, 2009, (Micon 2009).

- Micon International Limited. Technical Report on the Updated Mineral Resource Estimate for the Blackbird Chrome Deposits, McFaulds Lake Property, James Bay Lowlands, Ontario, Canada, May 4, 2012, (Micon, 2012).

2.4 UNITS AND CURRENCY

In this report, all currency amounts are stated in Canadian dollars ($), with commodity prices typically expressed in US dollars (US$). Quantities are generally stated in Système International d'Unités (SI) metric units, the standard Canadian and international practice, including metric tons (tonnes, t) and kilograms (kg) for weight, kilometres (km) or metres (m) for distance, hectares (ha) for area, grams (g) and grams per tonne (g/t) for platinum group element or metal (PGE or PGM) grades. PGE/PGM and gold grades may also be reported in parts per million (ppm) or parts per billion (ppb). Quantities of PGE/PGM and gold may also be reported in troy ounces (oz) and quantities of nickel and copper in avoirdupois pounds (lb). Nickel and copper and metal assays are reported in percent (%) while gold and PGM assay values are reported in grams of metal per tonne (g/t) unless ounces per short ton (oz/T) are specifically stated.

Units of measure and abbreviations used are provided in Table 2.2.

Table 2.2
List of Abbreviations

Term	Abbreviation
Acid base accounting	ABA
Acid potential	AP
Aluminum	Al
American Society for Testing and Materials	ASTM
Atomic absorption spectrometry	AAS
Billion years old	Ga
Borehole electromagnetics	BHEM
Canadian Environmental Assessment Agency	CEAA
Canadian dollar	$
Canadian National Instrument 43-101	NI 43-101
Capital Asset Pricing Model	CAPM
Carboxymethyl cellulose	CMC
Cemented paste backfill	CPB
Chromium	Cr
Chromium dioxide	Cr_2O_3
Cobalt	Co
Copper	Cu
Cubic foot (feet) per minute	cfm
Cubic metre(s)	m^3
Degree(s)	^{o}
Degrees Celsius	^oC
Eagle's Nest –Blackbird	ENB
Electron microprobe analysis	EMPA
Environmental Assessment	EA
Environmental Impact Statement	EIS
Fire assay	FA
Foot, feet	ft
Footwall	FW
General and Administration	G&A
Global positioning system	GPS
Gram(s)	g
Grams per cubic centimetre	g/cm^3
Grams per litre	g/L
Greater than	>
Gold	Au
Hanging wall	HW
Hectare(s)	ha
Hertz	Hz
High resolution aeromagnetic gradient survey	HRAM
Horizontal loop electromagnetic survey	HLEM
Horse power	HP
Hour(s)	h
Hours per day	h/d
In the hole	ITH
Inch(es)	in
Induced polarization	IP
Inductively coupled plasma-atomic absorption spectroscopy	ICP-AAS
Inductively coupled plasma atomic emission spectrometry	ICP-AES

Term	Abbreviation
Inductively coupled plasma optical emission spectroscopy	ICP-OES
Instrumental neutron activation analysis	INAA
Internal Rate of Return	IRR
Inverse distance to the power of 2	ID^2
Inverse distance to the power of 5	ID^5
Iridium	Ir
Iron	Fe
Kilogram(s)	kg
Kilograms per cubic metre	kg/m^3
Kilometre(s)	km
Kilovolt	kV
Kilowatthours per tonne	kWh/t
Lead	Pb
Lerchs-Grossmann	LG
Less than	<
Life-of-mine	LOM
Litre(s)	L
Litres per second	L/s
Load Haul Dump	LHD
Locked cycle test	LCT
London Metal Exchange	LME
Loss on ignition	LOI
Lower Massive Composite	LMC
Lower Net-textured Composite	LNTC
Magmatic massive sulphides	MMS
Mega pascal	MPa
Megavolt	MV
Megawatt	MW
Metres	m
Metres above sea level	masl
Metres per kilometre	m/km
Metres per second	m/s
Microns	µm
Milligals	mGal
Milligrams	mg
Milligrams per litre	mg/L
Millimetres	mm
Millimetres per year	mm/y
Million	M
Million pounds	Mlb
Million cubic metres	Mm^3
Million tonnes	Mt
Million tonnes per year	Mt/y
Million years old	Ma
Minute(s)	min
Molybdenum	Mo
Motor control centre	MCC
Nano-Tesla	nT
Net Present Value	NPV
Net Smelter Return	NSR
Neutralization potential	NP

Term	Abbreviation
New York Mercantile Exchange	NYMEX
Nickel	Ni
Ontario Environmental Assessment Act	OEAA
Osmium	Os
Ounce(s) (troy ounce)	oz
Ounces per tonne	oz/t
Ounces per short ton	oz/T
Palladium	Pd
Parts per billion	ppb
Parts per million	ppm
Platinum	Pt
Platinum group elements	PGE
Platinum group metals	PGM
Pound(s)	lb
Potentially acid generating	PAG
Public-private partnership	P3
Quality assurance	QA
Quality assurance/quality control	QA/QC
Quality control	QC
Rhodium	Rh
Ring-of-Fire	ROF
Rock quality designation	RQD
Run-of-mine	ROM
Ruthenium	Ru
Second	s
Short ton (2,000 pounds)	T
Silver	Ag
Specific gravity	SG
Superconducting quantum interference device	SQUID
Square metre(s)	m^2
Square metres per tonne	m^2/t
Square kilometre(s)	km^2
Standard deviation	Std Dev
Sulphur	S
Thousand tonnes	kt
Three dimensional	3D
Time domain electromagnetic survey	TDEM
Titanium	Ti
Titanium dioxide, titania	TiO_2
Tonne(s)	t
Tonnes per cubic metre	t/m^3
Tons (short) per vertical foot	TPVF
Treatment charges/refining charges	TC/RC
US gallons per minute	USgpm
Uncemented paste tailings	UPT
Unconfined compressive strength	UCS
United States dollars	US$
Universal transverse mercator	UTM
University of Toronto electromagnetic system	UTEM
Upper Massive Composite	UMC
Upper Net-textured Composite	UNTC

Term	Abbreviation
Vanadium	V
Vanadium pentoxide	V_2O_5
Versatile time domain electromagnetic survey	VTEM
Very low frequency	VLF
Volcanogenic massive sulphide	VMS
Weight	Wt.
Weighted average cost of capital	WACC
X-ray diffraction	XRD
X-ray fluorescence	XRF
Year	y
Z-axis Tripper Electromagnetic Survey	ZTEM
Zinc	Zn

3.0 RELIANCE ON OTHER EXPERTS

While exercising all reasonable diligence in checking, confirming and testing it, the authors have relied upon Noront's presentation of its project data and the findings of its consultants in formulating their opinion.

The various agreements under which Noront holds title to the mineral claims for this project have not been reviewed by Micon, and Micon offers no legal opinion as to the validity of the mineral title claimed. A description of the property, and ownership thereof, is provided for general information purposes only.

Micon has relied on Knight Piésold for comments on the state of environmental conditions, liability, and estimated costs of closure and remediation and other experts it understands to be appropriately qualified. Micon offers no opinion on the state of the environment on the property. The statements are provided for information purposes only.

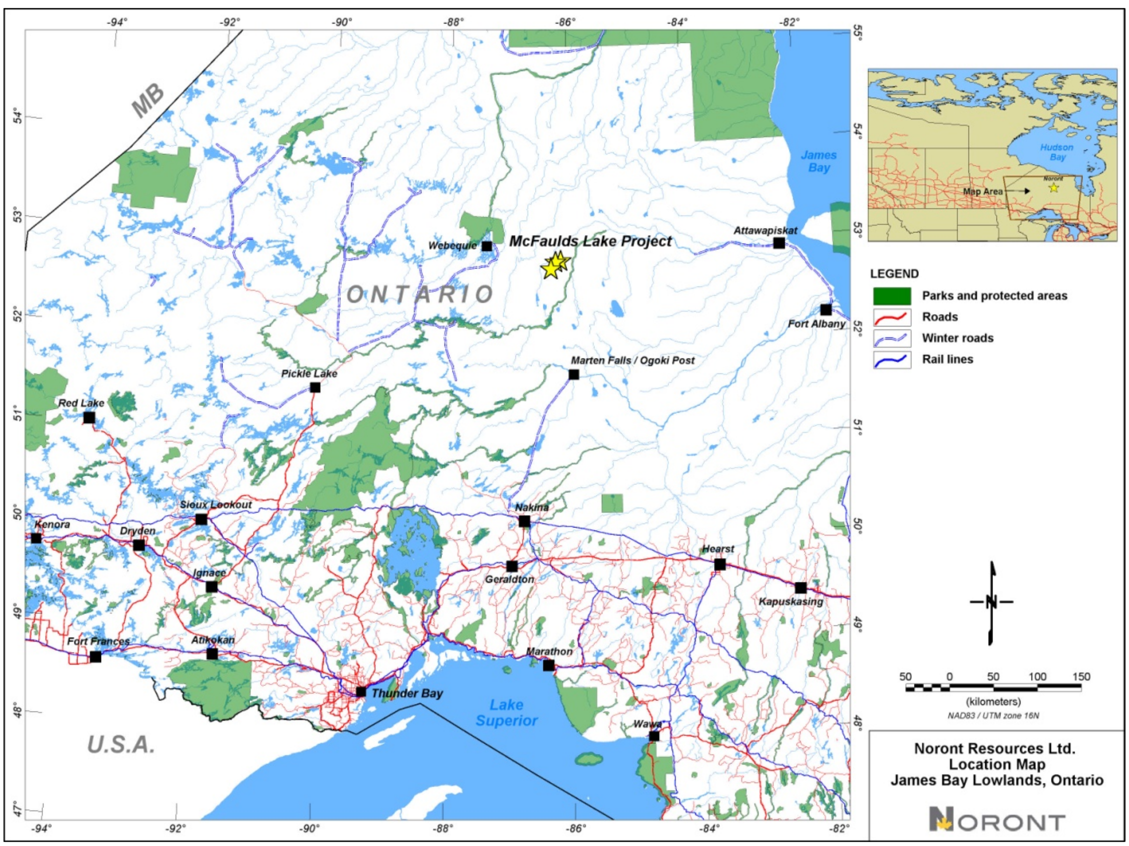
4.0 PROPERTY DESCRIPTION AND LOCATION

The following description of the McFaulds Lake property is based on previous published Technical Reports (Golder, 2010) and (Micon, 2010).

4.1 LOCATION

The McFaulds Lake project area is located at approximately UTM 5844000 N and 547000 E, and between approximately 52º42' and 52.50' N latitude and 86º06' and 86º24' W longitude, approximately 250 km west of the community of Attawapiskat on James Bay and 575 km northwest of Timmins. The closest all-season accessible community to the McFaulds Lake project area is Nakina, 300 km to the south, where there is a paved, 3,880-ft airstrip, in addition to all weather road and railroad access (see Figure 4.1).

Figure 4.1
McFaulds Lake Project Location

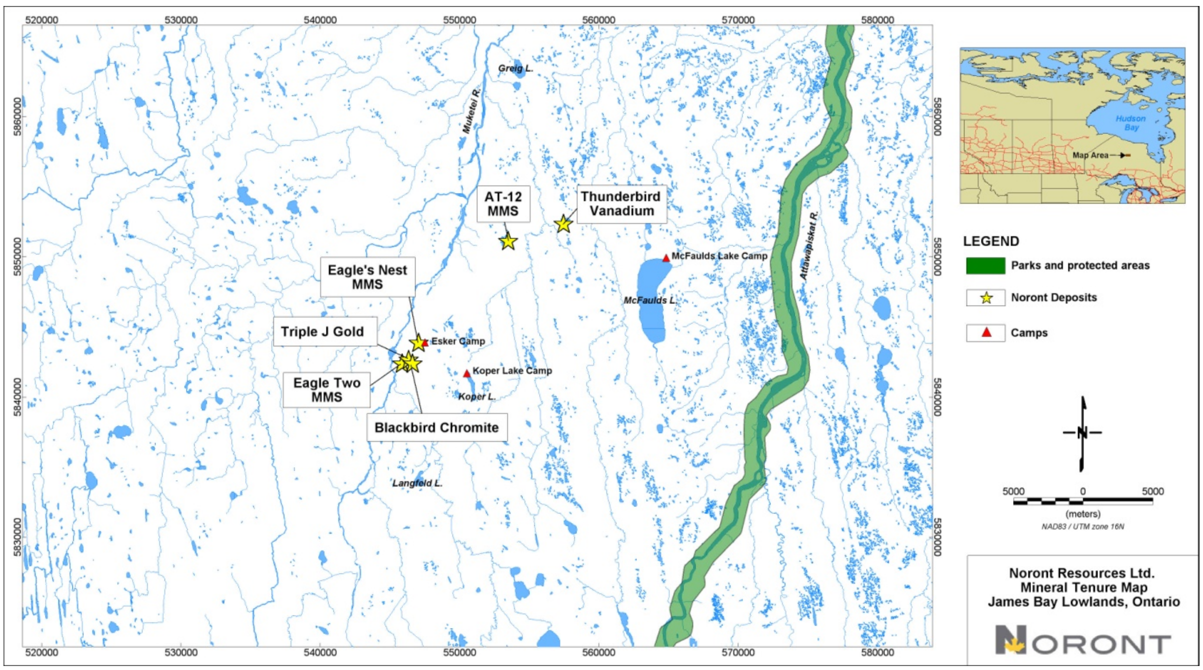


The First Nations communities of Webequie and Ogoki/Marten Falls are located 90 km west and 120 km south southeast of McFaulds Lake, respectively. Both communities are served by regularly scheduled air service, primarily from Thunder Bay; both Thunder Bay and

Timmins serve as support centres for the James Bay communities and the exploration projects in the area.

The Eagle's Nest, Eagle Two, Blackbird and Triple J occurrences are located within a 4 square kilometer surface area and are defined as the Eagle's Nest-Blackbird (ENB) Complex. The AT12 and Thunderbird mineral occurrences are 10 and 14 km to the northeast of the ENB Complex, respectively, as shown in Figure 4.2. Also shown are the locations of the Esker Camp, Koper Lake, the McFaulds Lake Camp and local bodies of water.

Figure 4.2
Locations of Noront Properties, McFaulds Lake Area

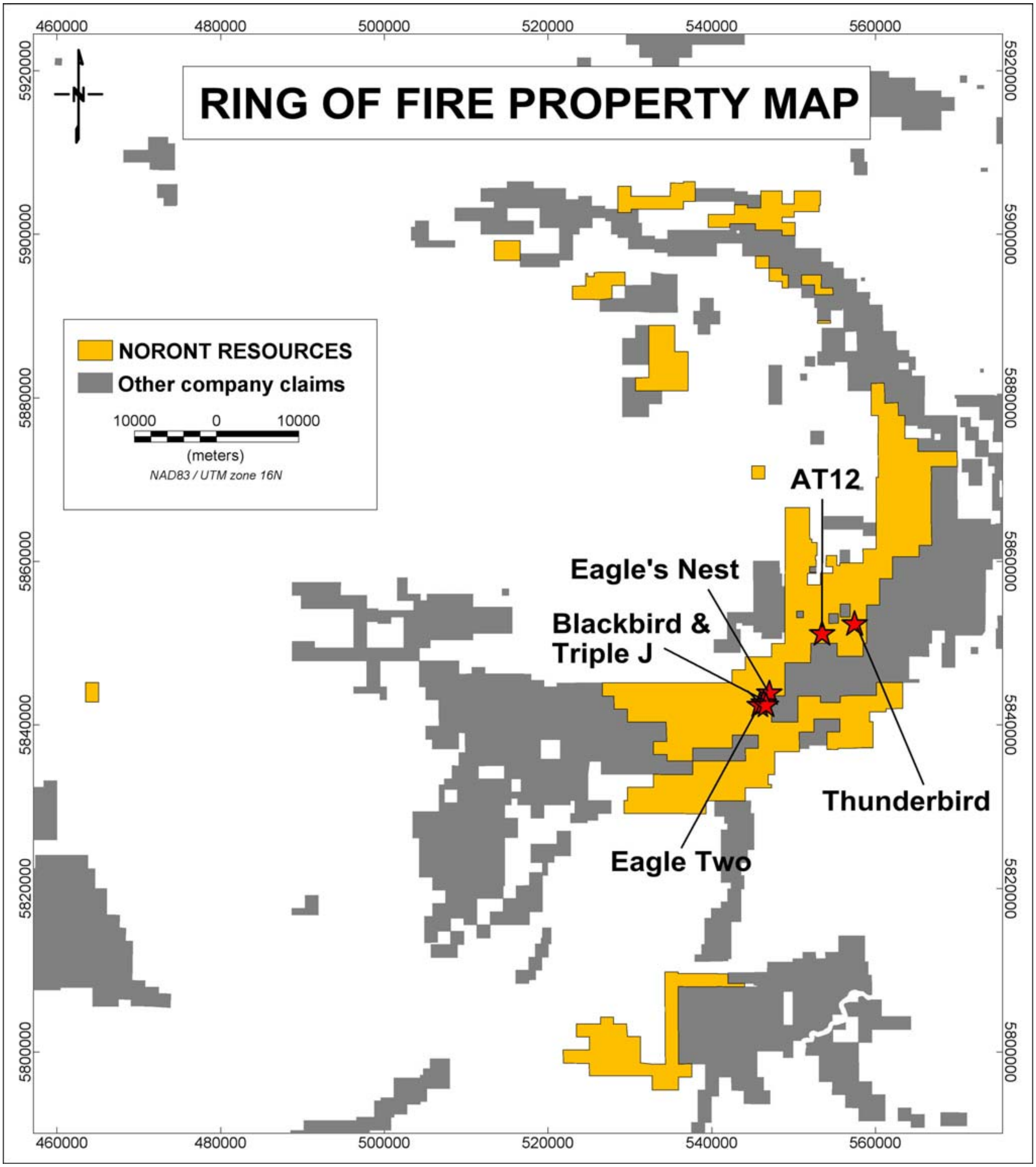


4.2 CLAIMS

As of the effective date of this report, Noront controls 351 claims of approximately 80,016 ha. Of these claims, there are 14 claims hosting the Eagle's Nest, Blackbird, Eagle Two and Triple J deposits and the AT12 and Thunderbird mineral occurrences, consisting of approximately 3,136 ha.

A property map showing the claims in the Ring of Fire area is presented as Figure 4.3.

Figure 4.3
Ring of Fire Property Map Including the McFaulds Lake Area



The claims within which Noront's deposits/discoveries are located are shown in Table 4.1.

Table 4.1
Claims Hosting Noront's Currently Known Deposits

Claim Number	Township/Area	Division	Area (ha)	Recording Date	Claim Due Date	Status	Percent Option	Deposits
3008266	BMA 527861	Porcupine	256	2003-Jul-31	2012-Jul-31	Active	100	Thunderbird, AT12
3008267	BMA 527861	Porcupine	256	2003-Jul-31	2012-Jul-31	Active	100	Thunderbird
3008687	BMA 527861	Porcupine	256	2003-Oct-08	2012-Oct-08	Active	100	AT 12
3011019	BMA 527861	Porcupine	240	2003-Apr-14	2014-Apr-14	Active	100	Thunderbird
3011020	BMA 527861	Porcupine	240	2003-Apr-14	2014-Apr-14	Active	100	Thunderbird
3011021	BMA 527861	Porcupine	240	2003-Apr-14	2014-Apr-14	Active	100	Thunderbird
3011022	BMA 527861	Porcupine	240	2003-Apr-14	2012-Apr-14	Active	100	Thunderbird
3011024	BMA 527861	Porcupine	256	2003-Apr-14	2013-Apr-14	Active	100	Thunderbird
3011025	BMA 527861	Porcupine	256	2003-Apr-14	2013-Apr-14	Active	100	Thunderbird
3012256	BMA 527862	Porcupine	256	2003-Apr-22	2012-Apr-22	Active	100	Eagle's Nest
3012259	BMA 527862	Porcupine	256	2003-Apr-22	2012-Apr-22	Active	100	Blackbird, Eagle Two, Triple J
3012261	BMA 527862	Porcupine	256	2003-Apr-22	2012-Apr-22	Active	100	Blackbird, Eagle Two
3012264	BMA 527862	Porcupine	64	2003-Apr-28	2014-Apr-28	Active	100	Eagle's Nest
3012265	BMA 527862	Porcupine	64	2003-Apr-28	2012-Apr-28	Active	100	Eagle's Nest

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The following is based on the descriptions provided in Golder, 2010 and Micon, 2010.

5.1 ACCESS

Regional access to the Eagle's Nest property is currently from Nakina, 300 km to the south, where there is a paved, 3,880-ft airstrip, in addition to all weather roads and railroad.

The First Nations communities of Webequie and Ogoki Post/Marten falls are located 90 km west and 120 km south-southeast of McFaulds Lake, respectively. Both communities are served by regularly scheduled air service, primarily from Thunder Bay. Both Thunder Bay and Timmins serve as support centres for the James Bay communities and the exploration projects in the area.

Charter air service to the property is available with West Caribou Air Service, Nakina Air Service and Wasaya Airways. A winter road system services the communities of Marten Falls, Webequie, Lansdowne House, Fort Albany and Attawapiskat, and could potentially be extended to give access to the project area. A side road to the winter road from Moosonee to Attawapiskat was built to service the Victor diamond mine site operated by De Beers Canada and located approximately 150 km east of the Eagle's Nest property.

Year-round operations performed by Noront are based at the Esker Camp which is located approximately 1.5 km northeast of the Blackbird project and 300 m northeast of the Eagle's Nest project. Direct access to the property is by helicopter in summer and with snowmobiles or small trucks in the winter. Access to Esker camp is through Koper Lake. Alternative access is from the original McFaulds Lake exploration camp established on McFaulds Lake which is accessible to float and ski-equipped aircraft, and is approximately 18 km north northeast of the Eagle's Nest deposit. Alternative access is also via Webequie by helicopter. Small ponds closer to work areas may form potential winter ice strips. Advanced programs require helicopter support for moving equipment and transporting personnel and supplies.

5.2 CLIMATE AND PHYSIOGRAPHY

The climate is warm in summer and very cold in winter, with freeze-up during late October. Long winters extend until spring break-up in April. The mean daily minimum temperature in January is -27º C, the mean total annual precipitation is 660 mm, and the mean snowfall is 2,400 mm. The mean annual maximum and minimum daily temperatures are 1.9 and -8.1º C, respectively.

The property lies within the James Bay Lowlands of Northern Ontario, a poorly drained peneplain that slopes gently from approximately 170 masl in the property area toward James Bay and Hudson Bay to the east and northeast. The terrain is flat and swampy, generally covered by string bogs and muskeg. Vegetation is dominated by moss, grass and sedges with sparsely scattered stunted larch and black spruce due to the very poor drainage of this almost completely flat landscape. There are occasional patches of boreal forest where drainage is locally enhanced by the presence of low sand ridges or next to incised water courses.

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 these rivers flow eastward or north into James and Hudson Bays, with string bogs that have developed between local drainages. Wetlands cover roughly 50% of the area and 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.

5.3 INFRASTRUCTURE

Infrastructure in the project area consists of the Esker and McFaulds Lake camps. The McFaulds Lake camp is located on the shore of McFaulds Lake and is shared by several companies working in the area. The Esker camp, immediately adjacent to the Eagle's Nest deposit, is used exclusively by Noront. The closest town with infrastructure is Nakina, 300 km to the south.

The local services available at Attawapiskat, Webequie and Marten Falls/Ogoki Post are limited, but include airports, health clinics, public schools, mail services, communications services and stores.

5.4 FLORA AND FAUNA

The McFaulds Lake area is in the Tundra Transition Zone of the James Bay Lowlands that lies 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.

Characteristic larger wildlife includes barren-ground caribou, black bear, wolf, moose and lynx. Smaller mammals are numerous, such as muskrat, weasel, American marten and red fox. A number of migratory bird species nest in the James Bay Lowlands in the summer, including Canada goose, ruffed grouse and American black duck. Local fish species include pickerel (walleye), northern pike (jackfish), trout (lake, brook, brown, speckled and rainbow), whitefish and sturgeon.

6.0 HISTORY

The following description is based on Golder, 2010 and Micon, 2011b.

Early geological work in the McFaulds Lake area was conducted by the Geological Survey of Canada and the Ontario Department of Mines. Exploration activities focused on diamonds and occurred sporadically between 1959 and 1990 and resulted in Monopros, the Canadian subsidiary of De Beers, discovering the Attawapiskat kimberlite cluster in 1988.

In the early to mid-1990s, joint venture partners Spider Resources Inc. (Spider) and KWG Resources Inc. (KWG) discovered the Good Friday and MacFayden kimberlites in the Attawapiskat cluster, as well as the five Kyle series kimberlites to the northeast of the McFaulds Lake properties. The first volcanogenic massive sulphide (VMS) deposits (McFaulds No. 1 and No. 3) were discovered in 2001 by follow-up drilling. The discovery of these deposits, and the recognition of the region as a poorly exposed greenstone belt led to the identification of six additional VMS deposits in 2003. Subsequent geophysical surveys carried out between 2004 and 2006 identified magnetic high targets that were drilled in 2006 by Probe Mines Ltd. (Probe) on ground held by Noront, confirming the presence of ultramafic rock and highlighting the potential for Ni-Cu-Cr-PGE mineralization in the area.

Noront discovered the Eagle's Nest magmatic massive sulphide deposit while searching for VMS mineralization in 2007. Follow up testing with other airborne anomalies led to the discovery of the Eagle Two shear-hosted sulphide deposit. Drilling of this occurrence led to the discovery of the Blackbird chromite deposits in 2008, which are hosted by the same ultramafic complex as Eagle's Nest. The most recent discoveries by Noront in the ultramafic complex are the Thunderbird vanadium and Triple J gold occurrences.

The Double Eagle claims were staked by Noront in March, 2003, following the Spider/KWG VMS discoveries. The Double Eagle property is now referred to as the Eagle's Nest-Blackbird (ENB) Complex. Noront optioned the ENB Complex claims to Hawk Precious Minerals Inc., (now Hawk Uranium Inc.), which in turn optioned them to Probe. Probe completed an exploration program in early 2006 with 11 holes and returned the ENB Claims to Noront in early 2007.

The first mineral resource estimate completed in the area was for the Eagle One deposit (subsequently renamed Eagle's Nest) and was prepared by P&E Mining Consultants Inc. (P&E) and is discussed in the report titled, Technical Report and Resource Estimate on the Eagle One Deposit, Double Eagle Property, McFaulds Lake Area, James Bay Lowlands, Ontario, effective date 3 July, 2008 (P&E, 2008a). Subsequently, P&E prepared a technical study for the Eagle One deposit as reported in its Technical Report and Preliminary Economic Assessment on the Eagle One Deposit Double Eagle Property, McFaulds Lake Area, James Bay Lowlands, Ontario, effective date October 20, 2008 (P&E, 2008b).

Golder Associates Ltd. (Golder) prepared mineral resource estimates for the Eagle's Nest and Blackbird deposits and presented the estimates in the report titled Technical Report and Resource Estimate, McFaulds Lake Project, James Bay Lowlands, Ontario, Canada, dated April 23, 2010 (Golder, 2010).

Micon prepared an updated mineral resource estimates and Technical report for the Eagle's Nest deposit (Micon, 2011a) with an effective date of 4 March, 2011.

Micon prepared a PEA and Pre-feasibility Study on the Eagle's Nest Project in September, 2010 (Micon, 2010) and August, 2011 (Micon, 2011b), respectively.

Micon also prepared a resource estimate for the Blackbird chromite deposit, located close to the Eagle's Nest deposit. This report, titled Technical Report on the Mineral Resource Estimate for the Blackbird Chrome Deposits, James Bay Lowlands, Northern Ontario, Canada, has an effective date of December 31, 2009 (Micon, 2009). An updated resource for the Blackbird Chrome Deposits and Technical Report was issued in May, 2012 by Micon (Micon, 2012).

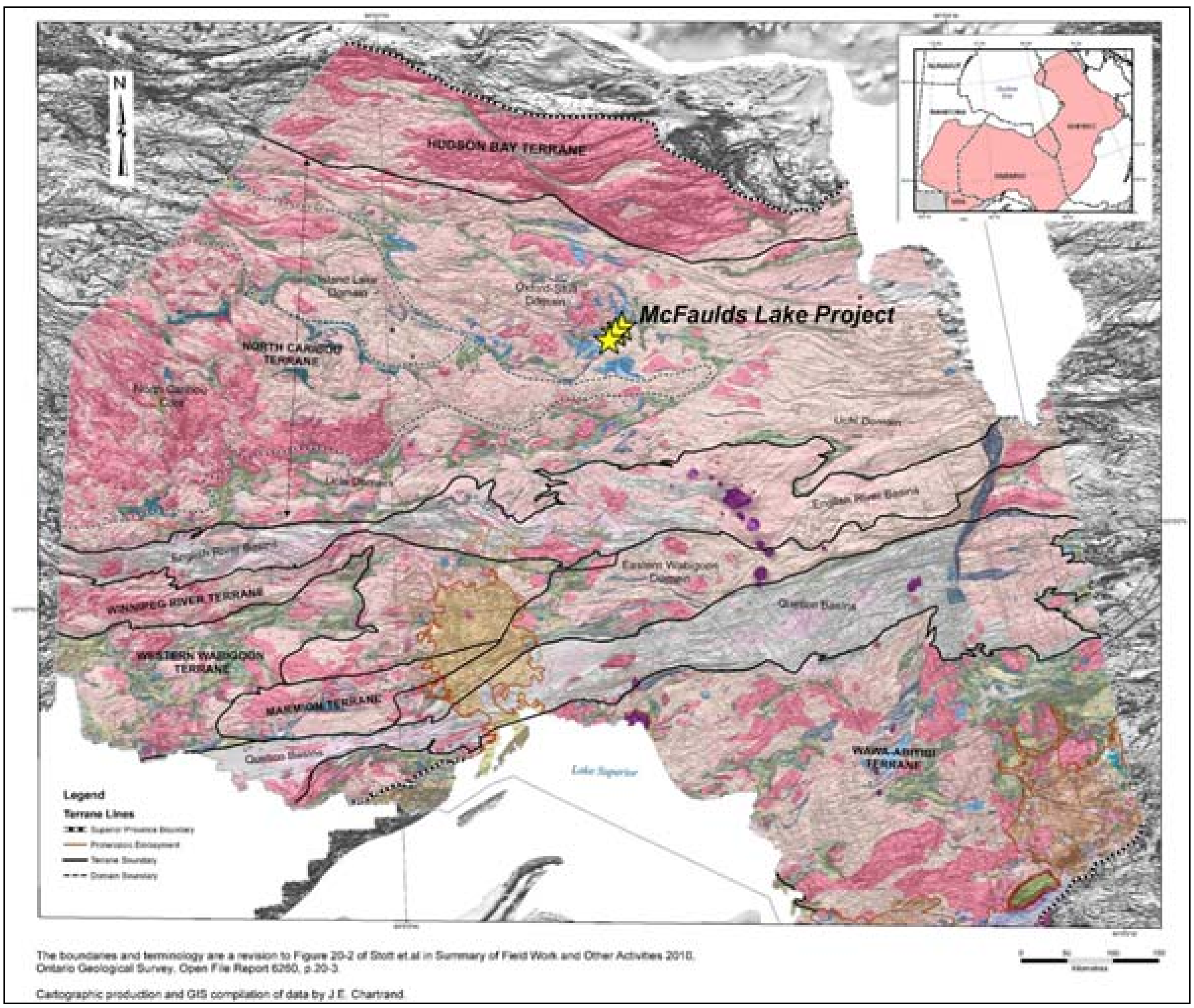
7.0 GEOLOGICAL SETTING AND MINERALIZATION

A detailed description of the geological setting of the McFaulds Lake is included in Golder, 2010 and Micon, 2010, on which the following summary is based.

7.1 REGIONAL GEOLOGY

The McFaulds Lake area is underlain by Precambrian rocks of the northwestern part of the Archean Superior Province. The Superior Province is a part of the central region of the Canadian Shield and is the world's largest, contiguous, exposed Archean craton. A series of Meso-archean volcanic and plutonic domains and terranes trending from west to east formed as micro-continents and are separated by Neo-archean meta-sedimentary belts and crustal faults. The regional geology of the area is illustrated in Figure 7.1.

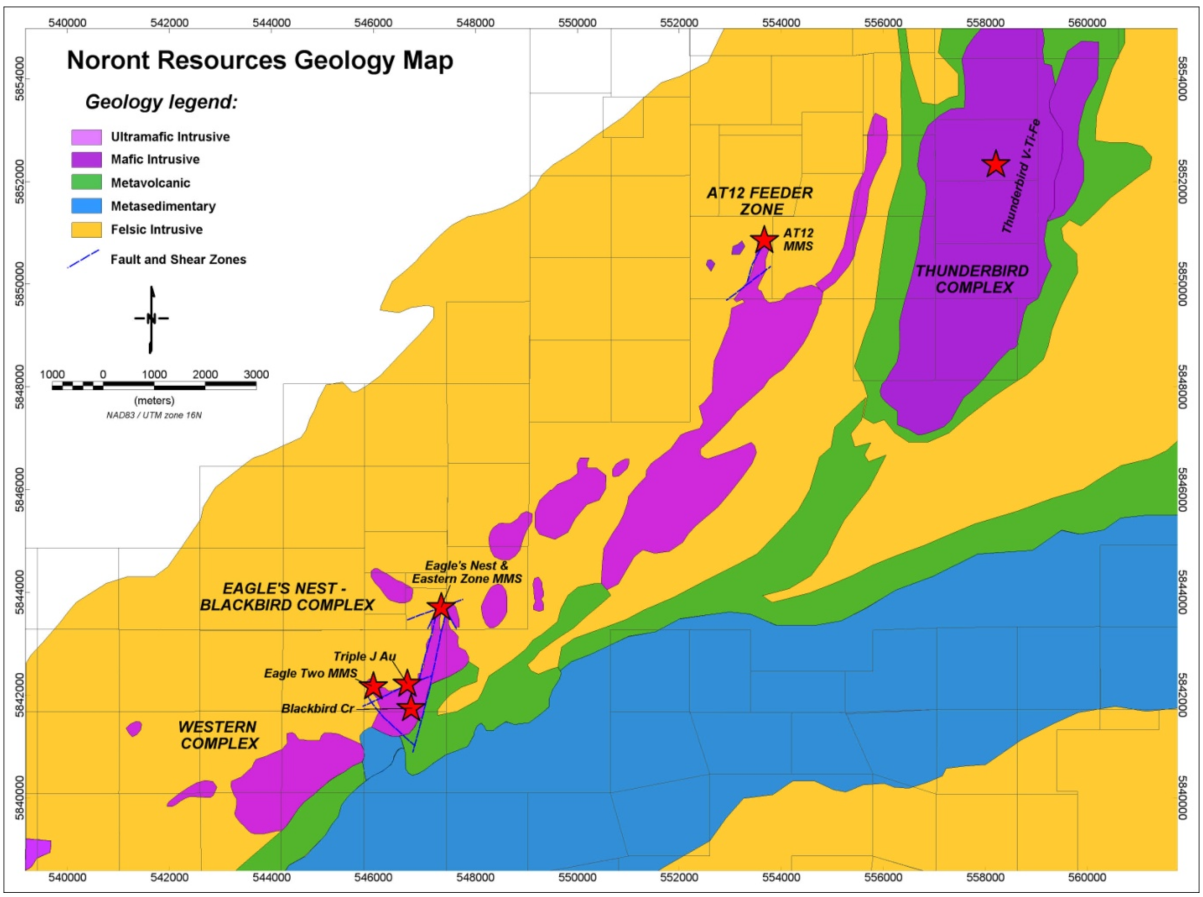
Figure 7.1
Regional Geological Map



7.2 LOCAL GEOLOGY

The McFaulds Lake VMS deposits are collectively recognized as an area within a significant greenstone belt located at the eastern limit of exposure of the Oxford-Stull Domain, where it disappears under the Paleozoic cover. The greenstone belt is not fully understood due to the lack of exposed supracrustal rocks in the region. Interpretation is almost exclusively through airborne geophysical surveys and diamond drilling. Local geology is illustrated in Figure 7.2.

Figure 7.2
McFaulds Lake Local Geology



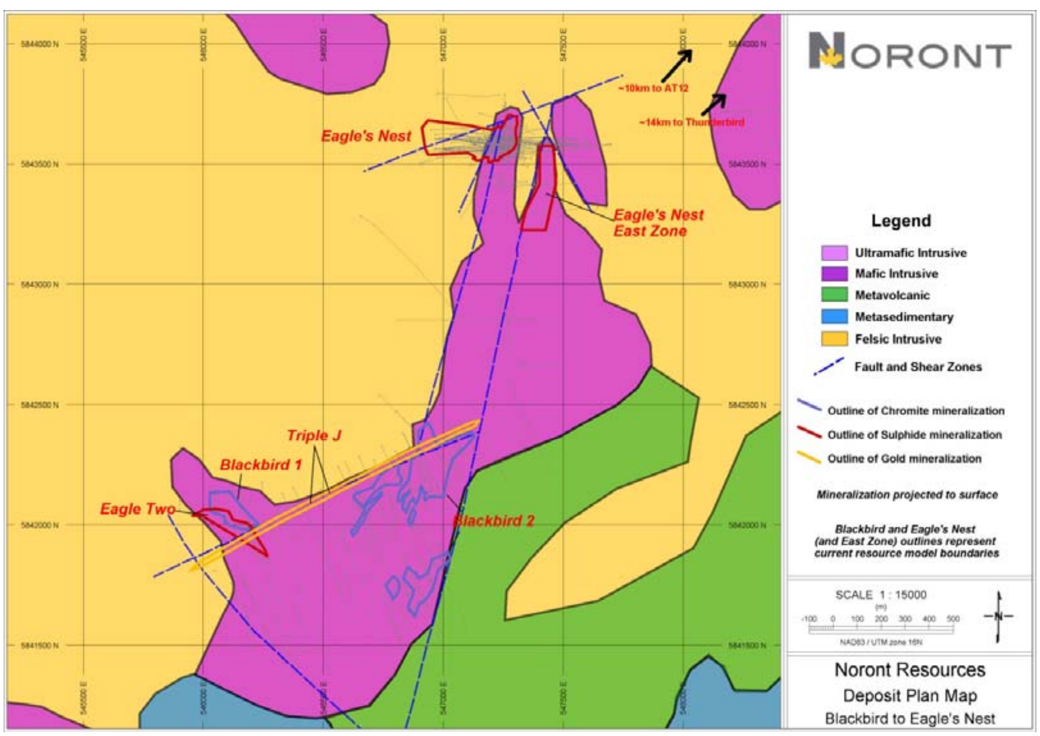
A key feature of the McFaulds Lake area is the formational magnetic high that forms a half-circle, 60 km in diameter, in the area known as the Ring of Fire (ROF) Intrusive. The magnetic high is a mantle-derived, ultramafic intrusion that has been emplaced along the margin of a regional-scale granodiorite pluton which, in turn, has been intruded into and caused a doming of the host Sachigo greenstone belt rocks. The magnetic high is a marker between highly deformed rocks within the ROF and the younger rocks outside the ROF that show relatively simple aeromagnetic fabric, indicative of a simpler deformational history. It appears that a series of conduits cutting across the granodiorite have acted as feeders to the ROF.

After the deposition of the ROF iron formation, a major episode of ultramafic magmatism was marked by the emplacement of peridotitic to dunitic dykes and sills of the ROF Intrusion. The ultramafic dykes and sills cut through older tonalitic to granodioritic intrusions that are structurally beneath the iron formation, and they also cut up through the iron formation and into the overlying mafic to intermediate lava flows. The ultramafic dykes below the iron formation are host to the magmatic nickel-copper-platinum group element deposits, notably including Eagle's Nest, Eagle Two and AT12. The ultramafic intrusions above the dykes 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, Black Creek, Big Daddy, and Black Thor chromitite deposits are hosted by these ultramafic sills.

7.3 LOCAL DEPOSITS AND MINERAL OCCURRENCES

The Eagle's Nest deposit is interpreted as occurring well within a conduit feeder, approximately one kilometre, from the main ultramafic intrusive. Two kilometres southwest of the Eagle's Nest deposit, Noront has discovered the Blackbird One chromite deposit, the Eagle Two shear-hosted Ni-Cu-PGE deposit, the Blackbird Two chromite occurrence within the ultramafic intrusive and the Triple J gold deposit at the contact between peridotite and granodiorite. The locations of these discoveries are shown on Figure 7.3.

Figure 7.3
Map of ENB Mineral Occurrence Location



7.3.1 Eagle's Nest Deposit

The Eagle's Nest deposit is a sub-vertically dipping body of massive magmatic sulphide (pyrrhotite, pentlandite, chalcopyrite, magnetite) in a pipe-like form approximately 200 m long, up to several tens of metres thick, and at least 1,650 m deep. It strikes northeast-southwest and occupies the northwestern margin of a vertically-inclined serpentinized peridotite dyke that is present in subcrop over a north-south strike length of about 500 m, with a maximum width of about 75 m.

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, and gabbro which is usually talc-chlorite altered.

7.3.2 Blackbird Deposit

The Blackbird chromite occurs entirely within altered ultramafic rocks which are associated with serpentine, talc, tremolite-hornblende, chlorite, magnesite and lesser biotite. The stratigraphy has been overturned and is dipping roughly 60° towards 335° (azimuth). There is evidence of folding to the southwest of the deposit where the intrusion pinches out. Drilling during the 2010 campaign intersected chromite approximately 400 m northeast of Blackbird Two. This demonstrates that the mineralization is open to the northeast and at depth.

7.3.3 Triple J Gold Mineral Occurrence

The gold mineralization of the Triple J is directly related to the sheared contact between the talc-altered peridotite hosting the Blackbird and Eagle Two occurrences and the hanging wall granodiorite. The sheared zone consists of biotite-chlorite-actinolite schist which contains or is flanked by brecciated quartz-rich fragments. The thickness of the zone ranges from several centimetres to tens of metres with a strike length currently defined at 1 km and to a depth of 300 m. The zone is interpreted as a large, low grade gold occurrence flanking the Blackbird and Eagle Two deposits, with a consistent strike of 065° and a dip of 50°.

7.3.4 AT12 Nickel-Copper Mineral Occurrence

Located 10 km northeast of Eagle's Nest, the AT12 occurrence is a Ni-Cu-PGE-bearing body that occurs within the ROF region. It has been periodically drilled since 2008 and the inferred boundaries are delineated by a strong magnetic anomaly that trends north-northeast. Drilling demonstrates that the AT12 mineralization is hosted by ultramafic rocks. Mineralization occurs as massive, semi-massive, shear-hosted and disseminated sulphides. The geometry of the ultramafic unit and position relative to the main intrusion may indicate that AT12 is part of a feeder, possibly the feeder for the Black Thor and Big Daddy chromite deposits on neighbouring property.

7.3.5 Thunderbird Vanadium-Titanium-Iron Mineral Occurrence

The Thunderbird mineral occurrence is located 14 km northeast of the Eagle's Nest deposit, 4 km to the east of the AT12. The zone is demarcated by a magnetic high which trends north-south as part of a magnetic anomaly that is 7 km long, 3 km wide. This is thought to be the result of a mafic intrusion which hosts the magnetite-rich ferrogabbro which has elevated values of vanadium, titanium and iron.

7.4 MINERALIZATION

A detailed description of mineralization at McFaulds Lake is provided in Micon, 2009 and Golder, 2010 from which the following description has been extracted.

The Eagle's Nest deposit is composed of massive and net-textured sulphides with little to no disseminated sulphides.

7.4.1 MASSIVE SULPHIDES

Massive sulphides at Eagle's Nest are comprised of pyrrhotite, pentlandite, and chalcopyrite, with subsidiary amounts of magnetite. At peak metamorphic conditions, all the nickel, and perhaps all the copper, was probably present within a homogeneous monosulphide solid solution. The pentlandite probably nucleated and grew during retrogression from peak metamorphic conditions, and its occasional habit of forming along the margins of fractures probably indicates that it was more easily nucleated on discontinuities. It is important to recognize that the extreme deformational textures that may have existed in the sulphide at peak conditions will have been erased by recrystallization.

7.4.2 NET-TEXTURED AND DISSEMINATED SULPHIDES

Net-textured sulphides are characterized by a closely-packed orthocumulate-textured framework, the interstices of which are fully occupied by sulphide minerals. This arrangement is generally understood to result from the invasion of a silicate crystal blend by dense immiscible sulphide melt that has effectively expelled all the interstitial silicate melt.

The voluminous amount of sulphide and ultramafic cumulates present at Eagle's Nest indicate that it was formed in a magmatic conduit. It is believed that sulphides left behind were due to a through-going volume of magma much greater than what is presently represented in the intrusion. The mafic chilled margins can be interpreted to represent samples of the liquid from which the intrusion formed; the ultramafic rocks are cumulates that were gleaned from large volumes of mafic liquid that deposited small increments of olivine and pyroxene as it passed by.

Present research shows that in order to form a mass of immiscible sulphide liquid on the scale observed at Eagle's Nest deposit, a mafic or ultramafic magma must have become contaminated by sulphide-rich crustal rock. At the present level of exposure, the mineralized intrusion is entirely surrounded by sulphur-poor felsic intrusive rocks, leaving the origin of the required sulphide in doubt. The presence of abundant magnetite-rich xenoliths in the intrusion has been interpreted as recording a previous episode of assimilation of iron formation, which has added sufficient sulphide to the magma to induce sulphide liquid saturation.

8.0 DEPOSIT TYPES

A detailed description of the deposit types at McFaulds Lake is included in Golder, 2010, from which the following summary has been extracted.

The interpreted geology of the area has been shown to be conducive to many deposit types including Ni-Cu+PGE in magmatic massive sulphides (MMS), Cu-Zn±Au in volcanogenic massive sulphides (VMS), magmatic Cr-Ni-Cu-PGE, V+Ti, and gold in shear-hosted settings.

The focus of interest within the McFaulds Lake area is the ROF which is a mantle derived mafic-ultramafic intrusion. The ROF is host to the Eagle's Nest Ni-Cu-PGE MMS deposit, as well as to the Blackbird chromite deposit, Eagle Two and AT12 Ni-Cu-PGE occurrence, and the Thunderbird vanadium-titanium-iron occurrence on Noront property, and the Black Thor and Big Daddy chromite deposits on adjacent properties.

The Eagle's Nest deposit is komatiitic. Proterozoic komatiitic deposits of the Thompson Nickel Belt in Manitoba account for one-quarter to one-third of current nickel production in Canada. Archean komatiitic deposits at Kambalda and elsewhere in Western Australia yield most of that country's produced nickel. Several small nickel mines in the Abitibi greenstone belt of Ontario and Quebec are also Archean komatiitic deposits.

A common feature of these deposits is that most of the ore-bearing komatiite is directly underlain by sulphidic sediments. It is generally believed these sediments are the source of sulphur that became incorporated in the komatiitic magmas and gave rise to the mineralization.

9.0 EXPLORATION

A detailed description of exploration at McFaulds Lake is provided in Golder, 2010 from which the following summary of work on the Eagle's Nest deposit has been extracted.

Since Noront acquired the claims that include the ENB Complex, AT12 and Thunderbird occurrences in 2003 and 2006, a total of 13 geophysical surveys undertaken, as well as an 11-hole diamond drill program completed by Probe in 2006, and continuous and on-going drilling by Noront since 2007.

9.1 AIRBORNE GEOPHYSICS

Late in 2007, Noront commissioned a collaborative regional survey and contracted Aeroquest to perform an AeroTEM III time domain electromagnetic survey over the project areas.

Some weak or deeply buried conductors under the thick and commonly highly conductive overburden in the ROF region were more thought to be readily detected using the recently developed fifth-generation VTEM system. This system had already been mobilized to the area by Geotech, and Noront commissioned a second time domain airborne survey (VTEM) to cover approximately the same survey blocks and was completed by Geotech in June, July, and August, 2008. The VTEM detected additional conductors that were invisible to the AeroTEM system. The results became available too late in the year to have a major effect on the 2008 exploration program but were used to guide work in 2009.

Noront has also undertaken three additional airborne surveys: a gravity Air-FTG survey, a Z-axis tripper Electromagnetic Survey (ZTEM) survey during the late spring of 2009, and a High Resolution Aeromagnetic Gradient (HRAM) survey in late 2009. These surveys covered the Eagle's Nest, Blackbird, Eagle Two and Triple J projects, while the ZTEM and HRAM also covered the AT12 project and the HRAM covered the Thunderbird area as well.

The AeroTEM and horizontal loop electromagnetic (HLEM) profiles centred on the net-textured sulphides, indicating that these surveys did not respond well to the massive sulphide but picked up the less conductive net-textured mineralization. A magnetic peak is centred on the massive sulphides.

9.1.1 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-km of data were collected, which added detail to the geophysical information available in the area. The survey identified several bedrock conductors that closely correlated with magnetic anomalies. 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. A ground survey using a horizontal loop electromagnetic system and magnetometer was suggested at the recommended locations and was completed in 2004.

9.1.2 2007 Noront AeroTEM III Helicopter Survey

In late 2007, following the discovery of the Eagle's Nest deposit, Noront carried out an airborne magnetic and electromagnetic survey over a more extensive area in McFaulds Lake in conjunction with other JV stakeholders in the region. Aeroquest Ltd. (Aeroquest) was contracted to fly the survey using the AeroTEM III helicopter transient electromagnetic system.

Twelve anomalies were identified (13 including the Eagle's Nest deposit) and follow-up exploration was recommended for seven of the twelve anomalies.

The northwestern edge of the survey block shows moderate magnetic response inferred to represent the basement gneiss complex with variable amounts of magnetite. Southeastward into the block, there is a broad zone of muted magnetic response and subtle northeast-southwest lineaments interpreted to represent a stacked series of felsic intrusions similar to the granodiorite hosting the Eagle's Nest deposit and the AT12 mineral occurrence. The southeastern margin of the magnetic quiet zone is a string of highly magnetic bodies, several of which contain bedrock conductors that are now known to be intrusions of ultramafic rock (Eagle Two, Blackbird, Eagle's Nest, AT12,), appearing both as isolated bodies surrounded by granodiorite, similar to Eagle's Nest, and as a lineament spanning the entire belt. Southeast of this belt of ultramafic and mafic intrusions, there is a second string of highly magnetic rocks that also show intermittent bedrock conductivity, and is now known to correspond to the iron formation of the ROF. In the far northeast of the property, there is a prominent highly magnetic structure showing what appear to be concentric layers of alternating high and very high magnetic susceptibility. Drilling in early 2009 revealed the presence of magnetite-rich gabbro in the most magnetic portion of this structure, indicating that this is a sill-sediment complex that has probably been folded into a doubly-plunging syncline.

9.1.3 2008 VTEM Airborne Survey

The VTEM survey flown on behalf of Noront in early 2008 covered the areas of the ENB Complex, AT12 occurrence and Thunderbird occurrence and the existence of conductors at the first three targets was confirmed.

9.1.4 2009 Gravity Gradiometry Airborne Survey

Bell Geospace Inc., of Houston Texas, completed an airborne gravity survey over the ENB Complex in January and February, 2009. The survey was flown in a northwest to southeast direction with perpendicular tie lines. The flight paths were spaced 100 m apart and were 10.3 km long and the tie lines were 17 km long and 1,000 m apart. In total, there were 167 lines and 11 tie lines. A final gradient colour contoured map was produced by Bell Geospace Inc. at 1:50000 scale.

9.1.5 2009 Z-Axis tripper Electromagnetic Geophysical Survey – Airborne Survey

A helicopter-borne ZTEM survey was flown in May, 2009 Geotech Ltd. (Geotech). The survey was performed to map the geology in the ENB Complex, by using resistivity contrast and magnetometer data. A total of 896 km of flight lines oriented in a northwest to southeast direction were flown covering an area of 165.8 km^2. The flight line spacing was generally at 200 m with no tie lines, although infill lines were completed at 50-m spacing from L4555-L4575.

Extracted from the data were both the In-phase and Quadrative components; this data was formulated into 1:20000 scale maps. Follow-up interpretation was recommended by Geotech.

9.1.6 2009 High Resolution Aeromagnetic Gradient and VLF-EM Airborne Surveys

Simultaneous HRAM and VLF-EM surveys completed by Terraquest Ltd. (Terraquest) during October and November, 2009 covered two blocks, known as Block B and Block D, located in the ROF. Block B, in the southern part of the ROF, includes the Eagle's Nest and Blackbird deposits, and Eagle Two, Triple J, AT12 and Thunderbird mineral occurrences.

A total of 11,163 km of data were collected along 100 m flight traverses with 1,000 m tie lines.

Four magnetic maps and 6 XDS-EM maps were produced by Terraquest, and TMF and Calculated Vertical Magnetic Gradient maps were produced for both blocks as well. The Terraquest XDS VLF-EM system produced good resolution and consistent results.

9.2 GROUND GEOPHYSICS

Noront conducted a ground magnetic and horizontal loop EM survey in March and April 2004, on two separate grids which included the Blackbird deposit and Eagle Two and Triple J mineral occurrences.

During 2006, Condor Diamond Corp., (Condor) conducted an infill ground magnetic survey in the Blackbird-Eagle Two-Triple J area. Three anomalies were identified, named A, B and C. Follow-up drilling was conducted with anomaly A, which was subsequently identified as the Eagle One Deposit (now referred to as Eagle's Nest) situated on one of the two claims that were optioned to Noront.

During the winter of 2008, the ground geophysical Grid 1 and Grid 2, originally cut for the Probe/Noront JV in 2003, were re-occupied, and new surveys were conducted between

January and May, 2008. Grid 2 was extended to cover Noront claims northeast of the original extent of Grid 2. Ground surveys were conducted between September and November, 2008.

An induced polarization (IP) program was conducted on Eagle's Nest drill holes in December, 2007. From January to March, 2011, and from September, 2011 to March, 2012, ground-based induced polarization (IP) and resistivity surveys were conducted over the Eagle's Nest and AT12 properties.

9.2.1 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, including the Eagle's Nest deposit. 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 m, perpendicular to a base line trending 045°, using GPS for reference.

Conductive axes of bedrock origin were mapped within and adjacent to magnetic anomalies 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.

9.2.2 2006 Condor Diamond Corp. In-fill Ground Magnetic Survey

In 2003, Condor Diamond Corp. (Condor) staked several mining claims in the McFaulds Lake area based on a regional aeromagnetic survey; two of the claims were later optioned to Noront and the Eagle's Nest discovery was made on claim number 3012264. In early 2004, Condor took part in a ground magnetic and horizontal loop electromagnetic survey that partially covered one of these claims. The survey revealed an elliptically shaped magnetic anomaly with an associated EM response. In February, 2006, Condor contracted Greenstone Exploration Ltd. to survey infill lines and to extend the survey to include the northwest claim. Three anomalies were identified and named A, B and C. Follow-up drilling was conducted and Anomaly A was identified as Eagle's Nest deposit.

9.2.3 2007 Magnetics, HLEM and Gravity Surveys over Eagle's Nest Deposit

HLEM (or MaxMin) and magnetic surveys were completed over the Eagle's Nest deposit in September and October, 2007. Total magnetic intensity readings were made at a station spacing of 12.5 m. HLEM surveys were done at a coil spacing of 50 m with readings every 25 m.

The Eagle's Nest deposit is marked by a distinct magnetic high with a peak over 10,000 nT and by strong 440 Hz HLEM anomalies consistent with multiple shallow, strong conductors.

9.2.4 2007 Gravity Survey

During the fall of 2007, JVX Ltd. (JVX) completed a gravity survey over the Eagle's Nest deposit. The Eagle's Nest deposit is clearly marked in the residual Bouguer gravity as a roughly circular gravity high of 0.6 mGal, which may be open to the south.

9.2.5 2008 Magnetic, VLF, HLEM, Gravity and Large Loop TDEM Surveys

Magnetic, VLF, HLEM, gravity and large loop transient EM (TDEM) surveys were completed by JVX in 2008. The results yielded a second anomaly continuing to the northeast of Blackbird One, which became known as the Blackbird Two anomaly.

9.2.6 2010 Surface EM – Crone SQUID system

A 'SQUID' survey, consisting of a Crone Pulse Time Domain Electromagnetic transmitter and SQUID (Superconducting Quantum Interference Device) magnetic receiver, was carried out by Crone Geophysics & Exploration Ltd. (Crone). The survey consisted of 40 surface lines covering about 30.65 km of data utilizing eight surface loops (400 m by 400 m, 800 m by 800 m and 800 m by 1,200 m) with Z and X components being measured. In general, out-of-loop measurements were made, except for two lines over the Eagle Two deposit, which used in-loop measurements. These were surveyed during the period May 22 to July 27, 2010. The survey covered three claims owned 100% by Noront, on lines 500N-1000N, 5900E-6400E, 2900E-3400E, 900N-100N, 3500E-4000E, and 2800N, all at 200-m line-spacing and 25-m station spacing. The SQUID system responded to the Eagle's Nest ore body and the Eagle Two deposit.

9.2.7 2010 Surface EM – Lamontagne UTEM system

A Lamontagne Surface UTEM survey was also carried out, using a Lamontagne continuous waveform Time Domain Electromagnetic transmitter and Lamontagne Z-component magnetic receiver. Frequencies of 31 Hz were used primarily, and 4 Hz was used for follow-up in some areas. The survey was conducted by Lamontagne Geophysics Ltd. (Lamontagne) between June 21 and December 2, 2010. The survey consisted of 76 lines covering 164.5 km of data utilizing 11 surface loops (1,000 m by 1,000 m, 1,100 m by 1,150 m, 800 m by 1,200 m, 1,200 m by 1,700 m, 1, 900 m by 2,000 m and 1,700 m by 2,000 m). In general, out-of-loop measurements were made with loops positioned to the northwest of the reading lines, except for several lines over the Eagle Two deposit, which used in-loop measurements.

The large survey covered 12 claims 100% owned Noront on lines 100E-200E, 400E-3900E, 4100 -4600E, 4800E- 5400E, 5600E-6100E, 6300E-6400E, 7600E, 7900E-8000E, 8100E-8400E, 800N-1100N and 1300N-1800N, using 50 m /100 m line-spacing and 25 m/50 m station spacing. The Surface UTEM system responded strongly to the Eagle's Nest and Eagle Two deposits. It also responded to known VTEM conductors at AT1, AT2, AT3, AT4, AT5, AT6, AT7, and northeast of Eagle's Nest. In addition, four possible Channel 1 conductors were identified, which were recommended for further follow-up, using 'flipped loops' off to the southeast, in order to test for anomaly symmetry and to verify the conductors.

9.2.8 2011 and 2012 Insight IP and Resistivity Surveys

From January 8, 2011 through March 10, 2011 and from September 18, 2011 through March 22, 2012, Insight Geophysics Inc. was contracted by Noront to perform Gradient and Insight Section IP/Resistivity surveys on the Eagle's Nest and AT12 properties. (Insight, 2012).

9.3 DIAMOND DRILLING

9.3.1 2006 Probe Diamond Drill Program

Noront optioned the McFaulds Lake claims to Hawk Uranium Inc. which, in turn, optioned them to Probe. Probe drilled 11 holes between February and April, 2006, to test selected ground and airborne geophysical targets identified from previous surveys. The conclusions stemming from the diamond drill program were that the geology and geophysical indications were favourable for the presence of VMS-type deposits and a second-phase program of airborne geophysics and diamond drilling was proposed. Probe returned the claims to Noront in early 2007.

9.3.2 2007 and 2008 Noront Diamond Drill Program

Between February and December, 2008, three drills were used to drill 127 exploration boreholes on the McFaulds Lake property. The majority produced NQ size core, however, in rare circumstances where rods became lodged in a hole without the possibility of recovery, smaller BQ size core was used to continue drilling the hole.

9.3.3 2009 Noront Diamond Drill Program

In 2009, between three and five drills were used to produce 161 drill holes, totalling 59,959 m, on the McFaulds Lake property. The majority produced NQ size core. However, in rare circumstances where rods became lodged in a hole without the possibility of recovery, smaller BQ size core was used to complete the hole.

9.3.4 2010 Noront Diamond Drilling Program

In 2010, seven drills were used to produce 63 drill holes totaling 41,545 m, on the McFaulds Lake property. This included the deepening of hole NOT-09-049. The majority produced NQ size core, however, one hole produced the smaller BQ size core, and one hole produced the larger HQ size core.

9.3.5 2011 Noront Diamond Drilling

In 2011, two drills were used to produce 67 drill holes totaling 31,206 m, on the McFaulds Lake property. The majority produced NQ size core, however, one hole produced the larger HQ size core.

9.3.6 2012 Noront Diamond Drilling

In 2012, two drills were used to produce 7 drill holes totaling 4,789 m, on the McFaulds Lake property. They all produced NQ size core.

9.4 OTHER EXPLORATION WORK

9.4.1 2008 Drill Hole IP Surveys

Borehole Spectral IP/resistivity surveys (BHIP) were performed by JVX between May and August, 2008 on 13 drill holes. Direction logs (Gradient) and detection logs (Pole-dipole and Mise-a-la-masse) were used. 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.

9.4.2 2009 to Present Drill Hole EM Surveys

Between 2009 and May, 2010, the majority of drill holes targeting sulphides were surveyed using borehole electromagnetics (BHEM) by Crone Geophysics and Exploration Ltd. (Crone). Since May, 2010, all surveys have been performed by Lamontagne. Lamontagne conducted 31 Hz borehole UTEM surveys in 55 drill holes using 15 loops in 2010. For some holes, 4 Hz was used as a follow-up to distinguish between massive sulphides and net-textured sulphides. These surveys were modeled extensively and the resulting plate models proved valuable in the Eagle’s Nest area for guiding delineation drilling.

9.5 RESULTS OF FIELD PROGRAMS

9.5.1 Eagle’s Nest Deposit

Eagle’s Nest is a sub-vertically dipping body of massive magmatic sulphides (MMS) in the form of a flattened pipe approximately 200 m long and 60 m thick, and currently defined vertically to 1,650 m. The deposit remains open along strike and occupies the northwestern margin of a vertically-inclined serpentinized peridotite dyke that is present in subcrop over a north-south strike length of about 500 m with a maximum width of about 75 m. The massive sulphides within the top 250 m are confined to a volume occupying the northwestern tip of this body, and are bordered to the southeast by a thicker zone of net-textured sulphide hosted by serpentinized peridotitic cumulates. Below 250 m, the massive sulphides can be found throughout the mineralization and, in some cases, into the surrounding granodiorite. The dyke is open at the north and south ends, and plunges very steeply to the south or vertically. The exact attitude of the sulphide-filled keel at the northern tip of the dyke is impossible to state because of the irregularity of the contact. Although a considerable amount of local deformation is evident around the contacts, particularly where they are occupied by massive sulphide, the body appears to be essentially still in place and not significantly deformed.

The host rock of the Eagle's Nest ultramafic dyke is granodiorite that apparently post-dates the overlying ROF iron formation but clearly predates the intrusion of the peridotite. Because the host rocks are magnetically inert felsic rocks with little or no structural fabric and relatively low density, the intrusion is easy to recognize on magnetometer or gravimetric survey data.

Diamond drilling in the fall of 2007 had essentially outlined the limits of the Eagle's Nest resource mineralization ahead of the start of the 2008 drill program. Holes NOT-08-030 to NOT-08-035 were drilled in February, 2008, to test gaps in the previous coverage and to better delineate the mineralized zone. Hole NOT-08-030 was allowed to run almost 200 m beyond the edge of the dyke to test for the possible presence of another ultramafic body at depth but this was not encountered. Hole NOT-08-031 was used to determine the northern tip of the deposit.

Inspection of the magnetometer survey results indicates that there is a second dyke parallel to and east of the Eagle's Nest dyke, but offset en echelon to the southeast. This has been called the Eastern dyke. A third, the Southern dyke, occurs south of both of these, along strike with the Eagle's Nest dyke. Several holes were drilled into the Eagle's Nest dyke south of Eagle's Nest and into the Eastern dyke during the summer and fall of 2008, in the hopes of locating other pods of sulphide in the same general ultramafic system. Some of these appear in the plans and sections relating to Eagle's Nest. Holes NOT-08-036, NOT-08-037, and NOT-08-038 were drilled along section 5843425 N, 100 m south of any previous drilling on Eagle's Nest. The first was collared in granodiorite and passed through the ultramafic dyke before running back out into granodiorite on the west side. Hole NOT-08-037 was collared in the serpentinized ultramafic rock of the Eastern dyke, passing through nearly 100 m of very weakly disseminated sulphide mineralization before encountering the screen of granodiorite that separates the two ultramafic dykes and passing entirely through the Eagle's Nest dyke. Hole NOT-08-038 was collared to the east of the Eastern dyke and passed completely through both it and the Eagle's Nest dyke. The last hole in this series was NOT-08-039, which was collared 100 m further south and again passed through both the Eastern dyke and the Eagle's Nest dyke. A small amount of disseminated sulphide mineralization was intersected by hole NOT-08-039 about 200 m below surface on the western margin of the Eastern dyke. A second zone of weak disseminated sulphide was encountered near the western margin of the Eagle's Nest dyke. Careful inspection of the core shows that all of the mineralized peridotite occurs as blocks hosted by an intrusive igneous breccia and has, therefore, been transported along the dyke from its original point of deposition. The host magma in the matrix of the breccia belongs to the much younger suite of potassic mafic dykes that are common throughout the deposit area but do not carry any sulphide mineralization.

The near total absence of sulphide mineralization in the Eagle's Nest dyke in the more southerly intersections, coupled with the presence of extensive magmatic breccias with clear evidence for stoping of the host rocks along the southeastern margin of the dyke, tends to confirm that the bottom of the Eagle's Nest dyke was the northwestern tip at the time of emplacement. If the roughly flat surface of the south-eastern limit of net-textured sulphide is taken as a paleo-horizontal plane then the entire system can be considered to have been subjected to a right-handed rotation of about 100º (i.e. slightly overturned) about a horizontal axis oriented at N030º. In this interpretation, the dyke originally was a flat blade-shaped intrusion ascending along a shallowly inclined fracture towards the base of the overlying sill containing the Blackbird deposit. The abundant presence in the dyke of autobrecciated textures, stoping, and repeated re-intrusion along the same axis, suggests that the conduit followed a brittle fault which would have simultaneously guided the intrusion and facilitated assimilation of the previously fractured wallrocks.

The present plunge of the keel of the dyke at the level of the deposit is about 70º along an azimuth of N180º from surface to a depth of 300 m. If the dyke system has been slightly overturned, then future efforts to locate more pods of sulphide down plunge should be done on the assumption that the original base of the dyke, and any sulphide-hosting embayments along it, might be at lower paleolevels than the current Eagle's Nest pod; this would place them beneath Eagle's Nest and, possibly, slightly to the southwest.

Hole NOT-09-049, initially designed as a BHEM platform, was near-vertical (with a dip of -87.5°) targeted to trace the interpreted sub-vertical dipping conduit system that emplaced the original Eagle One (Eagle's Nest) discovery. The intention was to explore in very close proximity to the conduit in order to later employ down-hole geophysics with the intention of identifying other potential lenses of nickel and copper sulphides. This hole crossed in and out of the main footwall granodiorite-peridotite conduit contact no less than five times prior to reaching the depth limits of the drill rig at 1,004.1 m. This discovery hole defined what was initially interpreted to be two additional lenses (Eagle 1B and Eagle 1C). Subsequent drilling focused on a series of angled holes along east-west cross sections targeting the areas of the body formerly referred to as lenses Eagle 1B and Eagle 1C. In order to accurately reach the deeper targets, Tech Directional Services commenced directional drilling on the project in July, 2009. The deepest intersection at Eagle's Nest by the end of 2009 was in NOT-09-069A, which extended the known mineralization at Eagle's Nest down to below 1,100 m. All gaps along the vertical length defining the mineralization to this depth have now been filled in and the mineralization was expanded at depth during the 2010 campaign. Hole NOT-10-085W2 intersected 203.3 m of mineralization to a depth of 1,350.8 m and borehole electromagnetic geophysics indicates that the mineralization continues below this.

10.0 DRILLING

Since Noront acquired the claims that include the Eagle's Nest-Blackbird (ENB) Complex, AT12 and Thunderbird occurrences in 2003, 2006, and 2007, there have been a total of 13 geophysical surveys undertaken, as well as a 39-hole diamond drill program completed by Probe in 2006, 2008, and 2009, and continuous and on-going drilling by Noront since 2007.

To 31 December, 2011, Noront has drilled a total of 445 holes and 187,645 m since mobilizing drills onto the property in 2007. Of these, 58 holes totaling 27,924 m were directed at various anomalies designated AT1 to AT11. The rest of the drilling was conducted on projects listed in Table 10.1.

The majority of drilling was carried out by Forage Orbit Garant (Orbit), and the remainder by Cyr Drilling International Ltd. (Cyr) and Cabo Drilling Corporation (Cabo). Drill moves were accomplished by truck, tractor or snow machine when accessible and by helicopter when surface travel was not possible.

Table 10.1
Summary of Diamond Drilling by Year, by Project

Project	2007	2008	2009	2010	2011	Total Holes	Total Metres
Eagle's Nest	29	17	44	34	3	127	63,076.42
Blackbird	0	62	92	0	48	202	74,615.64
Eagle 2	0	34	2	0	0	36	14,336.54
AT 12	0	23	12	8	8	51	19,014.66
Thunderbird	0	0	5	0	2	7	3,015.22

Note: Drill holes listed for Eagle 2 are included in the number of holes and meterages listed for Blackbird and do not, therefore, contribute to the totals of holes or meterages.

Between April, 2008 and December, 2011, a total of 202 holes totalling 74,615.64 m were drilled at the Blackbird project. Holes were typically spaced on 20 m sections over a strike length of 200 m and the deepest mineralized intersection encountered to date is 1,300 m below surface.

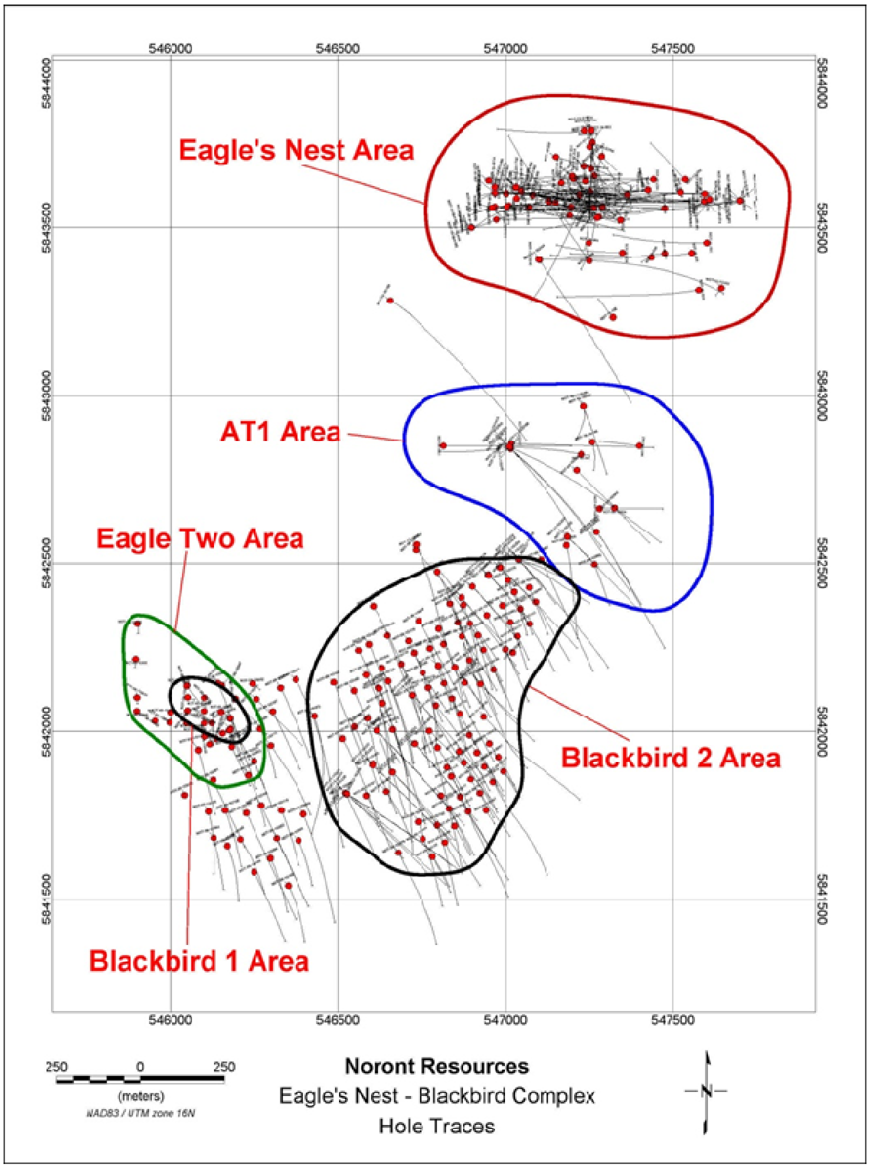
The majority of the holes were drilled to produce NQ diameter core. In rare instances, where drill casings became lodged in a hole, smaller BQ core was drilled in order to continue the hole. All collar locations were surveyed using a Trimble differential GPS with an accuracy of + 30 cm and down-hole surveys were recorded using a gyro instrument (GyroSmart) measuring dip and azimuth every 15 m. Core recovery was considered excellent.

All holes drilled in 2007, as well as 2008 holes NOT-08-030 and NOT-08-033, were drilled by Cabo. All other holes drilled in 2008, and most of those drilled in 2009 and 2010, were drilled by Orbit with the exception of holes NOT-09-064, NOT-09-064-W1, NOT-09-064-W2, NOT-09-069 (abandoned), NOT-09-069A, NOT-09-069A-W1, NOT-10-079, NOT-10-079-W1, NOT-10-079-W2, NOT-10-093 and NOT-10-099 which were drilled by Cyr. All core was delivered to the exploration camp by helicopter or surface transport.

A plan showing the drill hole collars and hole traces in the Eagle's Nest-Blackbird (ENB) Complex is presented in Figure 10.1. The current Feasbility Study and Technical Report focus on the Eagle's Nest area shown in the upper right on Figure 10.1. A summary of the major intersections in the Eagles Nest area is presented in Table 10.2 while results of the major intersections are shown in Table 10.3.

The Eagle's Nest deposit was intersected in 116 drill holes. The deposit dips sub-vertically, is approximately 200 m along strike in a north-south direction, 40-60 m wide and is open at depth beyond 1,500 m below surface.

Figure 10.1
ENB Complex, Drill Hole Layout Plan



Map provided by Noront, May, 2012.

Table 10.2
Summary of Major Intersections, Eagle's Nest Drilling

Hole Number	From (m)	To (m)	Interval Length (m)	Ni (%)	Cu (%)	Pt (g/t)	Pd (g/t)	Au (g/t)	Ag (g/t)
NOT-07-001	55.00	126.50	71.50	1.12	0.86	0.70	2.14	0.09	2.90
NOT-07-001	56.00	92.00	36.00	1.84	1.53	1.14	3.49	0.13	4.80
NOT-07-001	92.00	126.50	34.50	0.40	0.19	0.24	0.74	0.06	1.00
NOT-07-002	91.10	177.50	86.40	1.88	1.16	0.99	3.16	0.13	4.10
NOT-07-002	91.10	149.00	57.90	2.02	1.40	1.00	3.27	0.14	5.30
NOT-07-002	149.00	177.50	28.50	1.65	0.70	0.96	2.97	0.09	1.70
NOT-07-005	7.00	124.40	117.40	4.10	2.20	2.09	7.13	0.42	6.30
NOT-07-005	47.40	115.60	68.20	5.90	3.10	2.87	9.78	0.61	8.50
NOT-07-005	112.60	115.60	3.00	8.65	10.90	40.79	14.57	9.39	8.70
NOT-07-007	72.00	123.50	51.50	3.70	1.50	2.28	7.51	0.82	5.20
NOT-07-007	72.00	75.20	3.20	0.61	1.25	0.68	2.58	0.07	4.10
NOT-07-007	75.20	89.50	14.30	6.27	2.47	5.92	16.21	0.24	8.30
NOT-07-007	75.20	78.00	2.80	8.46	3.02	22.15	22.42	0.17	10.10
NOT-07-007	89.50	103.80	14.30	6.31	2.42	0.40	8.71	2.63	8.00
NOT-07-007	103.80	123.50	19.70	0.45	0.17	1.29	1.15	0.06	1.11
NOT-07-008	129.00	136.90	7.90	0.31	0.13	0.13	0.57	0.38	1.30
NOT-07-009	43.00	88.60	45.60	2.89	1.82	0.60	7.16	0.15	5.00
NOT-07-009	43.00	45.80	2.80	0.06	0.01	0.04	0.09	0.01	0.00
NOT-07-009	45.80	63.20	17.40	4.82	3.87	1.06	14.78	0.27	11.30
NOT-07-009	63.20	65.30	2.10	0.06	0.28	0.30	0.14	0.07	0.00
NOT-07-009	65.30	69.90	4.60	8.30	2.01	0.14	11.53	0.23	5.10
NOT-07-009	69.90	88.60	18.70	0.51	0.31	0.34	0.84	0.06	0.50
NOT-07-010	84.20	99.00	14.80	0.25	0.12	0.16	0.64	0.09	0.00
NOT-07-010	84.20	93.50	9.30	0.28	0.14	0.18	0.70	0.11	0.00
NOT-07-011	54.50	95.00	40.50	1.00	0.58	0.55	2.20	0.07	2.31
NOT-07-011	54.50	75.80	21.30	1.68	1.02	0.64	3.78	0.08	3.93
NOT-07-011	57.40	63.50	6.10	2.27	1.56	1.03	4.88	0.11	4.30
NOT-07-011	58.50	60.10	1.60	7.11	4.82	2.53	14.65	0.19	14.00
NOT-07-011	71.00	80.00	9.00	1.49	0.86	0.85	3.88	0.07	2.70
NOT-07-011	74.50	75.80	1.30	7.37	4.43	1.08	18.10	0.22	13.00
NOT-07-011	75.80	95.00	19.20	0.23	0.10	0.44	0.96	0.05	0.52
NOT-07-012	81.50	176.00	94.50	1.38	0.62	0.74	2.63	0.12	1.90
NOT-07-012	81.50	113.00	31.50	3.19	1.35	1.53	5.78	0.15	4.40
NOT-07-012	82.50	92.00	9.50	6.99	1.54	2.61	10.07	0.15	5.21
NOT-07-012	113.00	176.00	63.00	0.47	0.25	0.35	1.06	0.11	0.60
NOT-07-014	45.90	110.00	64.10	1.49	0.78	1.02	2.75	0.12	NA
NOT-07-014	45.90	80.00	34.10	2.28	1.22	1.60	4.13	0.14	NA
NOT-07-014	45.90	52.80	6.90	0.41	0.15	0.23	0.94	0.06	NA
NOT-07-014	52.80	56.40	3.60	7.45	3.43	5.00	9.10	0.12	NA
NOT-07-014	56.40	80.00	23.60	2.04	1.19	1.48	4.30	0.17	NA
NOT-07-014	80.00	110.00	30.00	0.59	0.28	0.37	1.18	0.10	NA
NOT-07-015	8.60	24.00	15.40	0.52	0.13	0.25	0.79	0.02	1.90
NOT-07-016	92.90	133.80	40.90	1.03	0.67	1.04	2.50	0.15	2.00
NOT-07-016	92.90	121.10	28.20	0.57	0.50	0.47	1.50	0.17	1.50
NOT-07-016	121.10	133.80	12.70	2.40	1.55	2.63	5.10	0.12	4.50
NOT-07-017	96.50	177.50	81.00	1.55	0.77	0.91	2.97	0.13	3.10
NOT-07-017	96.50	137.70	41.20	0.45	0.23	0.36	1.10	0.07	0.87
NOT-07-017	137.70	170.00	32.30	1.73	1.28	1.31	3.68	0.21	5.24
NOT-07-017	170.00	177.50	7.50	6.81	1.54	2.17	6.62	0.15	6.12
NOT-07-018	105.20	229.80	124.60	2.39	1.09	1.12	3.86	0.28	3.89
NOT-07-018	105.20	132.50	27.30	0.50	0.22	0.33	1.06	0.06	1.05

Hole Number	From (m)	To (m)	Interval Length (m)	Ni (%)	Cu (%)	Pt (g/t)	Pd (g/t)	Au (g/t)	Ag (g/t)
NOT-07-018	132.50	211.00	78.50	1.85	0.89	1.40	3.33	0.37	3.67
NOT-07-018	132.50	191.70	59.20	1.84	0.93	1.28	3.15	0.45	3.91
NOT-07-018	191.70	215.00	23.30	2.70	1.52	2.02	5.86	0.15	4.97
NOT-07-018	211.00	229.80	18.80	7.38	3.18	1.05	10.16	0.23	8.92
NOT-07-018	215.00	229.80	14.80	7.59	2.63	0.56	9.44	0.25	7.28
NOT-07-019	93.00	110.80	17.80	1.30	0.37	0.56	1.93	0.06	1.70
NOT-07-019	93.00	104.20	11.20	0.43	0.21	0.23	0.75	0.06	0.92
NOT-07-019	104.20	110.80	6.60	2.32	0.63	1.13	3.93	0.06	3.01
NOT-07-020	113.90	128.20	14.30	0.74	0.24	0.50	1.61	0.06	1.20
NOT-07-020	113.90	125.10	11.20	0.86	0.29	0.59	1.84	0.08	1.40
NOT-07-020	125.10	128.20	3.10	0.32	0.08	0.20	0.79	0.01	0.30
NOT-07-021	144.00	174.80	30.80	1.10	0.50	0.71	1.86	0.11	2.20
NOT-07-021	144.00	162.00	18.00	0.71	0.25	0.47	1.06	0.06	1.10
NOT-07-021	162.00	174.80	12.80	1.65	0.86	1.05	2.98	0.19	3.90
NOT-07-022	222.40	244.50	22.10	0.65	0.14	0.16	1.40	0.03	0.40
NOT-07-022	222.40	223.50	1.10	7.15	0.60	0.19	16.65	0.03	1.40
NOT-07-022	223.50	244.50	21.00	0.31	0.12	0.16	0.60	0.03	0.40
NOT-07-023	241.10	243.20	2.10	1.14	2.16	0.93	5.78	0.17	12.90
NOT-07-024	119.00	190.50	71.50	1.81	1.12	1.06	3.18	0.27	3.60
NOT-07-024	119.00	133.00	14.00	0.39	0.14	0.23	0.72	0.03	0.10
NOT-07-024	133.00	187.80	54.80	1.91	1.26	1.31	3.46	0.35	4.20
NOT-07-024	187.80	190.50	2.70	7.07	3.33	0.25	10.23	0.04	8.90
NOT-07-025	235.50	238.70	3.20	0.85	0.47	0.32	1.53	0.06	2.40
NOT-07-027	112.80	159.00	46.20	6.25	2.75	1.85	10.23	3.00	7.26
NOT-07-027	112.80	116.80	4.00	0.20	0.12	0.31	0.42	0.02	0.00
NOT-07-027	116.80	152.40	35.60	7.91	3.45	1.66	12.79	3.87	9.27
NOT-07-027	152.40	155.50	3.10	1.70	0.90	2.26	4.54	0.11	2.10
NOT-07-027	155.50	159.00	3.50	0.28	0.26	0.41	0.46	0.11	0.20
NOT-07-028	169.00	242.20	73.20	1.31	0.71	0.63	2.62	0.34	2.20
NOT-07-028	169.00	175.00	6.00	0.43	0.21	0.30	0.91	0,02	0.30
NOT-07-028	175.00	217.00	42.00	1.62	0.84	0.80	3.13	0.49	2.80
NOT-07-028	217.00	218.50	1.50	6.73	5.11	0.05	14.00	0.41	12.90
NOT-07-028	218.50	242.20	23.70	0.63	0.33	0.45	1.44	0.16	0.80
NOT-07-029	18.30	84.20	65.90	1.48	1.10	1.18	2.94	0.12	3.30
NOT-07-029	18.30	35.00	16.70	1.65	1.36	2.48	3.87	0.08	3.60
NOT-07-029	35.00	70.50	35.50	1.81	1.30	0.82	3.04	0.12	4.20
NOT-07-029	70.50	84.20	13.70	0.42	0.22	0.49	1.45	0.12	0.50
NOT-08-030	12.50	97.20	84.70	1.10	0.77	0.33	2.12	0.60	2.80
NOT-08-030	12.50	23.60	11.10	3.50	3.54	0.48	8.96	0.22	9.30
NOT-08-030	23.60	99.20	75.60	0.76	0.35	0.31	1.09	0.65	1.90
NOT-08-032	182.80	240.50	57.70	1.89	0.87	1.13	3.70	0.16	9.00
NOT-08-032	182.80	190.40	7.60	6.64	1.68	0.10	3.87	0.05	0.40
NOT-08-032	190.40	196.10	5.70	0.08	0.19	0.66	0.87	0.06	0.30
NOT-08-032	196.10	221.30	25.20	1.58	1.17	1.92	5.37	0.28	7.00
NOT-08-032	221.30	240.50	19.20	0.94	0.37	0.64	2.27	0.06	1.20
NOT-08-033	9.50	72.50	63.00	0.65	0.31	0.32	1.02	0.07	4.50
NOT-08-033	9.50	19.40	9.90	0.54	0.24	0.10	0.31	0.03	0.30
NOT-08-033	19.40	46.20	26.80	0.41	0.23	0.22	0.72	0.06	1.50
NOT-08-033	46.20	61.50	15.30	1.48	0.66	0.68	2.39	0.12	1.90
NOT-08-033	61.50	72.50	11.00	0.17	0.68	0.25	0.50	0.07	0.80
NOT-08-034	26.00	64.50	38.50	2.34	1.65	2.21	5.45	0.16	4.90
NOT-08-034	26.00	36.60	10.60	6.88	5.05	2.53	14.07	0.39	15.10
NOT-08-034	36.60	64.50	27.90	0.63	0.36	2.08	2.18	0.07	0.90
NOT-08-035	9.50	45.00	35.50	1.14	0.51	0.67	2.05	0.12	4.40
NOT-08-035	9.50	24.00	14.50	2.29	0.87	0.78	3.02	0.17	3.70

Hole Number	From (m)	To (m)	Interval Length (m)	Ni (%)	Cu (%)	Pt (g/t)	Pd (g/t)	Au (g/t)	Ag (g/t)
NOT-08-035	24.00	45.00	21.00	0.48	0.26	0.61	1.39	0.09	1.00
NOT-08-044	294.00	322.80	28.80	4.21	2.14	0.35	6.30	0.14	4.31
NOT-08-044	294.00	301.60	7.60	1.16	0.98	0.73	2.73	0.10	2.65
NOT-08-044	301.60	315.70	14.10	7.46	3.65	0.10	10.33	0.20	6.80
NOT-08-044	315.70	322.80	7.10	1.03	0.38	0.43	2.12	0.08	1.15
NOT-08-045	445.68	460.30	14.62	0.77	0.27	0.43	1.30	0.06	0.52
NOT-08-045	445.68	446.83	1.15	0.39	0.18	0.48	0.88	0.03	0.23
NOT-08-045	446.83	447.19	0.36	3.27	2.28	1.00	7.18	0.21	3.04
NOT-08-045	447.19	454.38	7.19	0.42	0.09	0.29	0.68	0.03	0.07
NOT-08-045	454.38	460.30	5.92	1.12	0.38	0.56	1.77	0.09	0.98
NOT-09-047	362.80	364.95	2.15	6.11	1.56	1.71	5.98	0.10	3.76
NOT-09-049	269.21	270.98	1.77	5.16	3.04	0.69	6.45	0.07	8.10
NOT-09-049	270.98	306.68	35.70	0.48	0.13	0.33	1.03	0.02	0.25
NOT-09-049	306.68	485.52	178.84	1.19	0.53	0.87	2.01	0.10	1.32
NOT-09-049	306.68	308.68	2.00	2.53	1.97	0.39	4.68	0.11	4.94
NOT-09-049	308.68	312.84	4.16	0.63	1.22	3.89	1.70	0.05	2.31
NOT-09-049	312.84	344.56	31.72	1.12	0.66	1.26	2.12	0.07	1.79
NOT-09-049	344.56	404.15	59.59	0.57	0.26	0.73	1.23	0.15	0.55
NOT-09-049	404.15	464.69	60.54	1.39	0.58	0.66	2.20	0.08	1.53
NOT-09-049	464.69	469.34	4.65	5.29	1.29	0.59	5.29	0.16	2.77
NOT-09-049	469.34	485.52	16.18	1.70	0.55	0.77	2.72	0.07	1.34
NOT-09-049	510.43	511.75	1.32	1.05	1.15	5.04	3.14	0.10	4.05
NOT-09-049	796.20	945.67	149.47	2.43	1.09	1.04	5.10	0.58	4.32
NOT-09-049	796.20	852.88	56.68	2.11	0.63	1.17	4.36	0.10	2.92
NOT-09-049	852.88	866.41	13.53	1.66	3.12	2.13	5.40	0.58	8.99
NOT-09-049	866.41	893.14	26.73	1.54	1.28	1.18	4.69	2.53	5.18
NOT-09-049	893.14	916.82	23.68	5.18	1.04	0.19	7.92	0.10	5.18
NOT-09-049	916.82	937.82	21.00	2.52	0.97	0.42	5.34	0.08	3.66
NOT-09-049	937.82	945.67	7.85	0.66	0.68	1.91	2.16	0.16	1.55
NOT-09-049-W1	791.07	979.50	188.43	1.67	1.30	1.13	4.24	0.22	
NOT-09-053	854.00	880.40	26.40	1.29	0.39	0.72	2.91	0.07	1.76
NOT-09-053-W1	873.30	928.00	54.70	2.31	1.91	1.43	5.77	0.24	6.37
NOT-09-053-W1	917.90	926.00	8.10	5.04	2.83	1.14	8.60	0.05	8.26
NOT-09-053-W3	841.00	856.40	15.40	1.03	0.24	0.52	2.95		
NOT-09-053-W4	783.00	842.00	59.00	1.73	0.81	1.08	4.08		
NOT-09-053-W5	933.00	1020.60	87.60	1.83	1.84	1.44	4.20		
NOT-09-053-W6	727.90	785.00	57.10	1.89	0.85	1.06	4.54		
NOT-09-055	501.50	507.30	5.80	1.26	0.42	0.51	1.91	0.11	1.43
NOT-09-056	526.40	595.00	68.60	1.99	0.94	1.05	3.57	0.12	2.90
NOT-09-056	526.70	532.00	5.30	4.77	1.95	0.84	6.75	0.11	4.34
NOT-09-057	545.20	596.00	50.80	1.94	1.05	1.38	3.38	0.15	3.13
NOT-09-058	431.90	441.30	9.40	1.30	0.52	1.07	1.90	0.06	1.30
NOT-09-059	507.30	514.10	6.80	6.51	5.51	2.44	11.84		
NOT-09-063	517.60	531.60	14.00	2.92	1.14	1.05	5.21		
NOT-09-063	526.89	530.32	3.43	7.28	1.71	0.06	6.43		
NOT-09-064	1079.33	1132.46	53.13	1.94	0.95	0.60	3.85		
NOT-09-064	1104.50	1117.70	13.20	4.98	1.92	0.07	6.71		
NOT-09-064-W1	1099.94	1231.76	131.82	1.27	0.56	0.85	2.89		
NOT-09-064-W1	1167.70	1176.40	8.70	5.82	1.62	0.05	6.62		
NOT-09-065	504.70	541.70	37.00	1.23	0.39	0.68	1.80		
NOT-09-066	584.00	633.40	49.40	2.03	1.50	0.76	2.99		
NOT-09-067	530.70	631.70	101.00	1.75	1.07	0.86	2.71		
NOT-09-068	672.40	721.90	49.50	2.22	0.74	1.26	3.68		
NOT-09-068	716.40	721.90	5.50	7.49	0.95	0.23	10.28		
NOT-09-068-W1	683.00	818.20	135.20	1.65	0.80	1.03	3.24		

Hole Number	From (m)	To (m)	Interval Length (m)	Ni (%)	Cu (%)	Pt (g/t)	Pd (g/t)	Au (g/t)	Ag (g/t)
NOT-09-069A	1094.12	1154.00	59.88	1.40	0.84	1.03	3.33		
NOT-09-070-W1	607.60	630.40	22.80	4.41	2.38	28.07	7.95		
NOT-09-070-W1	607.60	613.30	5.70	5.78	4.42	37.87	8.26		
NOT-09-070-W1	612.80	621.20	8.40	1.19	1.46	68.78	7.55		
NOT-09-070-W1	622.40	630.40	8.00	7.41	2.19	0.18	9.33		
NOT-09-070-W2	510.90	515.80	4.90	1.23	0.30	0.35	1.60		
NOT-09-071	720.89	851.18	130.29	1.75	0.88	1.27	3.55		
NOT-09-071	727.50	728.80	1.30	3.55	1.63	25.44	13.58		
NOT-09-072	666.00	678.76	12.76	0.41	0.14	0.18	0.67		
NOT-09-073	693.40	753.20	59.80	1.70	0.90	1.45	3.73		
NOT-09-074	552.60	635.20	82.60	2.05	1.00	0.64	2.94		
NOT-09-074	628.20	634.92	6.72	7.41	1.26	0.93	6.64		
NOT-09-075	602.10	612.60	10.50	6.51	1.68	2.00	8.18		
NOT-10-076	460.50	558.00	97.50	1.93	1.00	0.75	2.97	0.22	
NOT-10-076	460.50	464.10	3.60	5.09	1.48	0.50	6.63	0.07	
NOT-10-076-W1	531.00	574.50	43.50	3.24	1.19	0.45	4.18	0.10	
NOT-10-076-W1	561.40	574.50	13.10	7.01	2.19	0.26	8.45	0.14	
NOT-10-077	301.10	302.50	1.40	0.73	0.38	2.27	2.18	0.07	
NOT-10-077	313.40	313.70	0.30	0.59	0.74	7.79	12.70	0.09	
NOT-10-078	329.40	330.10	0.70	0.54	1.70	0.64	2.21	0.07	
NOT-10-079-W1	1029.20	1117.50	88.30	1.35	0.61	0.88	3.12	0.21	
NOT-10-079-W1	1043.00	1097.07	54.07	1.71	0.75	0.99	3.75	0.24	
NOT-10-079-W1	1051.45	1051.63	0.18	2.30	0.50	2.44	5.82	35.90	
NOT-10-081	412.00	569.00	157.00	2.64	1.57	1.72	4.15	0.32	
NOT-10-081	412.00	431.00	19.00	6.64	2.73	0.75	7.28	1.14	
NOT-10-081	412.00	412.50	0.50	3.94	1.85	9.64	9.22	35.80	
NOT-10-081	447.90	452.20	4.30	0.17	0.36	10.52	2.26	0.17	
NOT-10-081	449.00	450.10	1.10	0.06	0.10	30.30	0.16	0.02	
NOT-10-081	452.20	457.70	5.50	7.84	2.04	0.19	7.86	0.07	
NOT-10-083	564.92	652.28	87.36	1.93	0.82	1.80	3.17	0.12	
NOT-10-083	599.04	606.55	7.51	4.83	1.85	11.14	6.69	0.13	
NOT-10-083	601.26	601.92	0.66	1.32	2.79	31.60	8.04	0.15	
NOT-10-083	668.68	668.87	0.19	3.45	0.37	8.50	40.80	0.69	
NOT-10-084	660.43	749.60	89.17	1.75	0.87	0.80	3.29	0.20	
NOT-10-084	674.55	679.70	5.15	5.21	2.54	0.81	11.10	0.55	
NOT-10-085-W1	1099.20	1203.90	104.70	1.66	0.81	0.96	3.78		
NOT-10-085-W1	1165.10	1167.50	2.40	7.45	0.23	0.11	7.21		
NOT-10-085-W2	1147.50	1350.80	203.30	1.69	1.01	1.30	4.12		
NOT-10-087A	534.86	624.20	89.34	2.49	0.99	0.85	3.97	0.20	
NOT-10-087A	604.00	617.82	13.82	6.97	1.03	0.70	7.72	0.09	
NOT-10-088	770.45	776.45	6.00	0.82	0.87	0.32	1.70	0.07	
NOT-10-089	518.54	594.77	76.23	2.34	1.07	0.92	3.26	0.21	
NOT-10-089	578.11	583.45	5.34	7.61	0.84	0.07	6.57	0.06	
NOT-10-090	771.52	810.00	38.48	1.66	0.59	0.85	4.03	0.14	
NOT-10-091A	603.42	659.89	56.47	2.28	1.16	1.27	5.08	0.20	
NOT-10-091A	619.25	624.35	5.10	7.20	1.44	0.48	15.00	0.04	
NOT-10-091A	650.80	653.33	2.53	5.18	2.46	5.21	20.48	1.23	
NOT-10-092	751.60	780.50	28.90	0.60	0.37	0.67	2.08	0.12	
NOT-10-092	753.34	759.75	6.41	1.04	0.96	1.56	5.10	0.23	
NOT-10-096	748.50	800.66	52.16	1.89	1.26	1.73	4.44	0.30	
NOT-10-096	783.00	785.90	2.90	2.11	1.01	0.29	3.59	1.92	

10.1 CORE LOGGING AND SAMPLING PROCEDURES

All core logging data are directly entered into DH-Logger software from Century and stored in Noront's Century Fusion Data Management (Fusion) system, which includes a QA/QC module. Logging into DH-Logger is first completed on laptops, and then uploaded to the local Fusion database which is then transferred to Noront's main office Fusion database in Toronto. Noront has a full time Database/GIS manager in its main office who supervises the input of all the assay results, reviews the QA/QC data, requests re-assay runs, and maintains the Fusion database.

Once core is transported from the drill rigs, which occurs at least once a day, it is received by the geologists who create a new record in DH-Logger in order to complete a quick log. The quick log identifies the major and minor lithological units including mineralization, as well as any major structural features. This report is the sent to Noront's main office on a daily basis.

Prior to sampling the core, technicians complete geotechnical logging which includes the measurement of the total core recovery (TCR) per run (3 m) and the determination of the rock quality designation (RQD) per run. During geotechnical logging, the core is placed back together (where appropriate) and depth blocks are checked. The geotechnical data are collected on paper logs and subsequently digitally entered into Microsoft Excel spreadsheets which are then added to the DH-Logger files for each drill hole.

Geological detailed logging is performed by the geologist upon completion of the geotechnical logging. Data in the geological logs include mineralogy, mineralization percentages, alteration, structural features, lithological contacts and the sampling intervals and descriptions. Sample size varies depending on the deposit drilled and the mineralization variability. Samples from the Blackbird deposit can be as small as 4 cm due to the scale of variability in the observed chromite mineralization. Typical samples are between 1 and 1.5 m in length, but increased variability in mineralization results in the collection of more samples. A Niton XRF hand analyzer is used by the geologist to assist with the estimation of metal content in the core. Each sample is given a unique sample tag that is entered in the sample book and the DH-Logger database.

10.2 SURVEYING OF DRILL HOLES

Collars for drilling are located in the field by the geologist using a Trimble GPS Pathfinder with a Zephyr antenna. All drill holes are located in the field using the UTM NAD 83 Zone 16 system with an accuracy of 20 cm. After the drill holes are completed, the casing is left in place for a final collar survey by the geologist using the Trimble instrument.

Down-hole surveying is completed by the drilling companies using the Reflex EZ-Shot system to determine hole dip and azimuth. Surveys are taken approximately every 50 m and given to the geologist to enter in DH Logger. The Reflex EZ-Shot system is a single shot magnetic survey instrument and the acquisition of accurate measurements requires the instrument to be several metres away from any magnetic interface. Therefore, at the end of a drill hole with high magnetic content, a Reflex Gyro survey is conducted to confirm hole azimuth and dip.

Drill holes determined to be off-azimuth from their intended target are corrected on site by using the Devico directional drilling system. The Devico system is implemented with assistance from Tech Directional Services of Millertown, Newfoundland. All completed holes are also geophysically surveyed using borehole electromagnetic (BHEM) techniques by Crone Geophysics and Exploration Ltd (Crone) or Lamontagne Geophysics (Lamontagne). Data from the surveys are sent to the Crone or Lamontagne main office for processing and are then subsequently supplied to Noront.

10.3 MICON COMMENTS

Micon is satisfied that Noront's drilling and sampling protocols are in line with the CIM best practice guidelines. No drilling, sampling or recovery factors have been identified that could result in sampling bias or otherwise materially impact the accuracy and reliability of the assays and, hence, the resource database.

From 1 January to 31 May, 2012, Noront drilled a further six holes. Results from these holes are not included in the mineral resource estimate on which the Feasibility Study is based.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The following description of the sampling method and approach at McFaulds Lake has been extracted from Golder, 2010, with minor edits. The same method and approach has been continued through the 2010 drilling program at Eagle's Nest.

11.1 CORE LOGGING AND SAMPLING PROCEDURES

All core logging data are directly entered into DH-Logger software from Century and stored in Noront's Century Fusion Data Management (Fusion) system, which includes a QA/QC module. Logging into DH-Logger is first completed on laptops, and then uploaded to the local Fusion database which is then transferred to Noront's main office Fusion database in Toronto. Noront has a full time Database/GIS manager in its main office who inputs all the assay results, reviews the QA/QC data, requests re-assay runs, and maintains the Fusion database.

Once core is transported from the drill rigs, which occurs at least once a day, it is received by the geologists who create a new record in DH-Logger in order to complete a quick log. The quick log identifies the major and minor lithological units including mineralization, as well as any major structural features. This report is the sent to Noront's main office on a daily basis.

Prior to sampling the core, technicians complete geotechnical logging which includes the measurement of the total core recovery (TCR) per run (3 m) and the determination of the rock quality designation (RQD) per run (3 m). During geotechnical logging, the core is placed back together (where appropriate) and depth blocks are checked. The geotechnical data is collected on paper logs and subsequently digitally stored into Microsoft Excel spreadsheets which are then added to the DH-Logger files for each drill hole.

Geological detailed logging is performed by the geologist upon completion of the geotechnical logging. Data included in the geological logs include mineralogy, mineralization percentages, alteration, structural features, lithological contacts and the sampling intervals and descriptions. Sample size varies depending on the deposit drilled and the mineralization variability. For example, samples from the Blackbird deposit can be as small as 4 cm due to the scale of variability in the observed chromite mineralization. Typical samples are between 1 and 1.5 m in length, and increased variability in mineralization results in the collection of more samples. A Niton XRF hand analyzer is used by the geologist to assist with the estimation of metal content in the core. Each sample is given a unique sample tag that is entered in the sample book and the DH-Logger database. A straight line along the length of the core is drawn by the geologist as a guide for the core cutter to follow. The line drawn takes into account bedding features so as to attain symmetrical halves. This aids in ensuring that representative samples of half core are taken for assaying.

Prior to the core being sampled (sawed) or placed back into the core storage (un-sampled core), it is photographed both wet and dry by the geotechnicians. The core photos are stored on the same server as the Fusion database, but are not directly linked to the DH-Logger database for the particular drill hole. Metal tags are placed on the end of the core tray by the geotechnicians. These tags include the hole name, core intervals and core box numbers.

Core selected for sampling is sawed in half then each sample is washed in a pail with one core half placed in the core tray and the other in the sample bag with the sample tag. The remaining sample tag is stapled to the core box. Remaining half cores are placed on the core racks. Un-sampled core is either stored on the core racks or placed in the cross-piled core area.

All half core samples are placed in rice bags and seal tied with a unique plastic tag. Included in the pails are the QA/QC standards which are added by the geologist. These standards are previously outlined in the sample books based on a Microsoft Excel spreadsheet. Each batch of samples typically includes two standards, one blank, three duplicates (field, coarse and pulp duplicate), and 29 core samples. Each of these QA/QC standards is given a sample tag number in sequence with the rest of the core samples. Fragments of granodiorite drill core are used as blanks. Standards are in the form of powder in an envelope. The field duplicates are half core samples sawed into two quarter pieces and placed in separate bags. The coarse duplicate and pulp duplicates are added in the laboratory by Activation Laboratory Ltd. (Actlabs) staff based on the sample numbers submitted by the Noront geologist.

After the core and QA/QC samples are sealed in the pails they are transported from camp to Nakina (via Nakina Air) and then from Nakina to Actlabs in Thunder Bay by ground transport (via Carrick Express).

11.2 SURVEYING OF DRILL HOLES

Collars for drilling are located in the field by the geologist using a Trimble GPS Pathfinder with a Zephyr antenna. All drill holes are located in the field using the UTM NAD 83 Zone 16 system with an accuracy of 20 cm post processed. After the drill holes are completed, their casing is left in place for a final collar survey by the geologist using the Trimble instrument.

In-hole surveying is completed by the drilling companies (Orbit and Cyr) using the Reflex EZ-Shot system to determine hole dip and azimuth. Surveys are taken approximately every 50 m and given to the geologist to enter in DH Logger. The Reflex EZ-Shot system is a single shot magnetic survey instrument and the acquisition of accurate measurements requires the instrument to be several metres away from any magnetic interface. Therefore, at the end of a drill hole with high magnetic content, a Reflex Gyro survey is conducted to confirm hole azimuth and dip.

Drill holes determined to be off-azimuth from their intended target are corrected on site by using the Devico directional drilling system. The Devico system is implemented with assistance from Tech Directional Services of Millertown, Newfoundland. All completed holes are also geophysically surveyed using borehole electromagnetic (BHEM) by Crone Geophysics and Exploration Ltd (Crone) or Lamontagne Geophysics (UTEM). Data from the surveys are sent to the Crone or Lamontagne main office for processing and are then subsequently supplied to Noront. The purpose of the BHEM is to assist in directing the drilling program.

11.3 MICON COMMENTS

Micon is satisfied that Noront's sampling protocols are in line with the CIM best practice guidelines. No drilling, sampling or recovery factors have been identified that could result in sampling bias or otherwise materially impact the accuracy and reliability of the assays and, hence, the resource database.

11.4 SAMPLE PREPARATION, ANALYSES AND SECURITY

Other than the packaging of the samples, no aspect of sample preparation was conducted by an employee, officer, director or associate of Noront.

The following description of the sampling preparation, analyses and security at McFaulds Lake has been extracted from Golder, 2010 with minor edits. The same sample preparation, analysis and security protocols have been continued through the 2010 drilling program at Eagle's Nest.

Three reputable analytical companies have been employed since exploration began in 2007 for the deposits. These include ALS Chemex in Vancouver, British Columbia (ALS) during 2007 to 2008, SGS Mineral Services (SGS-MS) in Toronto, Ontario, during 2008 and Actlabs facilities in Thunder Bay, Ontario (preparation laboratory) and Ancaster, Ontario (analysis) from April, 2008 to current. Outlined in the following sections are the sample preparation and analyses used at each facility.

11.5 ALS CHEMEX

From 2007 to April, 2008 half the core sampled was sent to the ALS preparation laboratory in Thunder Bay and then forwarded for analysis in Ancaster. Sawed drill half-core samples submitted to ALS Thunder Bay were crushed in their entirety to 90% passing 2 mm and the crusher was cleaned with barren rock between samples. From the coarse rejects a sub-sample of one kilogram was split and pulverized to 85% passing 75 µm. The pulveriser was cleaned with silica sand between samples.

From each pulp, a 100-g sub-sample was split and shipped to the ALS Ancaster. The remainder of the pulp and the rejects were held at the ALS Thunder Bay facility.

The base metals of economic interest (Ni and Cu), were determined using a 0.2-gram aliquot that was digested from a 4-acid solution followed by inductively coupled plasma-atomic emission spectroscopy (ICP-AES) or inductively coupled plasma-atomic absorption spectroscopy (ICP-AAS).

Samples assayed for Ag were digested using aqua regia (3-acid) followed by AAS. Samples assayed for Au, Pd and Pt were subject to a 30-gram fire assay, followed by ICP-AES finish.

11.6 SGS-MS ANALYTICAL PROCEDURES

In addition to samples submitted to ALS from 2007 to April 2008, half of the core was submitted to SGS-MS as a result of a back log of samples at ALS.

The sawed drill half-core samples were crushed in their entirety to 90% passing 2 mm and the crusher was cleaned with barren rock between samples. From the coarse rejects a sub-sample of 1-kg was split and pulverized to 85% passing 75 µm. The pulverizer was cleaned with silica sand between samples.

From each pulp, a 100-g sub-sample was split for assay. The remainder of the pulp and the rejects are held at the preparation laboratory in Toronto for future reference.

The base metals of economic interest (Ni and Cu), were determined using a 0.2-g aliquot that was subjected a 4-acid solution to digest the sample, followed by ICP-AES or ICP-AAS finish. Following discussions with SGS-MS, the method for Ni and Cu was changed to a sodium peroxide fusion decomposition and analyzed by inductively coupled plasma optical emission spectroscopy (ICP-OES), as it was believed by SGS-MS that the results for Ni and Cu would be more accurate with this method.

Samples assayed for Ag were digested using aqua regia (3-acid) followed by AAS.

Samples assayed for Au, Pd and Pt were determined using a 30-g fire assay, followed by ICP-AES.

11.7 ACTLABS

After April, 2008, all samples were submitted to Actlabs preparation laboratory in Thunder Bay and then transported to Ancaster for analysis. The drill half-core samples received at the prep laboratory were sorted and verified against the customer list to ensure that all samples were received and there were no discrepancies. The sorted samples were dried in the original samples bags to ensure that any damp fines were not discarded on transferring into drying containers. The samples were entered into the Laboratory Information Management System (LIMS). Upon completion of sample analysis and being accepted by the Actlabs analyst, the results were entered into the LIMS system and approved. Reports were then generated and a final quality control check by an independent person was performed. This person also did the final certification of the data. Data were then reported to Noront.

The sorted samples were dried at 60^{o}C in a large volume drying room. When dry, the samples were then crushed in their entirety to better than 85% -10 mesh in a TM Engineering Terminator jaw crusher. The sample was then riffle split and an aliquot is pulverized in a TM Engineering TM MAX2 ring and puck pulveriser to 95% -150 mesh.

Samples analysed for chromite were pulverized still finer to 95% -200 mesh to ensure adequate fusion for the analysis. A separate split of the reject was prepared in the same fashion and was designated as a preparation duplicate (prep duplicate). Duplicates from pulps were designated as pulp duplicates. Samples were routinely monitored to ensure that the required fineness was achieved as this was critical to maintaining the required quality for the final analytical methods.

Analytical methods for assaying elements varied during the exploration program in order to better detect specific elements (i.e. chromite). Most samples were initially assayed with a TD (total digestion) ICP which provided a 35 element suite (including Cu). Ni and Cu were analysed using ICP OES and Au, Pd and Pt were analysed using a FA (fire assay) with an ICP finish. Cr_2O_3, Cr and Fe were analysed using instrumental neutron activation analysis (INAA) which encapsulated the sample and irradiated in a nuclear reactor. It was identified by a chromite expert consultant for Noront that chromite would be better analysed using FUS (fusion) XRF. Samples with chromite were re-assayed using FUS XRF for Cr_2O_3, V_2O_5, Ni, Cu, Co and loss on ignition (LOI).

Details of the analytical procedures described above are provided on the Actlabs website: www.actlabs.com.

11.8 SECURITY

Prior to shipment for assaying, all samples were placed into rice bags which were closed with a security seal and subsequently placed into a plastic pail which was then sealed with a tight lid. All samples awaiting shipment to Thunder Bay were placed in the outbound cargo area at the project site. Samples were not secured in locked facilities as this precaution was deemed unnecessary due to the remote and isolated camp location. A strict chain of custody protocol was followed during the transportation of all sample-bearing plastic pails to the assaying laboratory.

11.9 QA/QC

The QA/QC protocols on analytical work as described in Section 12.1 involve the insertion of control samples in every batch of samples sent to the laboratory. For each batch of 29 samples, the control samples typically include two standards, one blank, and three duplicates. QA/QC monitoring is done on a real time basis. For the 2007 to mid-2009 programs, an independent consultant (Ms. Tracy Armstrong of P&E) carried out the monitoring but, from mid-2009, monitoring has been achieved using the Century System Technologies Inc. (Century) QC module. Other than Noront's QA/QC protocols, the laboratories utilized by Noront are ISO-certified have their own internal checks for accuracy.

11.10 MICON COMMENTS

Micon considers the sample preparation, security and analytical procedures to be adequate to ensure credibility of the assays. The QA/QC procedures and protocols employed by Noront are sufficiently rigorous to ensure that the sample data are appropriate for use in mineral resource estimations.

12.0 DATA VERIFICATION

The following description of the data verification procedures at McFaulds Lake is based on that provided in Micon, 2009 and 2011, and in Golder, 2010.

12.1 P&E DATA VERIFICATION – EAGLE'S NEST DEPOSIT

A data verification review was completed for the Eagle's Nest deposit (formerly called the Eagle One deposit) and described in detail the P&E 2008 NI 43-101 technical report (P&E, 2008) that included a site visit and sample collection by P&E QP, Ms. Tracy Armstrong, P.Geo., from April 8 to April 10, 2008. During the site visit, the drill core was examined and 24 samples consisting of ¼ split core were taken from 15 drill holes. Both the disseminated and massive sulphides were equally sampled across a range of grades on an anonymous basis.

The samples were personally delivered to Fedex Courier in Thunder Bay and then to Actlabs (Ancaster) for analysis. Samples were analysed by three methods to determine Ni content: 3-acid (aqua regia) digest, 4-acid digest and a lithium metaborate fusion. The 4-acid and lithium metaborate fusion methods did not differ in their results apart from the analytical variability while the 3-acid method did not dissolve Ni contained in the silicates.

In addition, Ms. Armstrong assisted Noront by setting up and monitoring the Quality Assurance and Quality Control (QA/QC) program for drilling in 2007 (starting at hole NOT-07-05) until October of 2009, when Noront took full control of the QA/QC program. The QA/QC program at that time consisted of the insertion of two certified reference materials which monitored the laboratory accuracy on the Cu, Ni and PGE analyses, blank material comprised of sterile granodiorite drill core and field (¼ core) coarse reject and pulp duplicates.

The QC monitoring was done on a real-time basis, that is, as the laboratory certificates were received, the QC data were graphed to ensure results were accurate as defined by a strict protocol determined between Ms. Armstrong and the two laboratories (ALS and SGS). It was noted that likely due to the overextended capacity of the laboratories, the certified reference materials were often not meeting the required norms. This problem was noted and dealt with on a real-time basis and work orders were re-run as required. Once the data were shown to have passed the QC, they were transferred to the master database. All of the data in the master database met the QC requirements. It was the opinion of Ms. Armstrong that the sample preparation, security and analytical procedures were satisfactory (P&E, 2008).

12.2 MICON DATA VERIFICATION

A data verification review was completed by Micon for the Eagle's Nest and Blackbird deposits in connection with the initial mineral resource estimate for the Blackbird deposit and this was described in Micon, 2009 and Micon, 2012. The data verification review included four stages: (i) site visit to the project area; (ii) laboratory visit; (iii) repeat analyses on selected pulps; and (iv) database inspection and validation.

The site visit, by a Micon QP, was completed from July 6 to July 8, 2009, and included the following:

- Verification of topography and some of the drill hole collar positions in the company of Patrick Chance, P.Eng., who was the Project Manager for Noront at the time.

- Review of the drill core logging and sampling procedures.

- Review QA/QC protocols

- 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 NOT-08-1G025, NOT-09-1G130 and NOT-09-1G136.

- Verification of lithological units encountered in drill hole numbers NOT-08-1G025, NOT-09-1G130 and NOT-09-1G136 (to confirm fractionation trend).

- Independent sampling of quarter core from drill hole NOT-09-1G130

- Independent sampling of core pieces for petrographic analyses.

It was observed by Micon that standard logging and sampling procedures were in place, and that a QA/QC program applicable to both the Blackbird and the Eagle's Nest deposits was being implemented and supervised by an independent consultant (Ms Tracy Armstrong, P.Geo.). Follow-up on the performance of control samples was achieved through the use of control charts and reports on a monthly basis by Noront.

The results of the petrographic investigation completed by Micon were consistent with a transposed layered intrusion with a fractionation trend/younging direction to the southeast (Gowans et al., 2009).

As part of Micon's data verification, an inspection of the Actlabs facilities in Thunder Bay on July 9 and 10, 2009 was carried out by Charley Murahwi, P.Geo., of Micon. This was the laboratory used by Noront for sample preparation before shipment to the main Actlabs facility in Ancaster for analyses. Micon observed that the sample preparation was carried out to the highest industry standards. Contamination between samples during crushing was eliminated using a barren quartz rich material to clean the jaw/primary/secondary crushers after the treatment of every sample. Dust control was achieved by the use of a vacuum ventilation system that employs the latest technology (Micon, 2009).

12.3 SMEE AND ASSOCIATES CONSULTING REVIEW

Smee and Associates Consulting Ltd. (Smee) was retained by Noront to review the quality control data provided in 2009 and to make recommendations for adjustments in the data handling and quality control protocol, if necessary (Smee, 2009). Smee reviewed data that were exclusively from Actlabs in Ancaster from the 2009 drilling programs.

As part of this review, Smee plotted the blanks, duplicates (¼ core duplicates, coarse reject duplicate and pulp duplicate) and standards for Cu, Ni, Pt, Pd, Au (OREAS-73A, PGMS-16), Cr (SARM-8), TiO_2 and V_2O_5 (COULSONITE).

The review of the blanks data indicated that there were 670 blank samples monitored for Au, 671 blanks for Pt and Pd, and 774 blanks for Cu and Ni. In total, 100 of the blanks failed for various elements, with some blanks failing for multiple elements. It was recommended by Smee that, given the significant number of blank failures, further investigation was required. It was suggested that each failure be examined and corrected or explained. It was suggested that those failures that potentially affected or influenced a mineralised area be re-assayed from the reject, i.e., with a new pulp.

A review of the four reference standards indicated that there were a number of failures in Ni (13) and Cu (70) from the OREAS-73A standard. The failures seemed to have been time dependent, as there may have been a change in analytical method or calibration change for parts of the data. A review of the standard for Au, Pt and Pd (PGMS-16) identified a total of 14 failures. The laboratory appears to have a bias in Au as well, although the concentrations for Au were low in this standard. A review of the standard for Cr (SARM-8) showed no failures, but did show that the standards analysed over time had a narrow spread. This indicated that the laboratory may have changed its analytical procedures. A review of the standard for TiO_2 and V_2O_5 (COULSONITE) indicated no failures.

It was recommended by Smee that the failures in the reference standards be examined to determine if the standards occurred in a batch of samples that contained mineralization. If so, and if the failures were deemed to have an impact on the mineral resource calculation, the cause of the failures should have been determined and the failures be corrected either by correcting the data base or by re-assaying the batch. Of particular importance were any positive failures that might lead to an overstatement of the grades.

A review of the coarse reject and pulp duplicates for Cu, Ni, Pt, Pd and Au indicated no significant outliers. A review of the field duplicates (¼ core) indicated some outliers for Cu, Ni, Pt, Pd and Au.

Smee concluded that there was poor precision for Au of low grade at the laboratory which was greater than 20%. Precision for Pd and Pt was more than 10% which meant the pulp size was too small. Cu precision was more than 20% for the field duplicate and 10% for the Ni field duplicate. Cu and Ni should be similar since they were within the same sulphide matrix.

It was identified that a lack of suitable commercial standards for the PGE (Pt, Pd), Cu and Ni had hampered the effectiveness of the accuracy for these elements. Therefore, more suitable standards were required. Noront purchased additional standards for Ni, Cu and PGE (AMIS-0061) and no longer uses OREAS-73A or PGMS-16. It was also recommended that a table of failures be regularly completed for the blanks and standards and the use of a QC module in the database should be considered for monitoring and for assisting with producing tables and charts. As a result, Noront adopted the Century System Technologies Inc. (Century) QC module for on-going drilling programs.

12.4 GOLDER DATA VERIFICATION

Golder completed a data verification review of the McFaulds Lake Project which was described in detail in the April, 2010 NI 43-101 Technical Report (Golder, 2010). The data verification included the following:

- Site visit by Golder QP between April 9 and April 12, 2010 and verification sampling.
- Comparison of Actlab's assay certificates against Noront's database.
- Review of the QA/QC program for the 2008 and 2009 drilling program.
- Verification completed during mineral resource estimating.

12.4.1 Core Logging and Sample Verification

As part of the core logging data verification, Golder compared a selection of core logs against half-core stored at the project site. A total of 15 ½-core drill holes were reviewed from the Eagle's Nest, Blackbird, AT12 and the Triple J deposits. The DH-Logger database was first reviewed, and drill holes representative of the typical mineralization style for each deposit were selected. In addition to this, a total of 26 verification samples were taken from these drill holes. Each verification sample was half core samples sawed in half again with the ¼ sample sent for analysis and the other ¼ returned to the core racks

All samples were submitted for analysis of Cu, Ni, Pt, Pd and Au, except samples from the Blackbird deposit which were only submitted for analysis of Cr_2O_3.

Observations from the core logs (from DH-Logger) against the drill core indicated an excellent match between the core logs and the retained core. In addition, Cu and Ni mineralization was observed in the Eagle's Nest and AT12 deposits drill core. The mineralization observed was consistent with what has been published for each deposit. There was also a noticeable increase in core quality (i.e., sawing of core half) observed in the more recent drill holes compared to earlier holes. This indicates that Noront continues to improve the quality of its data collection procedures.

12.4.2 Collar Survey Verification

As part of the drill hole collar survey verification, Golder visited the Eagle's Nest, AT12 and Blackbird deposits. During the visit, GPS surveys (Garmin) were taken of the various drill hole casing and then compared against Noront's final collar surveys completed by their Trimble system. All data were in UTM NAD 83 and the accuracy of the Garmin GPS is +/- 10 m. A total of 37 drilling sites were visited and the comparison against Noront's final collar surveys was excellent, with the majority of the northing and easting values only different by 1-10 m which was within the tolerance of the Garmin GPS.

12.4.3 Actlabs Visit

A site visit was conducted at the Thunder Bay Actlabs site on April 12, 2010, by a Golder QP. During the visit, a description of the sample analytical process at the Thunder Bay laboratory was provided. This included descriptions from the samples entering the laboratory (Actlabs ID label and tracking process), the sample drying, crushing and pulverizing procedures. Observations were made on the sample preparation including cleaning screens with silica sand between sample crushing, the insertion of coarse reject duplicates and pulp duplicates. At the Thunder Bay laboratory, samples can be analyzed for all of the elements requested by Noront using Fire Assay, ICP and AAS methods. Samples that require XRF or INAA analysis are transported to Actlabs Ancaster. Noront's coarse rejects and pulps are currently stored at the Actlabs Thunder Bay laboratory. In addition to Noront's QA/QC program, Actlabs also includes a number of QA/QC samples within each batch for internal quality control that is provided to Noront. Golder concluded that the procedures being conducted at Actlabs' Thunder Bay facility with respect to sample processing, preparation, analyzing, storage and internal QA/QC programs conform to industry standards.

12.4.4 Review of Database

A review of the DH Logger/Fusion database was completed by Golder to verify the data transfer process of analytical sample results from Actlabs to the Fusion database. Noront provided Golder with all the Actlabs assay certificates for batches from mid-2008 (309 assay certificates) and 2009 (867 assay certificates) and Golder compared the assay certificates against the CSV file of the Fusion Database. The review indicated that there were no errors in the sample assay transfer from the lab to the Fusion Database. Golder noted that the samples that were below detection were recorded in the Fusion database as a value of 0.

12.4.5 Review of QA/QC Program

The QA/QC programs employed by Noront at the McFaulds Lake Project have changed since the first drilling program in 2007. Initially, the QA/QC program was set up by P&E and instituted by Noront. Some earlier drill holes in 2007 (NOT-07-001 to NOT-07-004) were not covered by the QA/QC program at that time (P&E, 2008). That report noted that QC monitoring for the Eagle's Nest deposit was carried out on a real-time basis and, as the laboratory certificates were received, the QC data were graphed to ensure results were accurate as defined by strict protocol (P&E, 2008). The same QA/QC program was used for the Blackbird drilling program and for the follow-up drilling program for Eagle's Nest.

During the 2009 drilling programs, Noront retained Smee to perform a review of the 2009 drilling data QA/QC program. Based on the conclusions from Smee, it was identified that there were concerns that inappropriate standards were being used. For example, the standard OREAS 73A was being used for Ni, Cu, Pt, Pd and Au. A review of this data by Smee and Noront identified that the Cu in this standard was failing regularly. It was determined that the amount of Cu in this standard (approx 0.1%) was too low to be considered reliable. Therefore, a new standard (AMIS 0061) was selected to better represent the Ni and Cu values of the Eagle's Nest deposit.

In November, 2009, in order to better control the QA/QC program, Noront's full-time GIS/Database manager instituted and began the maintenance of the QA/QC program utilizing the Century Fusion database system. Currently, as the sample assays are provided to Noront in the form of CSV files and imported into the Fusion database, they are automatically flagged during the import process if a reference standard or blank has failed. A blank standard is considered to have failed if it is three times greater than the detection limit of the analytical process and a reference standard is considered to have failed if it is above or below three times the standards deviation of the average value for the reference standards. If a reference standard or blank fails, it is first checked by the GIS/Database manager to determine if it is not an error due to reporting wrong standard or a typographical error. If it is not resolved due to import error, there is a request to re-run the entire 35 sample batch.

A review of the duplicate samples was completed based on a Microsoft Excel spreadsheet provided to Golder from Noront's GIS/Database manager. The spreadsheet file contained a total of 2,363 duplicate samples from the Blackbird, Eagle's Nest, AT12 and Thunderbird deposits and included assay values for Ni, Cu, Pd, Pt, Au, Cr_2O_3, TiO_2 and V_2O_5. The duplicate samples in the spreadsheet included ¼-core field duplicates (945 pairs), coarse rejects (944 pairs) and pulp duplicates (473 pairs). In general the review showed a good correlation between the pairs for all duplicate types with the widest spread observed in the ¼ core field duplicates.

The review of the active standards used in the QA/QC program indicated that the standards are appropriate for the elements being analyzed and no significant failures have occurred.

The blank standards were provided to Golder in a Microsoft Excel file which was an export from the Fusion database. A total of 1,493 blank samples were included in the database for elements Au, Pd, Pt, Cu, Ni, Cr, Cr_2O_3, TiO_2 and V_2O_5. As noted earlier the majority, and in some cases 100% of the blanks, failed for Cr, Cr_2O_3, TiO_2 and V_2O_5 which indicated the granodiorite blank is not appropriate as a standard for these elements. In addition a number of Cu and Ni samples have failed which may also indicate that the blank may contain trace amounts of Cu and Ni. There is indication that some of the standards have been re-assayed indicating that the entire batch has been re-assayed. The introduction of the QA/QC program in the Fusion database is able to flag standard failures allowing for early identification of batches requiring re-assaying.

12.5 MICON DATA VERIFICATION 2010/2011

Micon has reviewed all of the data verification results obtained by various QPs from 2007 to 2011 (including its own in 2009 and 2011). None of the QPs found or established unattended QA/QC issues that would have a material impact on the mineral resource database. Thus, Micon believes the resource database was generated in a credible manner and can be relied upon for resource estimation.

Micon has also reviewed the drill hole logs and analytical results for the 2007 to 2010 drilling campaigns and conducted a statistical comparison of the major drill hole intersections on a campaign basis. The results for the elements analysed are broadly similar within reasonable limits. On this basis, Micon concludes that the resource assay data database is representative of the mineralization of the Eagle's Nest deposit.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTWORK

13.1 EAGLE'S NEST

13.1.1 Metallurgical Testwork

SGS-MS undertook preliminary metallurgical testing during 2009 and 2010 at the Lakefield testing facility on two composite samples submitted by Noront. These composites, which were selected by Noront, were labelled "Comp 1", which was made up of massive sulphide mineralization and "Comp 2", which was designated disseminated (net-textured) mineralization. The testwork program included grinding testwork (Bond work index, BWI) on a head sample of the two composites, comprehensive mineralogical analysis on the flotation feed of the two composites, a series of developmental flotation testwork, flotation product (concentrates and tailings) characterization testwork and preliminary magnetic separation tests (see SGS-MS, 2010). The metallurgical test program was managed by Noront.

A second program of work commenced in the second half of 2010 was completed by June, 2011. This work was used in the preparation of Feasibility Study process design criteria and final flowsheet selection used by Outotec (see SGS-MS, 2012).

An additional phase of work was completed at SGS-MS during the latter part of 2011 and early 2012. This phase included variability testing of samples representing the lower portion (below 750 m L) of the mineral reserves at Eagle's Nest.

Outotec performed thickener and filtration tests using samples of concentrate and tailings from the SGS-MS tests (see Outotec, 2012a and 2012b).

Tailings samples from the SGS-MS tests were sent to the Yantai Tianhe Science and Technology Limited laboratory of Dr. Sun in China for testing.

13.1.2 SGS-MS Preliminary Testwork Program 2009/2010

The two split drill core composites used for the preliminary testwork program were selected by Noront and labeled Comp 1, which was made up of 56 kg of typical massive sulphide mineralization and Comp 2, which was made up of 49 kg of disseminated or net-textured mineralization. The chemical analyses of the two composites are included in Table 13.1.

Sub-samples of both Comp 1 and Comp 2, representative of a flotation feed at a grind size of 80% passing 100 µm, were submitted for mineralogy using the combination of optical microscopy and XRD examination. Mineralogical examination of Comp 1 showed a massive sulphide system containing 98% total sulphides. The major Cu-bearing mineral was chalcopyrite and the Ni-bearing mineral was pentlandite. Examination of Comp 2 determined that the composite contained 27% sulphides. The major Cu and Ni bearing minerals present in Comp 2 were chalcopyrite and pentlandite, respectively. In addition, trace amounts of pyrite, bornite and covellite were detected.

Table 13.1
Metallurgical Composite Head Analyses

Element/Compound	Units	Comp 1	Comp 2
Cu	%	3.07	1.01
Ni	%	7.89	2.11
Fe	%	50.9	19.6
Ni Sulphide	%	5.59	1.60
S^{2-}	%	35.4	10.1
Pd	g/t	10.1	3.40
Pt	g/t	0.83	0.21
Au	g/t	0.16	0.99
Ag	g/t	8.00	3.00
Co	g/t	2,000	560
Cr	g/t	150	2,700
Mg	g/t	2,100	160,000

Optical examination found an increase in locked chalcopyrite and pentlandite in Comp 2. The majority of the chalcopyrite, pentlandite and pyrrhotite appeared to be liberated (50-90% liberation) at a mineral grain size of between 40-80 µm for both composites.

13.1.2.1 Testwork Results

The Bond ball mill work indices for Comp 1 and Comp 2 were 8.6 kWh/t and 18.4 kWh/t, respectively. The material is considered soft for Comp 1 and medium-hard to hard for Comp 2, when compared to all ores tested in the SGS-MS database.

Batch flotation tests evaluated the effect of primary grind size, collector dosage, and collector addition points for both Comp 1 and Comp 2 on rougher kinetics. In addition, talc depressants were investigated on Comp 2. Most of the flotation work was directed at separate copper and nickel concentrate production.

For Comp 1, separation of copper and nickel was effective in producing a copper concentrate grading 34.0% Cu and 0.63% Ni at 74% Cu recovery. A final nickel concentrate grading 20.5% Ni at 61% Ni recovery was produced.

The copper-nickel separation tests using Comp 2 were incomplete. Using the non-optimized preliminary open circuit batch test results, SGS-MS estimated that a bulk Cu-Ni concentrate from Comp 2 grading 5.38% Cu and 10.8% Ni could be produced with metal recoveries of 80% for Cu and 76% for Ni, respectively.

A Davis tube magnetic separation test was conducted on a sample of Comp 1 that was ground to a K_{80} passing 100 µm. The non-magnetic fraction contained 26% of the mass grading 9.5% Cu, 22.2% Ni with recoveries of 89% for Cu and 80% for Ni, respectively. The magnetic fraction contained 74% of the mass and graded 0.41% Cu and 1.96% Ni.

13.1.3 SGS-MS Feasibility Study Testwork Program 2010/2011

A detailed program of metallurgical testwork at SGS-MS was initiated during the second half of 2010. This testwork program comprised sample preparation and characterization, grindability testing, mineralogical investigations, flotation development testing, solid-liquid separation tests, and product characterization.

This metallurgical testwork program was managed by a Senior Metallurgist with SNC-Lavalin Inc. (SLI). As part of Micon's management role of Noront's McFaulds Lake Project, Richard Gowans, President and Principal Metallurgist reviewed the metallurgical data and reports prepared by SGS-MS and SLI.

13.1.3.1 Metallurgical Samples

The metallurgical composite samples were selected by Noront, SLI and Micon from available representative fresh diamond drill core. A total of four composites were selected to represent the massive and net/textured mineralization within the measured and indicated resources outlined at that time (above -750 masl). Two composites were selected from above and two below the "pinch" point located approximately 250 m below surface (-80 masl). At the time the sampling program was undertaken, about 50% of the measured/indicated resource tonnes were located above and below this pinch point. The four composite samples were identified as follows:

1. Upper Massive Composite (UMC).
2. Lower Massive Composite (LMC).
3. Upper Net-textured Composite (UNTC).
4. Lower Net-textured Composite (LNTC).

A summary description of the metallurgical samples is included in Table 13.2.

Table 13.2
Metallurgical Composite Sample Drill Holes

Deposit Zone	Drill Hole	Drilling Program	No of Intervals	Depth (masl)	
				From	To
Lower – net-textured	NOT-10-076	Spring 2010 Resource Drilling	8	-282	-291
Lower – net-textured	NOT-10-076-W1	Spring 2010 Resource Drilling	7	-321	-328
Lower - massive	NOT-10-076-W1	Spring 2010 Resource Drilling	9	-349	-359
Lower - massive	NOT-10-081	Spring 2010 Resource Drilling	15	-214	-255
Lower – net-textured	NOT-10-081	Spring 2010 Resource Drilling	9	-256	-267
Lower - massive	NOT-10-083	Spring 2010 Resource Drilling	3	-410	-413
Lower – net-textured	NOT-10-083	Spring 2010 Resource Drilling	10	-440	-453
Lower - massive	NOT-10-084	Spring 2010 Resource Drilling	4	-457	-460
Lower – net-textured	NOT-10-084	Spring 2010 Resource Drilling	24	-461	-521

Deposit Zone	Drill Hole	Drilling Program	No of Intervals	Depth (masl)	
				From	To
Lower – net-textured	NOT-10-087A	Spring 2010 Resource Drilling	6	-366	-373
Lower – net-textured	NOT-10-091A	Spring 2010 Resource Drilling	6	-384	-390
Lower - massive	NOT-10-091A	Spring 2010 Resource Drilling	3	-391	-394
Lower – net-textured	NOT-10-091A	Spring 2010 Resource Drilling	6	-404	-411
Lower – net-textured	NOT-10-GT02	Golder Geotechnical Hole	5	-198	-203
Upper – net-textured	NOT-10-GT01	Golder Geotechnical Hole	41	+67	+33
Upper - massive	NOT-10-GT04	Golder Geotechnical Hole	60	+135	+73
Upper – net-textured	NOT-10-GT04	Golder Geotechnical Hole	23	+72	+47
Upper - massive	NOT-10-GT04	Golder Geotechnical Hole	33	+46	+22
Upper – net-textured	NOT-10-GT04	Golder Geotechnical Hole	35	+21	-19
Upper – net-textured	NOT-10-GT05	Met Sample Drill Hole	24	+74	+46

13.1.4 Sample Characterization

The average specific gravities and analyses of important elements for each sample are summarized in Table 13.3. Selected elemental analyses are presented in Table 13.4.

Table 13.3
Metallurgical Composite Sample Analyses

Sample	SG	Cu (%)	Ni (%)	S (%)	Co (%)	Pt (g/t)	Pd (g/t)	Rh (g/t)	Ru (g/t)	Ir (g/t)	Au (g/t)	Ag (g/t)
Upper Massive	4.54	3.69	7.42	32.70	0.19	1.44	11.90	0.23	0.08	0.05	0.21	9.50
Upper Net-textured	3.06	0.98	1.86	9.37	0.05	2.31	3.94	0.08	0.05	0.02	0.22	2.00
Lower Massive	4.19	2.03	6.59	29.95	0.18	3.83	9.57	0.64	0.28	0.17	0.18	5.50
Lower Net-textured	3.09	0.89	1.78	9.20	0.05	0.83	3.20	0.10	0.05	0.03	0.29	3.00

Table 13.4
Multi-Element Analyses of the Metallurgical Composite Samples

Sample	Elemental Assays						
	Al (%)	Ca (%)	Cr (%)	Fe (%)	K (%)	Mg (%)	Na (%)
Upper Massive	0.11	0.10	0.038	52.4	0.007	1.13	0.037
Upper Net-Textured	1.16	0.79	0.39	19.1	0.06	15.3	0.059
Lower Massive	0.77	0.62	0.053	42.1	0.092	1.74	0.25
Lower Net-Textured	1.18	0.89	0.40	20.4	0.22	15.9	0.12

A program of mineralogical testing on each of the four composites was completed by SGS-MS. This work comprised high definition mineralogy, including QEMSCAN technology, XRD and electron microprobe analysis (EMPA). The main purpose of the test program was to establish the bulk modal distribution of the minerals and determine the Ni and Cu deportment amongst the composites and to investigate the liberation and association characteristics of the main target minerals (chalcopyrite and pentlandite). XRD was also used to determine the crystal structure of the pyrrhotite and EMPA work was used to determine the Ni in solid solution within silicates and oxides, and to investigate the sulphide mineral chemistries for Ni accounting purposes (see SGS-MS, 2011).

The mineralogical tests suggested the following:

- Reconciliation between QEMSCAN and chemical assays is very good for all samples.

- Composites UMC and LMC comprise mainly sulphides, 88.4% for UMC and 80.4% for LMC. Pentlandite and pyrrhotite occurrences are similar for the two massive samples but the amount of chalcopyrite in the LMC is almost half that of the UMC.

- Non-sulphide minerals in the UMC sample are magnetite (7.2%) and serpentine (2.2%). The LMC non-sulphides comprise serpentine (4.5%), amphiboles (4.4%), feldspars (3.3%), and chlorite (2.1%).

- Composites UNTC and LNTC comprise 25.9% and 24.5% sulphide minerals. These minerals (pentlandite, chalcopyrite and pyrrhotite) occur in the same proportions within the two net-textured samples.

- Non-sulphides in the UNTC include serpentine (42.6%), chlorite (8.5%), amphiboles (6.7%). Non-sulphides in the LNTC are serpentine (35.0%), amphiboles (9.6%), olivine (7.3%) and chlorite (7.2%).

- The modal analysis suggests that the processing of the massive samples should focus on pyrrhotite rejection while the processing of net-textured mineralization should concentrate on the rejection of non-sulphide gangue.

- Over 95% of the nickel occurs in pentlandite with the remainder in pyrrhotite (3-4%) and very minor amounts in non-sulphides (about 1% in net-textured samples). Recovery of nickel will not be hindered by the presence of complex nickel mineralization.

- 80% passing size (P_{80}) of pentlandite grains is 112 µm for UMC, 143 µm for LMC, 38 µm for UNTC and 43 µm for LNTC. Free liberated pentlandite accounts for 89.5% and 85.6% of total in UMC and LMC, respectively. Pentlandite liberation is 50.8% and 61.3% for UNTC and LNTC, respectively. Non-liberated pentlandite is tied up mainly with pyrrhotite in the massive samples, but generally more complex particles in the net-textured composites.

- P_{80} of chalcopyrite grains is 132 µm for UMC, 171 µm for LMC, 41 µm for UNTC and 40 µm for LNTC. Free liberated chalcopyrite accounts for 84.8% and 75.8% of total in UMC and LMC, respectively. Chalcopyrite liberation is 75.0% and 63.3% for UNTC and LNTC, respectively. As with pentlandite, the non-liberated chalcopyrite is generally associated with pyrrhotite in the massive samples and complex particles in the net-textured samples.

- Electron microprobe analysis showed the following:

    - Pyrrhotite contains approximately 0.3% to 0.7% Ni.
    - Pentlandite contains between 34 and 36% Ni.
    - Chalcopyrite contains about 34.3% Cu.
    - Pentlandite contains approximately 1% Co.
    - Magnesium is mainly contained in serpentine (22-24%), chlorite (16-19%) and talc (19%).

- XRD work suggested that the pyrrhotite has a monoclinic crystal structure which was expected due to its strong magnetic susceptibility.

13.1.4.1 Metallurgical Testwork Results

Bond grinding work index (metric) and abrasion index results are summarized in Table 13.5. For massive mineralization, one rod mill work index test was conducted on a blend of upper massive and lower massive sample. The work index results from the SGS-MS preliminary 2009/2010 test program are included for comparison.

Table 13.5
Grinding and Abrasion Test Results

Parameter	Upper Massive	Lower Massive	Upper Net-textured	Lower Net-textured
Rod Mill Work Index	6.0[1]		17.6	16.9
Ball Mill Work Index (100 mesh) – 2009/2010	8.6[1]		18.4 [1]	
Ball Mill Work Index (100 mesh) – 2010/2011	7.5	9.9	19.5	19.0
Ball Mill Work Index (150 mesh)			19.3	18.6
Abrasion Index	0.02	0.069	0.029	0.042

[1] Single composite sample used representing both upper and lower zones.

Unconfined compressive strength (UCS) tests were conducted by Queen's University Department of Mining. Fourteen samples of core from within the mineralized envelope were tested. UCS values ranged from 49 MPa to 208 MPa and had a median value of 90 MPa. All but one of the samples had UCS classified as strong (50 to 100 MPa) or very strong (100 to 250 MPa). The massive mineralization samples had lower UCS values, averaging 67 MPa compared to an average of 119 MPa for net-textured mineralization samples.

Flotation

A number of open circuit tests were undertaken on the individual composites and blends of these composites. These open circuit tests were designed to investigate specific parameters and to develop the optimum flowsheet for processing the massive and net-textured mineralization. The parameters examined included flotation feed slurry rheology and density, rougher feed aeration, site water, pH modifier, primary grind size, regrinding, gangue depressants and flotation kinetics.

The two flowsheet concepts considered during the development test program were:

- Flowsheet A – Blends the massive and net-textured feed types before rougher flotation.

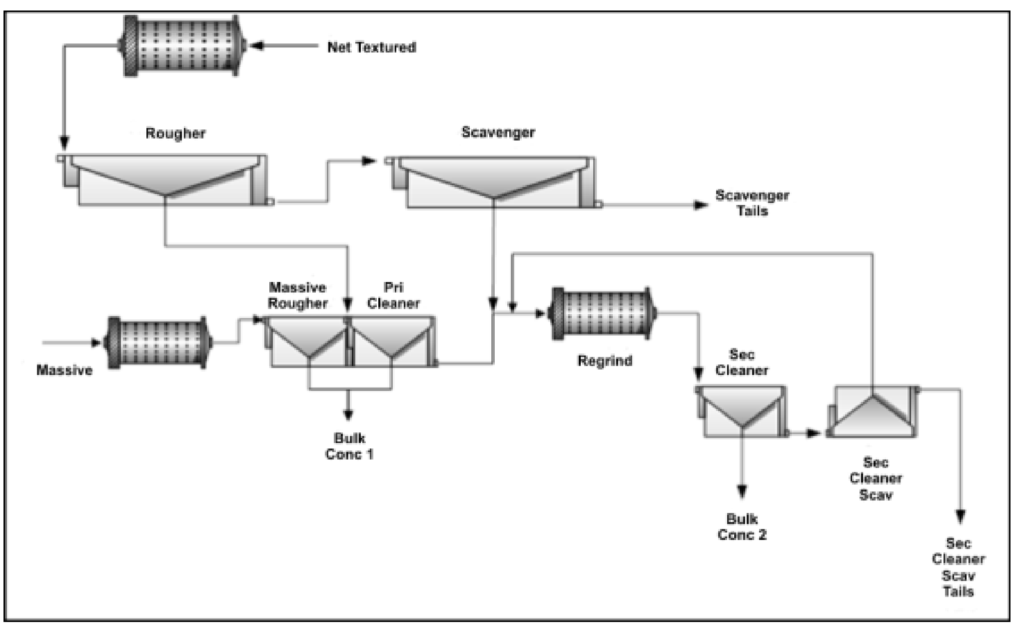
- Flowsheet B – Grinds and aerates massive and net-textured material separately and combines massive feed material with net-textured rougher concentrate prior to rougher cleaner flotation.

In all cases the objective was to produce a single flotation concentrate product containing nickel, copper and PGMs. The target concentrate grade was 15% Cu plus Ni.

Following a review of the initial open circuit test results, four locked cycle tests (LCT) were undertaken using a version of Flowsheet B (see Figure 13.1). The samples used for the four LCTs were made up as follows:

LCT1: 90%:10% blend of lower zone net-textured and massive mineralization.
LCT2: 90%:10% blend of upper zone net-textured and massive mineralization.
LCT3: 75%:25% blend of upper zone net-textured and massive mineralization.
LCT4: 75%:25% blend of upper zone net-textured and massive mineralization.

Figure 13.1
Locked Cycle Test Flowsheet



A summary of the locked cycle test results for Ni, Cu and S is presented in Table 13.6 and the test results for Pt, Pd, Au and Ag are shown in Table 13.7.

Table 13.6
Flotation Locked Cycle Test Results (Ni, Cu and S)

LCT 1 - Lower Zone 10:90 Massive:Net-textured Blend	Weight %	Assay (%)			Distribution (%)		
		Cu	Ni	S	Cu	Ni	S
Primary bulk concentrate	11.9	6.39	10.2	20.2	74.9	55.3	23.0
Secondary bulk concentrate	9.0	1.66	7.30	19.9	14.7	30.0	17.2
Combined concentrate	20.9	4.35	8.95	20.1	89.6	85.2	40.2
Secondary cleaner scavenger tails	17.7	0.126	0.61	11.5	2.2	4.9	19.4
Scavenger tails	61.4	0.136	0.35	6.87	8.2	9.8	40.4
Combined tails	79.1	0.134	0.41	7.89	10.4	14.8	59.8
Head (calculated)	100.0	1.02	2.20	10.4	100.0	100.0	100.0
LCT-2 - Upper Zone 10:90 Massive:Net-textured Blend	**Weight %**	**Assay (%)**			**Distribution (%)**		
		Cu	**Ni**	**S**	**Cu**	**Ni**	**S**
Primary bulk concentrate	9.4	11.84	10.0	25.4	82.9	37.0	19.9
Secondary bulk concentrate	10.5	1.49	11.36	20.8	11.6	47.0	18.2
Combined concentrate	20.0	6.38	10.7	23.0	94.5	84.0	38.2
Secondary cleaner scavenger tails	20.0	0.130	0.91	15.5	1.9	7.2	25.9
Scavenger tails	60.0	0.079	0.38	7.20	3.5	8.9	35.9
Combined tails	80.0	0.092	0.51	9.29	5.5	16.0	61.8
Head (calculated)	100.0	1.35	2.55	12.0	100.0	100.0	100.0
LCT-3 - Upper Zone 25:75 Massive:Net-textured Blend	**Weight %**	**Assay (%)**			**Distribution (%)**		
		Cu	**Ni**	**S**	**Cu**	**Ni**	**S**
Primary bulk concentrate	12.9	11.79	14.3	28.9	86.6	54.5	24.0
Secondary bulk concentrate	8.9	1.85	11.98	23.0	9.4	31.4	13.1
Combined concentrate	21.7	7.74	13.4	26.5	96.0	85.9	37.1
Secondary cleaner scavenger tails	25.7	0.102	1.05	21.9	1.5	8.0	36.3
Scavenger tails	52.5	0.083	0.39	7.86	2.5	6.1	26.6
Combined tails	78.3	0.089	0.61	12.47	4.0	14.1	62.9
Head (calculated)	100.0	1.75	3.38	15.5	100.0	100.0	100.0
LCT-4 - Upper Zone 25:75 Massive:Net-textured Blend	**Weight %**	**Assay (%)**			**Distribution (%)**		
		Cu	**Ni**	**S**	**Cu**	**Ni**	**S**
Primary bulk concentrate	15.2	9.90	14.0	28.6	86.6	64.1	28.5
Secondary bulk concentrate	8.1	1.92	9.03	19.4	9.0	22.0	10.3
Combined concentrate	23.4	7.12	12.3	25.4	95.6	86.0	38.8
Secondary cleaner scavenger tails	25.4	0.120	1.04	21.2	1.7	7.9	35.1
Scavenger tails	51.3	0.090	0.40	7.77	2.7	6.1	26.1
Combined tails	76.6	0.100	0.61	12.21	4.4	14.0	61.2
Head (calculated)	100.0	1.74	3.34	15.3	100.0	100.0	100.0

Table 13.7
Flotation Locked Cycle Test Results (Pt, Pd, Au and Ag)

LCT 1 - Lower Zone 10:90 Massive:Net-textured Blend	Weight %	Assay (g/t)				Distribution (%)			
		Pt	Pd	Au	Ag	Pt	Pd	Au	Ag
Combined concentrate	20.9	3.29	14.1	0.45	9.9	60.9	76.9	33.7	63.7
Head (calculated)	100.0	1.13	3.84	0.28	3.25	100.0	100.0	100.0	100.0
LCT-2 - Upper Zone 10:90 Massive:Net-textured Blend	**Weight %**	**Assay (g/t)**				**Distribution (%)**			
		Pt	**Pd**	**Au**	**Ag**	**Pt**	**Pd**	**Au**	**Ag**
Combined concentrate	20.0	4.54	15.20	0.95	11.70	40.8	64.1	86.7	85.0
Head (calculated)	100.0	2.22	4.74	0.22	2.75	100.0	100.0	100.0	100.0
LCT-3 - Upper Zone 25:75 Massive:Net-textured Blend	**Weight %**	**Assay (g/t)**				**Distribution (%)**			
		Pt	**Pd**	**Au**	**Ag**	**Pt**	**Pd**	**Au**	**Ag**
Combined concentrate	21.7	6.22	23.50	1.53	13.10	64.6	86.1	152.8	73.4
Head (calculated)	100.0	2.09	5.93	0.22	3.88	100.0	100.0	100.0	100.0
LCT-4 - Upper Zone 25:75 Massive:Net-textured Blend	**Weight %**	**Assay (g/t)**				**Distribution (%)**			
		Pt	**Pd**	**Au**	**Ag**	**Pt**	**Pd**	**Au**	**Ag**
Combined concentrate	23.4	4.77	22.2	1.03	14.6	53.3	87.5	110.7	88.0
Head (calculated)	100.0	2.09	5.93	0.22	3.88	100.0	100.0	100.0	100.0

Although the results from the LCTs were encouraging, the MgO content in the final concentrate was higher than desired. Two batch tests were undertaken to assess the effects of adding additional talc depressant (CMC) to the standard reagent suite used in the LCTs. The results of these tests (F27 and F28) are summarized in Table 13.8. The proportion of these blends was selected to represent the blend of mineralization from the two zones.

Both the Cu and Ni recoveries appear to be consistent for the three LCTs completed on upper zone material. Tests F27 and F28 gave similar Ni and copper recoveries to the LCTs.

Table 13.8
Batch Flotation Test Results (F27 and F28)

F27 - Lower Zone 10:90 Massive:Net-textured Blend	Weight %	Assay (%)				Distribution (%)			
		Cu	Ni	S	MgO	Cu	Ni	S	MgO
Combined concentrate	16.5	5.20	11.2	23.8	9.16	87.3	83.7	36.3	6.5
Combined tails	83.5	0.15	0.43	8.25	26.3	12.7	16.3	63.7	93.5
Head (calculated)	100.0	0.98	2.22	10.8	23.5	100.0	100.0	100.0	100.0
F28 - Upper Zone 25:75 Massive:Net-textured Blend	**Weight %**	**Assay (%)**				**Distribution (%)**			
		Cu	**Ni**	**S**	**MgO**	**Cu**	**Ni**	**S**	**MgO**
Combined concentrate	21.5	7.44	13.5	27.8	6.70	95.8	88.3	38.3	7.5
Combined tails	78.5	0.09	0.49	12.28	22.8	4.2	11.7	61.7	92.5
Head (calculated)	100.0	1.67	3.29	15.6	19.3	100.0	100.0	100.0	100.0

Magnetic Separation

Davis tube high intensity magnetic separation tests were conducted on samples of massive mineralization ground to 80% passing 100 µm. For the UMC sample, magnetic separation gave a good split, with over 90% of the pyrrhotite being recovered to the magnetic fraction and about 80% of the pentlandite being retained in a non-magnetic fraction containing 17.5% Ni. These results were consistent with the tests carried out by SGS-MS in 2009/10. For the

LMC sample, only 50% to 60% of the pyrrhotite was recovered to the magnetic fraction but over 90% of the pentlandite was retained in a low grade (8.7% Ni) non-magnetic fraction.

A number of tests combining magnetic separation and flotation were undertaken to see if magnetic separation could be justifiably be included in the flowsheet. The test results were not conclusive.

Self-Heating Tests

Self-heating tests on a set of eight samples from the project were completed by NesseTech Consulting Services Inc. of Kirkland, QC, Canada. The samples tested, comprising six tailings samples and two concentrate samples, originated from LCT-1 and LCT-3. The results suggested that scavenger tails will not exhibit any Stage A (70 ^{o}C) heating and would be suitable for paste production. Concentrate, scavenger cleaner tailings and combined scavenger/cleaner scavenger streams will likely exhibit self-heating properties and, therefore, care will be required in the design and operation of the storage and transportation of this material (see NesseTech, 2011).

Geochemical Analyses and Characterization of Tailings

The scavenger tailings and cleaner scavenger tailings samples from the four LCTs were submitted for geochemical analysis using the modified acid base accounting (ABA) procedure for neutralization potential. For all samples, the calculated net neutralizing potential (Net NP) values were negative and the NP/acid potential (AP) ratios were less than 3. All of these samples were classified as potentially acid generating (PAG).

13.1.5 SGS-MS Feasibility Study Testwork Program 2011/2012

A detailed program of metallurgical testwork at SGS-MS was initiated in the second half of 2010. This testwork program comprised sample preparation and open circuit variability flotation testing using samples representing the measured and indicated mineral resources from approximately below -750 masl at the Eagle's Nest deposit Main Zone. The program also included bulk flotation tests to produce representative tailings and concentrate samples required for solid-liquid separation testing by Outotec.

This metallurgical testwork program was managed by Noront and reviewed by Micon.

13.1.5.1 Metallurgical Samples

The metallurgical composite samples were selected by Noront from available representative diamond drill core. Figure 13.2 presents an east-west section of the deposit looking north showing the location of these metallurgical samples.

Table 13.9 gives the head analyses for major elements of the six variability samples.

Figure 13.2
Section of the Eagle's Nest Deposit Showing Locations of the Metallurgical Variability Samples

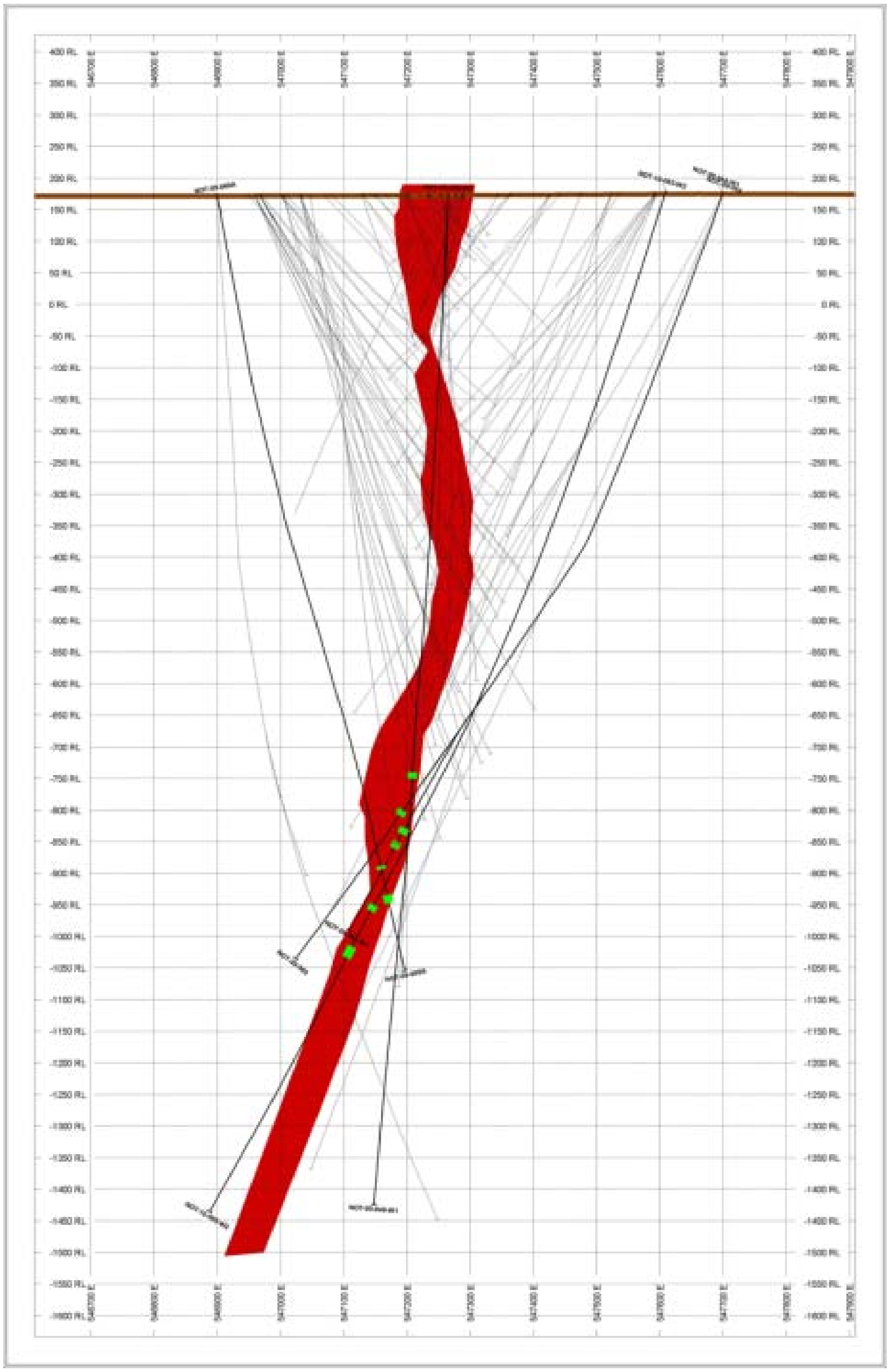


Table 13.9
Metallurgical Variability Sample Analyses

Sample	Assays (%)				Assays (g/t)		
	Cu	Ni	S	MgO[1]	Au	Pt	Pd
V1	1.56	1.89	8.60	25.3	0.21	0.49	3.50
V2	2.24	5.73	23.8	10.3	0.12	0.07	7.79
V3	0.91	1.59	8.81	23.1	0.19	1.23	5.38
V4	0.23	0.69	3.48	24.8	0.03	0.19	0.97
V5	1.03	1.51	8.47	24.7	0.28	1.55	4.46
V6	0.99	1.54	8.96	26.2	0.95	1.68	7.02

[1] MgO assay is the calculated head from the flotation test.

Details of the actual test conditions for each test are given in Table 13.10.

Table 13.10
Variability Flotation Test Conditions

Parameter	Units	Test V1	Test V2	Test V3	Test V4	Test V5	Test V6
Primary grind (P_{80})	µm	55	49	55	56	48	63
Re-grind size (P_{80})	µm	12	18	17	13	19	24
Rougher + scavenger time	min	26.5	26.5	26.5	26.5	26.5	26.5
Cleaner 1 time	min	5	5	5	5	5	5
Cleaner 2 time	min	4	4	4	4	4	4
Scavenger cleaner time	min	4	4	4	4	4	4
Reagent – SIPX	g/t	92.5	92.5	92.5	92.5	92.5	92.5
Reagent – MIBC	g/t	120	115	120	120	120	120
Reagent – Lime	g/t	375	370	215	120	480	305
Reagent – CMC	g/t	175	175	175	175	175	175

13.1.6 Flotation Recovery Estimates

Micon reviewed the flotation test data in order to model nickel, copper and PGM flotation recoveries to head grade, ore-type and location (upper or lower zones). The Ni and Cu recovery models selected for the Feasibility Study used all relevant data from tests undertaken at the final selected primary grinds, including the LCTs, and Ni and Cu combined final concentrate grade of around 15%. These models are presented in Figure 13.3 and Figure 13.4.

Although there is a degree of scatter over the range of average annual Ni grades mined, the nickel model predicts a good average recovery based on the test data. The predicted copper recoveries over the range of average annual feed grades included in the mine plan show good correlation to the test data apart from one outlier, which was one of the variability tests (V6)

Figure 13.3
Nickel Flotation Recovery Model – Nickel Head Grade Versus Nickel Recovery

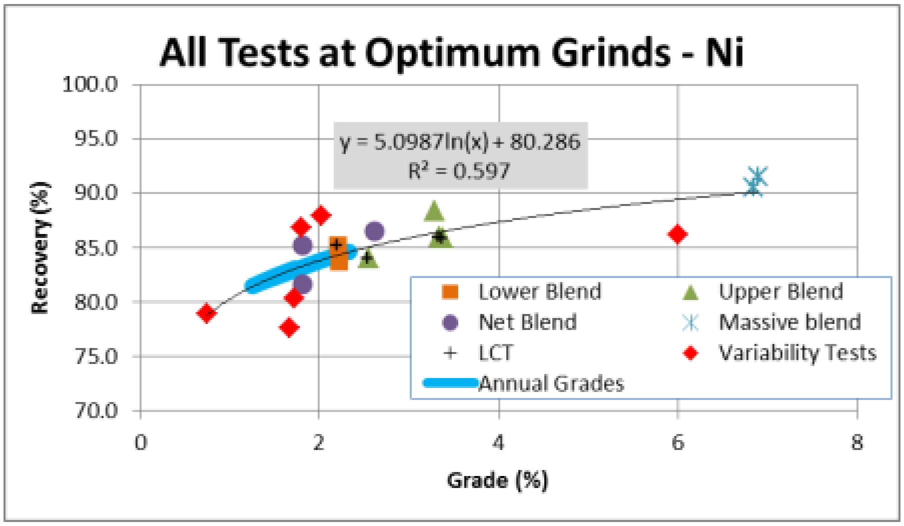
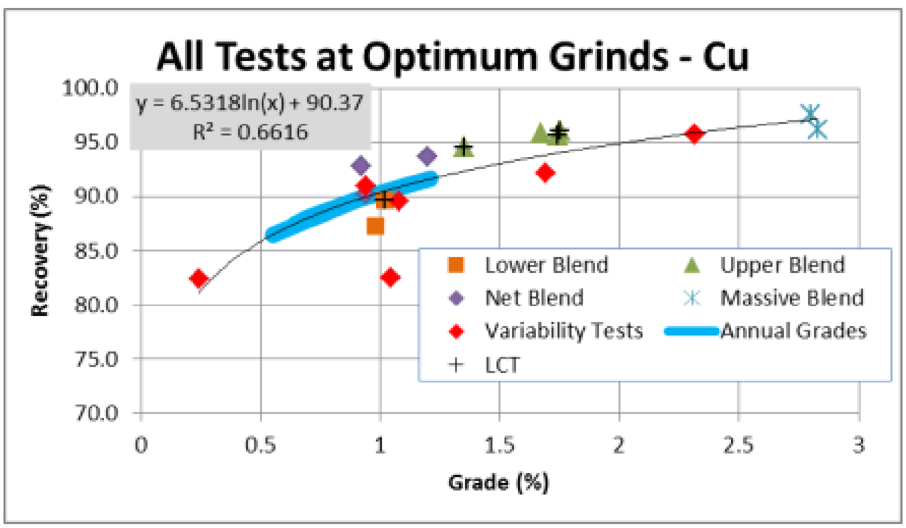


Figure 13.4
Copper Flotation Recovery Model – Copper Head Grade Versus Copper Recovery



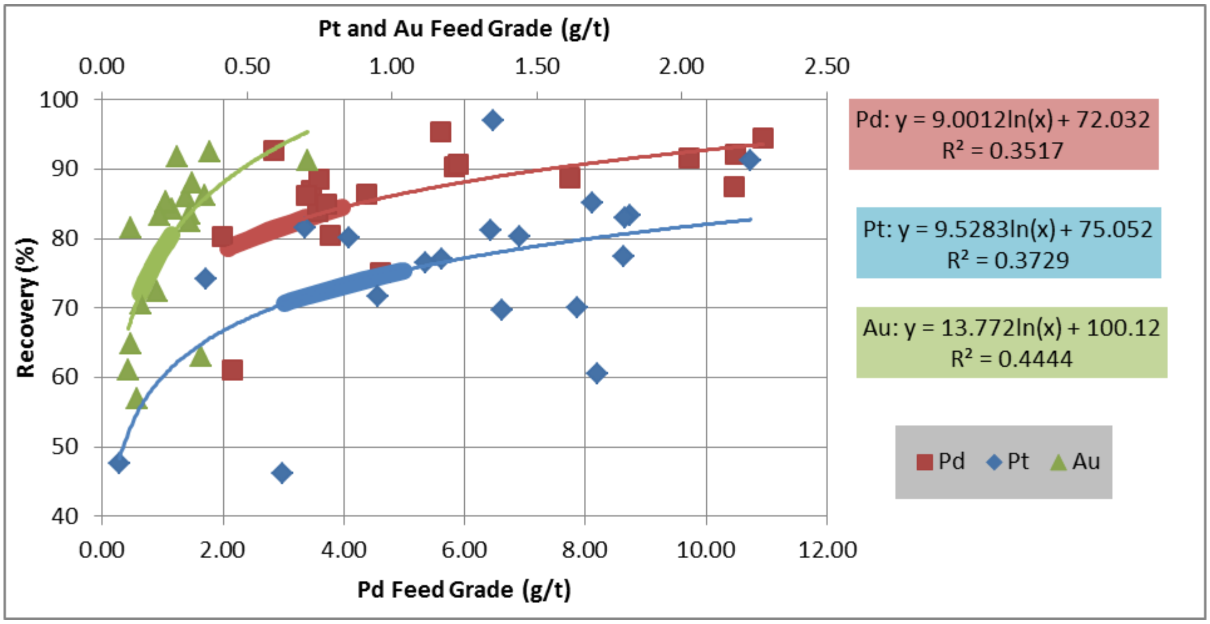
13.1.6.1 PGM, Gold and Silver Recoveries

A number of different algorithms were developed to estimate the PGM, Au and Ag recoveries using the available testwork data. These relationships were reviewed closely by Micon and it was decided to use the following grade recovery equations for Pt, Pd and Au.

- Platinum Recovery = ln(Pt Feed Grade (g/t)) x 9.5283 + 75.052.
- Palladium Recovery = ln(Pd Feed Grade (g/t)) x 9.0012 + 72.032.
- Gold Recovery = ln(Au Feed Grade (g/t)) x 13.772 + 100.12.

The test recoveries and respective algorithms are presented in Figure 13.5. The broad portion of the regression lines for each of the three elements shows the range of each respective annual average head grades included in the Feasibility Study mine plan.

Figure 13.5
PGM and Gold Head Grade Versus Recovery Relationships



In view of the limited silver data it was decided to use a simple multiplier using the nickel recovery:

- Silver Recovery = Nickel Recovery x 0.93.

13.1.6.2 Magnesium Recovery to Concentrate

The MgO content of the concentrate produced from the top middle and bottom zones of the Eagle's Nest deposit were 6.7%, 9.2% and 8.1%, respectively. It is expected that during the life of the mine, the MgO content of the concentrate will be about 9% although, during the early days when mining close to surface, it should be around 7%.

13.1.7 Solid-Liquid Separation

The material used to generate the tailings and concentrate solid-liquid separation test samples for the thickening test program was composited from the remaining upper and lower zone composites used in the 2010/2011 SGS-MS testwork program. The proportions used were:

Upper Zone	25% Massive, 75 % Net-textured
Lower Zone	10% Massive, 90% Net-textured
Upper:Lower Zone Ratio	35%:65%

A bulk locked cycle test was undertaken using about 12 kg per cycle for 11 cycles. The final mass balance for this bulk LCT is presented in Table 13.11.

Table 13.11
Bulk Flotation LCT Mass Balance

Mass Balance 1-11	Mass		Assay (%)			Distribution (%)		
Sample	**kg**	**%**	**Cu**	**Ni**	**S**	**Cu**	**Ni**	**S**
Massive rougher concentrate	1.1	0.9	6.33	17.3	30.6	4.7	6.3	2.2
Primary cleaner concentrate	15.3	12.2	7.50	11.8	29.0	76.4	58.8	28.3
Secondary cleaner concentrate	7.7	6.2	1.94	7.60	22.3	9.9	19.0	11.0
Combined concentrate	**24.1**	**19.3**	**5.67**	**10.7**	**27.0**	**91.0**	**84.1**	**41.4**
Net-textured tails	79.9	63.9	0.10	0.32	6.71	5.3	8.4	34.2
Secondary cleaner tails	21.0	16.8	0.26	1.10	18.23	3.7	7.5	24.4
Combined tails	**100.9**	**80.7**	**0.13**	**0.49**	**9.11**	**9.0**	**15.9**	**58.6**
Calculated head	125.0	100.0	1.20	2.46	12.6	100.0	100.0	100.0

The combined concentrate and tailings samples were used by Outotec to undertake solid-liquid separation tests.

13.1.8 Thickening Tests

Dynamic bench scale thickener tests were undertaken on one combined tailings and one concentrate sample at Outotec's laboratory facility in Burlington, Ontario. It was determined that flocculant MF-10 resulted in stable underflow density and very clear overflow clarity for the tailings and concentrate samples at a dosage of 28 g/t and 10 g/t, respectively. Outotec's estimate of thickener performance for the two process duties is outlined in Table 13.12.

Table 13.12
Thickener Design and Performance Estimates

Sample	pH	Feed Density (wt% solids)	Solids Loading Rate ($t/m^2/h$)	Rise Rate (m/h)	Flocculant Dose (g/t)	Achievable Underflow Density (wt% solids)	Achievable Overflow Clarity (ppm TSS)	Maximum Unsheared Underflow Yield Stress (Pa)
Tailings	9	21	0.84	3.4	28	61	30	106
Concentrate	9	21	0.40[1]	1.6	10	73	29	147

[1] Actual design solids loading used was 0.2 $t/m^2/h$

13.1.9 Filtration Tests

Outotec pressure and vacuum filtration tests were performed on samples of tailings slurry and concentrate slurry. Testing was performed at Outotec's laboratory in Burlington, Ontario using Outotec's vacuum filtration and Larox Labox 25 test units.

Vacuum filtration tests were undertaken using the tailings sample. A total of nine tests were completed, separation times ranged from 6 to 22 seconds, with time increasing as cake thickness increased. Resultant filter cake moistures ranged from 20.1 to 23.5% by weight, with moisture increasing as cake thickness increased from 19 to 41 mm. Variances in final drying times did not seem to affect final cake moisture. The targeted 20% moisture was achieved by maintaining a filter cake of 4.5 mm thickness.

A total of nine pressure filter tests were completed using the concentrate sample. Cake moistures ranged from 7.9 to 10.5%, with moisture increasing as cake thickness increased from 19 to 41 mm. The targeted 8.5% moisture was achieved by maintaining a thin cake of 21 mm and increasing the air drying time to two minutes.

13.1.10 Concentrate Quality

The multi-element analyses of the final concentrates produced from the four LCTs and batch flotation test are summarized in Table 13.13.

Table 13.13
Flotation Test Final Concentrate Analyses

Element	Units	LCT-1	LCT-2	LCT-3	LCT-4	F27
Cu	%	4.23	5.34	7.56	6.98	5.09
Ni	%	8.97	8.17	13.0	12.0	11.0
Co	g/t	2,650	2,270	3,370	3,190	3,140
Fe	%	26.6	27.2	31.6	30.8	31.0
S	%	20.1	21.0	27.2	26.0	24.2
Au	g/t	0.45	0.95	1.53	1.03	0.55
Ag	g/t	9.90	11.7	13.1	14.6	12.4
Pt	g/t	3.29	4.54	6.22	4.77	4.84
Pd	g/t	14.1	15.2	23.5	22.2	17.2
Rh	g/t	0.34	0.21	0.30	0.27	0.45
Al_2O_3	%	1.20	1.04	0.52	0.62	0.18
MgO	%	13.3	13.1	7.00	8.00	9.90
SiO_2	%	16.6	13.8	8.59	9.79	12.7

13.2 BLACKBIRD CHROMITE DEPOSITS

The following description of the metallurgical testwork program for the Blackbird chromite deposits has been extracted from Micon, 2012.

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-MS in January, 2009. These composite samples were crushed, blended, assayed and tested. The metallurgical program completed by SGS-MS 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 (see SGS-MS, 2009).

Following the 2009 testwork program, half drill core samples were selected and prepared by Noront, and submitted to SGS-MS for preliminary comminution testing. These samples were separated into two composites, named “intercalated” and “massive”. The intercalated material comprised thin bands of massive or semi-massive chromitite interspersed with the host rock (ultramafic). The massive material was massive chromitite.

13.2.1 Metallurgical Samples

Of the four composite samples, three were considered disseminated chromite and one was considered massive chromite mineralization (Sample 4). A comparison of the SGS-MS assays and Noront's weighted average drill log assays is included in Table 13.14.

Table 13.14
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-MS noted that chromite minerals are often difficult to digest when submitted for chemical analyses and 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. Samples with greater than 15% Cr_2O_3 content 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.

Detailed analyses of these samples are presented in Table 13.15.

Table 13.15
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

Element/Compound	Units	Sample 1	Sample 2	Sample 3	Sample 4
Cr_2O_3	%	2.40	35.1	6.17	43.7
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

Of the 178 samples submitted to SGS-MS for comminution testing in 2011, 82 samples were intercalated material and 96 samples massive material. Of the massive samples, 50 were combined into the massive composite, leaving 46 massive samples for possible future tests. A summary of the intercalated and massive composite samples is presented in Table 13.16.

Table 13.16
Summary of Comminution Test Samples

	Units	Intercalated	Massive
No. of Samples	-	82	50
Total Combined Core Length	m	70.51	63.72
Average Cr_2O_3 Assay	%	32.37	42.76
Average Cr:Fe Ratio	-	1.85	2.12

13.2.2 Metallurgical Testing (2009)

13.2.2.1 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 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 13.17 shows the analyses of the cumulative sink fraction for each test. The results from the fine HLS tests show that samples 1 and 3 did not upgrade 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).

Table 13.17
Cumulative Sink Product of the +0.85-2 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

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

Table 13.18
Cumulative Sink Product of the +0.3 - 12.5 mm Fraction

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)		100.0	41.8	28.6	13.7	7.49	100.0	100.0	100.0

13.2.2.2 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 13.19 provides a summary of these test results.

Table 13.19
Summary of the Gravity Table Separation Results

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

13.2.2.3 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 13.20.

Table 13.20
Fine Magnetic Separation 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.

13.2.2.4 Comminution Tests (2011)

The results from the comminution tests undertaken on the two Blackbird composite samples are summarized in Table 13.21.

Table 13.21
Summary of Preliminary Comminution Test Results

Test Description		Massive Composite	Intercalated Composite
Ball Mill Grindability (BWI)	(imperial)	8.0 kWh/T	9.0 kWh/T
	(metric)	8.8 kWh/t	9.9 kWh/t
Abrasion Index, Ai		0.12	0.08

The standard Bond ball mill grindability tests used a feed size of 100% passing 6 mesh (3.35 mm) and a product grind size of 100 mesh (0.152 mm).

13.2.3 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.

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.

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%.

Micon notes that samples 1 and 3, which performed poorly, had chromite grades well below the expected economic cut-off. Furthermore, samples 2 and 4 are more representative of the Blackbird mineral resources and these results are a good indication of the probable metallurgical recoveries and product grades that can be achieved.

The preliminary comminution tests suggest that the Blackbird chromite is not very abrasive, which implies relatively low grinding ball and mill liner wear. The Bond ball mill work index tests show relatively low power requirements for grinding.

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 and the selection of the most appropriate beneficiation flowsheet.
- Pilot plant scale testwork using the selected process flowsheet in order to establish industry scale unit operation design criteria and metallurgical recovery data.

- Preliminary testwork to investigate the pelletizing and smelting characteristics of the Blackbird chromite concentrate.

- Investigation of the marketing potential of Blackbird chromite concentrates.

- Investigation of the occurrence, association and potential recovery of PGMs and base metal sulphides.

14.0 MINERAL RESOURCE ESTIMATES

The deposits within the McFaulds Lake property for which mineral resource estimates have been produced are the Blackbird Chromite and the Eagle's Nest nickel-copper-PGE deposits.

14.1 BLACKBIRD CHROMITE RESOURCE

The Blackbird chromite resource estimate is reproduced in Table 14.1.

Table 14.1
Summary of the Blackbird Chromite Mineral Resource Estimate at 31 December, 2011

Deposit	Zone	Category	Tonnes	Avg. Cr_2O_3%	Cr:Fe Ratio
Backbird 1	BB1	Measured	1,806,000	35.21	1.98
Backbird 2	BB2-1	Measured	4,111,000	39.59	2.05
	BB2-2E	Measured	630,000	33.26	1.90
	BB2-2W	Measured	1,139,000	35.30	1.94
	BB2-4E	Measured	1,604,000	37.57	1.98
Total Measured			**9,290,000**	**37.44**	**2.00**
Backbird 2	BB2-1	Indicated	6,972,000	35.65	2.05
	BB2-2E	Indicated	16,000	30.47	1.90
	BB2-2W	Indicated	305,000	23.75	1.50
	BB2-3N	Indicated	658,000	26.99	1.62
	BB2-3S	Indicated	980,000	30.75	1.81
	BB2-4E	Indicated	893,000	37.04	1.98
	BB2-5	Indicated	1,349,000	34.55	1.79
Total Indicated			**11,173,000**	**34.36**	**1.95**
Total Measured & Indicated			**20,463,000**	**35.76**	**1.97**
Backbird 2	BB2-1	Inferred	13,582,000	32.68	2.05
	BB2-2W	Inferred	811,000	24.04	1.65
	BB2-4E	Inferred	1,915,000	39.08	1.98
	BB2-4W	Inferred	2,224,000	36.08	1.71
	BB2-6	Inferred	1,843,000	31.23	1.94
	BB2-Lenses	Inferred	3,106,000	32.89	1.94
Total Inferred			**23,481,000**	**33.14**	**1.97**

(1) 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, sociopolitical, marketing, or other relevant issues.
(2) The quantity and grade of reported inferred resources in this estimation are conceptual in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.

14.2 EAGLE'S NEST MINERAL RESOURCE ESTIMATE

14.2.1 Database Description

The Eagle's Nest resource estimate produced by Golder in April, 2010 (Golder, 2010) is superseded by the updated resource presented in this Section. The update follows a program of infill and deep drilling.

14.2.1.1 Drill Holes and Assays

The Golder April, 2010 resource estimate was based on 90 drill holes of which 14 were wedged from parent holes. Since then, Noront has completed a program of infill and deep drilling involving 34 additional drill holes. Thus the Eagle's Nest deposit has been tested by a total of 124 drill holes down to a vertical depth of about 1,200 m. All drill holes are of NQ size core. Due to the pipe-like nature of the deposit in the vertical sense, it was not possible to maintain a uniform drilling grid. Drill hole coverage of the deposit varies from a 20-m spacing in the upper part of the deposit to a 50-m to 75-m spacing in the lower middle part and to 100 m grid towards the bottom limit.

The database consists of over 10,405 samples of which the principal analyses were for Ni, Cu, Pt, Pd, Au and Cr_2O_3.

14.2.1.2 Lithology and Mineralization

To facilitate geological modelling of the deposit, all the major rock types encountered in drill holes are documented in a "from-to" interval format. The major rock types that have been coded include granodiorite, peridotite, harzburgite/dunite, pyroxenite, gabbro, banded ironstone, mafic volcanic rock, intermediate volcanic rock, felsic volcanic rock, mafic/felsic dykes, dolomite and limestone. The overburden thickness is variable but averages about 10 m. Sulphide mineralization has been recorded for each interval as being either massive, net textured or disseminated.

14.2.1.3 Survey

The survey information recorded in the files includes collar co-ordinates, dip, azimuth and down-hole survey data. Collars were located using a Trimble GPS Pathfinder with a Zephyr antenna. Down-hole deviations were measured using the Reflex EZ-Shot system and verified by a north-seeking gyro (Reflex Gyro).

The landscape in the Eagle's Nest area is monotonously flat and therefore a digital terrain model is not critical to the estimation of resources.

14.2.1.4 Specific Gravity

Specific gravity (SG) was determined on a total of 263 samples at the Actlabs facility in Ancaster, Ontario, during the course of sample analyses. The SG was determined using the ASTM D854 Standard Test Method for Specific Gravity of Soils. The crushed sample pass the 4.75 mm sieve and the SG measurement is performed is performed using a calibrated pycnometer.

The SG data set is representative of the range of nickel grades and lithologies intersected at Eagle's Nest.

14.2.1.5 Master Geological database

A master database was created by importing the data described in Sections 17.2.1.1 to 17.2.1.4 in Excel spreadsheet files into the Surpac version 6.1.4 software and GEMS software. The Surpac software was used for solid modelling and statistics while the Gems software was used for the resource modelling.

14.2.1.6 Estimation Details

14.2.1.7 Overview of Estimation Methodology

The Eagle's Nest updated resource mineral estimate has been conducted using a systematic and logical approach involving geological interpretation, conventional statistics on raw data, solid creation, statistics on composites, geostatistics, creation of interpolation parameters, block modelling, block model validation and classification.

14.2.1.8 Geological Interpretation

The Eagle's Nest deposit mineralization is confined within a single ultramafic unit and, therefore, no geological domains are applicable to the resource estimation process. The deposit comprises two segments – the Main Zone and the East Zone. The Main Zone is a pipe-like body that dips sub-vertically with the longer axis in the dip direction. It is approximately 200 m along strike in a north-south direction, 40 to 60 m wide and is open at depth beyond 1,500 m below surface. The East Zone is a north-south striking tabular body, about 200 m east of the Main Zone. Its dimensions have not been fully established as it is open-ended along both strike directions and at depth.

The Ni-Cu-PGE mineralization is associated with massive/semi-massive, net-textured and disseminated sulphides. The major sulphide minerals identifiable with a hand lens are pyrrhotite, pentlandite and chalcopyrite with accessory magnetite. The pattern of distribution of the sulphides is not discernible due to one or a combination of the following factors: (a) the drill holes intersecting the deposit are at highly variable angles, (b) extreme physical deformation, as evidenced by the narrowing and twisting of the Main Zone 100 m below surface coupled with metamorphism, have obliterated the original fabric of the minerals and the overall geometry of the bodies. Thus, wire-framing to differentiate the three sulphide mineralization patterns is not possible or practical. Despite the obliteration, drill hole intercepts show that Ni-Cu-PGE are concentrated in the same broad zone. There is no geological reason to believe that massive sulphides would be restricted to the upper, middle or lower zones of the deposit.

14.2.1.9 Statistics on Raw Assay Data

The rationale for statistics on the raw assay data was threefold: (a) to establish the mineralization indicator grade in order to draw the potential ore zone envelope and, (b) determine the composite length and (c) establish the general relationship between metals.

The primary statistics of the raw assay data are presented in Table 14.2. The probability plot of Ni, i.e. the chief component of the mineralization, shows a clear-cut break at 0.25% Ni followed by another one at 0.5% Ni (Figure 14.1). The lower break also coincides with the limits of the broad zone of mineralization for Cu, Pt, Pd and Au, and was therefore selected as representing the outer limit of the mineralization envelope. In one or two rare instances, this envelope leaves out some PGE values in the hanging wall but these are not elevated to significant levels.

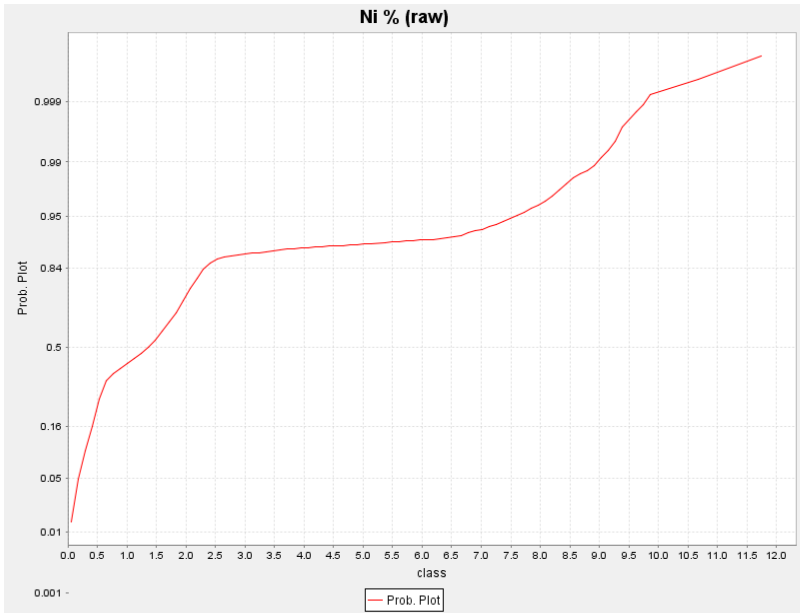
The mode of the sample lengths was found to be 1.5 m and this was adopted as the ideal sample length.

As is evident from Table 14.2, there is reasonable correlation between Ni, Cu and Pd. On the other hand, Au and Pt show poor correlations with other metals despite the zone of metal enrichment coinciding for all the metals.

Table 14.2
Primary Statistics of Raw Assay Data

Statistics					
Variable	**Ni (%)**	**Cu (%)**	**Pt (ppm)**	**Pd (ppm)**	**Au (ppm)**
Number of samples	10,405	10,405	10,405	10,405	10,405
Minimum value	0	0	0	0	0
Maximum value	11.8	27.7	1170	85.2	106
Mean	0.99	0.57	0.78	1.92	0.16
Median	0.27	0.11	0.11	0.55	0.03
Variance	2.70	1.88	150.58	11.30	3.07
Standard Deviation	1.64	1.37	12.27	3.36	1.75
Coefficient of variation	1.66	2.41	15.80	1.75	10.97
Correlation Coefficient					
Element	**Ni (%)**	**Cu (%)**	**Pt (ppm)**	**Pd (ppm)**	**Au (ppm)**
Ni (%)	1.00	0.48	0.06	0.80	0.05
Cu (%)	0.48	1.00	0.13	0.58	0.10
Pt (ppm)	0.06	0.13	1.00	0.10	0.02
Pd (ppm)	0.80	0.58	0.10	1.00	0.09
Au (ppm)	0.05	0.10	0.02	0.09	1.00

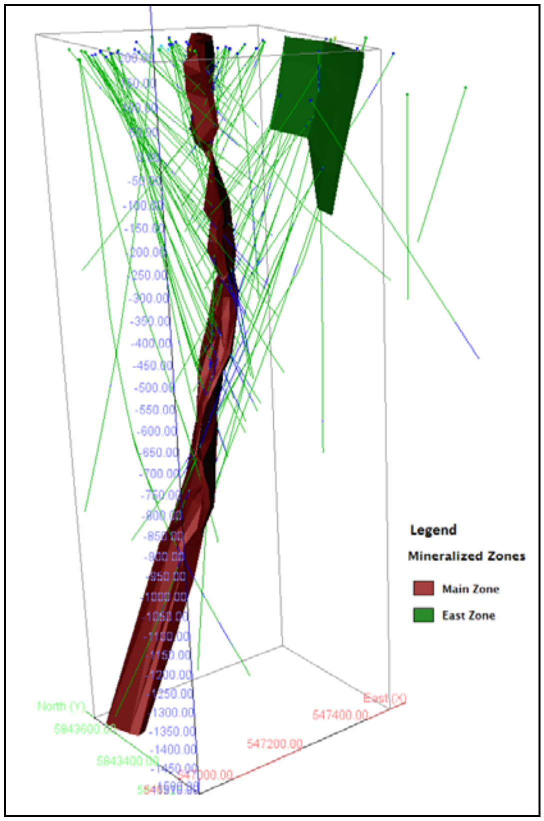
Figure 14.1
Cumulative Probability Plot for Nickel



14.2.1.10 Solid Creation/Modelling

Two separate solids/envelopes representing the Main and East Zones were created using a cut-off grade of 0.25% Ni (see Figure 14.2). The solids were created using the Surpac software version 6.1.4. Points defining the mineralized envelope were snapped to the end points of the appropriate drill hole intervals to ensure proper sample capture. Snapped points were validated through visual checks. Using an in-built module within the Surpac software, the volumes were verified to ensure that there were no intersections or invalid (open or shared) edges.

Figure 14.2
Eagle's Nest 3D Isometric View of the Main and East Zones Solids and Diamond Drill Coverage



14.2.1.11 Compositing and Statistics on Composites

Composites were developed (within the envelope defined on a 0.25% Ni cut-off grade) using a 1.5-m run length down-hole and rejecting any lengths at the bottom limit which were less than 0.75 m. Composites were generated without applying a top-cut and this is appropriate because the scale of mining selection will be significantly larger than that of uncomposited samples.

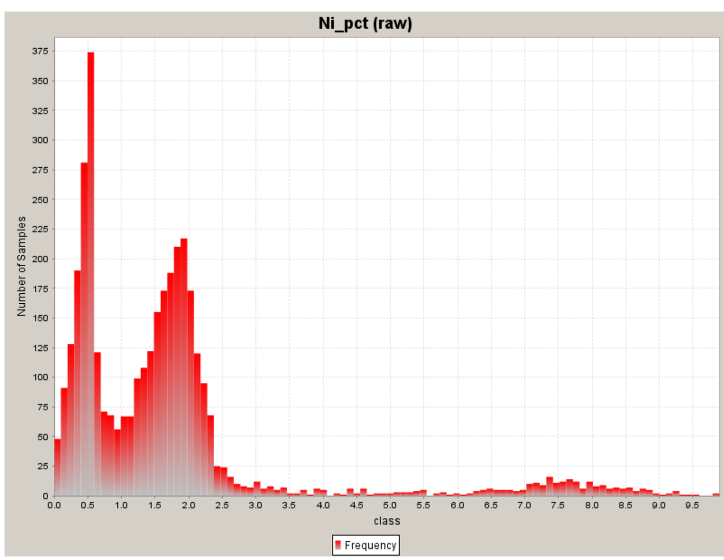
Statistical analysis of composite samples within the solids was performed to determine (a) population patterns and correlations, (b) top-cut value(s) and (c) global means. A summary of the statistical results is presented in Table 14.3. Analysis of the correlation matrix in the lower part of Table 14.3 shows an improved correlation between Ni, Cu and Pd than is reflected for the raw sample data in Table 14.2.

Table 14.3
Summary Statistics on Composite Samples

Statistics					
Variable	**Ni (%)**	**Cu (%)**	**Pt (ppm)**	**Pd (ppm)**	**Au (ppm)**
Number of samples	3,731	3,731	3,731	3,731	3,731
Minimum value	0.01	0	0	0	0
Maximum value	9.94	15.34	202.2	31.85	70.7
Mean	1.72	0.90	1.06	3.23	0.25
Median	1.48	0.54	0.56	2.74	0.08
Variance	3.06	1.17	18.62	8.27	2.85
Standard Deviation	1.75	1.08	4.31	2.88	1.69
Coefficient of variation	1.02	1.20	4.07	0.89	6.77
Correlation Coefficient					
Element	**Ni (%)**	**Cu (%)**	**Pt (ppm)**	**Pd (ppm)**	**Au (ppm)**
Au (ppm)	0.04	0.14	0.06	0.11	1.00
Cu (%)	0.53	1.00	0.14	0.64	0.14
Ni (%)	1.00	0.53	0.05	0.80	0.04
Pd (ppm)	0.80	0.64	0.16	1.00	0.11
Pt (ppm)	0.05	0.14	1.00	0.16	0.06

The histogram of the major component of the deposit, i.e. nickel, shows three major populations with diffuse boundaries (Figure 14.3).

Figure 14.3
Histogram Showing Distribution of Nickel Values in Composites



These populations correspond to disseminated sulphides with Ni values up to 1%, net-textured sulphides with Ni values up to about 4% and massive sulphides with Ni values between 4 and 10%.

Composites population histograms for Ni and Cu and log-histograms for Pt, Pd and Au were examined. The histograms for both Ni and Cu revealed no outlier values and hence, no grade capping was applied. Log-histograms for Pt, Pd and Au showed outlier values which necessitated capping at 20 g/t, 20 g/t and 5 g/t, respectively.

The global mean values of the elements of the deposit are as follow:

Ni	:	1.72%
Cu	:	0.90%
Pt	:	1.06 g/t
Pd	:	3.23 g/t
Au	:	0.25 g/t

The global mean values provide an indirect check on the block grades which should be within reasonable limits above or below the mean values.

14.2.1.12 Grade Variography

The East Zone of the deposit is covered by only 5 drill hole intersections and these data are not adequate for variographic analysis.

The Main Zone has adequate sample coverage and four variograms (one down-hole and three to cover the principal geometrical directions) were computed. The results are summarized in Table 14.4.

Table 14.4
Summary Results of Main Zone Variography

Element	Axis	Direction	Nugget	Structure 1	Structure 1 Range	Structure 2	Structure 2 Range
	Major (z)	Down-dip	0.45	1.87	93	0.83	280
Ni	Semi-major (y)	Along strike			78		
	Minor (x)	Across strike			26		
	Major (z)	Down-dip	0.56	0.59	104	-	-
Cu	Semi-major (y)	Along strike					
	Minor (z)	Across strike					
	Major (z)	Down-dip	3.45	3.16	80	-	-
Pd	Semi-major (y)	Along strike			80		
	Minor (x)	Across strike			33		

Note: Ranges for the semi-major and minor directions are determined from ratios given on the major variogram for each element. Those for Cu are poorly defined and have been omitted in the table.

Variograms for Ni, Cu and Pd are similar and this is to be expected because their coefficients of correlation are good. Variograms for Pt and Au show an apparent 100% nugget effect which implies that values for these two elements occur randomly within the mineralized envelope. Considering that the spatial analysis was carried out on mixed mineralization comprising disseminated, net-textured and massive zones, the results must be taken as indicatory only. A prerogative for accuracy in spatial analysis is that variography be conducted on data comprising a single population and, as noted above, it is not possible to differentiate the mineralization domains. Nonetheless, the range of influence for Ni, Cu and Pd as reflected in the variography, provides guidelines to the search ellipse radii for grade interpolations.

14.2.1.13 Choice of Interpolation Technique

Statistical analysis of composite samples has revealed multiple populations with diffuse boundaries as expected in a mixture of massive, net-textured and disseminated sulphides. Thus, the ID^2 method, which gives both a fair amount of weighting and smoothing, or which maintains a balance between weighting and smoothing was chosen as the most appropriate to estimate the multi-metal resource. It is also felt that the ID^2 method is the most reasonable approach where base and precious metals occur together.

14.2.1.14 Block Model Definition/Description

The block model of the deposit covers a 3-D block in UTM coordinates from 546,500 to 547,800 East, 5,842,900 to 5,844,000 North, and -1,600 m to 170 m Elevation. The lower limit was defined on the influence of the deepest drill hole supported by down-hole geophysical evidence. The upper limit representing the topography and top of bedrock was generated from the drill hole collars and logs.

Based on the geometry of the deposit and drill hole spacing, a parent block size of y = 5 m, x = 5 m and z = 10 m was selected to fill the mineralization envelope. Partial percents were used at the solid/mineralization envelope boundary to get an accurate volume representation. A volume check of the block model versus the mineralization envelopes revealed a good representation of the volumes of the two solids.

14.2.1.15 Search Parameters

The search parameters are summarized in Table 14.5 (for Ni, Cu and Pd), Table 14.6 (for Pt) and Table 14.7 (for Au).

Table 14.5
Search Ellipsoid Parameters for Ni, Cu, and Pd

Variable	Pass 1	Pass 2	Pass 3	Pass 4
X	12	25	50	75
Y	40	80	160	160/300[1]
Z	50	100	200	400/500[1]
Minimum # Samples	6	4	2	2
Minimum # Drill Holes	3	2	1	1
Maximum Samples/Drill Hole	2	2	2	2

[1] The larger radius is for search direction 3.

Table 14.6
Search Ellipsoid Parameters for Au

Variable	Pass 1	Pass 2	Pass 3	Pass 4
X	3	5	10	20/60[1]
Y	5	10	20	300
Z	20	45	90	500
Minimum # Samples	6	4	2	2
Minimum # Drill Holes	3	2	1	1
Maximum Samples/Drill Hole	2	2	2	2

[1] The larger radius is for search direction 3.

Table 14.7
Search Ellipsoid Parameters for Pt

Variable	Pass 1	Pass 2	Pass 3	Pass 4
X	3	5	10	60
Y	25	50	100	300
Z	25	50	100	500
Minimum # Samples	6	4	2	2
Minimum # Drill Holes	3	2	1	1
Maximum Samples/Drill Hole	2	2	2	2

For Ni, Cu, and Pd, a reasonable correlation exists, the variograms are similar and this justifies grouping them together. The Pass 1 dimensions correspond to approximately half the average variogram range for Ni and Pd in the x and y directions and about half the average variogram range for all 3 elements (i.e. Ni, Cu and Pd) in the z direction while those for Pass 2 equate to the respective average full variogram ranges. Passes 3 and 4 are roughly double Passes 2 and 3, respectively. Pass 3 serves to fill gaps (“islands”) between Pass 2 zones while Pass 4 covers areas with limited drill hole information and therefore uncertain continuity.

Gold shows almost 100% nugget effect and, therefore, the search ellipse Passes 1, 2 and 3 have been tightly reduced to avoid grade smearing. Platinum also shows a high nugget effect but not to the same extent as gold; thus the pass ranges are slightly less tight than they are for gold.

For all passes, the maximum number of samples per drill hole is designed to 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 Passes 3 and 4, the minimum number of drill holes for interpolation allows the bigger ellipse to fill all the space in the solid/wireframe.

14.2.1.16 Orientation of Search Ellipse

The geometry of the Main Zone solid requires three search orientations for the top, middle and lower part (designated 1 to 3in Figure 14.4) while that of the East Zone requires 2 search orientations (designated as 4 and 5 in Figure 17.4). These are designated as Searches 1 to 3 for the Main Zone and Searches 4 to 5 for the East Zone in Table 17.8.

Figure 14.4
Eagle's Nest deposit Solids Showing Search Ellipse Orientations

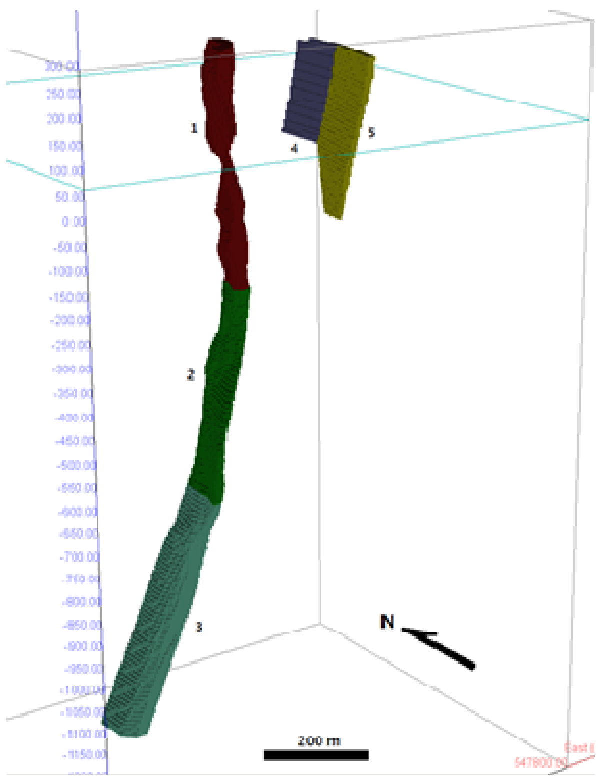


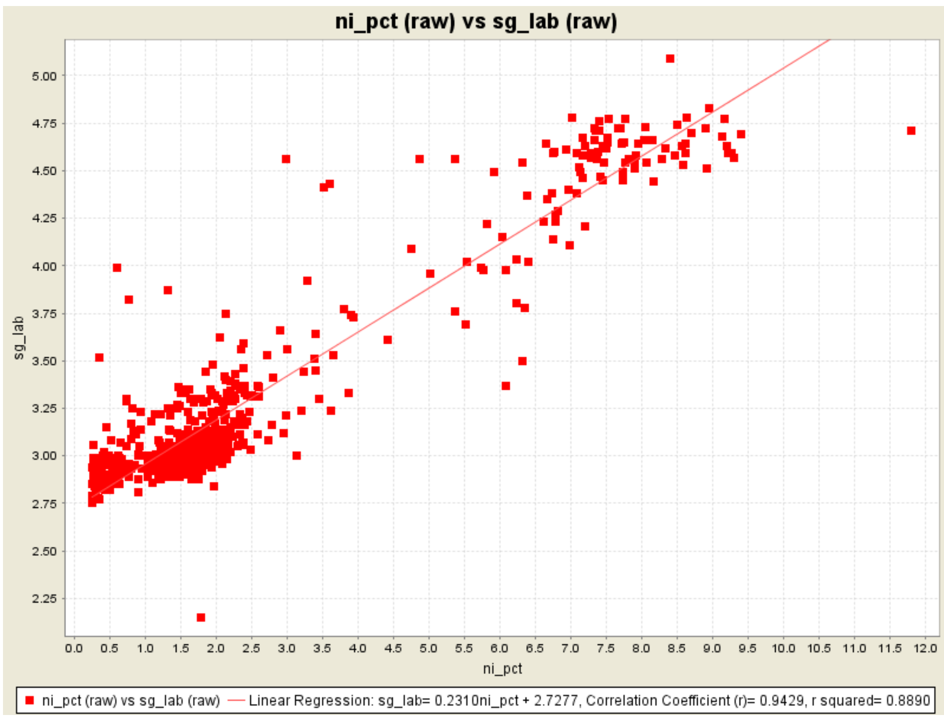
Table 14.8
Search Ellipse Directions

Variable	Search 1	Search 2	Search 3	Search 4	Search 5
Principal Azimuth	125	115	90	90	105
Principal dip	0	-12	-22	16	-15
Intermediate Azimuth	0	25	0	0	15
Elevation	150 to -400	-400 to -900	-1,500		

14.2.1.17 Tonnage Factor

The 263 SG determinations conducted by Act labs encompass all the sulphide mineralization types encountered at Eagle's Nest. A scatter plot of Ni grade versus SG was computed for samples with Ni assays > 0.25% and an excellent correlation (between Ni grade and SG) was obtained, as shown in Figure 14.5.

Figure 14.5
Scatter Plot of Nickel Grade Versus Specific Gravity

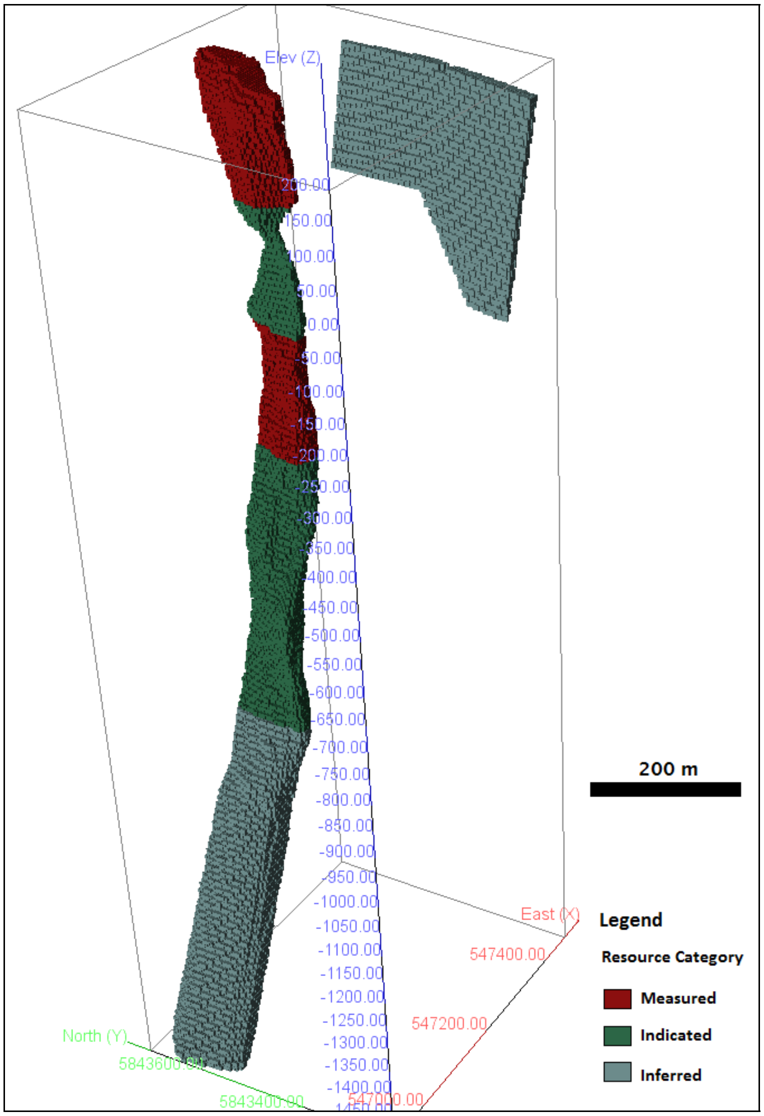


Using the regression formula of SG = 2.7277 + (0.2310*Ni %) obtained from the scatter plot, values for the missing SG intervals were calculated. Thus it was possible to use density weighting in all grade interpolations.

14.2.1.18 Resource Modelling/Estimation and Categorization

Block model grades for the density-weighted elements were estimated using the ID^2 function of the GEMS software. Categorization of the resource was as follows and is illustrated in Figure 14.6.

Figure 14.6
Resource Model Categorization



Measured Resource

The Measured resource category was assigned to the coherent portions of the deposit covered by Pass 1 of the search ellipsoid excluding islands or sporadic small volumes. Adequacy of sample coverage was confirmed visually.

Indicated Resource

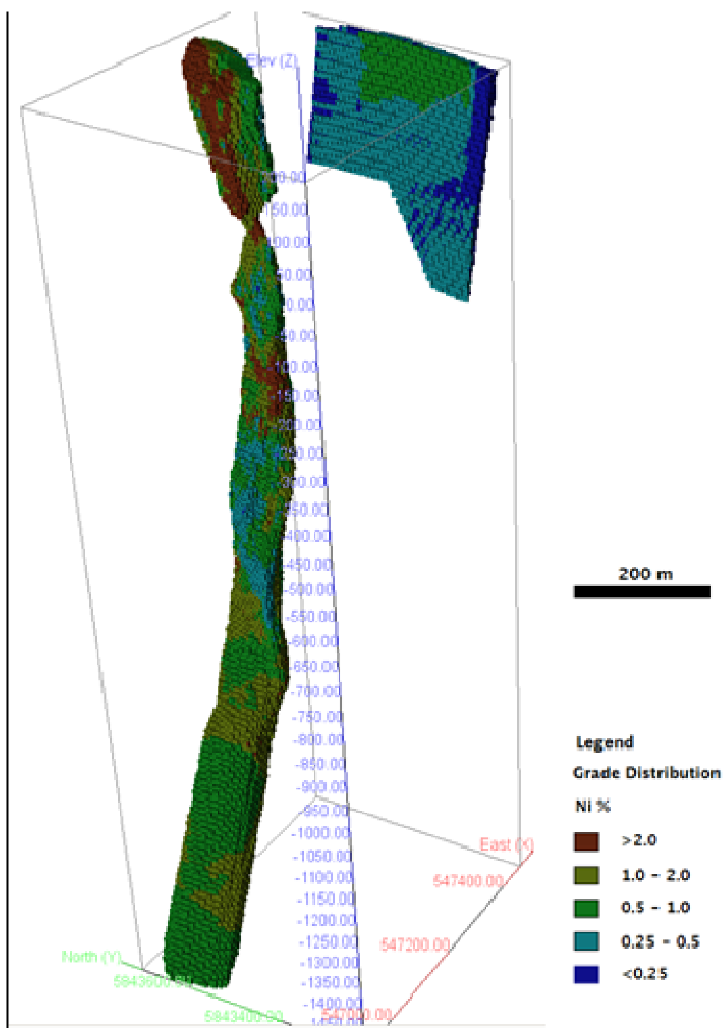
The Indicated resource category was assigned to coherent portions of the deposit covered by Pass 2 of the search ellipsoid, including islands of Pass 1 and Pass 1 areas below the -700 m elevation where survey is suspect. Pass 3 areas with good visual evidence of sample coverage were also considered.

Inferred Resource

The Inferred resource category was assigned to coherent Pass 4 areas including islands of Pass 3. These areas have very limited drill hole information and include the East Zone with five drill holes and the down-dip extension of the Main Zone covered by two holes supported by down-hole geophysics.

The resource block model is shown in Figure 14.7 and the estimated resources are presented in Table 14.9.

Figure 14.7
Resource Block Model Showing Distribution of Nickel Grades



The Eagle's Nest Main Zone resources are reported at 0.5% Ni cut-off grade within a geological limit defined by a nickel cut-off grade of 0.25%. The East Zone is reported within a geological limit defined by a 0.25% Ni cut-off grade, with no cut-off used to report the resource. Total tonnages are rounded to the nearest hundred thousand and individual categories are rounded to the nearest thousand tonnes.

Table 14.9
Eagle's Nest Deposit Resources

				Average Grade				
Zone	**Category**	**Cut-off Grade (Ni %)**	**Tonnes**	**Ni (%)**	**Cu (%)**	**Pt (g/t)**	**Pd (g/t)**	**Au (g/t)**
Main Zone	**Measured**	> 2.0	1,730,000	3.82	1.80	1.48	6.11	0.29
		1.50	3,035,000	2.93	1.45	1.29	4.82	0.24
		1.00	4,132,000	2.48	1.27	1.18	4.18	0.22
		0.50	5,346,000	2.08	1.07	1.03	3.55	0.20
Total Measured			**5,346,000**	**2.08**	**1.07**	**1.03**	**3.55**	**0.20**
Main Zone	**Indicated**	> 2.0	821,000	3.16	1.48	1.10	5.50	0.27
		1.50	2,231,000	2.24	1.18	1.11	4.50	0.24
		1.00	4,037,000	1.81	1.06	1.09	3.88	0.23
		0.50	5,643,000	1.50	0.91	0.95	3.29	0.20
Total Indicated			**5,643,000**	**1.50**	**0.91**	**0.95**	**3.29**	**0.20**
Total M+I Eagle's Nest Main Zone			**11,000,000**	**1.78**	**0.98**	**0.99**	**3.41**	**0.20**
				Average Grade				
Zone	**Category**	**Cut-off Grade (Ni %)**	**Tonnes**	**Ni (%)**	**Cu (%)**	**Pt (g/t)**	**Pd (g/t)**	**Au (g/t)**
Main Zone	**Inferred**	> 2.0	56,000	2.29	1.21	1.13	5.11	0.33
		1.50	1,240,000	1.69	1.17	1.26	4.16	0.30
		1.00	5,374,000	1.36	1.03	1.09	3.53	0.29
		0.50	8,966,000	1.12	0.97	1.04	3.12	0.28
Total Inferred			**8,966,000**	**1.12**	**0.97**	**1.04**	**3.12**	**0.28**
				Average Grade				
Zone	**Category**	**Cut-off Grade (Ni %)**	**Tonnes**	**Ni (%)**	**Cu (%)**	**Pt (g/t)**	**Pd (g/t)**	**Au (g/t)**
East Zone	**Inferred**	> 2.0	-	-	-	-	-	-
		1.50	-	-	-	-	-	-
		1.00	-	-	-	-	-	-
		0.50	110,000	0.58	0.22	0.18	0.78	0.04
		0.25	1,087,000	0.35	0.11	0.12	0.51	0.04
		< 0.25	1,615,000	0.31	0.09	0.12	0.45	0.04
Total Inferred			**1,615,000**	**0.31**	**0.09**	**0.12**	**0.45**	**0.04**

(1) 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, sociopolitical, marketing, or other relevant issues.
(2) The quantity and grade of reported inferred resources in this estimation are conceptual in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.

At present there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues which would adversely affect the mineral resources estimated above. However, mineral resources, which are not mineral reserves, do not have demonstrated economic viability. There is no assurance that Noront will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise, for the project. Other hindrances may include aboriginal challenges to title or interference with ability to work on the property, and lack of efficient infrastructure. There are currently no mineral reserves on the Eagle Nest property and there is no assurance that the project will be placed into production.

The Qualified Persons responsible for the preparation of this resource estimate are Charley Murahwi, M.Sc., P.Geo., MAusIMM, and Ing. Alan J. San Martin, MAusIMM. Both are independent of Noront as defined in NI 43-101.

The effective date of the estimate is 4 March, 2011 and is based on drilling and assay data up to 31 January, 2011.

14.2.1.19 Block Model Validation

The two methods used to validate the resource are visual inspection and swath plots.

Visual Inspection

The resource block model was validated by visual inspection in plan and section to ensure that block grade estimates reflect the grades seen in intersecting drill holes. Typical section drawings demonstrated that the block grades are complemented by the drill hole intersections.

Swath Plots

Swath plots comparing grade interpolations obtained from the nearest neighbour (NN) and ID^2 techniques are shown in Figure 14.8.

The swath plots, together with the composites, broadly reflect the accuracy of the estimate.

14.2.1.20 Resource Statement

A summary of the resources detailed in Table 14.9 is given in Table 14.10.

Figure 14.8
Swath Plots for the Eagle's Nest Deposit

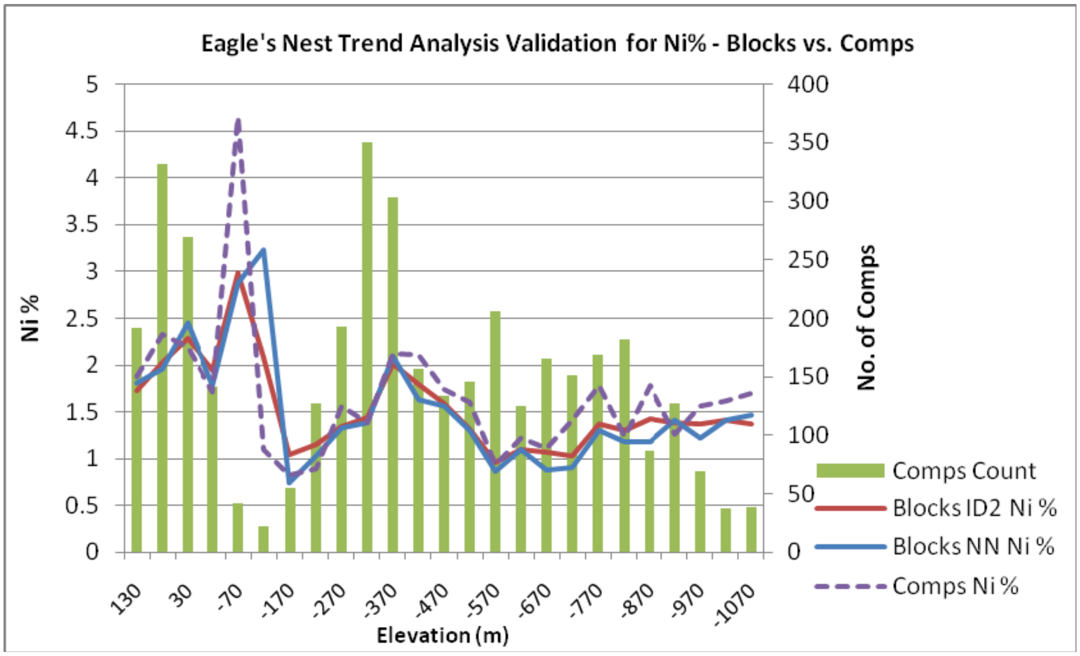


Table 14.10
Summary Table of the Eagle's Nest Mineral Resource Estimate

Zone	Tonnes	Ni (%)	Cu (%)	Pt (g/t)	Pd (g/t)	Au (g/t)
Main Zone						
Measured	5,346,000	2.08	1.07	1.04	3.55	0.20
Indicated	5,643,000	1.50	0.89	0.94	3.27	0.20
Total Measured plus Indicated	**11,000,000**	**1.78**	**0.98**	**0.99**	**3.41**	**0.20**
Inferred	8,966,000	1.10	1.14	1.16	3.49	0.3
East Zone						
Inferred	1,615,000	0.31	0.09	0.12	0.45	0.04

(1) 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, sociopolitical, marketing, or other relevant issues.

(2) The quantity and grade of reported inferred resources in this estimation are conceptual in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.

15.0 MINERAL RESERVE ESTIMATES

15.1 MINERAL RESERVES

The mineral reserve estimates were derived from the measured and indicated mineral resources as discussed in Section 3.4 of this report.

The key assumptions and parameters used to convert the mineral resources to mineral reserves are as follow:

- Cut-off grade: 0.5% Ni.
- Mining Dilution: 7%.
- Mining Recovery: 95%.
- Metallurgical recoveries to concentrate: Ni = 90.9%; Cu =93%; Pt = 80%; Pd = 80%; and Au = 80%.
- Cost per tonne milled: $75.31 (mining $31.71; processing $30.51; general and administration $13.09).
- Metal Prices: Ni = 9.08 /lb; Cu = 2.92 /lb; Pt = 1,427 /oz; Pd = $344.7 /oz and Au = $944.00 /oz.

It should be noted that the diluting material is not barren but contains nickel in the range 0.25-0.49%, plus much lower concentrations of the other metals, but no additional values were included from this dilution rock.

The reserves are summarized in Table 15.1.

Table 15.1
Table of Mineral Reserves

Category	Tonnes	Ni (%)	Cu (%)	Pt (g/t)	Pd (g/t)	Au (g/t)
Proven	5,264,000	2.02	1.04	1.01	3.45	0.19
Probable	5,867,000	1.38	0.72	0.78	2.76	0.18
Total Proven plus Probable	11,131,000	1.68	0.87	0.89	3.09	0.18

(1) At present Micon is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues which would adversely affect the mineral reserve estimated above. However, there is no assurance that Noront will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise, for the project. As regards the reserve parameters, higher mining dilutions, poor metallurgical recoveries and low metal prices could individually and/or collectively impact negatively on the reserve estimates.

16.0 MINING METHODS

The Feasibility Study considers extraction of the measured and indicated resources described in Section 15.0.

The deposit is a high grade nickel-copper-platinum-palladium mineralized pipe up to 60 m across and 200 m length on strike. The host rock is a strong to very strong granodiorite. The designs assume the underground location of many facilities, including mineral processing, utilizing the competent host rock around the deposit.

The mining of the Eagle's Nest deposit will be undertaken using bulk stoping techniques. The project will commence with the mining of aggregate from underground development. This aggregate will be used for surface infrastructure projects. The Eagle's Nest deposit will be mined using highly automated underground mining techniques and paste tailings will be used to fill mined voids. Aggregate stopes will be used for additional storage of tailings. The Eagle's Nest project will take approximately three years to construct, starting in 2013, producing enough aggregate for site development requirements and providing some of the material to develop the permanent road to site. Key mine planning parameters are presented in Table 16.1.

Table 16.1
Key Mine Plan Statistics

Parameter	Value
Mine Life	10.2 years starting in 2016
Mine Construction	3 years starting 2013
Daily Ore Production	3,000 t/d
Daily Rock Production	1,500 t/d
Mine Construction Cost	$148 million
Capital Equipment Cost	$50 million
Workforce	162
Mine Productivity	27 t/person-shift
Electrical Power Requirement	14 MW

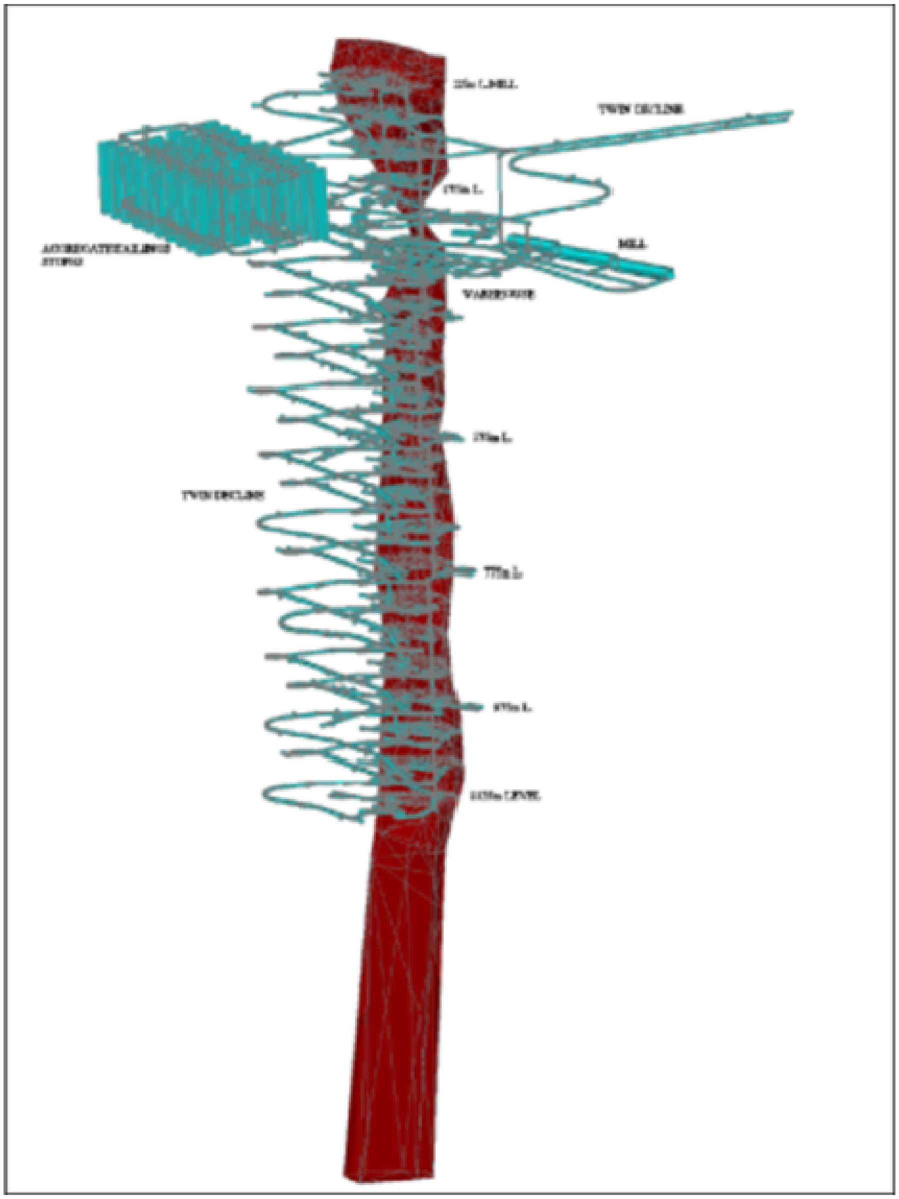
16.1 OVERVIEW

The Eagle's Nest deposit mineralized zone is overlain by 3 to 20 m of generally saturated organic matter, glacial till and sandy gravel. The deposit is a sub-vertical zone of massive magmatic sulphides in the form of a flattened pipe, 60 m across and 200 m long on strike. The surface elevation of the mine site is at 172 masl.

The deposit is well-suited to vertical bulk mining using blast hole stoping techniques. Initial underground access will be by twin ramps from surface to the processing plant level, followed by continuing twin ramps to the lower production levels. One of the lower twin haulage ramps will be equipped for electric trucks, to enable efficient haulage from the lower production levels. Conventional diesel truck haulage and ore passes will be utilized from the upper production levels to the crusher at the process plant. The process plant will be constructed underground 175 m below surface on 175 m L (mine levels measured from surface).

A schematic section of the underground infrastructure is shown in Figure 16.1.

Figure 16.1
Schematic Section of Underground Infrastructure



The life of mine plan is summarized in Table 16.2.

Table 16.2
Summary Life of Mine Plan

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Mine Tons, Grade, Operating and Capital Cost		01-Jan-12	1-Jan-13	1-Jan-14	1-Jan-15	1-Jan-16	1-Jan-17	1-Jan-18	1-Jan-19	1-Jan-20	1-Jan-21	1-Jan-22	1-Jan-23	1-Jan-24	1-Jan-25	1-Jan-26
Production Performance		Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14
Ore Tonnage by Year						**1,095,000**	**1,095,000**	**1,095,000**	**1,095,000**	**1,095,000**	**1,095,000**	**1,095,000**	**1,095,000**	**1,095,000**	**1,095,000**	**181,504**
Avg. Grade by Year (Ni)						2.33%	2.32%	2.03%	1.34%	1.72%	1.49%	1.25%	1.34%	1.53%	1.49%	1.49%
Avg. Grade by Year (Cu)						1.18%	1.21%	1.09%	0.89%	0.90%	0.68%	0.64%	0.70%	0.93%	0.57%	0.55%
Avg. Grade by Year (Pt) gram/tonne						0.94	1.03	1.03	0.71	0.90	1.04	0.84	0.86	0.90	0.65	0.63
Avg. Grade by Year (Pd) gram/tonne						3.90	3.97	3.64	2.45	2.77	2.73	2.83	3.22	3.38	2.15	2.09
Avg. Grade by Year (Au) gram/tonne						0.22	0.24	0.21	0.20	0.14	0.13	0.15	0.15	0.20	0.17	0.17
Avg. Grade by Year (Ag) gram/tonne						0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Operating costs - Ore																
Ore Production Total Mining OPEX	**$/T**					**$28.83**	**$29.26**	**$32.12**	**$32.69**	**$30.90**	**$31.78**	**$30.21**	**$34.53**	**$33.57**	**$29.60**	**$29.53**
Delineation cost	$/T					$0.45	$0.45	$0.45	$0.45	$0.45	$0.45	$0.45	$0.45	$0.45	$0.45	$0.00
Drifting cost	$/T					$3.22	$1.89	$2.73	$2.95	$2.41	$3.00	$1.59	$4.90	$3.76	$0.00	$0.00
Production cost	$/T					$12.73	$12.73	$12.73	$11.80	$11.80	$11.80	$11.80	$11.80	$11.80	$11.79	$12.81
Materials Handling	$/T					$0.25	$0.55	$1.23	$1.30	$1.39	$1.47	$1.56	$2.24	$2.33	$2.37	$3.03
Engineering and Technical cost	$/T					$6.58	$6.58	$6.58	$6.58	$6.58	$6.58	$6.58	$6.58	$6.58	$6.58	$6.20
Mine Heating	$/T					$0.48	$0.95	$1.52	$1.90	$1.90	$1.90	$1.90	$1.90	$1.90	$1.90	$1.89
Power costs @ $0.255/kW-hr	$/T					$3.47	$4.46	$5.22	$6.06	$6.37	$6.58	$6.34	$6.66	$6.75	$6.51	$5.61
Blasting Plant Rental	$/T					$1.65	$1.65	$1.65	$1.65	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Delineation Cost	$					$490,000	$490,000	$490,000	$490,000	$490,000	$490,000	$490,000	$490,000	$490,000	$490,000	$0
Mining Development Operating	$		$0	$0	$0	$3,529,008	$2,067,832	$2,993,007	$3,224,905	$2,644,226	$3,285,411	$1,741,720	$5,360,327	$4,117,042	$0	$0
Mine Production Costs	$		$0	$0	$0	$13,934,527	$13,934,527	$13,934,527	$12,924,043	$12,924,043	$12,924,043	$12,924,043	$12,924,043	$12,924,043	$12,908,359	$2,324,367
Materials Handling Costs	$		$0	$0	$0	$268,275	$598,276	$1,351,270	$1,423,864	$1,516,859	$1,609,853	$1,702,848	$2,455,843	$2,548,838	$2,600,236	$549,571
Engineering and Technical Cost	$		$0	$0	$0	$7,209,970	$7,209,970	$7,209,970	$7,209,970	$7,209,970	$7,209,970	$7,209,970	$7,209,970	$7,209,970	$7,209,970	$1,124,662
Mine Heating	$		$0	$0	$0	$530,837	$1,038,594	$1,661,750	$2,077,187	$2,077,187	$2,077,187	$2,077,187	$2,077,187	$2,077,187	$2,077,187	$343,352
Total Power costs @ $0.255/kW-hr	$		$0	$0	$0	$3,801,621	$4,889,039	$5,716,161	$6,636,910	$6,971,455	$7,199,895	$6,938,997	$7,289,771	$7,395,877	$7,129,529	$1,018,320
Blasting Plant Rental	$					$2,109,360	$1,809,360	$1,809,360	$1,809,360	$1,809,360	$0	$0	$0	$0	$0	$0
Ore production - Total OPEX	**$**		**$0**	**$0**	**$0**	**$31,873,598**	**$32,037,597**	**$35,166,045**	**$35,796,240**	**$35,643,100**	**$34,796,360**	**$33,084,765**	**$37,807,142**	**$36,762,957**	**$32,415,280**	**$5,360,272**
Operating Costs - Aggregate Rock																
			170016	813876												
Development Rock (tonnes)			170,016	643,860	577,164	306,600	306,600	280,560	332,640	306,600	306,600	306,600	153,300	153,300	0	
Aggregate Development Cost ($) @ $3500/metre			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Diesel ($)			$601,091	$1,820,626	$2,272,718											
Aggregate Stopes																
Aggregate Production (Tonnes)			0	0	181,500	547,500	547,500	501,000	594,000	547,500	547,500	180,000				
Aggregate and Rock Production (tonnes)			170,016	643,860	758,664	854,100	854,100	781,560	926,640	854,100	854,100	486,600	153,300	153,300	0	
Aggregate Stope Production Cost ($/tonne)				$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	
Aggregate Stope Production Cost ($)				$0	$1,654,772	$4,991,667	$4,991,667	$4,567,717	$5,415,616	$4,991,667	$4,991,667	$1,641,096	$0	$0	$0	
Aggregate & Development Production Cost ($)			$601,091	$1,820,626	$3,927,489	$4,991,667	$4,991,667	$4,567,717	$5,415,616	$4,991,667	$4,991,667	$1,641,096	$0	$0	$0	
Materials Handling Costs			0	$1,590,164	$0											
Engineering and Technical Costs			$1,285,600	$1,285,600	$1,285,600											
Mine heating Costs				$200,000	$500,000											
Power Costs @ 0.255/kw-hr			$59,240	$1,248,985	$1,694,405											
Total Cost of Aggregate Production ($)			$1,945,932	$6,145,375	$7,407,494											
Aggregate Rock Cost per Tonne																
Total Annual Operating Costs (Waste)			**$1,945,932**	**$6,145,375**	**$7,407,494**	**$4,991,667**	**$4,991,667**	**$4,567,717**	**$5,415,616**	**$4,991,667**	**$4,991,667**	**$1,641,096**	**$0**	**$0**	**$0**	**$0**
Aggregate/Waste Production ($/tonne)			**$11.45**	**$9.54**	**$9.76**	**$9.12**	**$9.12**	**$9.12**	**$9.12**	**$0**	**$0**	**$0**	**$0**	**$0**		
Mining Construction and Equipment Costs		1-Jan-12	1-Jan-13	1-Jan-14	1-Jan-15	1-Jan-16	1-Jan-17	1-Jan-18	1-Jan-19	1-Jan-20	1-Jan-21	1-Jan-22	1-Jan-23	1-Jan-24	1-Jan-25	1-Jan-26
Item	Detail	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14
Mine Capital Development Totals with Contractor			$17,949,000	$38,652,547	$60,958,290	$0										
Mine Capital Equipment			$12,715,965	$27,233,534	$10,021,124		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sustaining Equipment Capital						$14,120,150	$8,350,190	$6,419,315	$12,577,156	$16,003,611	$17,122,103	$12,890,526	$14,730,424	$8,364,330	$4,450,190	$0
Sustaining Mine Development Capital						$7,541,197	$5,312,424	$5,159,794	$5,157,194	$5,800,676	$5,106,194	$6,685,383	$1,240,558	$2,860,674	$333,000	
Backfill Plant to be included with the Mill					$6,906,439											

16.2 MINE DESIGN

16.2.1 Mine Design Basis

The following parameters were used as the design basis for the mining of the Eagle's Nest deposit:

- Design based on a measured plus indicated resource of 11.0 Mt in the Main Zone to a depth of 1,125 m below surface.

- Design production rate of 3,000 t/d ore with additional excavation rock production bringing the required output to 4,500 t/d.

- Footwall and hanging wall rocks and ore to be of generally competent description and strength.

- Surface overburden from 2 m to 20 m deep and 100% saturated.

- Mineralized sections in 100-m vertical blocks.

- Crown pillar at 25 m L to surface.

- Specific gravity of rock = 2.7, bulk in situ ore = 3.0 and tailings slurry = 1.57 at 50% density (solids by weight).

16.3 MINING METHOD

The mill has been designed to process massive ore and the net-textured ore separately (see Section 13.0 and Section 17.0). Accordingly, the mine plan allows for defining the massive ore and mining it separately from the net-textured ore.

Due to its geometry, moderate grade and strong host rock, the deposit is ideally suited for vertical bulk mining using blast hole stoping techniques. The Feasibility Study is based on blast hole stopes 20 m wide and 50 m high across the width of the orebody. Below 225 m L, 100-m stope heights are being considered as a cost improvement measure. The stope height is based on the current accuracy and capacity of longhole drill technology and a marginally high powder factor will be used to maximize blast fragmentation. The longer, 100-m holes would not be drilled until the fifth year of production, by which time significant experience will have been gained drilling 50-m holes and improvements in drill technology are also likely. The compactness of the Eagle's Nest deposit allows short underground travel distances and it is expected that, with good fragmentation, rock handling through main passes to feed the main crushing station will be extremely efficient.

The mining method will use the most advanced proven technology available. The main telecommunication/computer networking system will originate from the underground operations centre. This system will connect to field mining equipment used in delineation drilling, development, production, backfilling and infrastructure support systems, such as ventilation, dewatering, electrical and micro-seismic monitoring.

The development equipment fleet will consist of jumbo drills, machines for loading of emulsion explosives, manual connection of computer-based detonators and primers, load-haul-dump (LHD) machines, ground support equipment and trucks. Two fleets of equipment will be used in the mine to meet the production schedule. Ground support, with mechanical bolting and screening, cannot be automated easily but will incorporate "spray-on" ground support, as required by the anticipated geotechnical conditions.

Production mining equipment will consist of a fleet of longhole production drills, emulsion explosives loaders with manual charging of the loaded holes, LHD machines and haulage trucks. Two fleets of equipment, with computerized systems installed, will be needed to support the production goals.

The infrastructure systems, including electric haulage trucking, crushing, bin control and processing will use the same digital control system to operate the equipment in the field. Handheld devices will be supplied that allow some basic wireless control of the muck handling system.

Tele-remote controlled equipment will permit unmanned mining to take place in the lower levels of the mine, below overlying cemented backfilled stopes. Control of machines will be carried out from operator control stations or chairs, which provide the operator with all the information at the machine. All equipment connected to the control stations in the operations centre will have on-board computer systems retrofitted to the machines to support manual and tele-remote operation. Each piece of equipment will include positioning and navigation systems as part of the base package.

16.4 PRODUCTION RATE

The uniformity of the deposit and its suitability to a blast hole stoping method, along with combining mining processes that shorten normal stope cycle times, will allow the Eagle's Nest mine to be highly productive for its size. A production rate of 3,000 t/d has been selected based on the following:

- The compact dimensions of the deposit which allow for transverse stoping from a footwall access drift.
- The uniformity of the mineralization which facilitates a repetitious design and mining pattern from level to level.
- The vertical nature of the deposit allows materials handling to be carried out using standard and automated processes which have relatively low labour requirements.

- The competence of the host rock and mineralization allows conventional ground support methods and it is not expected that production will be interrupted because of ground control issues.

Comparisons of the Eagle's Nest deposit to active mines provide a measure of the capacity of the mine by examining the ratio of tons per vertical foot (TPVF) relative to their production rates. For Eagle's Nest, the ratio of 0.88 is comparable to operating mines in deposits which have similar geometry, mining methods and dimensions. While the Eagle's Nest operation will lie outside the generally accepted boundary of mine daily production, the production target is justified given the selection of highly efficient mining processes in a new mining operation. With the use of longhole drilling, mass blasting techniques, high speed-short distance LHD tramming, with minimal remote mucking and paste fill, stope cycles are expected to be as much as 35% to 45% shorter than stope cycles at other operations. This will reduce the number of active workplaces and lessen the need to operate on multiple levels, and allow higher production rates per TPVF, than typically have been historically achieved. The production rate will be further enhanced through the application of advanced technology to all unit operations, for example the speed and accuracy of longhole drilling is expected to improve over time. Conservative equipment utilization rates of 20 h/d have been assumed.

16.5 GEOTECHNICAL CONSIDERATIONS

Golder was engaged by Noront to assist in the geotechnical design of the Eagle's Nest deposit (see Golder, 2011).

The scope of this work included:

- Assessment of the site investigation data.
- Estimation of the in situ stress conditions.
- Preliminary geotechnical input to mine design:
- Stope dimensions.
- Sub-level intervals.
- Mine excavation stability.
- Crown pillar thickness.
- Ground support requirements.

The main investigation conducted by Golder consisted of geotechnical and hydrogeological field investigations using four drill holes to examine rock mass fabric and structural features in and around the mineralized zones at different depths and trends. Three of these holes were drilled to vertical depths of 187 m, 496 m and 759 m respectively, add varying orientations for the hanging wall, footwall and mineralized rock. The fourth was drilled to a final vertical depth of 258 m and targeted the crown pillar rock for geotechnical design and metallurgical testing. The field investigation included drilling of oriented core, geotechnical core logging simple hydro-geological tests and core sample collection for laboratory strength testing.

Golder states in its report:

> "Overall, the majority of the host rock mass units (Granodiorite, Peridotite and Pyroxenite) surrounding the mineralized zone are described as strong to very strong, blocky and fair to good quality rock mass. The intrusive and alteration units (Mafic, Ultramafic Dykes and Talc-altered Peridotite) vary from weak to strong rock, blocky to very blocky and fair to good quality rock mass. The mineralized units (Net-textured Peridotite, Massive Sulphide and Mineralized Peridotite) are generally described as strong to very strong, blocky and good quality rock mass. These units are often associated with serpentine, sulphide or haematite coatings along discontinuities, as well as slickensided joint surfaces."

Following the Pre-feasibility Study work, an assessment of mining geotechnical issues resulted in more conservative parameters relating to stope height, removal of the crown pillar and inclusion of sill pillars, summarized as follows:

- Stope heights were reduced to 50 m from 100 m (although heights of 100 m may be considered below 225 m L).
- The crown pillar will be geotechnically drilled in Year 2 of production to confirm the most suitable method for removal. At present, it is considered that the post pillar cut and fill method is the safest and most widely used method.
- Sill pillars will be included on 175 m L, 575 m L, 775 m L, 975 m L and 1125 m L.

16.5.1 Rock Strength and Rock Mass Classification

The rock strength, rock mass classifications and rock mass quality distributions were assessed through the geotechanical drilling program for the Eagle's nest orebody (see Golder, 2011). The majority of the host rocks (granodiorite, peridotite, net-textured peridotite, massive sulphide) have excellent geotechnical properties for mining.

The Golder analysis was used to determine the position of the permanent mine workings, such as the main ramps to surface, processing plant, twin ramps to the bottom of the mine, level workings, upper passes and aggregate stopes.

16.5.2 Preliminary Hydrogeological Parameters

Preliminary hydrogeological rock mass characterization was performed using hydraulic conductivity testing. The measurements performed during these tests showed that the water table is at surface and that two of the boreholes showed artesian conditions. These are two important considerations that need to be dealt with for the underground mine design.

High permeability zones were noted until a depth of 200 m is reached. It has been concluded, therefore, collection of water on 200 m L, and above, will minimize inflow into the mine workings. Below 200 m L, the permeability of the rock is much lower and it is anticipated that water inflow will be relatively low.

16.5.3 Unsupported Spans

Based on the geotechnical information created, Golder assessed the ground support requirements for the Eagle's Nest orebody and surrounding infrastructure in competent host rock. On the basis of the Golder analysis, Noront determined that for longer term access and key infrastructure such as hoist rooms or underground milling operations, the emphasis is to provide a ground support system that will not require rehabilitation. Hence, the location of infrastructure away from zones where mining induced stress change occurs is a key element of the design.

For short term access excavations, the use of spot bolting with or without light gauge screen is also likely within the good quality granodiorite and peridotite. Within the weaker talcose peridotites additional pattern support will be likely with the addition of shotcrete and/or mesh.

16.5.4 Ground Stresses

Preliminary assessment of ground stresses was performed by Golder. This preliminary 3D numeric modeling yielded fairly general results. Ground stresses will build with increasing depth with low stresses at surface. Stress levels at surface, however, have the potential to allow joints to open as the excavation is developed.

A program for evaluation of ground stresses as the mine progresses will be implemented. The existing data in this part of Canada are very sparse since there is no mining history in the region. Mining designs may be modified once the evaluation of the ground stresses has been determined. The design of appropriate profiles for ramps and tunnels will mitigate most potential issued.

16.5.5 Stope Stability Parameters

Stability is determined based on the knowledge of the rock mass classification of the host rock, rock strength, in situ stress conditions and joint orientation data. This analysis was performed by Golder as input into stope design and the Golder geotechnical analysis was used to develop the mining method for the Eagle's Nest orebody.

The crown pillar will be located above 25 m L, The largest excavation in the ore zone at the 25 m L horizon will be the 5 m wide by 5 m high top sill drill drifts that cut transversely across the orebody. The pillars adjacent to the sill drifts are 10 m, providing a very stable pillar height to width ratio of 0.5. The stopes from 75 m L to 125 m L will be filled with high quality cemented backfill, including the top sills on 25 m L.

The grade of the ore is higher in the upper sections of the orebody. Accordingly, the current plan assumes that that the crown pillar will be mined early in the mine life, after production of the ore, between 25 m L and 75 m L is complete. The crown pillar, from surface to 25 m L, will be mined and filled with cemented backfill to create a man-made crown pillar.

16.5.6 Sill Pillars

As noted above, sill pillars are included on 175 m L, 525 m L, 775 m L, 975 m L and 1125 m L. In this design, primary and secondary stopes (with cemented fill in primary stopes and unconsolidated rock fill in secondary stopes) will be sequenced along the strike of the orebody. Stopes in the subsequent lower levels will be mined, using remotely-operated equipment, directly below the overlying backfilled stopes.

16.5.7 Stope Stability

The preferred stope sequencing is a primary-secondary sequencing for transverse stopes. It is anticipated at the shallow to mid-range depths of this mine that lateral stresses and pillar bursting will not be a problem. The stope sizes selected are generally standard within the hard rock mining industry in Ontario, where numerous sites use horizontal stope dimensions of 20 m and a vertical dimension of 50 m. These stopes provide sufficient stability to allow placement of backfill within reasonable operating timelines.

The technical performance of longhole drills will allow drilling accuracy of 1% in holes that will be near-vertical due to the geometry of the deposit and will reduce wall damage. Mass blasting practices at the Eagle's Nest site will provide a volume of broken material within the stopes to support the walls.

Once empty, backfill will be placed in the stopes during a continuous pour period to quickly fill the stopes and dramatically shorten the total stope cycle.

All of these factors will enhance stope stability and minimize risk of stope failure. The use of remote-controlled equipment will permit unmanned mining to take place below the overlying cemented backfilled stopes.

16.6 VENTILATION

To estimate the ventilation needs for the Eagle's Nest underground operations, the Regulations for Mines and Mining Plants in Ontario, and standard ventilation engineering practices, along with experience at other similar mines have been used.

The greatest ventilation requirement is during full-scale production of ore and rock aggregate, and milling operations. Regulations require 100 cfm per motor horsepower, a factor that has been increased by 25% to account for system losses. Also included is ventilation for the underground mill equal to the mill volume replaced on an hourly basis. Using a 100% utilization factor on the operating mine trucks and load-haul-dump fleet, and a 30% utilization factor on the remaining balance of the underground mine fleet, an estimated total underground ventilation is estimated at 450,000 cfm, with the mill area being ventilated at 60,000 cfm and the warehouse complex at 70,000 cfm. There may be opportunities to re-use some of the mill air with adequate dust control systems.

The ventilation system to deliver this air through the mine will include the following

- The twin ramp system will continue to be driven down to 1125 m L. Connections will be made between these ramps at the level access locations. An internal 4-m diameter supply air raise will also be raise-bored from 125 m L to 1125 m L. Both ramps will be used as return air routes from areas below 175 m L.

- A 56 MBtu/h indirect oil fired, or alternatively a 44 MBtu/h direct-fired propane mine air heating system and two 350-HP booster fans, will be located at the portal and will provide tempered air for the initial twin ramp development, mill and warehouse area, and for mining in all areas. The system will be equipped with variable frequency drives, which will allow a staged increase in the mine air volume requirements. As development and mining progress to depth, the 4-m diameter fresh air raise (FAR) will be equipped with two 250-HP booster fans on the 125 m L.

The portal fan installation can be used to ventilate the mine during the initial five years of development and mining with the 125 m L fans installed in Year 6 of the project.

16.7 BACKFILL

Paste backfill will be used in the Eagle's Nest mine. Along with the planned primary-secondary stoping sequence, the high quality of backfill will help to reduce backfilling costs while allowing achievement of the projected cycle times. Also important at this environmentally sensitive site is that the entire size distribution of the tailings mass will be used, in contrast to hydraulic fills that are cycloned to remove excessive amounts of fines and coarse tails that are detrimental to hydraulic fill performance.

The backfill plant will be installed at the processing plant level of the mine. This system will provide a cemented paste backfill to fill the stopes in the mine replacing the 3,000 t/d of ore mined.

Tailings produced from the mill will be mixed with cement to create a paste fill. Approximately 50-55% of the tailings resulting from total production of 11 Mt of ore will be needed for backfill of ore stopes. Hence some 5 Mt, or 2.5 Mm^3 will need to be disposed of in aggregate stopes.

Preliminary analysis of the tailing material generated from the mill is expected to allow the creation of a fill material with the properties shown in Table 16.3.

Table 16.3
Design Properties of the Backfill Slurry

Content of Binder (%)	Pulp Density (%)	Aggregate	Compressive Strength (MPa)			
			8 hours	3 days	7 days	28 days
3-5	72-76	1:4-1:6	0.19-0.25	0.70-1.30	1.2-2.2	2-4

The slurry characteristics shown above provided the basis for the design of the backfill plant.

The cemented paste backfill (CPB) plant will consist of a tailings thickener system, tailings filters, mixing plant with binder and paste pumping, and an underground distribution system. The thickener will be located adjacent to the final flotation tailings pump box so that the tailings in the thickener underflow are pumped to the backfill plant (175 m L to m 200 m L), located near the main ramp and nearer to the orebody to allow for maximum gravity distribution of CPB to the mining stopes.

Disposal of uncemented paste tailings (UPT) into the aggregate stopes will use large engineered concrete bulkheads at the base of the aggregate stopes in order to avoid the risk of liquefaction of uncemented paste. The overall layout of aggregate stopes and development includes large rock pillars on all sides in order to isolate each stope. Access to each aggregate stope is via top and bottom sills. Concrete bulkheads will be situated strategically such that one or more aggregate stopes can be filled using a single bulkhead.

Approximately 90% of all ore stopes will be filled by gravity, while stopes slightly below the paste backfill plant, and those above, will require paste pumps. All aggregate stopes will require pumping of backfill. CPB will typically be placed at 175 mm (7-in) slump, to lower consumption of binder, while UPT can be pumped at high slump (250 mm or 10-in) to minimize pump operating and maintenance costs.

Since shut-down of the paste plant will affect the entire milling and production systems, the availability of the system must be as high as, or higher, than the mill, typically 92%. Since 100% of tailings must flow through the paste backfill system, sufficient redundancy on all key mechanical equipment has been included on live agitated tailings storage tanks, all centrifugal pumps, tailings filters and paste pumps. The remaining equipment items will have a suitable parts supply kept on hand at the operation.

16.8 DEWATERING

An active surface hydrology and ground water investigation is currently underway and a strategy has been defined to deal with the potential sources of water for mine dewatering. Potential sources of water include:

- Drainage from the mine openings due to groundwater flowing from joints, cracks and fissures in the rock mass.
- Water seeping from mine paste backfill.
- Water brought into the mine to be used in the mining process.
- Water entrained in tailings stored the aggregate rock stopes.
- Water entering the mine via unplugged diamond drill holes.

On a relative basis, potential in-flows from the first three sources noted are small in comparison to the potential of the latter two. Little water has been observed in diamond drill holes and the rock/ore material appears to have low permeability. The design is based on a paste backfill with limited water content and potential subsequent seepage. Process water used for cooling drills, reducing dust, et cetera, will be limited. Noront has diligently logged and cased diamond drill holes and plans to grout them, so it is anticipated that minimal water ingress to the mine will occur through these holes.

Decant water from aggregate rock stopes used to store tailings, will require pumping at 200 US gpm, back to the mill for treatment and re-circulation. This will be addressed within a closed loop system within the mill with a low head pumping system. The water arising from unplugged drill holes will be removed by a network of sumps, boreholes and pumps to take the water to surface.

16.9 PRIMARY ACCESS

16.9.1 Surface Ramp Access

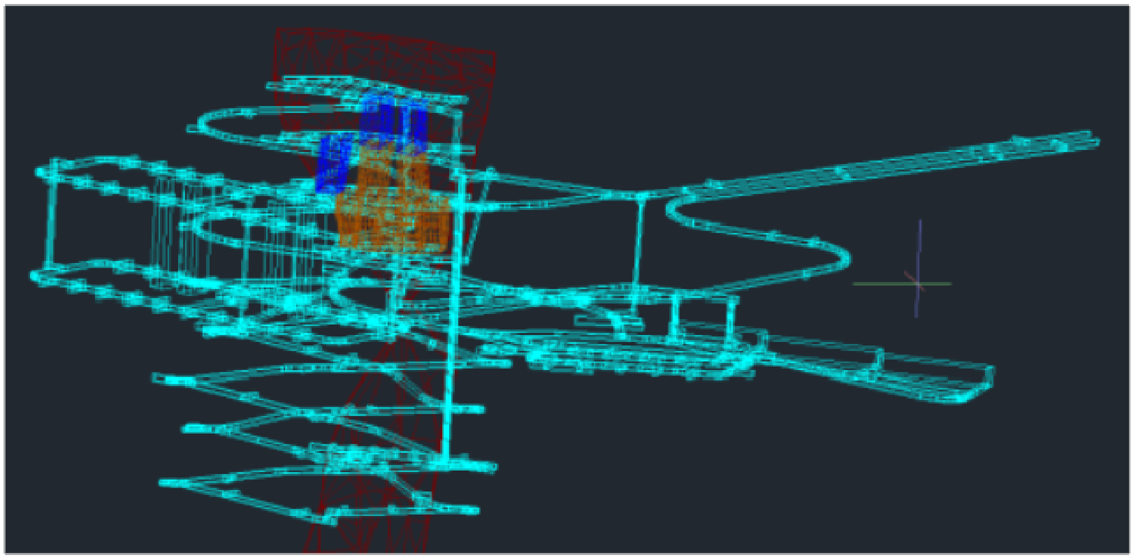
The twin portals and ramps must be developed first in order to access the crusher and grizzly on 175 m L, and the mill location on 200 m L. The portals will be excavated through overburden to bedrock, with the walls of the excavation sloped to a stable configuration. The portals have been located in what is believed to be an esker, based on the best available information, although there are some low rock outcrops in the vicinity. It is anticipated for the purposes of this study that construction of the portals will take six months and ramp development from surface to 175 m L will take approximately 13 months.

In order to accommodate the large mill and mining equipment, the main ramps are designed at 6 m wide and 6 m high, with an average grade of -15%. These dimensions also allow for ventilation flow within standard ventilation considerations.

The first phase of construction includes excavation of openings and installation of the crushing plant and the mill, and development of aggregate stopes and for initial production on 125 m L and 175 m L. This work will take three years to complete and is anticipated for the end of 2015.

Figure 16.2 shows the excavations prior to the start of first production. This view shows all of the workings, at the end of 2015, as level plans, and the orebody looking south. At this stage, installation of the mill will be complete, excavations will be on 125 m L and 175 m L and the first two aggregate stopes will have been excavated.

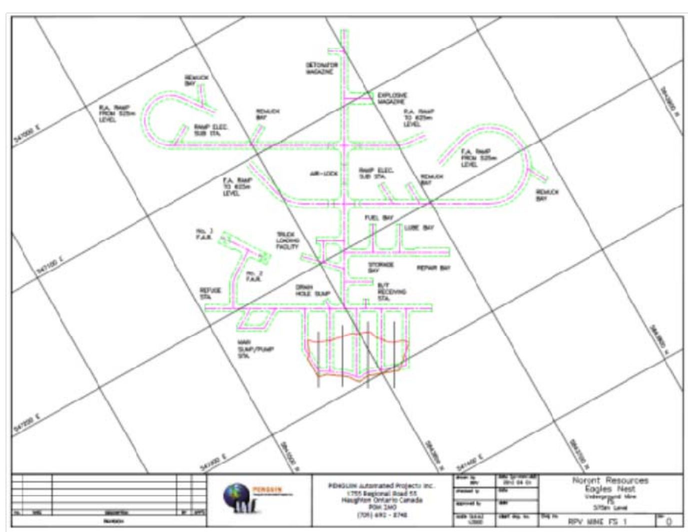
Figure 16.2
Mine Workings at Start of Production – Year 0
(Isometric View Looking South)



16.9.2 Upper Zone Development

With construction complete, the first ore to be mined and processed will occur between 125 m L and 175 m L. Development of the twin declines to the 575 m L sill will be initiated. Standard primary-secondary sequence will allow filling of stopes before mining starts in the adjacent stopes. The mining in this upper zone represents the first three years of mine production. During this phase, development continues to 575 m L for excavation as shown in Figure 16.3.

Figure 16.3
Excavation Layout on 575 m L



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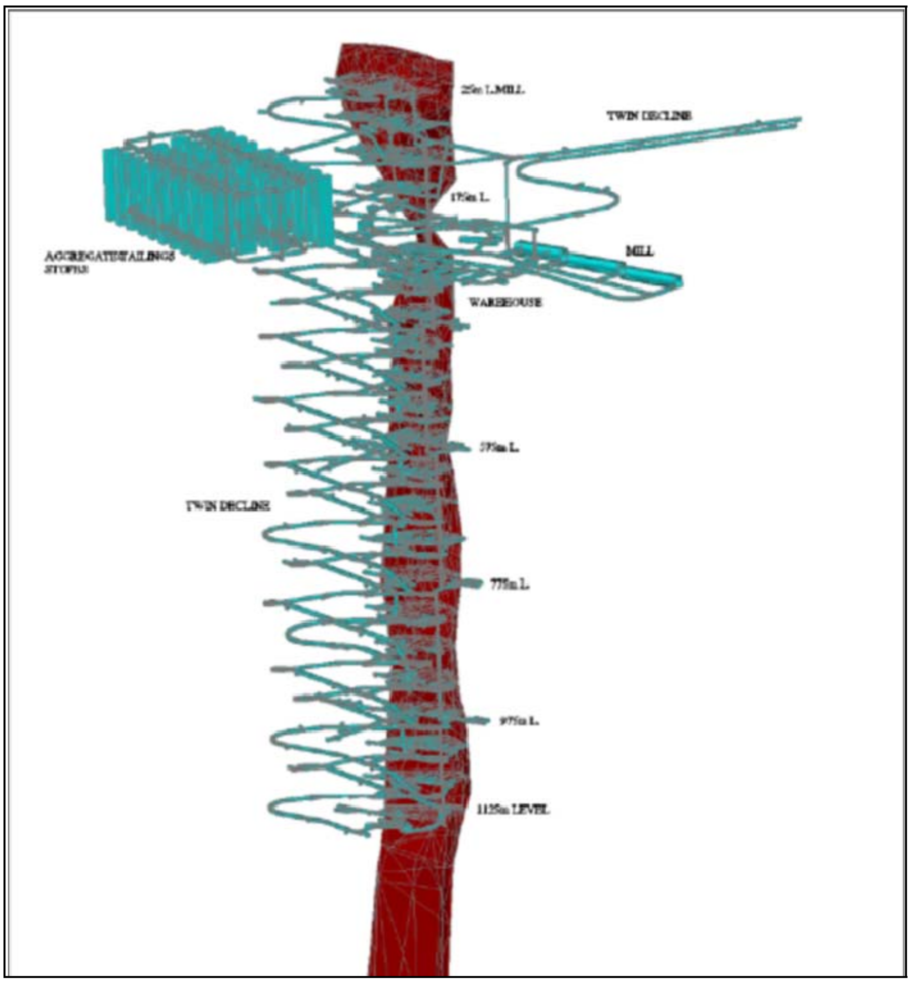
16.9.3 Lower Zone Development

The lower portion of the mine will be mined using 50-m intervals. Level plans from 575 m L to 1125 m L show the development required to be carried out. The development of these levels will occur between the beginning of 2017 and the end of 2024. The complete mine, including all development, is shown isometrically in Figure 16.4.

Figure 16.4
Mine Workings – Mine Completed Year 11
(Isometric View Looking South)



16.10 MILL AND PROCESSING PLANT EXCAVATIONS

The dimensions of excavations for the mill and processing facilities have been specified based on layouts completed by Outotec and include allowance installation and maintenance of the equipment in an underground location. The positioning of processes facilities made use of the 3D layout options available in an underground location, with parallel operations separated by rock using a 3:1 pillar:opening ratio. The largest openings are required for the thickener (18 m wide). Reagents will be located in a tunnel positioned above the main mill area to provide better delivery and proximity of these segregated operations. Warehouse space has been laid out to keep materials close to the respective process areas. Optimization will take place during detailed design.

Construction of the sub-surface mill construction will require scheduling of activities so that completed excavations can be made available to contractors for equipment installation.

16.11 ORE PRODUCTION MINING PROCESS

The Eagle Nest mine will utilize a mining method referred to as "slot/slash", or longhole mining. The method entails driving drifts transversely across the orebody. Initially, a slot will be created at the contact with the hanging wall using longhole drilling and blasting techniques. Once the slot has been formed, ore will be blasted to the slot and removed via remote mucking for truck haulage transport to the mill. The stope will then be filled, so adjacent stopes can be mined, while ensuring that in-situ rock stresses are relieved.

Construction of the stopes will occur from the main extraction drift connected to the ramp. The extraction drifts connect to upper and lower sill drifts. The sill drifts will be of sufficient size to accommodate the mining equipment. Once the slot is opened, the remainder of the drilling and blasting will be carried out with conventional in the hole (ITH) equipment and slurry explosives.

As the ore from the slot is being extracted from the bottom horizon, production drilling will be carried out downwards from the upper sill. This process will continue until the complete stope is mined to the geologic limits.

Ore will be drilled with longhole drills on an equivalent 2 m by 2 m pattern with 135-mm diameter holes. A sufficient powder factor will be selected to optimize fragmentation and to minimize downstream process costs. The stope layout and extraction methods will be used to segregate the higher grade massive sulphide mineralization from lower grade net-textured mineralization. Drill data can identify areas of lower strength massive ore. The higher density massive ore will be identified through LHD bucket weight for separate shipping to the mill.

The stopes will be 50 m in height in the upper part of the orebody.

In the lower portion, below 225 m L, the stope height has the potential to be 100 m although 50 m heights were used for costing. Blasting of the rock will utilize emulsion explosives technology with microprocessor-based detonators to ensure accurate timings and maximum break. Tele-robotic electric LHDs will be used to remove the broken ore.

16.12 MINING EQUIPMENT REQUIREMENTS

The equipment fleet has been designed to suit a bulk mining method operation. The twin ramp system, with one dedicated and equipped for electric truck haulage, has been demonstrated to be economically superior to a shaft hoisting system in this situation.

A fleet of 60 t Kiruna, overhead trolley line, electric haulage trucks has been specified. The size of the fleet will increase as the mine deepens until, ultimately, a total of six trucks will be required.

In addition to the standard fleet, equipment will be required to support tele-remote operation and mobile machine positioning. This equipment consists of tele-robotic control chairs, electronic packages for remote and tele-remote operation control and specialized positioning systems for the mobile equipment fleet. The majority of this equipment will be housed in an underground control room.

The annual mine equipment requirements are summarized in Table 16.4.

16.13 ROCK (AGGREGATES) STOPE MINING

Much of the tailings will be used to make backfill, which will be used to support the production stopes. A breakdown of the production of tailings, backfill and aggregate stoping is shown in Table 16.5. The long term aggregate rock stope production rate will average 750 t/d, with an allowance for bulking.

Excess tailings storage capacity will be needed for short periods of up to two weeks during regular mining cycles when stopes are not available for fill.

Using aggregate stopes of 25 m by 25 m by 100 m, each stope will have the capacity for just over four days of tailings production. For two weeks of tailings placement, at least three aggregate stopes must be available. Allowing for uncertainty in the actual production of tailings for storage, the percentage of backfill and operational issues, prudent aggregate rock production will require one and a half stopes per month, or 18 per year.

There is a large horizontal extent of granodiorite in which to locate the aggregate stopes. They will be situated in the host rock between 75 m L and 125 m L, away from the ramp and mill infrastructure, and mined out using the same production practices as the mineralized stopes, i.e., blast hole with longhole drills. Although they will be filled with tailings, the longer stand up time for the aggregate rock stopes, due to a slow filling rate, is a low risk because of the moderate stress regime at this horizon and the strength and competency of the host rock. Additional cavities within the 125 m L to 175 m L horizon will be excavated to provide rock handling infrastructure (coarse rock pass, crusher/screen plant, crushed rock product passes and bins).

Table 16.4
Annual Mine Equipment Requirements

Equipment Table			
[illegible]	[illegible]	[illegible]	[illegible]

Table 16.5
Aggregate Stoping Backfill and Tailings Disposal Schedule

	Units	Specific Gravity	Mine Life	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Mine Production Rate	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mine Production Volume	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mill Tailings	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mining Backfill	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tailings Disposal	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mill Tailing Volume	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mining Backfill Volume	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tailings Disposal	[illegible]		[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Granodiorite		[illegible]														
Backfill		[illegible]														
Aggregate Stope Tonnes Produced	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aggregate Stope Tonnes Stored	[illegible]															
Aggregate Stopes Required			29	0.0	0.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	0.3
Peak Requirement (Aggregate Stopes Ready to go)						6										
Water																
Aggregate Stope Width	[illegible]															
Aggregate Stope Length	[illegible]															
Aggregate Stope Depth	[illegible]															
Aggregate Stope m3	[illegible]															

16.14 ORE AND WASTE HANDLING

Waste rock from the initial development of the ramp, mill and other infrastructure will be trucked to surface to be used as aggregate or other fill material for surface infrastructure. Initial development ore will be mined when the mill is to be commissioned, and will provide the mill feed during the majority of the commissioning phase. Bulk stope material will be mined once the mill is commissioned and the start of this will mark the approximate end of the project capitalization period. Waste will be truck loaded and used as aggregate material or in stopes as rock fill.

16.15 UNDERGROUND INFRASTRUCTURE

Underground infrastructure will be developed by separate crews as the ramps advance. Infrastructure includes sumps, refuge stations, maintenance shops, explosives magazines, electrical rooms and other ancillary excavations.

16.16 MINING SCHEDULE

The schedule for ore mining is based on excavation of standard blast hole stopes in a primary-secondary sequence along the strike of the mineralized zone. Mining within the designated blocks will advance level to level using a bottom-up approach with a chevron sequence traversing from hanging wall to footwall and from east to west across each level.

The schedule for the mine infrastructure is based on feeding ore to the mill as soon as possible in order to generate early positive cash flow. For this, three key milestones must be met:

- Completion of top and bottom sill development for the first stopes on 125 m L and 175 m L.
- Completion of the mining of the required aggregate rock stopes to provide space for the mill tailings once processing starts.
- Completion of the mill commissioning with development product from 125 m L and 175 m L sills.

The timing to get the ramp from surface and under the crown pillar is important in order for initial development of raises and fan stations to take place and provide ventilation air for the removal of up to 2,000 t/d of rock from the excavations for the mill and other permanent infrastructure. While the mill excavation is being mined and the mill constructed, the ramps will be extended.

Ore production is planned for a mill feed of 3,000 t/d. Table 16.6 presents the annual ore production schedule.

Table 16.6
Annual Ore Production Schedule

Mining Levels	Year	Au (ppm)	Cu (%)	Ni (%)	Pd (ppm)	Pt (ppm)	Tonnes	Mining Levels
225-175 m L, 175-125 m L, 125-75 m L	1	0.22	1.18	2.33	3.90	0.94	1,095,000	Level 3-2-1
125-75 m L, 75 m L-Crown Pillar	2	0.24	1.21	2.32	3.97	1.03	1,095,000	Level 1-Crown
75 m L-Crown Pillar, 225-325 m L, 325-425 m Level	3	0.21	1.09	2.03	3.64	1.03	1,095,000	Crown-Level 4-5
325-425 m L, 425-525 m L	4	0.20	0.89	1.34	2.45	0.71	1,095,000	Level 5-6
425-525 m L, 525-625 m L	5	0.14	0.90	1.72	2.77	0.90	1,095,000	Level 6-7
525-625 m L, 625-725 m L	6	0.13	0.68	1.49	2.73	1.04	1,095,000	Level 7-8
625-725 m L, 725-825 m L	7	0.15	0.64	1.25	2.83	0.84	1,095,000	Level 8-9
725-825 m L,825-925 m L	8	0.15	0.70	1.34	3.22	0.86	1,095,000	Level 9-10
825-925 m L	9	0.20	0.93	1.53	3.38	0.90	1,095,000	Level 10
825-925 m L, 925-1025 m L	10	0.17	0.57	1.49	2.15	0.65	1,095,000	Level 10-11
925-1025 m L	11	0.17	0.55	1.49	2.09	0.63	181,504	Level 11

16.17 UTILITIES SERVICES FOR UNDERGROUND FACILITIES

The following utility services will be provided for underground mill and other underground facilities through surface infrastructure facilities:

- Fresh water.
- Fire water.
- Potable water.
- Underground mill power supply and distribution.
- Underground mining operations and infrastructure power supply and distribution.

16.17.1 Water Supply

Make-up water delivery to the underground services will be at a rate of 45.5 m^3/h. The fresh water for the underground fresh water tank will be delivered from the surface water infrastructure facility.

For the underground facilities fresh water, fire water and potable water piping will be routed through a common bore hole drilled in the portal area and extended down to the underground mine with three tie-ins for water distribution.

Fire water for the underground mill and other underground facilities will be supplied from surface infrastructure. A separate fire water system, complete with storage tank and fire water pumps, will be provided for underground facilities at a rate of approximately 100 m^3/h.

Potable water for the underground mill and other facilities will be supplied from the ground level potable water tank. The estimated flow of 0.5 m^3/h is considered reasonable for underground potable water requirements. This will be used for showers in the dry and safety showers. There will be underground potable water storage capacity.

16.17.2 Underground Mill Power Supply and Distribution

Electrical power at 13.8 kV will be delivered from a dedicated breaker via underground cables running in bore holes to switchgear in the primary crushing electrical room at 175 m L. Distribution will continue underground to switchgear located in electrical rooms near the crushing area, grinding operation, flotation and thickening, and the paste backfill area.

Unit substations will be located in strategic locations in the mill area to provide power to the nearby process machinery. Each electrical room, equipped with MV MCCs and 600-V MCCs, will have step-down transformers to provide 5-kV and 600-V power, as required.

Large 5-kV motors will be required to run the major underground equipment items. The ball mill motor will be a synchronous type motor and will require a 5-kV MCC starter. The synchronous motor also allows for power factor correction. The SAG mill motors are expected to be 5-kV and will be provided with electronic drives to allow for operator-regulated speed control.

Energy-efficient fluorescent lighting will be included where possible underground and occupancy sensors installed where applicable.

17.0 RECOVERY METHODS

The Eagle's Nest project is envisaged to be a 3,000 t/d (1,095,000 t/y) nickel-copper ore processing facility that includes crushing, grinding, flotation and dewatering to produce a saleable nickel-copper concentrate. Outotec completed the detailed process design and process equipment selection using as the basis the process design criteria developed by SNC Lavalin during the Pre-feasibility Study.

The process comprises conventional crushing, grinding, flotation and concentrate dewatering to produce a single concentrate containing typically 10.2% Ni, 5.7 % Cu, 19 g/t Pd, 5 g/t Pt, 1 g/t Au and 13 g/t Ag.

17.1 PROCESS DESIGN CRITERIA

The process design criteria that were used a basis of the process engineering and equipment selection was based on the metallurgical testwork that is discussed in Section 13.0.

Table 17.1 summarizes the process plant production schedule and the basic design criteria used for the Feasibility Study.

Table 17.1
Process Plant Annual Production Schedule and Design Basis

Criterion	Units	Annual	
		Process Design	LOM Average
Milling Schedule			
Operating time	d	365	365
Ore to mill	t/y	1,095,000	1,095,000
	t/d	3,000	3,000
	t/h massive	35	18.4
	t/h net-textured	132	113.2
	% Ni	2.28	1.67
	% Cu	1.15	0.85
	g/t Pd	-	3.01
	g/t Pt	-	0.87
	g/t Au	-	0.18
Concentrate production	t (dry)/y	216,810	150,018
Moisture content	%	0.00	0.00
Metal Recoveries			
Nickel recovery	%	80.00	83.1
	t/y	19,973	15,290
	Mlb/y	44.0	33.7
Copper recovery	%	87.0	89.7
	t/y	10,955	8,579
	Mlbs/y	24.1	18.9
Palladium recovery	%	-	82.3
	kg/y	-	2,785
	koz/y	-	89.5

Criterion	Units	Annual	
		Process Design	LOM Average
Platinum recovery	%	-	74.0
	kg/y	-	717
	koz/y	-	23.0
Gold recovery	%	-	76.7
	kg/y	-	151
	koz/y	-	4.8
Concentrate Grade			
Nickel	%	10.1	10.2
Copper	%	5.6	5.7
Palladium	g/t	-	18.6
Platinum	g/t	-	4.8
Gold	g/t	-	1.0

17.2 PROCESS DESCRIPTION

A simplified schematic diagram showing the main process flows is presented in Figure 17.1.

Process design is based on metallurgical test results and a 3,000 t/d nickel-copper ore processing plant. It is anticipated that this processing plant will be located underground. The base case assumes that the concentrate is pumped to surface following thickening underground. The concentrate is then filtered dried then loaded for bulk road transportation to Nakina, then railed to the market. The tailings are dewatered underground and either stored in underground storage areas that were excavated for aggregate or used as back-fill in the mine.

The process plant design assumes separate grinding circuits for the massive and net-textured sulphide mineralization.

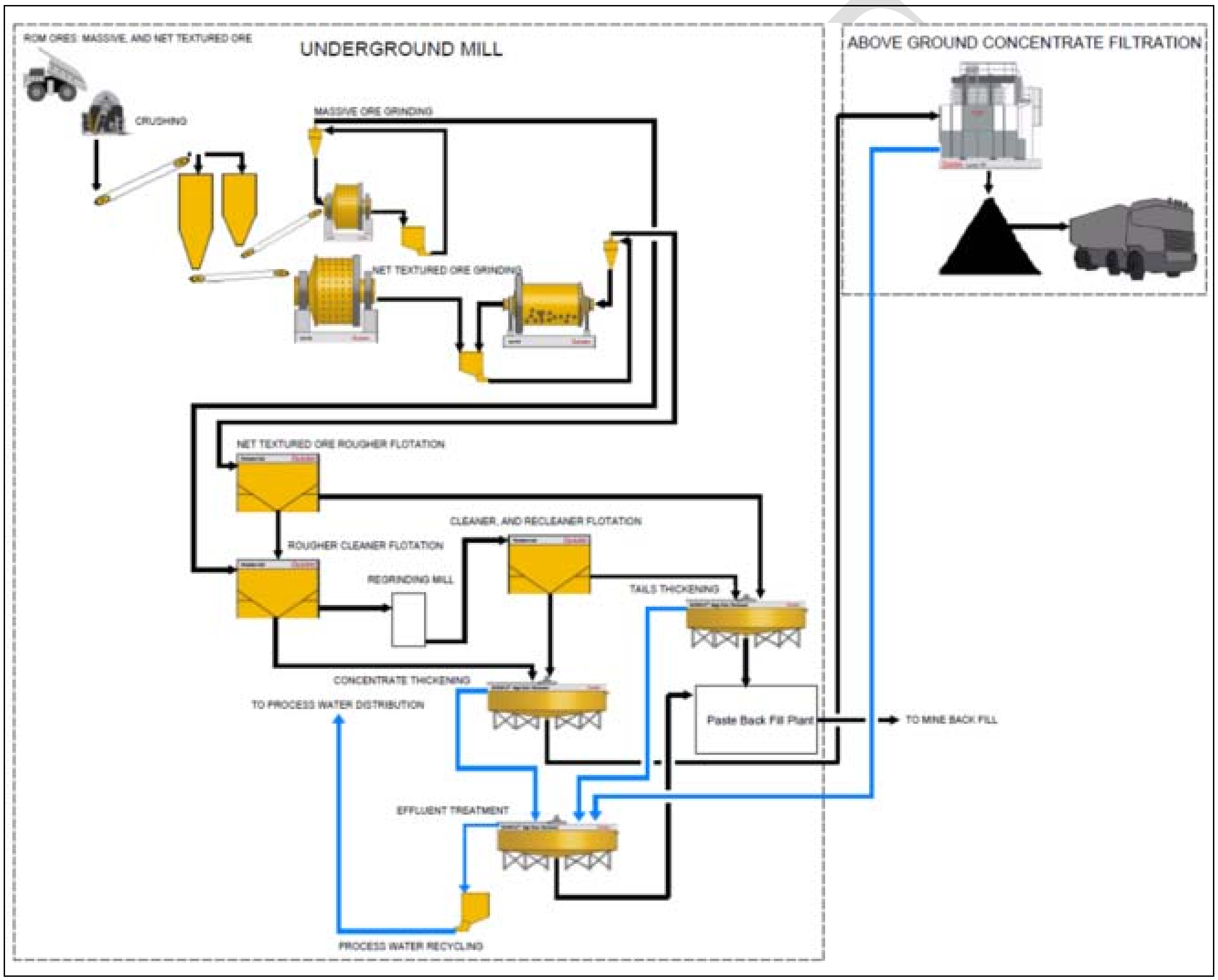
The process plant design concept adopted by Outotec was to minimize the width of the underground openings by using a linear equipment layout

17.2.1 Crushing

The run-of-mine ore (ROM) will be delivered to a 600 mm by 600 mm grizzley and crushed using a primary jaw crusher. Oversize will be broken using a hydraulic boom breaker. The crushed product will be conveyed to either the 3,000-t capacity net-textured crushed storage bin or the 3,000-t capacity massive ore storage bin. Net-textured and massive mineralization will be campaigned separately through the crushing facility.

The crushing and the crushed ore storage areas will have dust collection systems installed.

Figure 17.1
Simplified Process Flow Diagram



17.2.2 Grinding

Feeders below the net-textured and massive crushed ore bins will feed onto their respective net-textured and massive SAG mill feed belt conveyors, both equipped with a belt scale. The products from the net-textured SAG mill (5.0 m by 5.0 m EGL, with 1,600-kW motor) and the massive ore SAG mill (3.5 m by 3.5 m EGL, with 500-kW motor) the will be screened, and oversize material (pebbles) will be conveyed to a pebble crusher. The cone crusher will process pebbles from both the massive and net-textured grinding circuits and the product will discharge onto the net-textured SAG mill feed conveyor.

The fine discharge from the massive SAG mill will be pumped to a cyclone cluster, the cyclone overflow product, with a target particle size of P_{80} 100 µm, will be forwarded directly to the primary flotation cleaning circuit. Underflow will go to a ball mill for further grinding.

The fine product from the net-textured SAG mill will be combined with the secondary ball mill discharge and pumped to a nest of cyclones. The cyclone overflow with a target particle size of P_{80} 55 µm will feed the rougher flotation circuit and the underflow will feed the ball mill (5.0 m diameter by 8.2 m EGL with 3,550-kW motor).

On average, the process plant will mill 420 t/d of massive ore and 2,580 t/d of net-textured material; however, the net-textured milling circuit is designed for between 2,250 to 3,000 t/d.

17.2.3 Flotation

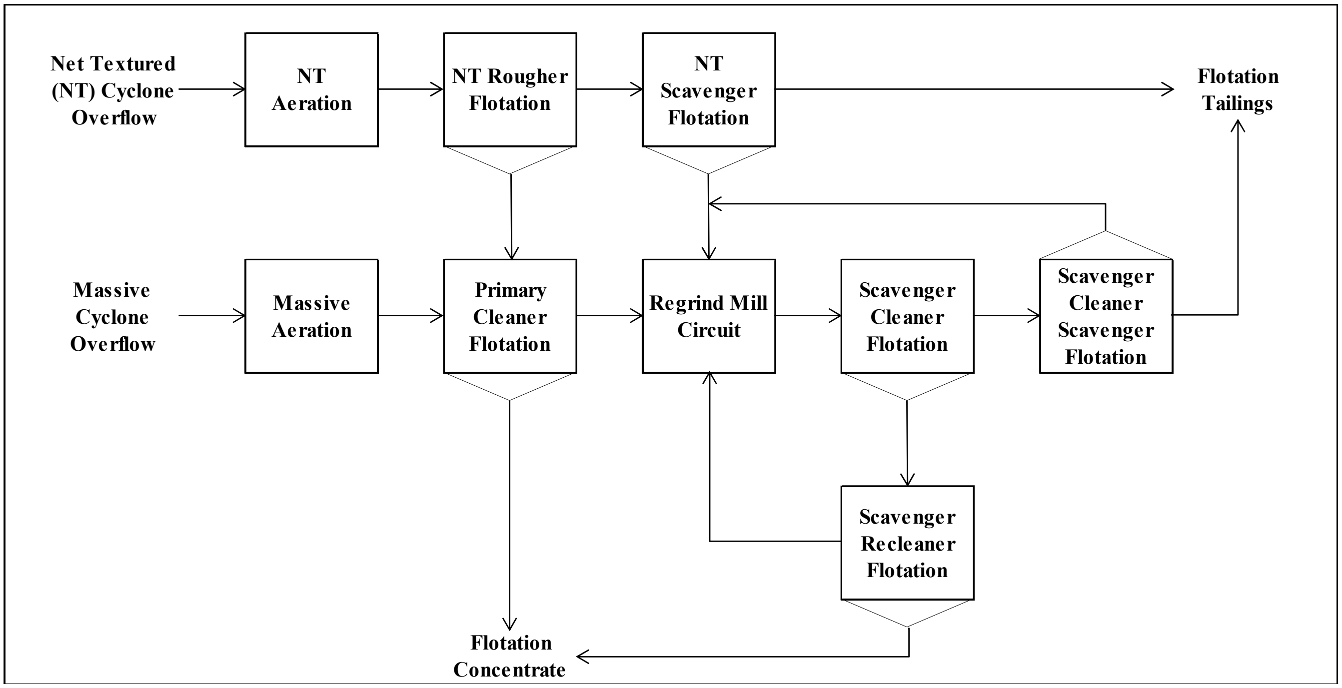
The Feasibility Study assumes that a single bulk copper-nickel-PGM concentrate product will be produced. The flotation circuit assumed for the Feasibility Study is illustrated in the block diagram depicted in Figure 17.2.

The net-textured flotation circuit comprises aeration rougher flotation, rougher cleaner flotation to reject pyrrhotite and non-sulphide gangue, scavenger flotation, re-grinding of scavenger concentrate, scavenger cleaning and scavenger cleaner scavenging flotation. The flotation cells selected by Outotec were based on kinetic studies.

The rougher concentrate will be directed to the first cleaning circuit, where it joins the aerated massive ore cyclone overflow stream. The scavenger concentrate will feed the regrind circuit and the scavenger tailings will be pumped to the tailings thickener.

Prior to the cleaning stage the massive ore cyclone overflow product will be aerated by two aeration tanks. The concentrate from the cleaner cells will be pumped to the concentrate thickener and the cleaner tailing will feed the regrind circuit.

Figure 17.2
Flotation Circuit Block Diagram



The feed of the regrinding circuit comprises the scavenger concentrate, first cleaner tail, scavenger cleaner scavenger concentrate and scavenger re-cleaner tailings. The purpose of the regrind mill circuit is to produce a product with a target P_{80} of 35 µm.

The overflow of the regrind circuit cyclones will feed the scavenger cleaner circuit, which comprises six (scavenger cleaner) and two (scavenger cleaner scavenger) flotation tank cells. The concentrate from these scavenger cleaner cells will feed a scavenger re-cleaner circuit containing three flotation tank cells. The concentrate from the scavenger re-cleaners will join the cleaner concentrate and be pumped to the concentrate thickener.

The cleaner concentrate and scavenger re-cleaner concentrate will be combined into a single product and partially dewatered underground using a 14-m diameter high rate thickener. The thickener underflow will be stored in two 600-m^3 agitated holding tanks which will ensure that there will be enough underground storage capacity prior to pumping thickened concentrate to the surface for filtering. Pumping to surface will be undertaken using positive displacement pumps.

The overflow from the concentrate thickener will feed the effluent treatment plant.

17.2.4 Concentrate Dewatering

The concentrate dewatering facilities located on surface were designed and costed by Tetra Tech.

17.2.4.1 Filtration

Concentrate will be transported as a thickened slurry from the underground mine to the surface process plant building via an 8-in (20.3-cm) diameter pipeline that will be routed to surface via a borehole.

The filter plant equipment for concentrate dewatering will be provided by Outotec.

17.2.4.2 Concentrate Drying and Cooling System

Due to the self-heating nature of nickel concentrate drying and cooling will be required to bring it to a stable state for storage and transportation. All equipment in this package has been designed for continuous operation.

Wet filter cake with a design moisture content of 8% will be transported from the filter press to the dryer by belt conveyor. A screw conveyor at the dryer inlet will maintain a consistent material feed rate into the dryer.

Hot flue gases recovered from the diesel generation power plant will facilitate the drying process. The drying process will be fully automated and will have the flexibility to mix ambient outdoor air with flue gas as the heat requirement varies with the feed rate and moisture in the feed. It should be noted, however, that the volume of ambient atmospheric air entering the dryer should be minimized to reduce the oxygen content of the process stream.

Dry concentrate will be discharged from the dryer at a temperature of 120°C with a design moisture content of 0.3%. The dry, fluidized material will enter a bag house, where diesel exhaust and water vapor from evaporation will be vented to the exterior atmosphere at a temperature of 120°C. Dry concentrate will be collected in the bag house hopper and fed into the cooler. The cooling operation will use process water to cool the dry concentrate from 120°C to approximately 30°C.

17.2.4.3 Concentrate Handling Storage and Load Out

The cooled, dry concentrate will be moved using a pneumatic conveying system

An air gravity conveyor will transport the cool, dry concentrate to an airlift to fill the three 800-t concentrate storage bins.

The truck load out system includes all equipment downstream from the storage bins and will be controlled by a separate local PLC.

17.2.5 Tailings Dewatering

Process tailings will be thickened in a 14-m diameter high rate thickener. The thickener underflow, with a slurry density of approximately 60% solids by weight, will be pumped to the filter feed holding tanks. A portion of the thickener overflow will feed the effluent treatment plant while the remainder will be recycled as process water.

The tailings thickener underflow and the underflow of the effluent treatment clarifier will be collected in the filter feed holding tank and fed to the vacuum disc filters (filter area 120 m^2). Filtrate will feed the tailings thickener and the filter cake, containing about 20% moisture by weight, will be fed to the back-fill plant.

17.2.6 Process Effluent Treatment

The current water balance does not have any water being returned to the environment, other than treated water from the sewage treatment facility. Make-up water is required due to the amount of water to be contained underground in backfill and tailings.

A portion of the concentrate and tailings thickener overflow streams will feed the effluent treatment plant before being recycled as process water. The treatment facility is designed to process up to 70 m^3/h of effluent to remove heavy metals and sulphates. Any effluent treatment plant sludge produced will be combined with the process tailings for disposal. The effluent treatment plant package consists of oxidation, precipitation, solid-liquid separation, reagent preparation and auxiliary systems.

17.2.7 Reagents and Process Consumables

Flotation and de-watering reagent consumptions are based on laboratory testwork. Reagents and usage rates for the water treatment facility have been estimated by Outotec using the best information and knowledge available. The reagents will be automatically fed to the process utilizing an intelligent dilution and dosage control system.

The following reagents will be used in the process:

- Flotation collector (sodium isopropyl xanthate): 55-77 t/y.
- Flotation frother (methyl isobutyl carbinol): 22-28 t/y.
- Flotation gangue depressant (carboxyl methyl cellulose): 66-1,101 t/y.
- Concentrate flocculant: 7-8 t/y.
- Tailings flocculant: 21-25 t/y.
- Process plant, quicklime: 315-385 t/y.
- Effluent treatment, quicklime: 317-631 t/y.
- Effluent treatment, ferric sulphate: 0 - 32 t/y.
- Effluent treatment, aluminium compound (alum?): 158-1,182 t/y.
- Effluent treatment, hydrochloric acid: 237-396 m^3/y.
- Effluent treatment, flocculant: 8-12 t/y.

- SAG mill – massive ore grinding media: 18-44 t/y.
- SAG mill – net textured ore grinding media: 378-453 t/y.
- Ball mill – net textured ore grinding media: 838-1,005 t/y.
- Regrind mill grinding media: 222-266 t/y.

17.2.8 Utilities

Process plant utilities include a cooling water system, fresh water system and a process water system. Compressed air systems to provide both plant quality air and instrument air will be installed at the mine site.

17.3 PROCESS PLANT BUILDING

The surface process facilities were designed and costed by Tetra Tech.

A process plant building for the surface process equipment measuring approximately 60 m long by 27 m wide will be installed on surface, adjacent to the power plant at the portal area. This building will house surface process equipment for concentrate dewatering, drying/cooling and storage, handling and load-out.

The process plant building will be a pre-engineered, steel type construction. This will allow for a high level of modularization and preassembly prior to delivery to site which will decrease construction requirements on site. The close proximity to the power plant is intended to minimize piping requirements for the heat recovery system between the power and process plants. Building heating will be provided by hydronic unit heaters which will be powered by the heat recovered from the diesel exhaust.

18.0 PROJECT INFRASTRUCURE

18.1 SURFACE INFRASTRUCTURE

18.1.1 Overview

The Eagle's Nest Project will require the following key surface infrastructure components and site services to support construction, commissioning and production for the planned operations:

- Site roads.
- Process plant buildings (mine site).
- Ancillary buildings (offices, truck shop, warehouse et cetera).
- Maintenance complex.
- Camp facilities.
- Explosives storage area.
- Airstrip building.
- Fuel storage and distribution.
- Power supply and distribution.
- Concentrate handling, storage and load out (Nakina).
- Waste management facility.
- Water supply and distribution.
- Surface water management.
- Sewage treatment and disposal.

The project site is divided into four main areas, the portal area, the camp area, the explosive storage area and the airstrip. The project site is located in a region consisting primarily of muskeg where the water table is close to surface. To the extent possible, the footprint of facilities has been minimized and structures have been located the sandy, more stable soils associated with groves of poplar trees. Site preparation for the facilities will require minimal cut of earthworks. Each structure will be founded on a single pad built on the surface of the muskeg.

The camp, explosive storage area and airstrip range from 1.5 km to 3 km from the portal area and all areas are connected by site roads with an internal network of roads at each location. Site roads will be 8 m in width, and will be constructed using brush mat and geotextile design.

Located adjacent the process building will be a power plant to service the electrical load requirements for processing equipment, the underground mill and other surface infrastructure features, such as the camp facilities and airstrip.

Other ancillary buildings and site services included within the portal area include a fuel storage and distribution area containing three diesel fuel storage tanks with a total capacity of

2,550 m^3, fuel pump house, a light truck shop, warehouse, incinerator-based waste management facility and modular offices.

A permanent camp facility will be located at the mine site to accommodate 300 people.

The Nakina loadout area is a standalone facility located about 300 km from the mine site, to unload dry concentrate from trucks into storage hoppers prior to loading onto railcars for shipment.

18.2 SURFACE HYDROLOGY

18.2.1 Design Rainfall

Rainfall data for the project has been developed from 18 years of data from the Lansdowne House weather station (Climate ID#6014350), operated and managed by Environment Canada (EC). The Lansdowne House station is positioned approximately 122 km southwest of the project location and represents the nearest available EC station.

18.2.2 Surface Water Management Plan

Surface water management will be required at all four site locations and will be based around current best management practices to:

- Control surface water in order to prevent pollution of clean or non-impacted water resources.
- Divert excess runoff that may interfere with site operations.
- Control erosion of the site to limit sediment runoff that may negatively impact receiving waters.

Localized undisturbed catchments upstream of the project sites will be conveyed in diversion ditches and returned back to natural drainage channels further downstream of the project areas. Diversion ditches are designed for the 1 in 100 year storm event, plus snowmelt, with a minimum freeboard of 0.3 m. Internal site drainage within the project site footprints will be achieved via finished surface grading and open channels/swales. Project areas will be graded to drain runoff towards storm water collection ditches; with the ditches conveying runoff to sediment ponds. Internal site drainage collection ditches are designed for the 1 in 25 year storm event, plus snowmelt. Sediment ponds for the respective areas have been designed to capture runoff from the 1 in 10 year, 24 h, rainfall event, plus snowmelt.

18.2.3 Fresh Water Supply

Requirements of fresh water for surface and underground facilities will be met by three wells complete with pumping systems and connected pipework. Fresh water will be taken from local wells and pumped to a central wet well at a rate of 75 m^3/h. from each well. Fresh water from this wet well will be pumped at 150 m^3/h to the fresh water storage tank in the portal area to meet water requirements.

In the explosive storage area, a water intake package and supply of fresh water from a new local well to a 10-m^3 water storage tank will be installed.

A water treatment system will be located at the portal area and will provide potable water for a total of approximately 300 people (during mine operation). Fresh water will enter the water treatment plant at a rate of 6 m^3/h and pass through two pre-treatment filters, two ultrafiltration membranes, two UV disinfection units and duplex effluent pumps to meet Ontario Drinking Water Quality Standards.

A fresh/fire water tank with capacity of 750 m^3 will provide fresh water for the underground process plant, dry concentrate plant, water treatment plant and fire pumps.

18.3 SITE INFRASTRUCTURE

Nuna provided preliminary design, construction planning/scheduling and capital budget estimates for the access road and facilities infrastructure components.

Pads will be constructed for infrastructure, site roads joining this infrastructure and an airstrip capable of accommodating Hercules type aircraft. The roads and pads will be constructed using aggregate sourced from underground mining operations and crushed aggregate for surfacing which will be produced adjacent to the portal.

18.3.1 Site Roads and Pads

Site roads will be constructed to join mine site facilities and will be 8 m in width. Roads will be constructed running west and then north to the camp complex and airstrip, and south to the explosives facility. Mine roads will be built with a 1.25-m base course, topped with a 200-mm surfacing course and three layers of biaxial geo-grid throughout the base course which is used to reinforce the road structure.

Mine site pads will be constructed with a similar cross-section, however only one layer of biaxial geo-grid will be placed beneath the base course. Total amount of geo-grid is estimated to be 266,000 m^3. Slopes will be constructed at 2H:1V. The total aggregate needed to complete base and surfacing course is estimated to be 30,000 m^3 which is considered to be free issue from mine.

18.4 CONTAINMENT AREAS

The containment areas include a permanent diesel storage facility and a waste rock settling pond. These structures will be built with a 1.25-m sub grade base, 150 mm of sand including one layer of geo-grid and one layer of liner, topped with 200 mm of surfacing crush. The

HDPE running up the slopes will extend to the top of the berms which will be constructed 2 m in height at a slope of 2H:1V. The amount of liner required to complete these facilities is estimated to be 3,800 m2. Sand is estimated at 800 m^3.

Temporary fuel storage Envirotanks will also be used during the construction period however secondary containment for these facilities is not anticipated to be required.

18.4.1 Camp Facilities, Site Services and Schedule

The overall housing requirements for construction are to be met for all contractors on site as follows. The first year of construction will have personnel housed at the existing camp at site. The second year will start with temporary installation of some of the modules for the permanent camp so that crews can be housed while the remainder of the camp is installed. Once the remainder of the permanent camp is operational, all construction personnel will be based at it. The existing camp will be maintained to handle any requirement for extra housing during the final year of construction.

18.4.2 Site Roads Route Selection

The terrain around the mine site area is generally flat. The main alignment and design issue is the suitability of the natural ground for construction. Alignments were chosen for constructability, durability and maintenance considerations. Roads built on unsuitable muskeg will require ongoing maintenance and will need to have additional material continuously added to them. Where required, the wetland road construction technique applies a modified road construction method whereby the felled trees are placed across the road path (corduroy) and geotextile is applied to a wider road width so the loads are spread across a greater width. Successive layers of coarse rock and geotextile, the finer rock and road bed are applied to prepare the structure. Culverts will be installed frequently along to road to ensure the road does not halt the flow of water through the wetland.

The region encompasses a large general area dominated by swamp and muskeg. Due to the lack of available geotechnical data, the basis of the geotechnical assumption for road alignment was governed by the presence of poplar trees as identified in aerial photos of the area. In locations where poplar trees are abundant, the ground is deemed more structurally sound and with a lower water table, based on the knowledge that the poplar roots best in soil that remains above the water table. Based on field investigations, aerial photos and topographic data, the road alignment is along ridges with the most developed and dense groupings of poplar trees.

As with the access road, site roads will follow higher ground to the greatest extent possible. An existing ridge of poplar trees runs parallel to the river from the airstrip to west of the portal. This higher ground will also be the location for the camp site.

The road from the portal to the explosives plant navigates swamp filled area which has a deficit of poplar trees. This alignment will require field adjustments based on the site conditions encountered during construction. The explosives plant is located 1.5 km from the site facilities as required by safety regulations.

18.5 SITE LAYOUT

One of the primary issues guiding site layout is the challenges of the muskeg soil in the area. The issue is addressed by minimizing the footprint of facilities area and locating the facilities and associated laydown areas on more sandy, stable soils associated with groves of poplar trees. The recommended locations of various project facilities have taken advantage of the local topography.

A plan of the McFaulds Lake Project site is shown in Figure 18.1.

Site buildings are located to both conserve space and utilize waste heat from the on-site power generation plant as a source of building heat. The site allows for one-way traffic around a loop to keep traffic conflicts to a minimum and organize the transportation of concentrate off-site. The orientation of the process building minimizes pipe lengths and keeps concentrate loading away from aggregate haul traffic.

There will be no significant cut of earthworks on the site. For this reason, the production area is a single laydown pad built up on the surface of the muskeg. Buildings will be supported by concrete foundations as required.

18.5.1 Ancillary Buildings

These include the following:

- Production Area: Modular, hydronically heated, 24 m by 64 m building including offices, conference room, lunch room and washrooms.

- Production area: Pre-engineered, hydronically heated, light truck shop, 58 m by 31 m by 6 m high, including tire/lube/oil bay, welding/hydraulic hose shop and electrical shop.

- Portal area: Pre-engineered, electrically heated trans dock warehouse (24 m by 24 m by 5.5 m high).

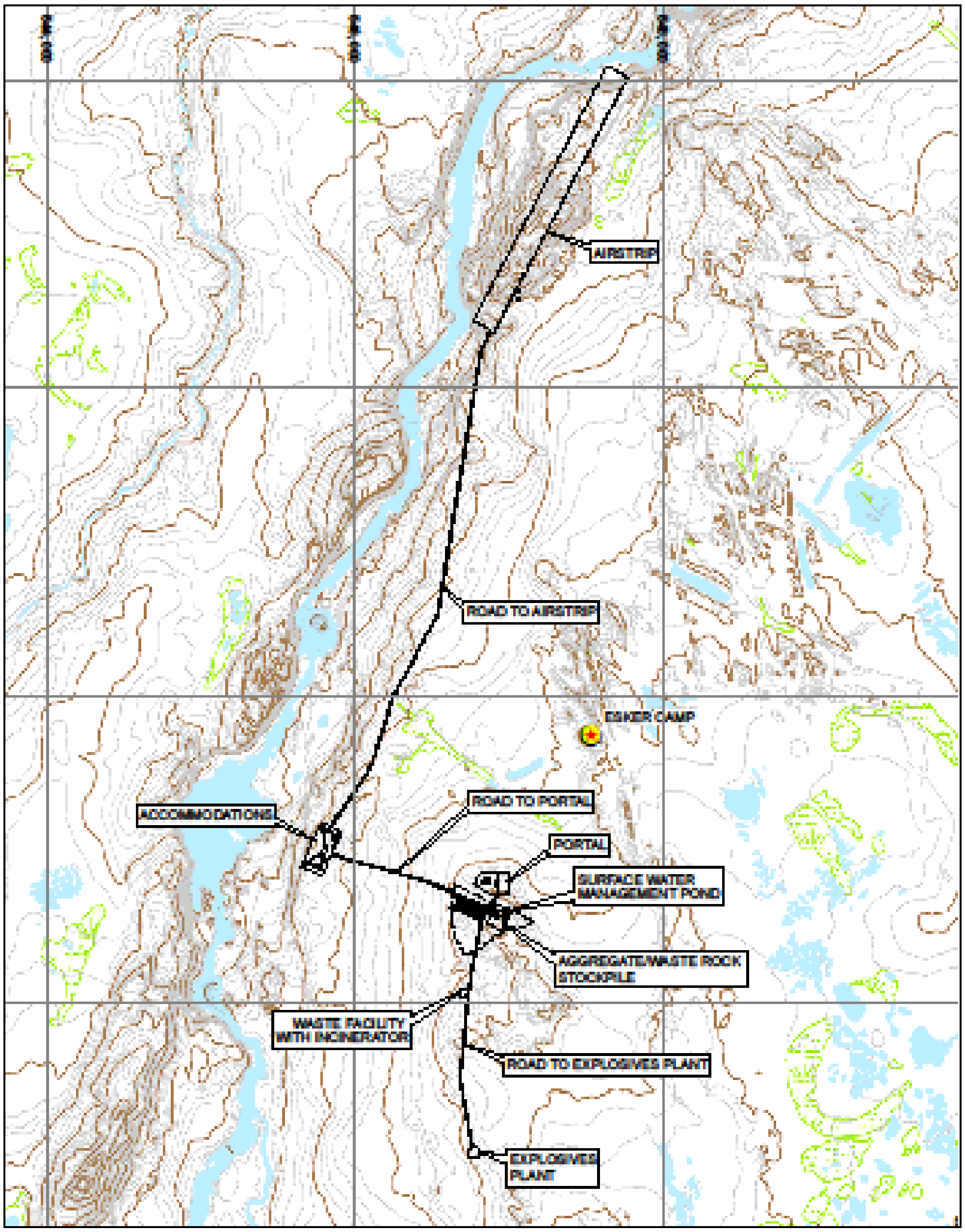
- Production area: Three electrically heated modular fuel pump houses (3 m by 3 m by 3 m).

- Airport building: Pre-engineered, electrically heated building (15 m by 8 m by 4 m high).

- Modular water pump and water treatment houses.

- Nakina office/service building - electrically-heated modular unit (12.095 m by 6.705 m) will include offices, lunch room, washrooms, and electrical/mechanical service rooms.

Figure 18.1
Layout of the McFaulds Lake Project Site



18.5.2 Camp Facilities

The camp is located over 1 km from the portal facilities to provide separation from the noise, dust and sight of the mining activities.

The camp facilities are designed to accommodate approximately 300 people simultaneously. The facilities will consist of modular factory-built units ready for installation on concrete foundations. The modules will be linked up on site to form a single unit. Where necessary, Arctic corridors will be provided to connect spaces with different occupancy classifications in order to enhance privacy and to facilitate efficient and comfortable circulation of people.

Camp facilities will include female and male staff bedrooms, executive accommodation, recreation area, kitchen/dining room, offices and reception room, heavy duty laundry room, staging area and shuttle bus bay.

Camp facilities will be provided with full sprinkler systems, including fire hose standpipes, portable fire extinguishers, smoke detectors, fire alarm systems and HVAC (as applicable).

18.5.3 Fuel Storage and Distribution

The fuel storage and distribution facility will be located in the production area. Diesel fuel will be unloaded from trucks at a rate of 10 m^3/h to three fuel storage tanks each with capacity of 850 m^3. Diesel fuel from storage tanks will be distributed to various consumption points, including the power plant, camp facilities, incinerator, surface vehicles and underground facilities. Each facility will have day tanks, as required.

Diesel fuel will be distributed by pumping at a rate of 5.8 m^3/h to meet power plant requirements. Fuel oil will be kept in circulation in the system to meet the climate conditions.

All diesel fuel pipe lines connecting fuel tanks and power generators on mine site will be installed aboveground with proper supports and insulation. Installation of diesel pipelines from surface to underground is not required. Diesel fuel will be supplied by trucks for underground truck fueling purposes and emergency use.

18.6 POWER SUPPLY AND DISTRIBUTION

A summary of the estimated power loads is presented in Table 18.1.

Table 18.1
Project Electrical Power Load Summary

Area	Peak load		Average Load	
	MW	MVA	MV	MVA
Process plant	14.74	17.33	11.08	13.06
Site surface infrastructure	1.95	2.30	1.96	2.30
Ramp and mine	5.35	6.29	4.55	5.35
Total	22.05	25.93	17.59	20.71

18.6.1 Site Diesel Power Plant

The Eagle's Nest location currently has no access to utility power. Power for the site will be provided by a dedicated diesel generator power plant designed for a continuous output of 21.3 MW. Eight diesel generator sets will be in continuous operation at the mine site. The power plant will be part of the surface facility at the mine portal location.

The power plant will house diesel generators in an N+2 configuration that will provide back-up capacity to allow for routine maintenance or a breakdown. During construction, temporary facilities, such as office trailers and power for construction activities will be powered by local generators, as required.

Energy recovered from the diesel exhaust will be used for both the concentrate drying process as well as for heating buildings located in the production area.

18.6.2 Site Power Distribution

Power will be generated at 13.8 kV and connected to a common set of switchgear for the site. Distribution breakers will be connected to the common bus. Each breaker will supply power to the various site locations. One feeder breaker will be used to feed a 13.8-kV overhead line that will supply power to the camp complex, airstrip building, incinerator and waste handling facility and the explosives storage area.

18.6.3 Power for Nakina Facility

Power for the Nakina facility will be provided by a dedicated diesel generator located at the site. There will be two units with a transfer switch provided to allow for preventative maintenance on the equipment. Power distribution equipment will be provided in an electrical room to supply the material handling equipment, office and services areas.

18.7 WASTE MANAGEMENT

During construction, domestic wastes, packaging and recyclable materials, and special and/or hazardous wastes will be sorted, compacted and shipped offsite to a licensed waste disposal facility.

On-site waste products include domestic waste such as food scraps, packaging, and refuse. Inert waste such as glass, scrap metal and clean plastics will also be produced. An incinerator will be the primary means of disposing of domestic waste during the construction, operation and closure phases of the project. Materials not suitable for incineration, such as recyclables including plastic, tin, and glass, will be sorted compacted and stored until they can be shipped out. Similarly, scrap metal will be stored on-site with the recyclables until it can be shipped off site or reused. Large wood packaging will be burned on site or transported off-site, as appropriate.

18.7.1 Hazardous Waste

Hazardous waste materials include used petroleum products and petroleum-contaminated containers, and used glycol and lubricating oils. Such wastes will be stored in sealed containers in lined and bermed areas, or in a secondary containment, and disposed of off-site in a licensed facility.

Fuel tanks will be returned to the vendor or cleaned, crushed and shipped off-site.

Contaminated soils will be treated on-site in a bioremediation unit.

Explosives wastes will be destroyed by the explosives contractor or by licensed personnel.

18.7.2 Septic Systems and Sewage Treatment

Three septic systems are required, at the portal area, Nakina and the airstrip. Septic systems receive all the sewage created from these areas, treats the sewage to a safe level, and releases the treated effluent back into the ground water. Each septic system includes a fibre glass underground septic tank, duplex effluent pump, filter and ancillary items.

The rotating biological contactor system located at the camp site will be fully covered and insulated, eliminating the necessity of a dedicated wastewater treatment building.

18.8 EXPLOSIVES STORAGE AND MANAGEMENT

An emulsion explosives plant will be constructed south of the portal according to the requirements of Natural Resources Canada Explosives Regulatory Division. Sensitizer for the emulsion, which renders it explosive, will only be mixed into the emulsion during loading operations at the blasting areas underground. Non-explosives raw materials will be transported to the site and stored at a suitable separation distance from this facility.

Magazines for detonators, boosters and some emulsion explosive cartridges (stick powder) will be constructed at suitable separation distances from other mine facilities and the explosives plant.

18.9 AIRSTRIP

An airstrip, 1,870 m long and 150 m wide, will be constructed for use by aircraft, including the Lockheed-Martin Hercules cargo transporter, under a separate First Nation business.

The gravel runway will be constructed using crushed and sized rock from underground mine development.

18.10 COMMUNICATIONS

Fibre-optic lines will be strung along the all-season road to site, providing high capacity data connection to global networks. Surface and underground operations will be linked with high-speed data connections, to provide voice, data and video communications in support of the overall tele-remote control of equipment and processes. All vehicles and underground personnel will have communications capabilities.

18.11 EMERGENCY RESPONSE FACILITY

The surface facilities will include mine rescue capabilities and equipment, as required by Provincial regulations.

18.12 OFFSITE INFRASTRUCTURE

18.12.1 Access Roads

On May 9, 2012, the Ontario Government announced support for a north-south all-season road to the Ring of Fire area. Subsequently, Noront adopted this as its base case for site access, and retained the original east-west corridor as an alternative for accessing the site. Due to this change, Noront had to identify a railcar loading facility near Nakina and study it for environmental and geotechnical information. Incoming supplies and outgoing concentrate will be transported by road between the mine site and Nakina along the north-south access road. Both routes have been applied as user fees on operating costs for the financial model, since the Province has stated this would be applicable based on proportional usage.

Noront still retains the east-west corridor as a viable alternative.

North-south Alternative

The north-south route is described in the Final Terms of Reference for the chromite project of Cliffs Natural Resources and the route identified by Cliffs is shown in Figure 18.2.

Figure 18.2
North-south Route

East-west Alternative

During the Feasibility Study evaluations, it was determined that suitable construction techniques for crossing the wetlands were available and that suitable sources of rock were viable to support construction. These findings resulted in eliminating facilities previously proposed at Webequie Junction, and locating power generation and concentrate drying equipment at the mine site. The need for a concentrate pipeline was also eliminated.

Noront will retain the alternative for a new all-season road between the Eagle's Nest mine site (Esker Camp) Highway 808 (300 km).

18.12.2 Concentrate Transportation

Nickel-copper concentrate will be transported by truck from the mine site at Eagle's Nest to Nakina, 334 km to the south, where it will be transferred to railcars at a new railcar loading facility at Savant Lake on the rail line of Canadian National Railway Company (CN) for transportation to market.

The road transportation plan is based on shipment in hopper trailers using the following parameters:

- Average daily production of concentrate: 600 t.
- Average density of concentrate: 1.5 t/m^3.
- Operating days and hours per year: 365 d, 24 h.
- Average bulk trailer payload: 35 t.
- Approximate distance, Eagle’s Nest to Nakina: 334 km.
- Approximate travel time, Eagle’s Nest to Nakina: 6.7 h.

It is estimated that 17 truck loads per day, or 521 loads per month will be required.

Concentrate will be transported by rail from Nakina to market by 50-ft gondola cars with capacity of 110 t. A total of 166 rail cars will be loaded per month (5.45 per day).

18.13 CONCENTRATE HANDLING, STORAGE AND LOAD OUT AT NAKINA

Side-dump truck trailers will discharge into an unloading hopper, from which it will be moved through a screw-conveyor to a bucket elevator to feed concentrate into the overhead 800 tonne hopper of the railcar loading system. The hoppers, coveyor, and elevator will be vented to a local dust collector to minimize dust emissions to the surroundings. Dust collectors at the Nakina facility contain air compressors to meet the compressed air requirements.

Railcars will be loaded on a weighbridge to control car weight. The loading system will use retractable spouts to aid dust control.

19.0 MARKET STUDIES AND CONTRACTS

19.1 MARKET ANALYSIS

For the purpose of this Feasibility Study, it has been assumed that the bulk nickel-copper concentrate will be sold and shipped to a smelter in North America. Treatment and refining charges, metal payability and settlement terms are assumed on the basis of confidential information received by Noront, which Micon considers to be reflective of the market.

The average annual concentrate production is forecast to be about 153,000 dmt. The estimated typical grade of this product is expected to be:

Moisture	1%.
Ni	10.0%.
Cu	5.7%.
Pt	5.1 g/t.
Pd	18.9 g/t.
Au	1.0 g/t.

19.2 TREATMENT COSTS AND REFINING COSTS

The following treatment costs and refining costs (TC/RCs) for smelting and refining, and associated conditions, have been assumed for the Feasibility Study.

Smelter costs		:	US$150/dmt.
Price participation	Ni	:	8% on price greater than US$5.00/lb.
Penalties		:	None.
Payability	Ni	:	90%, (no minimum deductions).
	Cu	:	75%.
	Pt	:	74.2%.
	Pd	:	74.2%.
	Au	:	74.2%.
Refining costs	Ni	:	US$0.60 /lb.
	Cu	:	Included in payability.
	Pt	:	Included in payability.
	Pd	:	Included in payability.
	Au	:	Included in payability.
Transportation		:	US$98.4/dmt.
Insurance (on net invoice value)		:	0.06%.
Losses (on net invoice value)		:	0.1%.

19.3 METAL PRICES

Prices for nickel, copper and precious metals in concentrates are based on historical average market quotes. Nickel, copper, platinum, palladium and gold are openly traded on terminal markets. These include the London Metal Exchange (LME) for nickel and copper, the London Platinum and Palladium Market and New York Mercantile Exchange (NYMEX) for platinum and palladium, and the London Bullion Market and NYMEX for gold.

The financial analysis of the Eagle's Nest Project base case utilizes three-year trailing average metals prices which are available on a number of websites including www.kitco.com.

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 REGULATORY REQUIREMENTS

The Eagle's Nest Project is subject to both the Canadian Environmental Assessment Act (CEAA) and the Ontario Environmental Assessment Act (OEAA). Noront submitted a Project Description to the CEAA in July 2011.

Due to the fact that the steps required to complete an Environmental Assessment (EA) as defined under the OEAA and CEAA are somewhat different; a coordinated approach is required to integrate the requirements of both federal and provincial legislation. The Government of Canada and the Ontario provincial government entered into an agreement in 2004 (Canada-Ontario Agreement on Environmental Assessment Cooperation (2004)).

The two levels of government have indicated a willingness to follow the coordinated EA process for this Project, and with Noront, will agree on the approach to coordinating the EA to produce one body of documentation. Therefore, the EA document will address the requirements of both the provincial Terms of Reference (ToR) and the federal Environmental Impact Statement (EIS) Guidelines.

20.2 ALTERNATIVES ASSESSMENT

An assessment of alternatives is being conducted as part of the EA for the Eagle's Nest Project, is summarized below.

20.2.1 Mining Methodology

Mineralization at the Eagle's Nest deposit occurs in a near-vertical pipe-like structure which extends from near surface to a depth of over 1,600 m. Surface mining techniques are not appropriate because of the amount of waste rock which would have to be excavated in order to access the deposit and because of the wetland conditions of the surrounding area.

Standard bulk stoping (blast hole) mining is appropriate given the high competency of the mineralized rock. Access will be by twin ramp. A traditional shaft was not selected because of the requirement to extend the foundation of the headframe through peat bog.

Mechanized mining will allow the planned 3,000 t/d production rate and simultaneous operation on several levels using the same equipment.

20.2.2 Power

The Ring of Fire region has no electricity supply from the Ontario grid. There are no plans in the short to medium term to upgrade transmission lines to Pickle Lake and to construct the required lines to the Ring of Fire area.

Diesel power generation was selected since it provides reliable operation in a remote location. Facilities will be located at the mine site. Alternative locations are being assessed in the Alternatives, such as hydroelectric, solar, natural gas and wind generation were assessed but will not provide reliable power at the capacity required for the project.

20.2.3 Site Access

Alternative routes and methods for site access are being considered by Noront given the location of the project. The road corridor from Pickle Lake, which runs east from the existing highway (Northern Ontario Resource Trail, Highway 808) northeast of Pickle Lake, requires minimal construction of bridges to cross rivers, and avoids lakes and Provincial parks. The alternative routes being considered in the EA include:

- Connection with the winter road which supports De Beers Victor diamond mine.
- A north-south rail and/or road route along eskers.

The preferred east-west corridor alternative makes use of an existing winter road route that was prepared with the intention of converting it to an all-season road, although some of the route travels over lakes that would require realignment. For the 10 year life of the Eagle's Nest mine, this route provided a lower cost option since it will have only one river crossing. Other advantages are that it avoids provincial parks, avoids areas of special interest to aboriginal groups, and provides the greatest benefit to First Nation communities.

Alternatives to road access were considered for materials and supplies, including the use of hovercraft, barges on a canal system and airships. These were rejected primarily on the basis of cost although each had additional disadvantages.

20.2.4 Site Infrastructure

As described, the Project is located in a region of wetlands and peat bogs with limited capacity to support structures and with scarce availability of aggregate for construction. Process activities are located underground to utilize competent waste rock. Aggregate will have to be mined from waste rock underground for road construction and limited surface structures and this provides the necessary openings for placement of processing facilities, shops and warehouses as well as for disposal of tailings.

20.2.5 Aggregate Rock Sources

As noted above, available aggregate from surface deposits is limited and would require construction of roads in order to access it. Suitable material is readily available from underground.

20.2.6 Tailings Storage

Construction of surface facilities for tailings storage would require aggregate mined from underground. Disposal of tailings in underground mine openings was selected since it will provide long term storage and minimize environmental issues for closure.

20.2.7 Concentrate Transport

The preferred means of transporting concentrate is via an all-season road. Alternatives considered include a slurry pipeline and the use of hovercraft and airships. Hovercraft and airships were considered costly and the latter untested on a large commercial scale. Concentrate transportation by winter road only was rejected on the basis of the required storage capacity and loss of a continuous revenue stream.

20.3 ENVIRONMENTAL BASELINE STUDIES

Environmental baseline studies were initiated by Noront in 2009 and are ongoing. In order to capture the natural variability, baseline studies have taken place over multiple years and seasons. Preliminary baseline results and proposed field investigations were discussed with the federal and provincial ministries in May, 2011 and again in April 2012. Comments and feedback received from these technical sessions were integrated into the subsequent field programs. The Baseline studies were initiated to support the scoping and pre-feasibility level studies for the Eagle's Nest Project and continue to support the preparation of the EA.

20.4 CLIMATE AND METEOROLOGY

The James Bay Lowlands area of northern Ontario has a humid continental climate with cool short summers and cold long winters. The area has a perihumid high boreal ecoclimate and does not experience a dry season. The local climate is affected by the proximity to Hudson Bay and James Bay. Fog is common in the early morning and may last all day during the summer months. There are usually 1 or 2 days of dense fog in the summer that restrict the use of aircraft. There are typically 2 or 3 days during the winter months when snow storms restrict activity in the region.

20.5 HYDROLOGY

Surface water includes water accumulating on the ground in wetlands, lakes and streams. The James Bay Lowlands are characterized by predominantly flat, poorly drained soils with slow rates of plant decay. As a result, the development of organic soils and peat is common throughout much of the area. The organic surface layer typically ranges from 3 to 5 m in thickness. It is underlain by a clay/silt till layer of up to 2 m thick, and a Quaternary till layer up to 5 m thick. Depth to bedrock ranges from 5 to 12 ms below the surface.

20.6 WATER QUALITY

Baseline ground water quality data indicate that iron and aluminum are elevated at the mine site. Additional metals observed at elevated levels include cobalt, nickel, tungsten and zinc. These results are typical of samples obtained within this geological setting.

20.6.1 Terrestrial Studies

The Eagle's Nest Project is located within the Boreal Forest region of Ontario. The eastern part of the project area, including the mine site, is located in the James Bay Lowland Ecoregion, and the western part, including the access roads, is located in the Big Trout Lake Ecoregion. Terrestrial baseline studies were initiated in 2009 and have included:

- Bird breeding surveys.
- Winter mammal surveys.
- Wildlife inventories.
- Vegetation community surveys within forest and wetland habitats.
- Species at risk assessments with attention to caribou habitat and population studies.

20.6.1.1 Caribou

Noront is a member of the MNR working group which aims to develop resource selection modeling for caribou in the Ring of Fire region. Local and regional study areas will identify the potentially affected caribou range or ranges and cumulative effects of the Eagle's Nest project and other developments in the region will be assessed as directed by the Ontario Caribou Conservation Policy.

20.6.2 Aquatic Environment

A number of lakes, ponds and beaver impounded watercourses surround the proposed mine site. A comprehensive surface water quality monitoring program has been implemented as part of baseline studies. In addition, a focused aquatic baseline assessment of surface water was conducted in 2011 and included surface water and aquatic sediment quality monitoring, as well as benthic macroinvertebrate, and fish community surveys. A complementary aquatic baseline assessment of the proposed access roads, Webequie Junction, and the Savant Lake areas was also conducted in 2011.

20.7 SOCIO-ECONOMIC AND CULTURAL STUDIES

The Eagle's Nest Project area includes the traditional lands of a number of First Nation and supports traditional land uses including hunting, trapping and fishing. Recreational land uses are based on a number of tourist lodges, fly-in camps and independent (self-directed) activities. The Otoskwin/Attawapiskat River and Winisk River Provincial Parks offer rafting and canoeing. There is significant mineral exploration activity in the area and mining takes place in the Big Trout Ecoregion.

Construction and operation of the Eagle's Nest Project may potentially impact use of traditional lands and resources of the following communities:

- Marten Falls First Nation.
- Webequie First Nation.
- Neskantaga First Nation.
- Nibinamik First Nation.
- Eabametoong First Nation.
- Aroland First Nation.
- Attawapiskat First Nation.
- Weenusk (Peawunuk) First Nation.
- Mishkeegogamang First Nation.
- First Nation of Saugeen.
- Kasabonkia Lake First Nation.
- Métis Nation of Ontario.

20.7.1.1 Cultural Resources

Provincial Parks

The Eagle's Nest Project is located approximately 25 km from the Otoskwin-Attawapiskat River Provincial Park and runs the entire length of the river and includes a buffer zone of 200 m on both sides. The Winisk River Provincial Park surrounds Webequie First Nation. Other parks include the Pipestone River Provincial Park and the Albany River Provincial Park.

Archeological Studies

A Stage 1 archeological assessment was carried out in 2010 by Woodland Heritage Services Ltd. at the mine site and along the proposed access corridors.

A Stage 1 Assessment and field inspection will be conducted in 2012 to identify areas of high archeological potential within the proposed Project footprint. The report will be submitted to the Ontario Ministry of Tourism and Culture and, on approval, Stage 2, subsurface work will be carried out prior to development in areas identified as having archaeological potential.

Based on desktop studies, there are no registered archaeological sites in the immediate vicinity of the Eagle's Nest site. This is likely due to the overall lack of development in the area.

First Nation and Public Consultation

Noront has been very proactive in engaging and consulting with local Aboriginal groups and other interested stakeholders. Noront has developed a website www.mikawa.com, which allows interactive online discussion with community members and has also developed a project website, www.eaglesnestmine.com, which provides specific information on the Project. A monthly radio program in Oji-Cree on Wawatay Radio supplements information provided through meetings or on the internet.

Information meetings and Open House sessions have been held with municipal leaders in Pickle Lake and Thunder Bay and less formal meetings held in Greenstone, Pickle Lake and Thunder Bay. Meetings have taken place with Federal and Provincial agencies where the discussion has focused on the EA permitting and approval process and schedule, tailings management and baseline studies. Table 20.1 provides a preliminary summary of issues and concerns arising from consultation with First Nation communities.

Table 20.1
Preliminary Summary of Issues and Concerns

Issue Subject	Summary of Discussion
Employment and training	Issues raised relating to business opportunities, employment and training opportunities to bring community members into the industry.
Social concerns	Discussion about the potential increasing demands on community infrastructure. Concerns about the increased use of illegal substances with more money in the community through employment.
Treaty rights	Concerns raised about Aboriginal and treaty rights relating to hunting and trapping.
Information sharing	Concerns expressed about the lack of information sharing between Noront and the community.
Facilities, permitting	Concerns raised about the development and permitting of the airstrip. Discussion of potential pros and cons to development of all-season road.
Traditional knowledge studies	Concerns raised about sharing information with Noront and issues of trust concerning the use of information.
Environmental concerns	Concerns raised about previous environmental problems in the region being repeated.

KP Terms of Reference, 27 March 2012.

20.8 CLOSURE CONSIDERATIONS

KP has developed a closure plan and cost estimates for which the objective is to return the project area to a physically and chemically stable state in order to ensure both public safety and reduce the potential impacts on the social and natural environment.

A closure plan has been developed in accordance with the requirements of the Mining Act in Ontario. A monitoring framework will be developed during preparation of the EA and presented in that document.

Environmental and Social Management Plans will be prepared as part of the EA to manage impacts. Environmental and Social Monitoring Plans will also be prepared specifically to verify the predictions of the impact assessment and to inform the preparation of management strategies.

21.0 CAPITAL AND OPERATING COSTS

21.1 CAPITAL COSTS

Capital costs have been assessed for the purposes of this Feasibility Study. The estimates are expressed in second quarter 2012 Canadian dollars, without escalation. The expected accuracy of the estimates is ±15%.

21.1.1 Initial Capital Expenditure

The total estimated pre-production cost of capital is $609 million comprising $195 million for mining, $113 million for processing, $100 million for infrastructure, $158 million for indirect costs, and contingencies of $44 million, as shown in Table 21.1.

Table 21.1
Initial Capital Cost Summary

Area	Cost ($ 000)
Mining	195,026
Processing	112,756
Infrastructure	100,178
Indirects	157,806
Contingency	43,675
Total	**609,440**

This estimate assumes that the costs for transport infrastructure will be shared with other users through a public-private partnership (P3) arrangement, so that the project bears only its freight-related proportion of annual service charges.

21.1.1.1 Mining

The initial capital cost estimate for mining totals $195 million for direct costs. These costs provide for establishment of the portal, driving the twin ramps to the mill area and other mine workings, developing the twin production ramps to sufficient depth for initial mining, excavating the mill excavation, warehouse, shops, and other workings, and creating the access and initial stopes of the aggregate stoping operation. Some ventilation raises have been added to balance air flow. An ore pass is included to direct ore to the crusher for the period mining above that level. The mining capital includes $50 million of mobile mining and support equipment. The backfill plant is also included in the mining cost, as is the surface aggregate crushing/screening/stacking equipment.

21.1.1.2 Process Plant

Capital for the main processing facility and the concentrate dewatering and drying facility is estimated to be $113 million. These costs include supply and installation. The mill installation overlaps some of the mill excavation, made possible by creating 3 separate chambers which will be joined after the major components are installed. This has been done to reduce overall development timeline as compared to waiting to excavate the entire mill before installing process equipment. The overhead crane rails will be installed when the upper accesses of the mill rooms are formed, before the bulk of the rock is blasted between the upper and lower benches, thus the costs to install the crane rails are in the mine capital. As well, the cost to drill boreholes from surface for mine utilities is included in the mine capital.

21.1.1.3 Site Infrastructure

The capital cost estimate for site infrastructure at the mine site and at Nakina is estimated at $100 million. The cost includes equipment for the generation and distribution of power. The cost of constructing an all-weather road is excluded, since the annual cost of freight-related road maintenance charges are included in G&A operating costs on the assumption that a public-private partnership will be responsible for road ownership and maintenance.

21.1.1.4 Indirect Capital

The pre-production indirect costs are estimated at $158 million. The Standard indirect costs for engineering, procurement, construction, freight, first fills, owner's costs and other such costs are included. The owner's costs ($49 million) include training, land, environmental studies, plant mobile, commissioning and start-up, camp costs during construction, labour transportation, insurance, and community relations and corporate costs. Logistics and site trailers are included in indirect costs.

Closure plans and associated costs developed by Knight Piésold total $2.8 million, to be spent within seven years of mine closure. Discounted back to the present at 3%/y, that cost is estimated to have a present value of $1.9 million. The latter amount is included in the indirect capital estimate and in the cash flow model as an up-front (pre-production) bonding amount.

21.1.1.5 Capital Contingency

In addition to the above, contingency is provided in the capital estimate as shown in Table 21.2. The contingency equates to 9% of the estimate for direct mining costs and 12.3% of direct process and infrastructural costs.

Table 21.2
Initial Capital Cost Summary – Contingency

Area	Cost ($ 000)
Mining	17,421
Plant and infrastructure	26,254
Total contingency	**43,675**

21.1.2 Sustaining Capital

Sustaining capital required through the life-of-mine period subsequent to expenditure of initial capital totals $160 million for direct mining costs, made up of replacement equipment ($115 million) and development costs ($45 million). The development costs are for extending the ramps and preparing the levels up to the ore body, however development in the ore body is part of the operating costs. There is no sustaining capital allocated for the plant it is assumed that this is covered in operating maintenance costs.

21.2 OPERATING COSTS

Estimated average cash operating costs for the life-of-mine (10.2 years) of the Project are summarized in Table 21.3.

Table 21.3
Summary of Life-of-Mine Operating Costs

Area	Life-of-mine Cost ($ 000)	Unit Cost ($/t ore milled)
Delineation cost	4,900	
Drifting cost	28,963	
Production cost	134,581	
Materials handling	18,216	
Engineering and technical cost	77,081	
Mine heating	18,815	
Power costs	67,990	
Blasting plant rental	9,347	
Diesel (development)	4,694	
Aggregate mining	33,246	
Less pre-production cost (capitalized)	(15,499)	
Sub-total Mining	**382,334**	**34.35**
Mill supervision/technical	15,573	
Mill production labour	26,849	
Mill maintenance labour	28,858	
Mill operating consumables	29,669	
Reagents	41,484	
Assay laboratory	1,010	
Freight costs	6,399	
Maintenance (spares)	11,777	
Electrical power	206,018	
Sub-total Processing	**367,636**	**33.03**
All Season Road Usage Charges	**95,953**	**8.62**
Building maintenance	4,485	
Equipment maintenance	21,563	
Labour	63,716	
Misc. consumables (incl. camp)	25,697	
Power	50,249	

Area	Life-of-mine Cost ($ 000)	Unit Cost ($/t ore milled)
Mobile equipment operation	2,468	
Labour transportation to site	27,289	
Other	38,528	
Sub-total G&A	**233,994**	**21.02**
Total Operating Costs	**1,079,917**	**97.01**

21.2.1 Mining Costs

The mining operating costs were developed from first principles after extensive interviews by Penguin Automated Projects Inc. with key mine personnel in northern Ontario operations. The numbers here consist of consumables, fuel, maintenance, materials and depreciation costs. Equipment suppliers were also interviewed and contributed to performance values and defining the level of automation expected to be in place for the mine application. Penguin prepared detailed calculations for costs of unit operations, which can be applied as the detailed design advances and adjustments to plans are made. Labour rates are imbedded in the unit operation costs, which in turn were summarized to determine labour requirements over the life of the mine.

Since the underground aggregate stopes will hold tailings, instead of developing and controlling surface tailings ponds, the cost of tailings management is included as a mining cost. Seepage from tailings stopes is expected to be greatly reduced by dewatering the tailings and depositing paste tailings in the stopes and applying barricades to seal the bottom of these stopes. Any seepage will be directed to the water treatment facility which has been included in the process operating costs.

The aggregate crushing, screening, and stacking equipment will be located on surface. The mining operating costs include the mobile equipment, power, maintenance and labour to operate this facility.

21.2.2 Process Costs

Process operating costs include supervisory and technical labour, operating labour and supplies, maintenance labour and supplies, and electrical power for the following facilities:

- Primary crushing plant and coarse ore storage.
- Process plant (SAG and ball mills for grinding, flotation, concentrate thickening, tailings thickening).
- Process reagents and utilities.
- Concentrate and tailings pumping.
- Mobile equipment related to process facilities.

- Assaying facilities.
- Effluent treatment.
- Surface Processes.
- Concentrate dewatering (filtration and drying).
- Concentrate truck loading.
- Off-site Operations.
- Truck offloading, storage and railcar loading at Nakina.

All labour costs are based on the number of people assumed to be required to fill the various positions and on the salaries for each position assumed. The total on-site and off-site labour complement is 74. The labour costs include salaries, overtime and a 25% overhead burden.

All power costs are estimated from the drawn power for each piece of equipment and an associated cost of $0.255/kWh.

The consumables include such commodities as grinding media, chemical reagents, liners, fuel, bulk bags and filter cloth. The main cost items are CMC (flotation reagent), grinding balls and water treatment chemicals.

21.3 GENERAL AND ADMINISTRATION COSTS

The general and administration (G&A) costs are associated with costs and expenses pertaining to management, administration, security, first aid, environmental management, engineering and planning, warehouse, dry maintenance, power generation plant, maintenance shop supervision, yard maintenance and water systems as well as office supplies, training, consultants, insurance, etc. The estimated annual general and administration operating costs is approximately $23 million per year or $21.02/t processed.

The major G&A cost items include labour, which includes a complement of 68 persons, labour transportation to and from site, power and the camp.

21.3.1 All Season Road

The estimated cost for using the all-season road is about $9.4 million per year or $8.62/t processed.

22.0 ECONOMIC ANALYSIS

22.1 BASIS OF EVALUATION

Micon has prepared its assessment of the Project on the basis of a discounted cash flow model, from which Net Present Value (NPV), Internal Rate of Return (IRR), payback and other measures of project viability can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested.

The objective of the study was to determine the viability of the proposed underground mine and concentrator to exploit the Eagle's Nest deposit. In order to do this, the cash flow arising from the base case has been forecast, enabling a computation of the NPV to be made. The sensitivity of this NPV to changes in the base case assumptions is then examined.

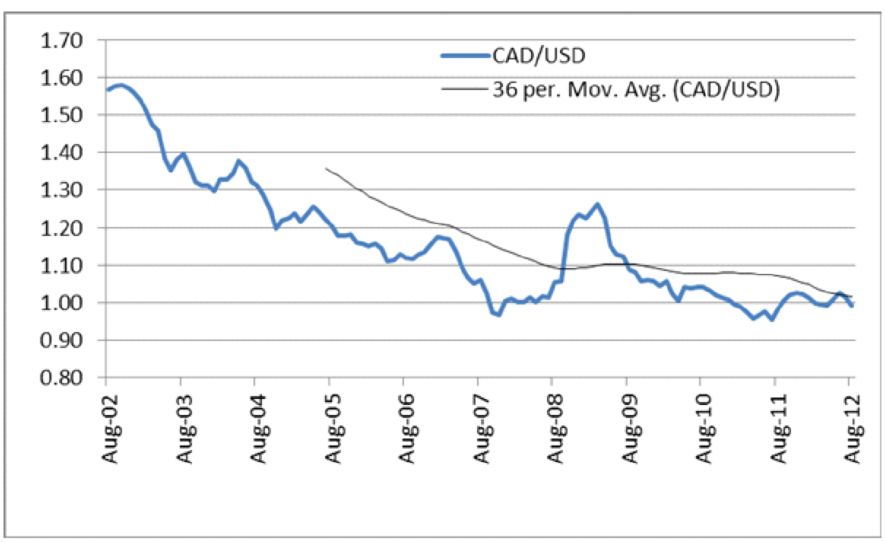
22.2 MACRO-ECONOMIC ASSUMPTIONS

22.2.1 Exchange Rate and Inflation

All results are expressed in Canadian dollars. Cost estimates and other inputs to the cash flow model for the Project have been prepared using constant, second quarter 2012 money terms, i.e., without provision for escalation or inflation.

The CAD/USD exchange rate selected for the base case (CAD1.015 per USD) is equal to the three-year trailing average to August 31, 2012, i.e., the average over the same period used to compute average metal prices, as described below.

Figure 22.1
Canadian Dollar to US Dollar Exchange Rate



22.2.2 Weighted Average Cost of Capital

In order to find the NPV of the cash flows forecast for the project, an appropriate discount factor must be applied which represents the weighted average cost of capital (WACC) imposed on the project by the capital markets. The cash flow projections used for the valuation have been prepared on an all-equity basis. This being the case, WACC is equal to the market cost of equity, and can be determined using the Capital Asset Pricing Model (CAPM):

$$E(R_i) = R_f + \beta_i(E(R_m) - R_f)$$

where $E(R_i)$ is the expected return, or the cost of equity. R_f is the risk-free rate (usually taken to be the real rate on long-term government bonds), $E(R_m)$- R_f is the market premium for equity (commonly estimated to be around 5%), and beta (β) is the volatility of the returns for the relevant sector of the market compared to the market as a whole.

Figure 22.2 illustrates the real return on CAD long bonds computed by the Bank of Canada, taken as a proxy for the risk-free interest rate. Over the past two years, this has dropped from around 2.0% to 0.5%. Nevertheless, it is generally accepted that using a long-term average rate will give a more reliable estimate of the cost of equity. Micon has therefore used a value of 2.0% for the risk free rate, close to the real rate of return averaged over 10 years.

Figure 22.2
Real Return on Canadian Bonds
(Bank of Canada, www.bankofcanada.ca)

Taking beta for this sector of the equity market to be in the range 1.2 to 2.0, CAPM gives a cost of equity for the Eagle's Nest Project of between 8% and 12%. Micon has taken a figure at the lower end of this range as its base case, and provides the results at higher rates of discount for comparative purposes.

22.2.3 Expected Metal Prices

The three-year trailing average metal prices as of 31 August, 2012 were selected for the base case. For comparison, Micon also evaluated the Project using a 1, 12, 24 and 60 months averages computed to the same date. Table 22.1 presents these prices, which were applied throughout the operating period. As part of its sensitivity analysis, Micon also tested a range of prices 30% above and below the base case values.

Table 22.1
Metal Price Forecasts

Item	Units	Recent price (Aug 2012)	1-y trailing	2-y trailing	3-y trailing (Base Case)	5-y trailing
Nickel	US$/lb	7.10	8.22	9.65	9.43	9.26
Copper	US$/lb	3.40	3.57	3.84	3.60	3.28
Platinum	US$/oz	1,452	1,545	1,647	1,601	1,520
Palladium	US$/oz	602	642	687	599	484
Gold	US$/oz	1,626	1,663	1,555	1,415	1,198
Exchange rate	$/US$	0.993	1.009	0.999	1.015	1.046

22.2.4 Taxation Regime

Canadian federal and Ontario provincial corporate income and mining taxes have been allowed for. Non-capital losses of $22.9 million are carried forward to off-set project income. Likewise, projected utilization of CEE and CDE allowances of $53.4 million and $1.8 million, respectively, is taken into account.

The base case assumes that the Project will achieve "Remote Mine" status, which provides for a reduction in the rate of Ontario mining tax and an extended period of allowances for a new mine. A sensitivity study, discussed below, demonstrates the impact of that assumption.

Initial capital expenditure for the establishment of the mine is assumed to be eligible for accelerated depreciation. Thereafter, for income tax, ongoing capital is depreciated at an annual rate of 25% using the declining balance method, with a limit of 50% claimable in the year of acquisition. For the computation of the Ontario mining tax liability, ongoing capital is depreciated at 30% for mining assets and 15% for processing assets.

22.2.5 Royalty

No royalty has been provided for in the cash flow model.

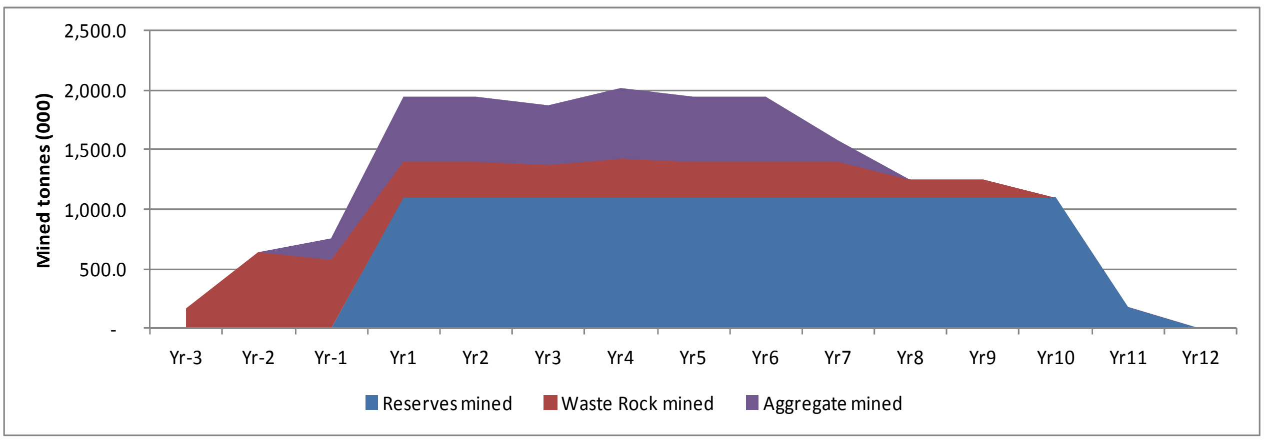
22.3 TECHNICAL ASSUMPTIONS

The technical parameters, production forecasts and estimates described earlier in this report are reflected in the base case cash flow model. These inputs to the model are summarised below.

22.3.1 Mine Production Schedule

In addition to the extraction of the nickel-copper-PGM mineral reserve at the rate of 1.095 Mt/y, the mine will produce aggregate at the rate of 1,500 t/d for use on-site and for sale to external users. The base case cash flow model assumes that sales will off-set the cost of producing aggregate, so that this activity is cash neutral.

Figure 22.3
Mining Production Schedule



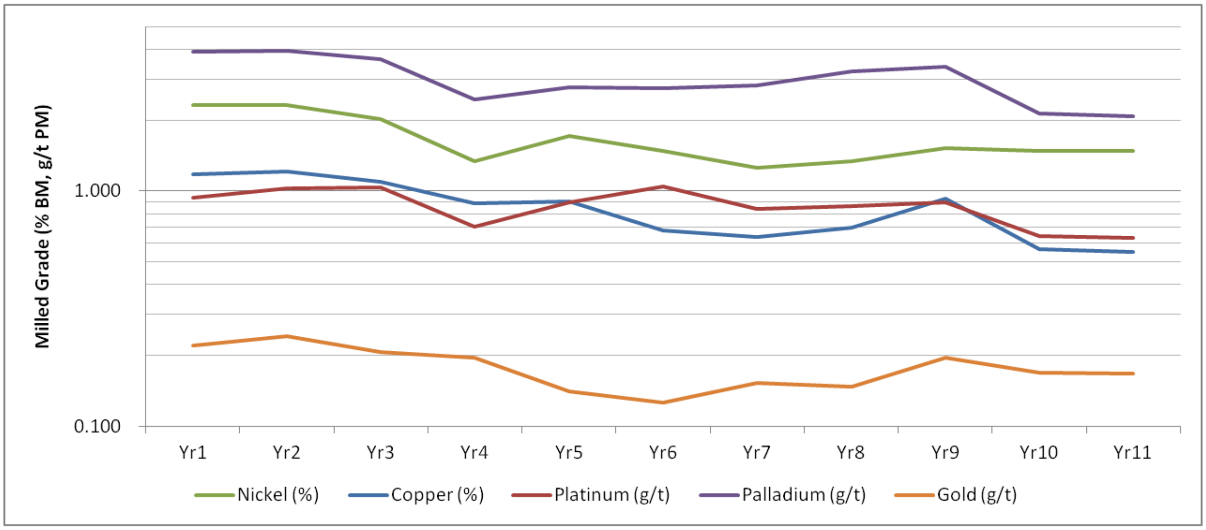
22.3.2 Processing Schedule

With milling taking place underground, processing of the resource must take place concurrent with mining, there being no significant stockpile volume. Appropriate assumptions regarding plant availability have been applied in determining the annual production forecast. The average grade of resource milled is shown annually in Figure 22.4.

22.3.3 Net Smelter Return

Project revenues assume that a bulk concentrate product is sold and shipped to a smelter in Sudbury, Ontario. Treatment and refining charges, metal payability and settlement terms are based on a confidential terms agreement received by Noront and on Micon's recent experience with similar concentrate products.

Figure 22.4
LOM Grade Profile
(logarithmic scale)



Assumed NSR terms and base case values are presented in Table 22.2, below.

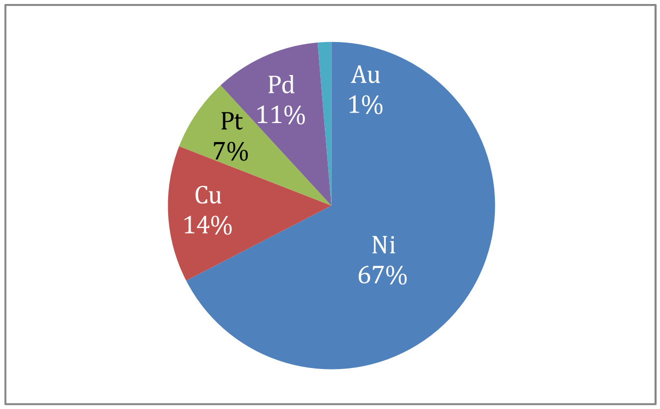
Table 22.2
LOM Total Net Smelter Return

	Units	Nickel	Copper	Platinum	Palladium	Gold	Total
Ave. Grade	% or g/t	1.681	0.874	0.885	3.088	0.179	
Recovery	%	83.1	89.7	74.0	82.3	76.7	
Conc. Grade	% or g/t	10.19	5.72	4.78	18.55	1.00	
Payability	%	90.00	75.00	74.20	74.20	74.20	
Gross value	US$M	2,908.2	519.2	278.4	404.8	51.7	4,162.3
Smelting	US$M	160.1	28.5	15.3	22.2	2.8	228.9
Refining	US$M	185.0	-	-	-	-	185.0
Transport	US$M	111.3	22.2	11.9	17.3	2.2	164.9
NSR	US$M	2,342.5	468.5	251.2	365.3	46.7	3,474.2
NSR	US$/t	210.44	42.09	22.57	32.82	4.19	312.11

Concentrate transport costs are based on an estimate of US$77.11/wmt and US$25.93/wmt, to cover costs of road haulage and railage, respectively, to the smelter. A demurrage factor of 5% has been taken into account, together with insurance and handling losses.

Using the base case price assumptions (i.e., 3-year trailing average), the contribution of each of the above metals to the NSR over the LOM period is shown in Figure 22.5.

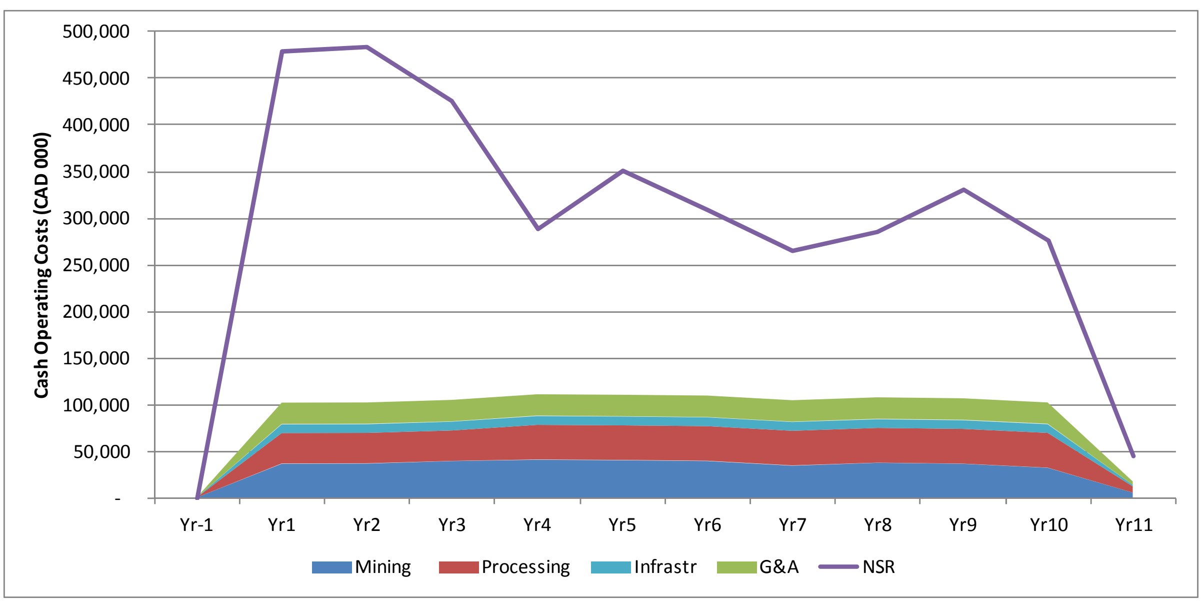
Figure 22.5
Contribution of Metals to NSR
(Base Case)



22.3.4 Operating Costs

Direct operating costs average $97.01/t milled over the LOM period, including $34.35/t mining, $33.03 processing, $8.62/t for infrastructure (i.e., road usage charges) and $21.02/t general and administrative costs. Figure 22.6 shows these expenditures over the LOM period, compared to the NSR value of production, showing the strong margin over the LOM period, more particularly in the first three years of operation.

Figure 22.6
Cash Operating Costs



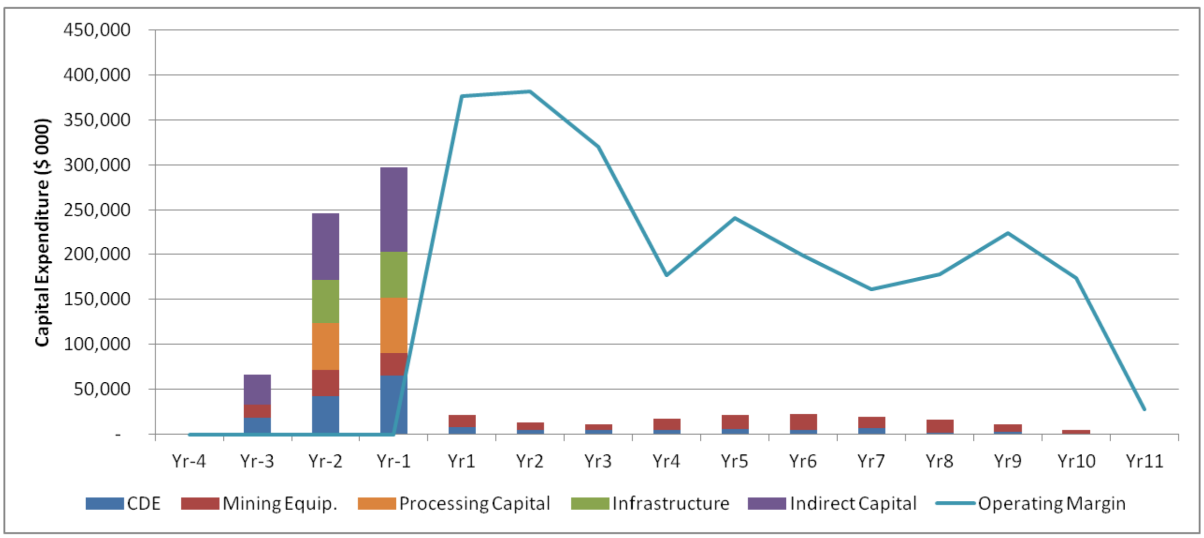
22.3.5 Capital Costs

Pre-production capital expenditures are estimated to total \$609 M, including \$195 M for mining, \$113 M for processing, \$100 M for infrastructure, \$158 M for indirect costs and a contingency of \$44 M.

Working capital has been estimated to include 30 days product inventory (including milling and product transport), and 45 days receivables from delivery of concentrate to the smelter. Stores provision is for 60 days of consumables and spares inventory, less 30 days accounts payable. Working capital of \$102 million is required in Year 1.

Figure 22.7 compares annual capital expenditures over the preproduction and LOM periods with the Project's cash operating margin.

Figure 22.7
Capital Expenditures



22.3.6 Project Cash Flow

The LOM base case project cash flow is presented in Table 22.3 and

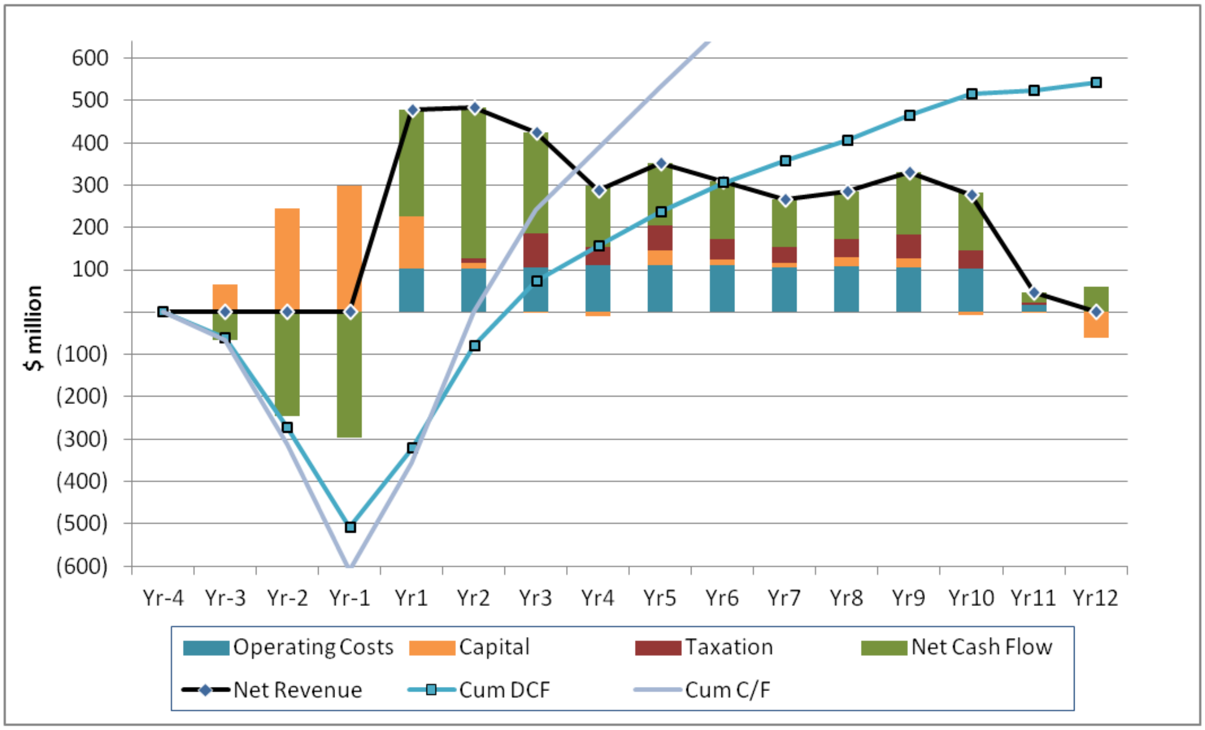
	LOM total $ 000	$/t Milled	US$/lb Ni
Net revenue (Nickel only)	2,365,911	212.54	7.60
Mining costs	382,334	34.35	1.23
Processing costs	367,636	33.03	1.18
Infrastructure (P3 road usage)	95,953	8.62	0.31
General & Administrative costs	233,994	21.02	0.75
Total Cash Operating Cost	**1,079,917**	**97.01**	**3.47**
Less NSR on By-Products	(1,174,652)	(105.53)	(3.77)
Net operating margin	2,460,647	221.05	7.90
Capital expenditure	769,665	69.14	2.47
Net cash flow (before tax)	1,690,982	151.91	5.43
Taxation	423,184	38.02	1.36
Net Cash Flow (After Tax)	**1,267,798**	**113.89**	**4.07**

Figure 22.8. Annual cash flows are shown in Table 22.5. The Project demonstrates an undiscounted pay back of around 2 years, or approximately 2.5 years discounted at 8.0%, leaving a production tail of more than 7 years. The base case evaluates to an IRR of 33.1% before tax and 28.3% after tax. At a discount rate of 8.0%, the net present value (NPV_8) of the cash flow is $756 million before tax and $543 million after tax.

Table 22.3
Life-of-Mine Cash Flow Summary

	LOM total $ 000	$/t Milled	US$/lb Ni
Net revenue (Nickel only)	2,365,911	212.54	7.60
Mining costs	382,334	34.35	1.23
Processing costs	367,636	33.03	1.18
Infrastructure (P3 road usage)	95,953	8.62	0.31
General & Administrative costs	233,994	21.02	0.75
Total Cash Operating Cost	**1,079,917**	**97.01**	**3.47**
Less NSR on By-Products	(1,174,652)	(105.53)	(3.77)
Net operating margin	2,460,647	221.05	7.90
Capital expenditure	769,665	69.14	2.47
Net cash flow (before tax)	1,690,982	151.91	5.43
Taxation	423,184	38.02	1.36
Net Cash Flow (After Tax)	**1,267,798**	**113.89**	**4.07**

Figure 22.8
Life-of-Mine Cash Flows



22.3.7 Base Case Evaluation

The base case cash flow was evaluated at a discount rate of 8.0%, as shown in Table 22.4 which also presents the results at comparative discount rates of 6%, 10%/y and 12%/y.

Table 22.4
Base Case Cash Flow Evaluation

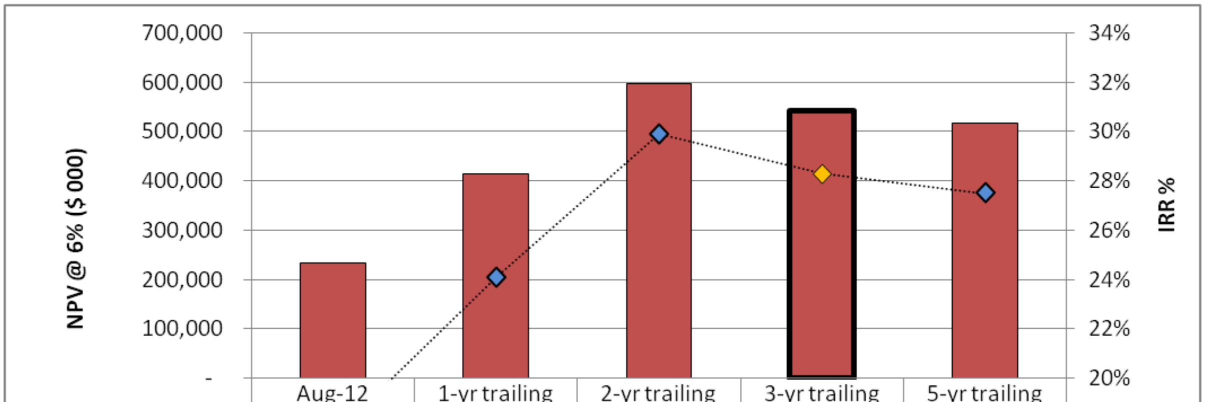
$ million	LOM Total	Discounted at 6%/y	Base Case Discounted at 8%/y	Discounted at 10%/y	Discounted at 12%/y	IRR (%)
Net Revenue (Nickel only)	2,365,911	1,503,874	1,308,616	1,144,858	1,006,668	
Net Revenue (By-Products)	1,174,652	744,750	647,292	565,559	496,603	
Net revenue (total)	3,540,564	2,248,624	1,955,908	1,710,417	1,503,271	
Mining costs	382,334	236,481	203,885	176,733	153,983	
Processing costs	367,636	224,214	192,481	166,167	138,280	
Infrastructure	95,953	59,021	50,810	43,986	38,280	
G&A costs	233,994	143,930	123,908	107,267	93,352	
Total cash operating cost	1,079,917	663,646	571,083	494,154	429,831	
Cash operating margin	2,460,647	1,584,978	1,384,825	1,216,264	1,073,440	
Capital expenditure	769,665	632,285	596,055	563,426	533,883	
Working capital	-	28,757	32,544	35,745	35,821	
Net Cash Flow (Before Tax)	**1,690,982**	**923,936**	**756,225**	**618,092**	**503,735**	**33.1**
Taxation	423,184	251,027	213,230	182,030	156,134	
Net Cash Flow (After Tax)	**1,267,798**	**672,909**	**542,996**	**436,062**	**347,601**	**28.3**

22.4 SENSITIVITY STUDY AND RISK ANALYSIS

22.4.1 Metal Price and Exchange Rate Assumptions

The sensitivity of the Project returns to changes in metal price and exchange rate assumptions was tested using the trailing averages computed over periods of 1, 12, 24, 36, and 60 months ending 31 August, 2012.

Figure 22.9
Sensitivity to Metal Prices



	Aug-12	1-yr trailing	2-yr trailing	3-yr trailing	5-yr trailing
After-tax NPV	232,899	413,325	596,659	542,996	517,282
After-tax IRR	17.7%	24.1%	29.9%	28.3%	27.5%

Table 22.5
Base Case Life of Mine Annual Cash Flow

Cash Flow Forecast	3-yr trailing	LOM TOTAL	Yr-3	Yr-2	Yr-1	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12
Underground Mine Production																	
Reserves mined		11,132	-	-	-	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**182**	-
Aggregate mined		3,647	-	-	**182**	**548**	**548**	**501**	**594**	**548**	**548**	**180**	-	-	-	-	-
Processing Plant Production		**11,132**	-	-	-	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**1,095**	**182**	-
Nickel (%)	%	1.681	-	-	-	2.334	2.323	2.030	1.341	1.722	1.486	1.255	1.339	1.525	1.489	1.488	-
Copper (%)	%	0.874	-	-	-	1.180	1.215	1.092	0.887	0.902	0.683	0.637	0.697	0.927	0.569	0.552	-
Platinum (g/t)	g/t	0.885	-	-	-	0.936	1.030	1.033	0.709	0.897	1.044	0.837	0.862	0.898	0.646	0.633	-
Palladium (g/t)	g/t	3.088	-	-	-	3.903	3.968	3.641	2.454	2.773	2.733	2.826	3.219	3.380	2.149	2.090	-
Gold (g/t)	g/t	0.179	-	-	-	0.221	0.241	0.207	0.195	0.141	0.126	0.153	0.147	0.196	0.169	0.168	-
Nickel	t 000	187.128	-	-	-	25.557	25.435	22.226	14.679	18.853	16.271	13.738	14.659	16.701	16.310	2.700	-
Copper	t 000	97.236	-	-	-	12.916	13.303	11.953	9.712	9.875	7.479	6.978	7.633	10.156	6.229	1.001	-
Platinum	kg	9,850	-	-	-	1,025	1,128	1,131	776	982	1,144	916	944	983	707	115	-
Palladium	kg	34,375	-	-	-	4,274	4,345	3,986	2,687	3,037	2,993	3,094	3,525	3,702	2,354	379	-
Gold	kg	1,997	-	-	-	242	264	226	214	154	138	167	161	215	185	30	-
Payable Metal in Conc (imperial)																	
Nickel	000 lbs	308,397	-	-	-	42,903	42,686	36,997	23,819	31,069	26,572	22,199	23,784	27,318	26,639	4,410	-
Copper	000 lbs	144,209	-	-	-	19,531	20,157	17,973	14,386	14,646	10,868	10,088	11,108	15,093	8,928	1,431	-
Platinum	oz	173,921	-	-	-	18,201	20,273	20,336	13,292	17,339	20,597	16,034	16,585	17,369	11,956	1,939	-
Palladium	oz	675,533	-	-	-	85,962	87,551	79,589	51,369	58,851	57,908	60,095	69,449	73,312	44,325	7,121	-
Gold	oz	36,567	-	-	-	4,571	5,069	4,234	3,965	2,687	2,358	2,968	2,839	3,984	3,342	549	-
Nickel	% in conc	10.19					10.685	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	
Moisture %	1	1.00					1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Concentrate	t 000 dry basis	1,525.68					201.34	186.46	120.04	156.58	133.92	111.88	119.87	137.68	134.26	22.23	
	t 000 wet basis	1,541.09					203.38	188.35	121.26	158.17	135.27	113.01	121.08	139.07	135.62	22.45	
Overall Payability (metal in Conc.)		83.47%				**83.46%**	**83.65%**	**83.31%**	**83.92%**	**83.02%**	**83.39%**	**83.93%**	**84.05%**	**84.17%**	**82.02%**	**81.90%**	
NET SMELTER RETURN (USD 000)		3,474,230	-	-	-	**469,062**	**474,457**	**416,408**	**280,347**	**342,489**	**300,794**	**261,462**	**282,805**	**327,692**	**273,759**	**44,954**	-
Nickel	USD 000	2,342,487	-	-	-	326,710	325,413	280,488	181,371	235,048	201,567	169,052	181,286	208,397	200,062	33,092	-
Copper	USD 000	468,523	-	-	-	63,578	65,686	58,265	46,830	47,386	35,251	32,839	36,191	49,215	28,688	4,596	-
Platinum	USD 000	251,185	-	-	-	26,345	29,375	29,313	19,238	24,943	29,705	23,208	24,027	25,182	17,081	2,768	-
Palladium	USD 000	365,344	-	-	-	46,580	47,490	42,948	27,834	31,694	31,265	32,564	37,665	39,791	23,707	3,805	-
Gold	USD 000	46,692	-	-	-	5,849	6,494	5,395	5,074	3,418	3,007	3,798	3,637	5,107	4,221	693	-

Cash Flow Forecast		LOM TOTAL	Yr-3	Yr-2	Yr-1	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12
Net Smelter Return	CAD 000	3,508,973	-	-	-	473,753	479,202	420,572	283,150	345,914	303,802	264,076	285,633	330,969	276,497	45,403	-
Less Royalties	CAD 000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Revenue	**CAD 000**	**3,508,973**	**-**	**-**	**-**	**473,753**	**479,202**	**420,572**	**283,150**	**345,914**	**303,802**	**264,076**	**285,633**	**330,969**	**276,497**	**45,403**	**-**
Operating Costs	**CAD/t ore**	**1,079,917**	**-**	**-**	**-**	**102,196**	**102,360**	**105,064**	**111,142**	**110,565**	**109,719**	**104,657**	**107,738**	**106,694**	**102,346**	**17,437**	**-**
Mining	34.35	382,334	-	-	-	36,865	37,029	39,734	41,212	40,635	39,788	34,726	37,807	36,763	32,415	5,360	-
Processing	33.03	367,636	-	-	-	32,874	32,874	32,874	37,474	37,474	37,474	37,474	37,474	37,474	37,474	6,697	-
Infrastructure (P3 road usage)	8.62	95,953	-	-	-	9,439	9,439	9,439	9,439	9,439	9,439	9,439	9,439	9,439	9,439	1,565	-
G&A	21.02	233,994	-	-	-	23,018	23,018	23,018	23,018	23,018	23,018	23,018	23,018	23,018	23,018	3,815	-
Operating Margin	218.21	2,429,056	-	-	-	371,557	376,842	315,508	172,008	235,349	194,083	159,420	177,896	224,275	174,151	27,966	-
Capital Costs	69.14	**769,665**	**66,357**	**245,617**	**297,466**	**21,661**	**13,663**	**11,579**	**17,734**	**21,804**	**22,228**	**19,576**	**15,971**	**11,225**	**4,783**	**-**	**-**
Mine Development	15.43	171,756	18,595	42,198	65,766	7,541	5,312	5,160	5,157	5,801	5,106	6,685	1,241	2,861	333	-	-
Mining Equip.	16.48	183,494	14,016	29,833	24,617	14,120	8,350	6,419	12,577	16,004	17,122	12,891	14,730	8,364	4,450	-	-
Processing Capital	10.13	112,756	-	51,274	61,482	-	-	-	-	-	-	-	-	-	-	-	-
Infrastructure	9.00	100,178	-	48,859	51,319	-	-	-	-	-	-	-	-	-	-	-	-
Indirect Capital	18.10	201,481	33,746	73,453	94,282	-	-	-	-	-	-	-	-	-	-	-	-
Change in Working Cap	-	-	-	-	-	101,915	920	(12,063)	(27,957)	12,794	(8,463)	(8,536)	4,625	9,212	(11,506)	(98)	(60,842)
Pre-tax c/flow	**151.91**	**1,690,982**	**(66,357)**	**(245,617)**	**(297,466)**	**252,973**	**367,251**	**320,560**	**187,646**	**205,742**	**185,310**	**150,021**	**157,299**	**203,838**	**180,874**	**28,065**	**60,842**
Tax payable	38.02	423,184	-	-	-	-	9,651	80,536	43,051	58,834	47,860	37,319	43,123	54,907	42,887	5,016	-
C/flow after tax	**113.89**	**1,267,798**	**(66,357)**	**(245,617)**	**(297,466)**	**252,973**	**357,600**	**240,024**	**144,596**	**146,908**	**137,450**	**112,702**	**114,177**	**148,931**	**137,987**	**23,048**	**60,842**
Cumulative C/Flow			(66,357)	(311,974)	(609,440)	(356,467)	1,133	241,157	385,752	532,660	670,110	782,812	896,989	1,045,920	1,183,907	1,206,955	1,267,798
Discounted C/Flow (8%)		542,996	(61,441)	(210,577)	(236,138)	185,943	243,377	151,256	84,370	79,370	68,759	52,203	48,968	59,143	50,738	7,847	19,180
Cumulative DCF			(61,441)	(272,019)	(508,157)	(322,214)	(78,838)	72,418	156,788	236,158	304,917	357,120	406,089	465,231	515,969	523,816	542,996
Max funding reqmt to positive cashflow		(733,016)	(66,357)	(311,974)	(609,440)	**(733,016)**	(380,701)	(78,919)	-	-	-	-	-	-	-	-	-

The chart demonstrates that the Project returns are similar when using metal prices and exchange rates averaged over two- and five-year periods, but are less attractive when recent (August, 2012) and 12-month average prices are applied.

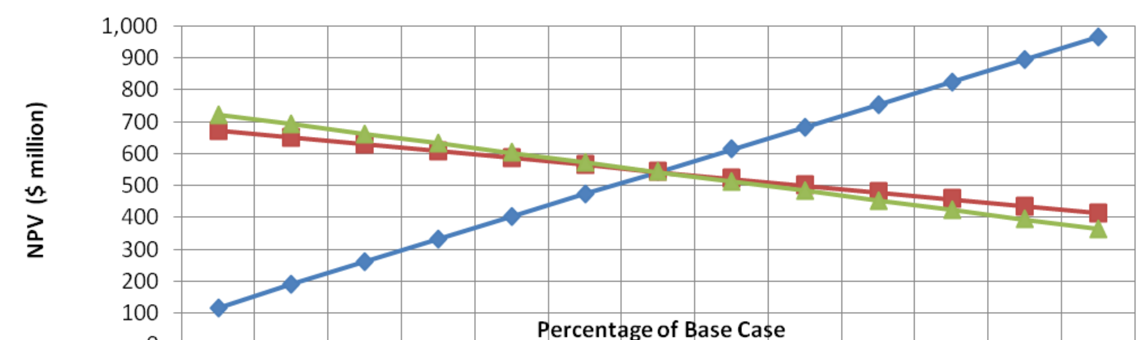
22.4.2 Capital, Operating Costs and Revenue Sensitivity

The sensitivity of the Project returns to changes in all revenue factors (including grades, recoveries, prices and exchange rate assumptions) together with capital and operating costs was tested over a range of 30% above and below base case values. The results show that the Project is most sensitive to revenue factors, with an adverse change of 30% reducing NPV_8 by \$426 million to approximately \$117 million. An adverse change of 30% in capital cost reduces NPV_8 by \$179 million to \$364 million. A 30% increase in operating costs reduces NPV_8 by \$128 million to \$415 million, making this the least sensitive of the principal value drivers.

In Micon's analysis, applying an increase of more than 55% in both capital and operating costs simultaneously would be required to reduce NPV_8 to near zero.

Figure 22.10 shows the results of changes in each factor separately.

Figure 22.10
Sensitivity to Capital, Operating Costs and Revenue



	70	75	80	85	90	95	100	105	110	115	120	125	130
Product Price	117	189	260	331	402	473	543	613	684	754	824	894	965
Opcosts	671	650	628	607	586	564	543	522	500	479	457	436	415
Capex	722	692	662	632	603	573	543	513	483	454	424	394	364

22.4.3 Sensitivity to Remote Mine Status

The sensitivity of the Project returns to changes in the assumptions made in respect of the remote mine status of the Project was tested. This status is subject to Ontario Ministerial approval and depends on the existence of suitable road access to the mine. The results in

Table 22.6 show that the impact of this assumption on after-tax returns is not significant. There is no pre-tax impact.

Table 22.6
Sensitivity of NPV to Share of Off-site Infrastructure

Mine Status	Pre-Tax		After Tax	
	NPV_8 ($ 000)	IRR (%)	NPV_8 ($ 000)	IRR (%)
Remote	756,225	33.1	542,996	28.3
Non-remote	756,225	33.1	512,390	27.5

22.5 CONCLUSION

Micon concludes that this study demonstrates the viability of the Project as proposed, and that further development is warranted.

23.0 ADJACENT PROPERTIES

Interest and subsequent activity in the vicinity of McFaulds Lake area has increased since 2007, and has resulted in the claims in the ROF area being staked by several companies and JV partners. The nearest producing mine to the McFaulds Lake area is the Victor diamond mine of De Beers Canada near Attawapiskat, approximately 150 km to the east. There is currently no other mining activity in the immediate area of the McFaulds Lake or in the James Bay Lowlands.

The Blackbird deposits were discovered when drilling the AT2 geophysical target. This target was first identified as the Eagle Two Ni-Cu deposit and initial drilling did not target the Blackbird chromite deposits. The Triple J gold zone was later discovered at the contact between the granodiorite and the ROF Intrusion in the same area.

The Eagle's Nest Ni-Cu-PGE and Blackbird chromite deposits owned by Noront, are central to much of the current activity in the area. Discovery of two VMS deposits prompted activity within 20 km of Blackbird and the McFaulds Lake area, and has included claim staking, exploration and the discovery of several occurrences of VMS, many hosted in a peridotite-pyroxenite unit of the ROF Intrusion. Some of these discoveries include Noront's Eagle Two Ni-Cu-PGE magmatic sulphide deposit and the AT12 Ni-Cu-PGE occurrence both of which are in the early stages of exploration.

Other discoveries near the ENB Complex include the Big Daddy chromite deposit by the Cliffs Natural Resources/KWG (formerly Freewest/Spider/KWG) JV to the northeast of Blackbird, and the Black Thor and Black Label chromite deposits by Cliffs Natural Resources (formerly Freewest).

24.0 OTHER RELEVANT DATA AND INFORMATION

24.1 MANPOWER

The challenging conditions of the James Bay Lowlands have contributed to delaying mineral discoveries in this region. These conditions are also the reason why there are no communities located near the mine site. The nearest communities are First Nation which currently have limited capability to work in the mining operation, but this can be addressed through training and aiding them with business development. The First Nation communities have high unemployment and low education levels. Noront has been working with the First Nation communities and colleges to assess capabilities and determine how to upgrade education and skills of First Nation people so they can work at the mine or for businesses supporting the mine, or start new businesses themselves.

The Canadian mining industry is facing a pending shortage of skilled workers, projected to be approximately 100,000 people by 2020, according to the Mining Industry Human Resources Council, Summer 2010 study. Working in remote mines adds to the challenges to fill positions. The local communities are seen as a valuable source for supporting the mine. Noront and the Canadian Council of Community Colleges are working to develop training programs to help First Nation people obtain high school equivalency and develop skills which will make them eligible to take advantage of the jobs and business opportunities arising from the development in the Ring of Fire.

In addition to education, Noront is looking to leverage skilled workers through the use of automation whereby one worker can operate several pieces of equipment using tele-remote control and relying on automation to handle activities like driving between workplaces.

24.2 PROJECT IMPLEMENTATION

The following implementation schedule is anticipated for the development of the project:

Project Feasibility Study complete	August, 2012
Commence detailed engineering	September, 2012
Apply for advanced exploration permit	Fall, 2012
Issue EA report	Fall, 2012
Commence advanced exploration	Winter, 2013
Prepare and submit permit applications	Spring, 2013
Commence major equipment purchasing	Spring, 2013
EA approved	Summer, 2013
Commence construction	Summer, 2013
Engineering complete	Fall, 2013
Construction and commissioning complete	December, 2015

25.0 INTERPRETATION AND CONCLUSIONS

This Feasibility Study is based on the proposed mining and processing of the Eagle's Nest measured and indicated mineral resources previously defined by Micon in a mineral resource estimate reported in April, 2011.

Mineral resources for the Eagle's Nest deposit comprise measured and indicated resources of 11.0Mt grading 1.78% Ni, 0.98% Cu, 0.99 g/t Pt, 3.4 g/t Pd and 0.2 g/t Au and an inferred resource of 9.0Mt grading 1.10% Ni, 1.14% Cu, 1.16 g/t Pt, 3.49 g/t Pd and 0.3 g/t Au.

A feasibility mine plan has been developed using the combined measured and indicated resources; no inferred resources have been used. The mining schedule reflects mining of the measured and indicated resource base with a 7% dilution and a 95% mining recovery. The proven and probable reserves derived from the mining plan and economic evaluation contained in this Feasibility Study comprise 11.1 Mt averaging 1.68% Ni, 0.87% Cu, 0.89 g/t Pt, 3.09 g/t Pd and 0.18 g/t Au.

The Feasibility Study is based on the following:

- The Eagle's Nest Ni-Cu-PGM mineralization will be extracted using standard underground mining methods.
- Mine access will be from twin portals and ramps. Twin production ramps will be developed throughout the mine life to the bottom of the orebody to access the orebody.
- Nominal throughput rate of 1.1 Mt/y ore.
- The life of the operating mine is approximately 10.2 years.
- Conventional mineral processing technology will be used to produce a single concentrate product containing nickel, copper, platinum, palladium and gold.
- Estimated life-of-mine nickel recovery of 83.1% and copper recovery of 89.7%.
- Production of a 10% Ni product containing copper, PGMs and gold.
- Major facilities will be located underground.
- All tailings will be stored underground.
- The Project is designed for minimal surface disturbance.

- Aggregate for construction will be sourced from underground, supplemented by surface borrow material for road construction.
- Access to site will be via an all-season roads from Nakina to site.
- Electrical power will be provided by a diesel power plant located at mine site.
- The planned off-site infrastructure will benefit other companies and local communities.

The results of the study are summarized in Table 25.1. (All dollars are Canadian dollars).

Table 25.1
Summary of the Feasibility Study Base Case Results

Item	Unit	Value
Total life-of-mine ore production	kt	11,132
Average nickel grade	%	1.68
Average copper grade	%	0.87
Average palladium grade	g/t	3.09
Average platinum grade	g/t	0.89
Average gold grade	g/t	0.18
Average nickel process recovery	%	83.1
Average copper process recovery	%	89.7
Annual Ni production (average)	lb (000's)	30,235
Annual Cu production (average)	lb (000's)	14,138
Annual Pd production (average)	oz (000's)	18.5
Annual Pt production (average)	oz (000's)	68.7
Annual Au production (average)	oz (000's)	3.8
Life of the mine	Years	10.2
Pre-production capital cost	$ 000	609,440
Sustaining capital	$ 000	160,225
LOM operating cost	$ 000	1,079,917
LOM cash operating cost	$/t milled	97.01
Average base case nickel price	US$/lb	9.43
Average base case copper price	US$/lb	3.60
LOM gross metal sales	$ 000	4,203,911
LOM off-site costs	$ 000	609,440
LOM net revenue	$ 000	3,508,973
Project cash flow before tax	$ 000	1,690,982
Pre-tax NPV@ 10.0% discount rate	$ 000	618,092
Pre-tax NPV @ 8.0% discount rate	$ 000	756,225
Pre-tax NPV@ 6.0% discount rate	$ 000	923,936
Post-tax NPV @ 8.0% discount rate	$ 000	542,996
Pre-tax IRR	%	33.1
After-tax IRR	%	28.3

Sensitivity analyses indicate that the Project economics is most sensitive to revenue factors and is less sensitive to capital and operating costs.

25.1 RISKS AND OPPORTUNITIES

Micon has assigned a level of confidence to individual key parameters as high, medium or low with a corresponding risk assessment as low, medium or high, as summarized in Table 25.2.

Table 25.2
Eagle's Nest Project, Qualitative Risk Assessment

Subject or Technical Area	Confidence Level	Risk Level
Mineral and surface rights	High	Low
Geology	Medium to high	Low to Medium
Mineral resources/reserves	Medium to high	Low to Medium
Geotechnical	Low to Medium	Medium
Mining	Medium to High	Low to Medium
Hydrology/mine dewatering	Low to Medium	Medium
Metallurgical testing	Medium to High	Low to Medium
Aggregates testing (granodiorite)	High	Low
Plant design	Medium to High	Low
Utilities and services	Medium to High	Low to Medium
Surface infrastructure	Medium to High	Low to Medium
Logistics (climate, access and roads)	Medium to High	Low to Medium
Environmental	Medium to High	Low to Medium
Recruitment, training & retention	Medium to High	Low to Medium
Meeting projected schedules	Medium to High	Low to Medium
Construction plan	Medium to High	Low to Medium
Capital costs	Medium to High	Low to Medium
Operating costs	Medium to High	Low to Medium
Economic assessment	Medium to High	Low to Medium
Socio/governmental consultations	Medium to High	Medium to High
Overall	**Medium to High**	**Low to Medium**

Overall the Project is considered to be of medium risk. Work is continuing in several areas, including environmental and infrastructure components.

Opportunities exist in several areas:

- Infrastructure development synergies with other stakeholders.
- Infrastructure synergies with development of other projects in the area, including Noront's Blackbird chromite deposit.
- Potential infrastructure and service synergies with other companies exploring in the region.
- External aggregates sales to future infrastructure projects.

- First Nation employment, training and development.
- Further resource potential through exploration.

26.0 RECOMMENDATIONS

It is recommended that Noront continues to develop the Project beyond Feasibility Study. During Detailed Design the following areas of work should be considered:

1. Identification of sources of borrow material, particularly for road construction.
2. Continue planned stakeholder engagement.
3. Continue with preparation of environmental and social impact studies to meet provincial, federal and international standards.
4. Conduct additional mineralogical studies to determine the manner in which talc occurs in the orebody for mine planning purposes.
5. Conduct additional metallurgical testwork to clarify reagent consumption rates for both massive and net-textured ores.
6. Conduct additional metallurgical testwork in order to ensure acceptable levels of talc and other deleterious minerals/elements report to the final concentrate.
7. Determine the extent of future geotechnical studies to support mine planning and implement if deemed necessary.
8. Pursue the potential opportunities listed above.
9. Additional grindability tests to confirm the sizing of the SAG mills.
10. Continued evaluation of producing separate copper and nickel flotation concentrates.
11. Preliminary testing of hydrometallurgical treatment of the concentrate.
12. Large scale bulk tests to prepare bulk concentrates suitable for marketing purposes.
13. More detailed MgO deportment study and continued evaluation of depressants to optimize reagent costs and control of MgO reporting to the final concentrate.

26.1 BUDGET FOR ON-GOING WORK

Noront's budget for on-going work during the next 12 months amounts to $18,300,000 and is broken down as shown in Table 26.1.

Table 26.1
Budget for On-going Work

Item	Cost $ Millions
Mine Design	6.0
Metallurgical Testwork	0.3
Mill Process Design	1.3
Infrastructure	7.8
Project Management	1.0
Contingency	1.9
Total	18.3

Micon believes that the proposed budget is reasonable and recommends that Noront proceeds with the proposed work program.

27.0 DATE AND SIGNATURE PAGE

MICON INTERNATIONAL LIMITED

Effective Date: September 4, 2012
Signing Date: October 19, 2012

"Richard Gowans" (signed and sealed)

Richard Gowans, P.Eng
Micon International Limited

"Chris Jacobs, C.Eng." (signed and sealed)

Christopher Jacobs, C.Eng.
Micon International Limited

"Bogdan Damjanović" (signed and sealed)

Bogdan Damjanović, P.Eng.
Micon International Limited

"Harry Burgess" (signed and sealed)

Harry Burgess, P.Eng.
Micon International Limited

"Charley Murahwi" (signed and sealed)

Charley Murahwi, M.Sc., P.Geo.,Pr.Sc.Nat., MAusIMM
Micon International Limited

28.0 REFERENCES

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29.0 CERTIFICATES

CERTIFICATE OF AUTHOR

RICHARD M. GOWANS

As a co-author of this report entitled "NI 43-101 Technical Report on the Feasibility Study for the Eagle's Nest Property, McFaulds Lake Project, James Bay Lowlands, Ontario, Canada" dated October 19, 2012, 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:

   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 29 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 visited the project site on May 5, 2010.

7. I am responsible for the preparation of Section 13 of this report dated October 19, 2012 and entitled "NI 43-101 Technical Report on the Feasibility Study for the Eagle's Nest Property, McFaulds Lake Project, James Bay Lowlands, Ontario, Canada".

8. I am independent of the parties involved in the Eagle's Nest property, as defined in Section 1.4 of NI 43-101, other than providing consulting services.

9. I was a co-author of the report entitled "Technical Report on the Preliminary Assessment of the McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada" dated September 9, 2010 and the report entitled "Technical Report on the Pre-feasibility Study of the McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada" dated October 06, 2011.

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: September 4, 2012
Signing Date: October 19, 2012

"Richard M. Gowans" {signed and sealed}

Richard M. Gowans, P.Eng.

CERTIFICATE OF QUALIFIED PERSON
CHRISTOPHER JACOBS

As a co-author of this report entitled "NI 43-101 Technical Report on the Feasibility Study for the Eagle's Nest Property, McFaulds Lake Project, James Bay Lowlands, Ontario, Canada" dated October 19, 2012, I, Christopher Jacobs do hereby certify that:

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

2) I hold the following academic qualifications:
B.Sc. (Hons) Geochemistry, University of Reading, 1980;
M.B.A., Gordon Institute of Business Science, University of Pretoria, 2004;

3) I am a Chartered Engineer registered with the Engineering Council of the U.K. (registration number 369178);

   Also, I am a professional member in good standing of: The Institute of Materials, Minerals and Mining; and The Canadian Institute of Mining, Metallurgy and Petroleum (Member);

4) I have worked in the minerals industry for 30 years; my work experience includes 10 years as an exploration and mining geologist on gold, platinum, copper/nickel and chromite deposits; 10 years as a technical/operations manager in both open pit and underground mines; 3 years as strategic (mine) planning manager and the remainder as an independent consultant when I have worked on a variety of precious and base metal deposits

5) I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101;

6) I have not visited the property that is the subject of the Technical Report.

7) I am responsible for the preparation of Section 19, 21, 22, and the portions of Sections 1, 25 and 26 summarized therefrom, of the Technical Report.

8) I am independent of Noront Resources Ltd., as defined in Section 1.5 of NI 43-101.

9) I was previously a co-author of the reports entitled "NI 43-101 Technical Report, Preliminary Assessment, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada" dated September 9, 2010 and "NI 43-101 Technical Report, Pre-Feasibility Study, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada" dated October 6, 2011.

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: September 4, 2012
Signing Date: October 19, 2012

"Christopher Jacobs" {Signed and Sealed}

Christopher Jacobs, CEng MIMMM

CERTIFICATE OF QUALIFIED PERSON
CHARLEY Z. MURAHWI

As a co-author of this report entitled “NI 43-101 Technical Report, Feasibility Study, McFaulds Lake Property, Eagle’s Nest Project, McFaulds Lake Project, James Bay Lowlands, Ontario, Canada”, dated October 19, 2012, I, Charley Z. Murahwi 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, 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 in Ontario (membership number 1618) and in PEGNL (membership # 05662), a registered Professional Natural Scientist with the South African Council for Natural Scientific Professions (membership # 400133/09) and am also a member of the Australasian Institute of Mining & Metallurgy (AusIMM) (membership number 300395).

4) I have worked as a mining and exploration geologist in the minerals industry for over 29 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, tin, and tantalite.

6) I visited the Eagle’s Nest and Blackbird properties from 6 to 9 July, 2009 and 30 June, 2011, and the Activation Laboratory in Thunder Bay on 10 July, 2009.

7) I was a co-author of the report entitled “Technical Report on the Preliminary Assessment of the McFaulds Lake Property, Eagle’s Nest Project, James Bay Lowlands, Ontario, Canada” dated September 9, 2010.

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 Eagle’s Nest property as described in Section 1.5 of NI 43-101.

10) I have read 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 sections 4 to 12, and 14 of this Technical Report dated October 19, 2012 and entitled “NI 43-101 Technical Report, Pre-Feasibility Study, McFaulds Lake Property, Eagle’s Nest Project, James Bay Lowlands, Ontario, Canada”.

Effective Date: September 4, 2012
Signing Date: October 19, 2012

“Charley Z. Murahwi” {signed and sealed}

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

CERTIFICATE OF QUALIFIED PERSON
HARRY BURGESS

As a co-author of this report entitled "NI 43-101 Technical Report, Feasibility Study, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada" dated October 19, 2012, I, Harry Burgess do hereby certify that:

1) I am employed as a Senior Mining Engineer by, and carried out this assignment for, Micon International Limited, Suite 900, 390 Bay Street, Toronto, OntarioM5H 2Y2, telephone 416 362 5135, fax 416 362 5763, e-mail hburgess@micon-international.com.

2) I hold the following academic qualifications:

B.Sc. (Mechanical Engineering)	London University	1966
B.Sc. (Mining Engineering)	London University	1968
M.Sc. (Engineering)	University of Witwatersrand	1980

3) I am a registered Professional Engineer with the Association of Professional Engineers of Ontario (membership number 6092506); as well, I am a member in good standing of several other technical associations and societies, including:

   The Australasian Institute of Mining and Metallurgy (Fellow)
   The Institution of Mining and Metallurgy (Fellow)
   The Canadian Institute of Mining, Metallurgy and Petroleum (Member)

4) I have worked in the mining industry as an operator and consultant for over 40 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. I am familiar with NI 43-101 and, by reason of education, experience and professional registration, My work experience includes 13 years as a mining engineer working in mine planning and production operations in underground copper and gold mining and over 30 years as a consulting mining engineer working in open-pit and underground operations involving many minerals and all aspects of mining from mine design to financial evaluation.;

6) I have not visited the McFaulds Lake Property.

7) I was a co-author of the report entitled "NI 43-101 Technical Report, Preliminary Assessment, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada" dated September 9, 2010.

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 McFaulds Lake Property, as defined in Section 1.5 of NI 43-101, other than providing consulting services.

10) I have read 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 Sections 15 and 16 of this Technical Report dated August 23, 2011 and entitled "NI 43-101 Technical Report, Feasibility Study, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada".

Effective Date: September 4, 2012
Signing Date: October 19, 2012

"Harry Burgess" {signed and sealed}

Harry Burgess, P.Eng.

CERTIFICATE OF AUTHOR

Bogdan Damjanović

As co-author of this report entitled "NI 43-101 Technical Report, Feasibility Study, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada" dated October 19, 2012 (the "Technical Report"), I, Bogdan Damjanović, do hereby certify that:

1. I am employed as a metallurgist by, and carried out this assignment for:
   Micon International Limited, Suite 900 – 390 Bay Street, Toronto, ON, M5H 2Y2
   tel. (416) 362-5135 email: bdamjanovic@micon-international.com
2. I hold the following academic qualifications:
   B.A.Sc., Geological and Mineral Engineering, University of Toronto, 1992
3. I am a Professional Engineer registered with the Professional Engineers of Ontario. (registration number 90420456);

   Also, I am a professional member in good standing of: The Canadian Institute of Mining, Metallurgy and Petroleum (Member);
4. I have worked in the minerals industry for 20 years; my work experience includes 8 years as a metallurgist on gold, copper/nickel and lead/zinc/gold deposits; and the remainder as an independent consultant when I have worked on a variety of precious and base metal deposits;
5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101;
6. I have not visited the McFaulds Lake Property;
7. I am responsible for the preparation of Section 17, 18, 20 and the portions of Sections 1, 2, 25 and 26 summarized therefrom, of the Technical Report.
8. I am independent of Noront Resources Ltd., as defined in Section 1.5 of NI 43-101;
9. I have had no previous involvement with the property;
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: September 4, 2012
Signing Date: October 19, 2012

"Bogdan Damjanović" {signed and sealed}

Bogdan Damjanović, P.Eng.