



# Technical Report for the McWatters Nickel Deposit, Ontario, Canada

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Report Prepared by

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16 May 2008

# Technical Report for the McWatters Nickel Deposit in Ontario, Canada

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**16 May 2008**

Compiled by:

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## **Executive Summary**

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### **Introduction**

The assets of Liberty Mines Inc. (“Liberty”) include an interest in the McWatters Nickel Mine (“McWatters”), which is located approximately 25 kilometers south east of Timmins, Ontario, Canada. Liberty has recently completed an aggressive surface drill program to facilitate an accurate Feasibility Study, the results of which are summarized in this report. All permitting for the project has been completed, and the mine is currently in development stage.

In December 2007, SRK Consulting (Canada) Inc. (“SRK”) was retained by Liberty to compile a resource and reserve estimation as part of a Feasibility Study for the McWatters Nickel Mine. The scope of work included three site visits to examine the property (conducted in December 2007, February 2007, and May 2007) review available technical information, interview project personnel and collect of all relevant information for the compilation of the technical report and resource estimation according to Canadian Securities Administrators NI43-101 and Form 43-101F1 guidelines in conformity with generally accepted CIM “Exploration Best Practices” and “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines.

### **Work Program**

SRK staff received the final edited database for the resource estimation from Liberty on the 14<sup>th</sup> of January, 2008. This database included validated drillhole files, topographic and bedrock surfaces, modelled geological units including volcanic stratigraphy and intrusive rocks where possible, a specific gravity database, and three verified wireframes of the ore zone domains used in the resource estimation. The latter wireframes consisted of a broad zone defined by 0.3% Ni cut-off grade that encapsulates a disseminated sulphide dominated zone (0.6% Ni cut-off) and a basal massive sulphide zone. These datasets formed the basis of the resource estimation conducted by SRK.

Geostatistic, block modelling and resource estimation was completed by Mr. Glen Cole of SRK in Toronto, Ontario, Canada. This resource statement was subsequently used by Liberty’s engineering department to produce a preliminary mine plan and reserve estimate. This preliminary plan and estimate was received by SRK (Sudbury) on 10<sup>th</sup> of March 2008, during a conference held in SRK’s offices in Sudbury, Ontario, Canada. Based on this data, which included a basic layout of underground workings, mining methods, production rates, geotechnical data, and metallurgical recoveries, SRK reviewed and generated a final reserve estimate and completed a Feasibility Study on the McWatters Nickel Mine.

The final results of the Feasibility Study were received by Liberty on 2<sup>nd</sup> April 2008, at which point a press release was issued containing the salient points. The requisite technical report was produced during April and May 2008. The report was compiled and edited by Liberty with invaluable assistance from SRK.

## Property Description

The McWatters Property is located approximately 25 kilometres southeast of the city of Timmins, Ontario. The property is within the boundaries of the city of Timmins and is centered at approximately UTM (NAD83 Z17) coordinates 5,350,860 mN and 497,570 mE. The property is in Langmuir Township, within the Porcupine Mining Division, and is accessed from the city of Timmins/South Porcupine by a series of all-weather gravel roads.

The McWatters Property consists of two patented mining claims held by Liberty. These claims total 295.6 hectares, and have been legally surveyed. Liberty owns 100% of the McWatters property with no subsidiary involved.

The McWatters site is large enough to accommodate all the required construction of mining facilities. Completed infrastructure on site consists of a mechanical maintenance shop, office complex, mine dry, compressor house, security gate, and settling and treatment ponds. The mine is accessed via a portal, completed in early 2008, from which the ramp initiates.

## Geology and Mineralization

The McWatters deposit is hosted by ultramafic rocks that form part of, or intrude, the Tisdale assemblage that flank the Shaw Dome and form part of the Abitibi greenstone belt (AGB). The Abitibi greenstone belt is one of the youngest parts of the Archean Superior Province forming what is considered one of the largest and best-preserved belts of its kind in the world. To date five Ni-Cu-(PGE) deposits have been discovered in the Shaw Dome (Redstone, Hart, McWatters, Langmuir #1, Langmuir #2), and numerous showings have been identified.

The McWatters deposit differs markedly from the rest of the known deposits in the Shaw Dome. The ultramafic body hosting the McWatters deposit is discordant, evidently cutting up through the iron formation that sits immediately on its north flank, as indicated by recent, more detailed magnetic surveys conducted by Liberty. The discordant nature of this ultramafic unit suggests that it is intrusive.

The McWatters mineralized zone can be readily subdivided in two distinct zones: an upper zone of altered dunitic rocks containing disseminated sulphides, and a basal, lower zone consisting of massive sulphides. The upper zone directly overlies the lower zone, which is principally in contact with wedges of andesitic, footwall volcanic rocks. The two zones combined form an orebody approximately 150 metres in strike length by 30m to 40m in width extending down to a depth of approximately 160m. The sulphide assemblage consists almost exclusively of pyrite and heazlewoodite. Heazlewoodite ( $\text{Ni}_3\text{S}_2$ ) is one of the most nickel rich sulphide minerals, and is generally thought to be of hydrothermal origin, most often found in dunites and lherzolites.

## Mineral processing and metallurgy

On the 17<sup>th</sup> of July, 2007, Liberty commissioned the Redstone Nickel concentrator, located on the Redstone Mine site. The plant is designed to process up to 2,000 tonnes per day of high MgO Ni-Cu-PGE ore, even though permitting currently restricts throughput to a maximum of 1,500 tpd. The plant has been processing ore from Liberty's Redstone Nickel Mine. The ore type produced at the Redstone mine is similar to the ore type predicted to be produced at McWatters.

McWatters ore will be processed at the Redstone nickel concentrator, which is approximately 9 km due west of the McWatters site. Predicted nickel recoveries for the McWatters Mine ore material are based on previous plant performance (operating on similar ore from the Redstone Mine), future upgrades, and metallurgical testing performed on drill core from the McWatters deposit.

Present nickel recoveries achieved at the plant average 87.05%, while the average predicted Ni recovery used in this feasibility study is 88%. This one percent increase can be attributed to the incorporation of an on-stream analyzer (LIBS) that is currently being installed. This analyzer measures nickel and MgO values on a 2 minute interval at feed, tails and concentrate locations. This added automation lowers reaction times and therefore boosts recoveries.

In order to predict recoveries at head grades lower than those typically produced at Redstone, numerous open cycle tests were conducted on low grade material from the McWatters deposit. The head grade of the tested material ranged from 0.6% - 0.9% Ni. Tests were conducted by Process Research Associates Ltd., of Richmond, B.C. (Canada), using parameters intended to emulate the Redstone Mill. Reported recoveries ranged from 78.4% to 89.9%.

## Mineral Resources

The January 28, 2008 SRK Mineral Resource Statement for the McWatters Nickel Deposit is summarized in Table 1-1.

**Table 1-1 Mineral Resource Statement – January 28, 2008**

Mineral Resource Statement - January 28, 2008*					
SRK Consulting (Canada) (Inc)					
	Zone	Tonnes	Ni (%)	Contained Ni	
				(t)	(lbs)
Indicated:	Disseminated Zone (Upper)	665,308	0.72	4,790	10,557,640
	Massive Zone (Lower)	49,562	3.93	1,948	4,292,922
	<b>Sub total:</b>	<b>714,870</b>	<b>0.94</b>	<b>6,738</b>	<b>14,850,561</b>
Inferred:					
	Massive Zone (Lower)	13,829	3.39	469	1,033,242
	<b>Sub total:</b>	<b>13,829</b>	<b>3.39</b>	<b>469</b>	<b>1,033,242</b>

The independent mineral resource estimate prepared by SRK is reported in accordance with Canadian Securities Administrators' National Instrument 43-101 and conforms to generally accepted Canadian Institute of Mining ("CIM") "Estimation of Mineral Resources and Mineral Reserves Best Practices" guidelines. A complete National Instrument 43-101 Technical Report, which will incorporate the resource and reserve estimation, will be filed on Sedar within 45 days of release of this press release.

Nickel mineralization is broadly confined to a higher grade lower massive zone and to lower grade overlying disseminated zone. The resource estimate is based on a domainal three dimensional (3-D) geological interpretation of the mineralization that integrated information from a total of one hundred and fifty three diamond drill holes largely drilled on twenty five metre centres. Drill data was appropriately composited and capped prior to grade estimation.

The McWatters block model was created using Datamine with 2.5x2.5x2.5m blocks. Block grades were estimated using ordinary kriging (OK) methodology. Resource blocks situated within the primary ranges defined by variography are assigned to the Indicated classification; all other resource blocks within four times the primary variography ranges are assigned an Inferred classification.

The resource model and NI43-101 mineral resource estimation, was completed by Mr Glen Cole, P. Geo., Principal Resource Geologist, of SRK Consulting (Canada) Inc., Toronto, Ontario. By virtue of his background and professional experience, Mr Cole is a "Qualified Person" as defined by NI43-101.

## **Mineral Reserves**

The total probable mineral reserve for the McWatters deposit is 596,800 tonnes at an average grade of 0.93% Ni. The conversion of indicated resources to probable reserves at McWatters was based on the stope outlines and dimensions for resources at or above a diluted 0.6% Ni cutoff grade. Where development warranted, an incremental cut-off of 0.5% Ni was employed. The McWatters reserve estimate eliminated those resources contained within the presently unrecoverable portions of the crown, sill and rib pillars and incorporates planned and unplanned dilution, as well as production losses.

The NI43-101 mineral reserve estimation using stope shapes, tonnes, grades, and costing information as provided by Liberty, was completed by Mr. Alan Linden, Principal Consultant and reviewed by Ms. Christine Linden, P. Eng., Senior Consultant, of SRK Consulting (Canada) Inc., Sudbury, Ontario. By virtue of her background and professional experience, Ms. Linden is a "Qualified Person" as defined by NI43-101.

## **Mining Operations**

The McWatters ore body consists of a sub-vertical, larger zone of disseminated nickel sulphides over-lying a sub-horizontal massive sulphide basal layer. The two zones present distinct sizes and geometry and are, therefore, conducive to two distinct mining techniques: longhole stope mining and conventional panel stope mining. The former of the two methods is scheduled to produce 83% of the ore, and is therefore the most important mining method to be employed.

## **Environmental**

As part of the McWatters Mine Production Closure Plan, filed on the 20<sup>th</sup> of June of 2007 under Part VII of the Mining Act with the Ministry of Northern Development and Mines, Liberty reported on numerous environmental and site studies conducted on the property. These included hydrogeological and hydrological studies, water quality assessment, prediction of metal leaching and acid rock drainage, background environmental studies, discharge criteria, and archaeological and cultural heritage assessment. The Closure Plan was orchestrated and compiled by B. H. Martin Consultants Ltd, who used the services of various other consultants to provide the necessary data. The submitted closure plan met all standards and regulations set out in the act and was duly filed.

On April 15<sup>th</sup>, 2008, Liberty signed an Impact and Benefits Agreement ("IBA") with the Mattagami, Matachewan and Wahagoshig First Nations ("MMW"). The IBA encompasses all of the Corporations mining properties in the Shaw Dome Nickel Belt ("Properties") near Timmins Ontario (which includes the McWatters Mine), and is in effect for the life of any mining project developed on the Properties.

The IBA includes provisions for job training, employment, scholarships, business relationships and financial participation in community development projects. It also streamlines the exploration of the Properties and the permitting of economic deposits through direct consultation and input from the MMW.

## **McWatters Life of Mine Plan**

The McWatters mine is planned to produce 106,988 tonnes in 2008, 422,305 tonnes in 2009 and 67,505 tonnes in 2010. A detailed ore production schedule is tabulated in Table 25.2. The nickel price used for the McWatters project was \$12.50 US. For the purpose of this study \$1CDN:\$0.98US was assumed and remains constant for the life of mine. Table 1-2 shows the estimated pre-tax cash flow for the McWatters project:

**Table 1-2 Summary of the financial analyses at McWatters**

Tonnes of ore produced	596,797
Tonnes of Ni sold (mill recovered)	5232.15
Total Revenue	\$107,165,695
<i>Operating Costs</i>	
Mining Cost	\$21,875,842
Surface Transportation	\$2,088,793
Closure	\$1,640,600
Consulting	\$60,000
Milling Cost	\$8,653,570
G & A	\$2,564,049
Net Operating Profit	\$78,282,841
Capital Costs	\$16,354,592
Pre Tax Cash Flow	\$53,928,248
Internal Rate of Return (IRR)	385%
Net Present Value (NPV) at 5% discount rate	\$46,121,200

## Summary and Recommendations

Significant nickel mineralization has been identified at the McWatters Mine. The confidence in estimating mineral resources at McWatters is high as the geological constraints are well understood and the drilling density is high. As a consequence the mineral resource estimate is of high enough confidence to warrant conversion to mineral reserves and the formulation of a mine plan, schedule, and financial analysis. These last items have formed the basis of the Feasibility Study, the results of which are summarized in this report.

An indicated mineral resource estimate of 714,870 tonnes grading an average 0.93% Ni (calculated based on a 0.5% Ni cut-off grade) was identified. The resultant block model was used by SRK engineers to formulate a viable mine plan and schedule that incorporates methodology and rates appropriate to the deposit size, geometry, and geographic location.

The McWatters ore body consists of a sub-vertical, larger zone of disseminated nickel sulphides over-lying a sub-horizontal massive sulphide basal layer. The two zones present distinct sizes and geometry and are, therefore, conducive to two distinct underground mining techniques: longhole stope mining and conventional panel stope mining. The former of the two methods is scheduled to produce 83% of the ore, and is therefore the most important mining method to be employed. Stopes are to be accessed via an underground ramp from surface. This same ramp will also serve as a haulage route utilized to transport ore to surface using underground haulage trucks. Ore is then transported by a series of all weather gravel roads to Liberty's operating Redstone processing plant 9 kilometers away.

Based on a 0.6% cut-off grade a probable mineral reserve of 596,800 tonnes at an average grade of 0.93% Ni was identified. Where appropriate, selective portions of the deposit are mined at a reduced 0.5% cut-off grade. The resultant financial analysis was positive, and indicated a pre-tax cash flow of



\$53,930,000, based on \$12.5 per pound of nickel. Financial results are positive down to a break-even price of \$5.50 per pound of nickel. Based on current and predicted market conditions, and given the relatively short 2 year life of mine, the results are considered highly positive.

The results of this feasibility study are highly dependent on the accuracy and quality of the data used to calculate key parameters. While the majority of the data has been derived from reliable and accurate information, there are key areas that would benefit from increased investigations:

- Prior to reaching the target ore zone, conduct advanced rock quality tests on available and relevant drill core;
- Use the information gathered above to generate spatially sensitive models of rock quality characteristics that can aid in determining predicted ground conditions;
- Revise planned pillar dimensions and locations based on the above data;
- Once underground conduct further geotechnical investigations prior to final stope layout and crown pillar determination;
- Conduct and complete an extensive underground sampling program following industry best practices. Use these results to compare and update the generated block model to reflect the increased data density and confidence. This should also occur prior to final stope layout. This could prove particularly important in the upper disseminated zone;
- Upon underground excavations reaching the relevant horizons, geology to accurately sample, map and update models of the massive sulphide zones. Many of these zones are located in the deepest part of the orebody where drill hole inaccuracies can escalate;
- Engineering to revise the proposed mining method for massive sulphide zones (longwall panel stopes) to reflect improved ore model described above. The potential exists to employ a less labour intensive, more cost effective mining method if ore geometry improves;
- Geology to assess structural components of the ore body once underground to determine structural controls on mineralization;
- Exploration department to determine the depth potential of the ultramafic body, as well as investigate the strike potential based on geological observations and interpretations;
- Assess structural impact on mine design.

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## Table of Contents

---

<b>Executive Summary.....</b>	<b>ii</b>
<b>1 Introduction .....</b>	<b>15</b>
1.1 Background of the project .....	15
1.2 Qualification of SRK.....	15
1.3 Project team .....	16
1.4 Basis of the Technical Report .....	16
1.5 Site visit .....	17
<b>2 Reliance on other Experts .....</b>	<b>18</b>
<b>3 Property Description and Location.....</b>	<b>19</b>
3.1 Land Tenure .....	21
3.2 Underlying Agreements .....	21
<b>4 Accessibility, Climate, Local Resources, Infrastructure and Physiography .....</b>	<b>23</b>
4.1 Accesibility, Local Resources and Physiography .....	23
4.2 Infrastructure .....	24
<b>5 History .....</b>	<b>26</b>
<b>6 Geological Setting .....</b>	<b>32</b>
6.1 Regional Geology .....	32
6.2 Property Geology.....	35
<b>7 Deposit Types .....</b>	<b>38</b>
<b>8 Mineralization .....</b>	<b>41</b>
<b>9 Exploration.....</b>	<b>44</b>
<b>10 Drilling .....</b>	<b>45</b>
<b>11 Sampling Approach and Methodology .....</b>	<b>49</b>
11.1.1 Sampling Protocols .....	50
<b>12 Sample Preparation, Analyses and Security.....</b>	<b>52</b>
12.1.2 Sample Preparation and Analyses.....	52
12.1.3 Quality Assurance and Quality Control Programs .....	52
12.1.4 Specific Gravity Data.....	55
<b>13 Data Verification .....</b>	<b>57</b>
13.1 Historical data verifications .....	57
13.2 Control Sampling Assay protocols .....	57
13.3 SRK independent verifications .....	57
<b>14 Adjacent Properties.....</b>	<b>60</b>
<b>15 Mineral Processing and Metallurgical Testing.....</b>	<b>61</b>
15.1 Introduction.....	61
15.2 Ore Processing .....	61
15.2.5 Ore Type .....	61
15.2.6 Previous Plant Performance .....	61
15.2.7 Plant Flow Sheet Description .....	62
15.3 Laboratory .....	64

15.4 Plant Personnel .....	64
15.5 Plant Operating Costs.....	64
15.6 Future Prospects and Upgrades .....	68
<b>16 Mineral Resource and Mineral Reserve Estimates .....</b>	<b>69</b>
16.1 Introduction.....	69
16.2 Database validation .....	70
16.3 Resource Estimation.....	70
16.3.8 Database .....	70
16.3.9 Solid Body Modelling.....	71
16.3.10 Compositing .....	72
16.3.11 Statistics.....	73
16.3.12 Grade capping .....	76
16.3.13 Variography.....	77
16.3.14 Block Model and grade estimation .....	78
16.4 Model validation.....	80
16.5 Mineral Resource Classification.....	81
16.6 Mineral Resource Statement.....	82
16.7 Mineral Reserve Statement.....	84
<b>17 Additional Requirements for Technical Reports on Development Properties and Production Properties ....</b>	<b>85</b>
17.1 Mining Operations.....	85
17.1.15 Introduction .....	85
17.1.16 Mining Method .....	86
17.1.17 Longhole Stope Mining .....	86
17.1.18 Longwall Panel Stope Mining .....	87
17.1.19 Geotechnical Studies.....	88
17.1.20 Mine Equipment.....	88
17.1.21 Ore and Waste Handling .....	89
17.1.22 Mine Ventilation .....	89
17.1.23 Pumping.....	90
17.1.24 Milling.....	90
17.1.25 Backfilling.....	90
17.1.26 Development.....	91
17.2 Production and Development Schedules .....	93
17.3 Mining Costs.....	93
17.3.27 Mine Operating Costs .....	93
17.3.28 Capital Cost .....	94
17.3.29 Mill Operating Costs .....	94
17.3.30 General and Administrative Operating Costs .....	94
17.3.31 Personnel.....	95
17.3.32 Safety and Environment Department .....	95
17.4 Infrastructure .....	96
17.4.33 Site Access .....	96
17.4.34 Power Supply and Distribution.....	96
17.4.35 Water Supply .....	96
17.4.36 Environmental Considerations.....	96
17.4.37 Metal Leaching & Acid Rock Drainage Assessment ....	96
17.4.38 Waste Management Systems.....	98
17.4.39 Water Treatment System.....	99
17.4.40 Storage Sites .....	99
17.4.41 Consultation with Aboriginal Peoples .....	99
17.4.42 Closure Plan .....	99
17.5 Financial Analysis .....	100
17.5.43 Mine Operating Costs .....	100
17.5.44 Plant Operating Costs.....	100

---

17.5.45	G&A Costs .....	100
17.5.46	Total Operating Costs .....	100
17.5.47	Total Costs .....	100
17.6	McWatters Life of Mine Plan .....	101
17.6.48	Capital Expenditures .....	101
17.6.49	Marketing .....	102
17.6.50	Mine Plan .....	103
17.6.51	Taxes .....	106
17.6.52	Sensitivity Analysis .....	106
<b>18</b>	<b>Conclusions and Recommendations.....</b>	<b>109</b>
<b>19</b>	<b>References .....</b>	<b>111</b>

## List of Tables

---

Table 1-1 Mineral Resource Statement – January 28, 2008 .....	iv
Table 1-2 Summary of the financial analyses at McWatters.....	vii
Table 3-1 Details of the McWatters Project Mining Lease .....	21
Table 5-1 Summary of Previous Work on the McWatters Property ..	27
Table 5-2 Select Drill Results Urban Quebec Mines Ltd. ....	28
Table 7-1 Classification of mineralization types in komatiite-associated magmatic Ni-Cu-PGE deposits .....	39
Table 10-1 A tabulation of diamond drilling activities conducted at the McWatters Mine.....	45
Table 12-1 Summarized weighted averages per rock type of the specific gravity database .....	55
Table 13-1 Comparative analyses for SRK check assay verification	58
Table 15-1 First quarter of 2008 plant metallurgical performance ....	62
Table 15-2 Redstone plant operating costs.....	64
Table 16-1 A tabulation of summary statistics of composited drill data with both modelled ore types .....	74
Table 16-2 Variography analyses ranges for nickel for all modelled directions and for both the two mineralization zones.....	77
Table 16-3 Parameters of the McWatters Block Model constructed by SRK.....	79
Table 16-4 McWatters Deposit Mineral Resource Statement, SRK Consulting January 28, 2008. ....	82
Table 16-5 Grade sensitivity tables for massive sulphide ore.....	83
Table 16-6 Grade sensitivity tables for disseminated sulphide ore...	83
Table 17-1 Tabulation of major mining equipment .....	89
Table 17-2 Life of Mine ore production schedule .....	93
Table 17-3 McWatters total mine development schedule.....	93
Table 17-4 Breakdown of the total operating mining costs.....	94
Table 17-5 McWatters Mine capital cost tabulation .....	94
Table 17-6 McWatters predicted General and Administrative Operating Costs .....	95
Table 17-7 Total operating costs based on ore production of 1,200 tonnes per day.....	100
Table 17-8 A summary of total mining costs, including all capital expenditures.....	101
Table 17-9 Tabulation of capital expenditure at McWatters.....	102

Table 17-10 Breakdown of the estimated mineral reserves per stope .....	104
Table 17-11 Summary of the financial analyses at McWatters .....	106
Table 17-12 Sensitivity Analyses: NPV vs nickel price at various discount rates (quoted in C\$million) .....	107

## List of Figures

Figure 3-1 Map of Ontario showing McWatters Mine location. ....	19
Figure 3-2 Detailed location map showing the McWatters Mine property in relation to the City of Timmins. ....	20
Figure 3-3 McWatters Property mining claims plan. ....	21
Figure 4-1 McWatters Mine site infrastructure overlain on an air photograph. ....	24
Figure 4-2 Photograph of the McWatters Mine portal during winter (2008). ....	25
Figure 6-1 Simplified regional geological setting of the Abitibi Greenstone Belt. ....	33
Figure 6-2 Location of the McWatters Mine shown on an extract from Map P2455 produced by the Ontario Geological Survey. ....	34
Figure 6-3 Simplified surface geological map of the McWatters deposit. ....	37
Figure 7-1 Map showing the distribution of magmatic Ni-Cu-PGE sulphide deposits in Canada, with resources greater than 100,000 tonnes (after Wheeler et al, 1996). ....	39
Figure 8-1 Thin section microphotograph of mineralized core from the McWatters deposit showing the predominant sulphide assemblage: Heazlewoodite (ha) and Pyrite (py). ....	41
Figure 8-2 Microphotograph of a thin section showing the mineral assemblage of the disseminated zone at McWatters. Magnetite (mt), Chlorite (cl), Heazlewoodite (ha), Magnesite (ms), Chalcopyrite (cp). ....	42
Figure 8-3 Microphotograph of a thin section showing mineralogy of the massive sulphide dominated basal layer at McWatters. Pyrite (py), Pyrrhotite (py), Chlorite (cl), Heazlewoodite (ha). ....	43
Figure 10-1 Plan section of diamond drill hole collars by Liberty shown on the McWatters grid. ....	47
Figure 10-2 Geological cross-section of the McWatters deposit showing geology, assay data, and drill hole traces. ....	48
Figure 11-1 Extract from Liberty drill log for MCW -07-65 DH Logger format .....	50
Figure 11-2 Extract from Liberty drill log MCW-07-65 Sampling Procedures and Logging Details .....	51

Figure 12-1 Plot for the control Nickel and Copper samples used by Liberty (top=blank, middle=copper and bottom=nickel).....	54
Figure 12-2 Histogram of specific gravity data (gcm <sup>3</sup> ) for the total McWatters database.....	56
Figure 12-3 Scatter plot showing the relationship between SG and Ni% from the McWatters dataset.....	56
Figure 13-1 Graph showing comparative Ni% assays for SGS (ICP90Q) and ALS Chemex (AA46).....	59
Figure 15-1 Flow Sheet - Crusher Circuit.....	65
Figure 15-2 Flow Sheet - Grinding Circuit.....	66
Figure 15-3 Flow Sheet - Flotation Circuit.....	67
Figure 15-4 Flow Sheet – Dewatering and Shipping .....	68
Figure 16-1 Mineral Resource Estimate for the McWatters Nickel Property (RPA, 2005) .....	69
Figure 16-2 Simplistic oblique sectional view looking NNW of the result of the geological modeling process applied at McWatters..	72
Figure 16-3 Histogram of original sampled widths within modeled massive and disseminated sulphide ore zones. ....	73
Figure 16-4 Histogram for composited nickel within the two modeled mineralized zones.....	75
Figure 16-5 Probability Plots for composited nickel for data within the massive sulphide and disseminated sulphide zone.....	76
Figure 16-6 Illustrative experimental variograms for the three modeled directions within the disseminated sulphide domain derived from composite data. ....	78
Figure 16-7: West to east section (looking north) showing nickel grade distribution relation to ore zone outlines.....	80
Figure 16-8 The classification scheme for McWatters highlighting search distances in each direction modelled for nickel in both modelled ore domains. ....	81
Figure 17-1 Worm's view of underground workings (green) panel stopes (red) longhole stopes (gold).....	92
Figure 17-2 Side view of underground workings (green) panel stopes (red) longhole stopes (gold) rib pillar (blue).....	92
Figure 17-3 NPR vs % Sulphide Sulphur for ore and waste at the Proposed McWatters Mine, Ontario .....	97
Figure 17-4 McWatters Mine stope layout.....	105
Figure 17-5 Diagram showing cash flow sensitivity to changes in grade (Ni%), operating costs (Opex), and capital expenditures (Capex).....	108

# **1 Introduction**

## **1.1 Background of the project**

Liberty Mines Inc (“Liberty”) has worked with SRK Consulting (Canada) Inc. (“SRK”) staff in the past with positive results and feedback. Liberty approached SRK staff during the latter stages of December 2007 to commission a NI 43-101 compliant resource and reserve estimate on the McWatters deposit. Liberty planned to mine the McWatters Nickel deposit and needed a third party to assist with the estimates, financial analysis, and mine planning logistics.

During the ensuing months SRK and Liberty worked together to compile a validated database to be used for resource modelling and estimation processes. The basis of this information were the results of an extensive drill program conducted by Liberty mines during 2007. From this a NI 43-101 compliant resource was produced.

Liberty’s engineering staff subsequently received the validated block model and produced a tentative mine plan and mineable reserve. SRK engineering staff from Sudbury, Ontario, was retained to review and complete this mine plan based on a series of assumptions and parameters provided by Liberty. These inputs and assumptions were based on previous data, knowledge and experience derived from Liberty’s operating Redstone Nickel Mine. Furthermore, SRK and Liberty worked together to produce a Feasibility Study on the McWatters Mine, including a final mineable reserve and financial analysis.

On April 2<sup>nd</sup>, 2008, a press release was issued by Liberty providing a summary and overview of the findings of the McWatters Feasibility Study. The release was reviewed and approved by SRK geologists and engineers involved in the study, as well as by Liberty management.

During the 45 days ensuing the press release this technical report was generated.

## **1.2 Qualification of SRK**

The SRK Group comprises over 500 professionals, offering expertise in a wide range of resource engineering disciplines. The SRK Group’s independence is ensured by the fact that it holds no equity in any project and that its ownership rests solely with its staff. This permits SRK to provide its clients with conflict-free and objective recommendations on crucial judgment issues. SRK has a demonstrated track record in undertaking independent assessments of Mineral Resources and Mineral Reserves, project evaluations and audits, technical reports and independent feasibility evaluations to bankable standards on behalf of exploration and mining companies and financial institutions worldwide. The SRK Group has also worked with a large number of major international mining companies and their projects, providing mining industry consultancy service inputs..



### 1.3 Project team

The mineral resource estimate portion of this technical report was compiled by Mr. Glen Cole, P.Geo. (APGO#1416). Mr. Cole is a Principal Resource Geologist with SRK. He has been practicing his profession continuously since 1986 and has extensive experience in estimating mineral resources in North America as well as in Southern and West Africa. Mr. Cole visited the project on January 14, 2008.

The mineral reserve estimate portion of this report was compiled by Mr. Alan Linden. Mr. Linden has over 18 years experience in Mine Engineering, and mine operations. He has specialized in underground mining and has worked as a senior engineer, project manager, supervisor, and consultant. Mr Linden's areas of expertise are drill and blast, mine design and planning, scheduling, budgeting, and financial evaluation. Mr. Linden visited the project on 18<sup>th</sup> March, 2008.

The mineral reserve portion of this report has been reviewed by Mrs. Christine Linden, P.Eng (PEO 100124751, APEGGS#09246)). Ms. Linden has over 15 years experience in mining engineering, mine development, and heavy civil/structural construction activities. Ms Linden has worked throughout North America and has worked in several underground mines, both in supervision, engineering, and management. She has also worked on a large EPCM project for the development of a repository for spent nuclear fuel and high-level nuclear waste. Mr. Alan Linden visited the project on 13<sup>th</sup> May, 2008

This technical report has been compiled by Mr. William Randall, P.Geo (APGO#1516). Mr. Randall is the Vice-President of Exploration for Liberty Mines Inc. Mr. Randall's area of expertise is the exploration and development of Ni-Cu-PGE properties, having acquired the majority of his experience working in the Cape Smith Belt that contains the prolific Raglan trend. Mr. Randall has visited the project on numerous occasions dating back to late 2006.

### 1.4 Basis of the Technical Report

This report is based on information provided to SRK by Liberty as well as information collected during the site visits.

SRK conducted certain verifications of exploration data from the Liberty drilling program from drill core, files and records maintained by Liberty Mineral Exploration staff. Limited data verifications were possible for pre-Liberty data. This technical report is based on the following sources of information:

- Discussions with Liberty VP: Exploration Mr William Randall;
- Datasets provided by Liberty;
- Mining and processing data provided by Liberty Engineering Department;
- Basic mine plan developed by Liberty.

## **1.5 Site visit**

In compliance with NI 43-101 guidelines, each of the acting qualified persons responsible for this report visited the McWatters Mine site.

Mr. Glen Cole visited the McWatters site on January 14, 2008. The main purpose of this visit was to conduct geological investigations and inspections of available diamond drill core from the Liberty drilling program. Validation samples of split core were taken by SRK.

Mr. Alan Linden and Mrs. Christine Linden visited the site on April 24, 2008, and May 13, 2008, respectively. The main purpose of the visits was to inspect surface infrastructure, current work programs, including portal and ramp development, and review current mining practices.

The site visits also enabled technical discussions with project staff and for the site compilation of information required for the technical report.

## 2 Reliance on other Experts

The technical work referenced in this report is the combined result of technical inputs from Liberty as well as SRK technical staff. SRK's opinion contained herein and effective May 16, 2008, is based on information provided to SRK by Liberty throughout the course of SRK's investigations, which in turn reflect various technical and economic conditions at the time of writing. Given the nature of the mining business environment, these conditions can change significantly over relatively short periods of time. Consequently actual results may be significantly more or less favourable.

A portion of the project database originates from historically derived exploration programs and sampling activities. This data cannot always be adequately verified and a reliance on the integrity of such data received from Liberty exists.

This report includes technical information, which requires subsequent calculations to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, Liberty and SRK does not consider them to be material.

SRK is not an insider, associate or an affiliate of Liberty, and neither SRK nor any affiliate has acted as advisor to Liberty or its affiliates in connection with this project. The results of the technical review by SRK are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.

SRK has not researched ownership information such as property title and mineral rights and has relied on information provided by Liberty as to the actual status of the mineral titles.

Potential environmental liabilities associated with the McWatters Deposit were excluded from the work program. As such, no verification was conducted by SRK and no opinion is expressed regarding the environmental aspect of this project.

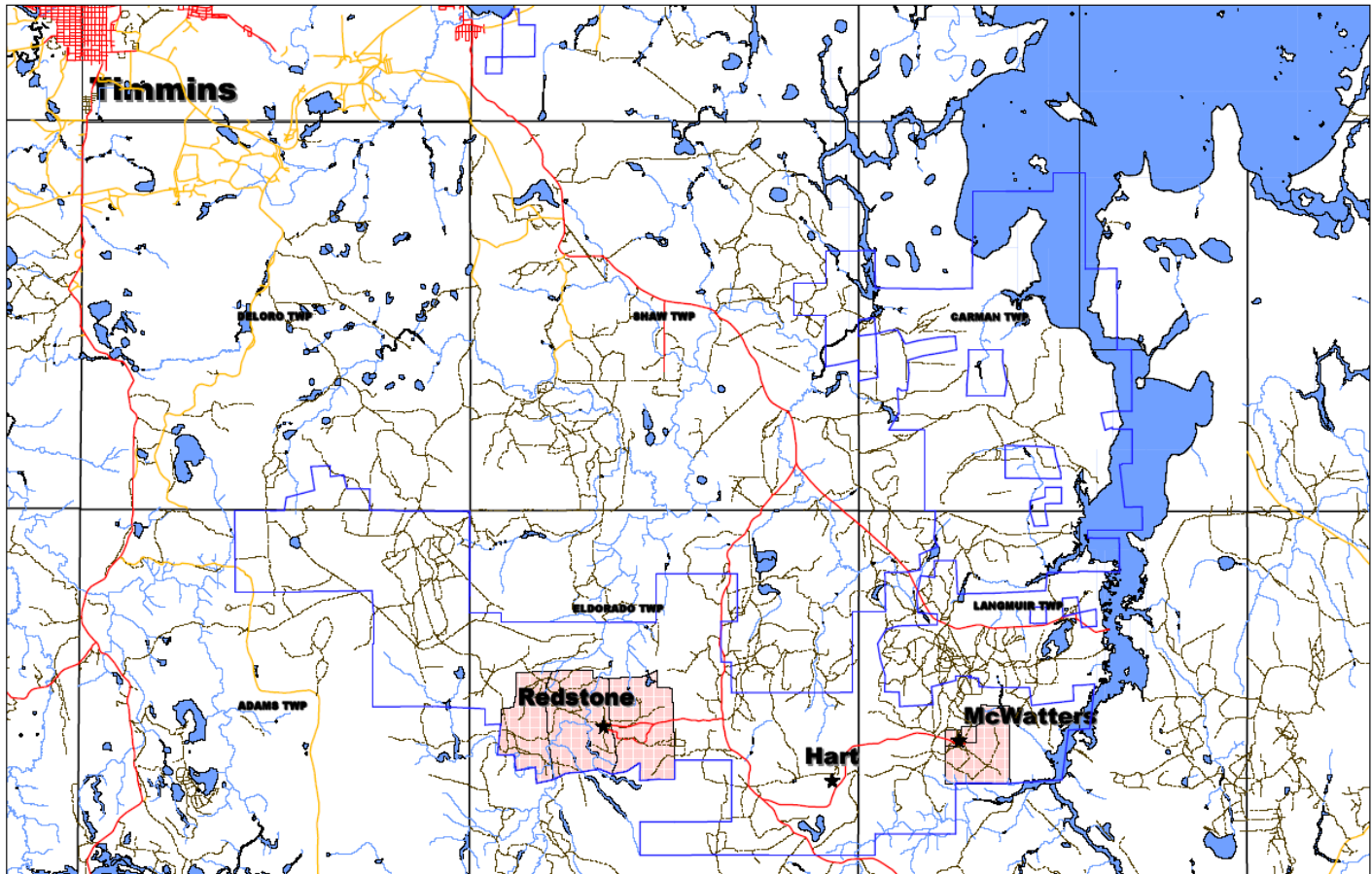
SRK was informed by Liberty that there are no known litigations potentially affecting the McWatters Deposit.

### 3 Property Description and Location

The general location of the McWatters Mines is shown in Figure 3-1. The McWatters Property is located approximately 25 kilometres southeast of the city of Timmins, Ontario. The property is within the boundaries of the city of Timmins and is centered at approximately UTM (NAD83 Z17) coordinates 5,350,860 mN and 497,570 mE. The property is in Langmuir Township, within the Porcupine Mining Division, and is accessed from the city of Timmins/South Porcupine by a series of all-weather gravel roads. A detailed location map of the McWatters Mine in relation to the City of Timmins is shown in Figure 3-2.



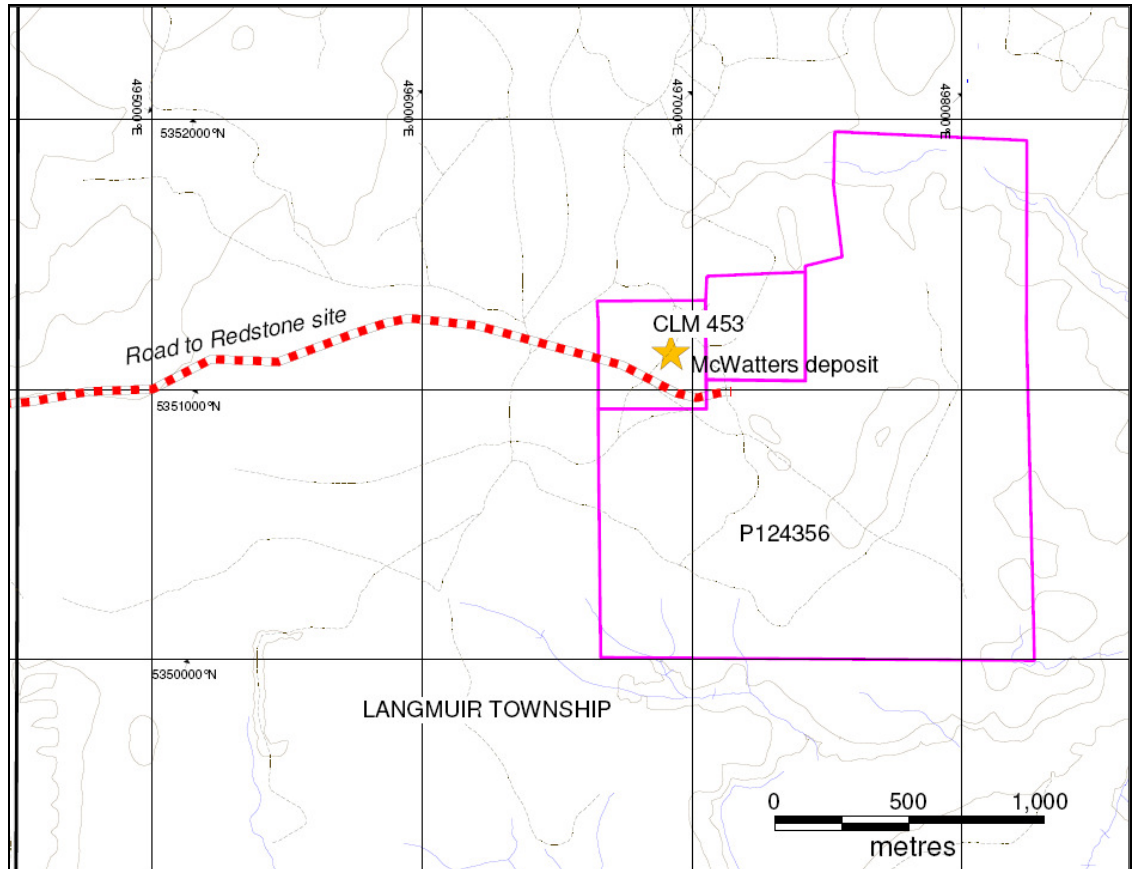
Figure 3-1 Map of Ontario showing McWatters Mine location.



**Figure 3-2 Detailed location map showing the McWatters Mine property in relation to the City of Timmins.**

### 3.1 Land Tenure

The McWatters Property consists of two patented mining claims held by Liberty. These claims total 295.6 hectares, and have been legally surveyed (Figure 3-3 and Table 3-1).



**Figure 3-3 McWatters Property mining claims plan.**

**Table 3-1 Details of the McWatters Project Mining Lease**

Property	Claim No.	Area (Ha)	Map Area	Title
McWatters	CLM453	31.9	42 A/6	Liberty Mines Inc
McWatters	P1243153	263.7	42 A/6	Liberty Mines Inc
	Total:	295.6		

### 3.2 Underlying Agreements

The company 2004428 Ontario Inc, whom among other properties owned the McWatters property, was vended into Liberty Mineral Exploration Inc. on

November 15th, 2001 in exchange for 3,000,000 shares of the company and \$450,000. The name 'Liberty Mineral Exploration Inc' was then changed to Liberty Mines Inc. on June 30th, 2005, so that now Liberty Mines Inc. owns 100 percent of the McWatters property with no subsidiary involved. The property is subject to a 3 percent Net Smelter Royalty retained by some of the original shareholders of 2004428 Ontario Inc. One half, or 50 percent, of this Net Smelter Royalty may be purchased by Liberty for the sum of \$1,000,000.

## **4 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

### **4.1 Accesibility, Local Resources and Physiography**

The McWatters Property is proximal to the city of Timmins, Ontario, which has a population of 48,000. The population consists of a skilled workforce with considerable experience and history in mining and mineral processing. Infrastructure is adequate to supply potential power and services for developing local resources.

The property is accessed from the city of Timmins by a series of gravel roads. Approximately 25 kilometres southeast of Timmins, a road branches east to the McWatters Mine site. Approximately 6 kilometres east along this road, the western part of the property is reached, where a security gate has been installed by Liberty. The access roads are used in all seasons, and are winter safe.

The McWatters deposit is located in an area that is relatively flat with poor drainage. The deposit location is generally low-lying with a few local rock outcrops and ranges in elevation from the low 290's to a high of approximately 300 metres above sea level at a rock outcrop immediately to the south east that is 3 to 5 metres higher than the surrounding topography. The topography in the general area slopes gently from north to south. Higher relief is shown in a north/south trending outcrop that is located approximately one kilometer southeast of the orebody.

No waters flow through the site. The site naturally drains to the south into the Forks River at a location that is less than 2 kilometres upstream of the confluence with the Night Hawk River. The property lies entirely within the Night Hawk Lake sub-watershed. The Forks River drains northeasterly into the Night Hawk River which flows northeasterly into Night Hawk Lake. Night Hawk Lake in turn drains to the Frederickhouse River. The Frederickhouse River drains to the Abitibi River (north of Cochrane) then to Moose River, which ultimately discharges into James Bay.

The terrestrial vegetation (as described in the Liberty Mines Inc. – McWatters Mine Background Environmental Report – 2006 by B. Z. Environmental Consulting) was assessed at two sampling stations to best represent the dominant soil and vegetation types of the area. The vegetation type was identical at both stations, and was classified as V 28, typical of black spruce-lowland areas. This vegetation type tends to represent a forest to wetland transition zone, and is characterized by black spruce, bog rosemary, pale laurel, and sphagnum.

Wildlife communities around the McWatters Project are typical of other poorly drained northern boreal forest areas. The majority of the several species

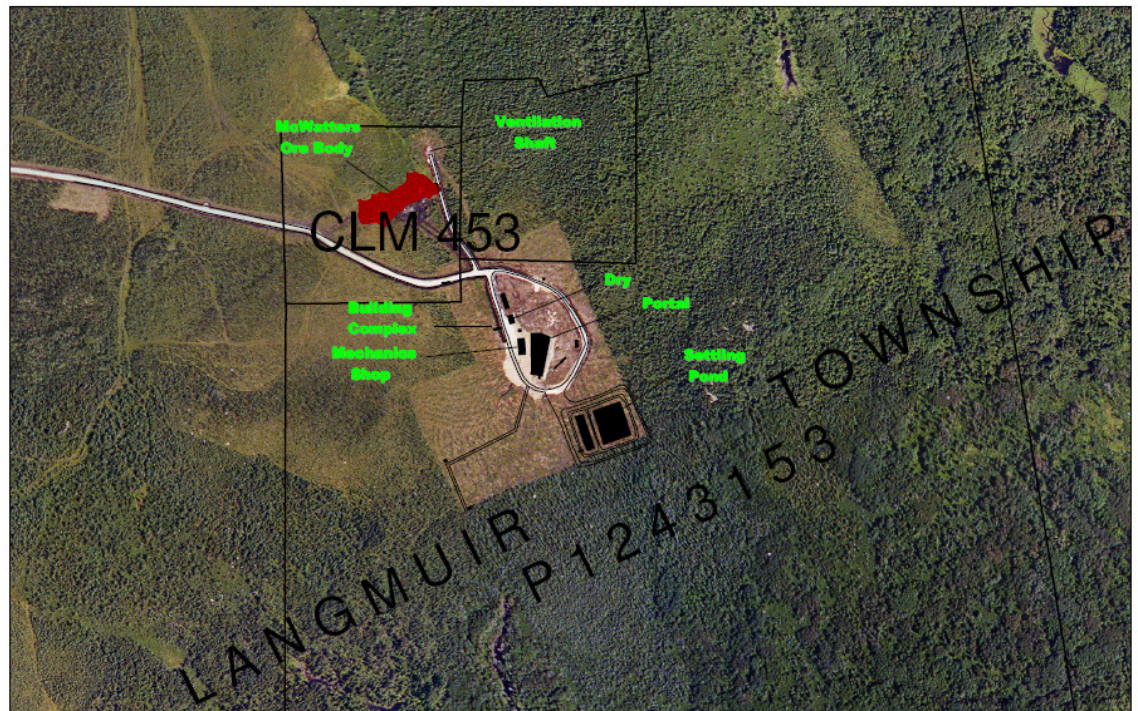


present are small mammals and songbirds that are common and widely distributed. Other species include ungulates, furbearers and raptors. Moose populations in the area are low to moderate. Furbearers in the vicinity include beaver, marten, mink, muskrat, fox, lynx and black bear. Other animal types include the snowshoe hare, fisher and wolf.

## 4.2 Infrastructure

The McWatters site is large enough to accommodate all the required construction of mining facilities. Completed infrastructure on site consists of a mechanical maintenance shop, office complex, mine dry, compressor house, security gate, and settling and treatment ponds. The mine is accessed via a portal, completed in early 2008, from which the ramp initiates.

Figure 4-1 shows the vegetation of the McWatters, as well as a layout of the surface infrastructure, in relation to the mining leases. Figure 4-2 shows a photograph of the portal collared during the winter months of 2008.



**Figure 4-1 McWatters Mine site infrastructure overlain on an air photograph.**



**Figure 4-2 Photograph of the McWatters Mine portal during winter (2008).**

## 5 History

A diligent summary of the exploration activities on the property has been prepared by Todd Keast. The following has been extracted from his report (2003).

Exploration on the McWatters Property dates back to 1947, and has included prospecting, trenching, airborne geophysical surveys, ground geophysical surveys, and diamond drilling. Government sponsored work in the area has included a 1967 mapping program of Langmuir and Blackstock Townships by the Ontario Department of Mines (O.D.M.), and a 1988 airborne electromagnetic (EM) and Magnetometer (magnetic) survey over the Timmins Area, which included Langmuir Township, by the Ontario Geological Survey (O.G.S.). A summary of all documented government surveys and exploration activities by companies covering the McWatters Property is listed below in Table 5-1

**Table 5-1 Summary of Previous Work on the McWatters Property**

Year	Company	Type of Work
1947	Dominion Gulf Company	Airborne Magnetics.
1961- 1967	McWatters Gold Mines Limited	Mag, EM, and geological surveys, Drilling 25,735 ft.
1965	Urban Quebec Mines Limited	Diamond drilling (2,476 ft)
1965	National Explorations Limited	Ground geophysics, drilling (3,786 ft)
1966	Silverplace Mines Limited	Drilling (1,004 ft).
1967	Ontario Department of Mines	Mapping Langmuir and Blackstock Townships (Geological Report 86)
1967	E. Galata	Drilling (2,000 ft)
1969- 70	Falconbridge Nickel Mines	Drilling (3,031.5 ft)
1970	Tontine Mines	Acquires Assets of McWatters.
1970	Canadian Jamieson Mines	Geophysics, drilling, metallurgical testing.
1971	Cantri Mines Limited	Drilling (1,769 ft)
1971	Seaway Copper Mines Limited	Prospectus
1971	International Nickel Company	Ground Magnetics
1975	Pamour Porcupine Mines	Drilling (404 ft)
1977	Noranda Exploration Co	Ground geophysics
1987	Canadian Nickel Company	Airborne Geophysics, RC Drilling
1988	Ontario Geological Survey	Airborne Surveys
1991	Timmins Nickel	Ground magnetometer, HLEM
1994, 1995	Outokumpu Mines Ltd.	Ground geophysics, trenching drilling (7,011 ft)
2002	Liberty Mineral Exploration	Diamond drilling

### **Dominion Gulf Company (1947)**

In 1947, Dominion Gulf Company conducted an airborne magnetometer survey. The company did not report any follow up work.

### **McWatters Gold Mines Limited (1961)**

In 1961, McWatters Gold Mines Limited, in partnership with Quebec Manitou Mines Limited, staked a group of 54 unpatented mining claims. During the same year the companies completed ground magnetic, electromagnetic and geological surveys on the property. In 1962 the company drilled 13 diamond drill holes totaling 3,502 feet. Ten of these holes tested magnetic anomalies with coincident electromagnetic anomalies, which turned out to be sulphide

bearing iron formation with no base metal concentrations (Ontario Department of Mines Geological Report 86). The other three holes investigated magnetic anomalies. The final drill hole of the program tested a magnetic feature 3,400 ft long and 200-300 ft wide, and was found to host Ni sulphide mineralization. The mineralization, hosted within a serpentinized dunite, returned an average of 0.428 percent Ni for 199 ft of core length, with a value of 0.65 percent Ni for 51.8ft of core length (Ontario Department of Mines Geological Report 86). Later in the year an additional 11 diamond drill holes (5,192 ft), were completed along the mineralized magnetic anomaly. One of these holes was reported to have 0.63 percent Ni for a 36ft core length and 0.74 percent Ni for a 45ft core length (Ontario Department of Mines Geological Report 86). This drilling outlined a small sub-economic Ni sulphide deposit.

In 1964 and 1965, drilling resumed with 24 vertical holes (15,028 ft) completed on the mineralized zone. Some of the drill holes returned encouraging results, with some values greater than 1 percent Ni for lengths of 100-300 ft. (ODM Report 86). One 10ft section returned more than 5 percent Ni (Northern Miner 1964, p.1113), and another 9.71 percent Ni (Northern Miner 1965 p.297). In addition one inclined hole was drilled to test a magnetic anomaly. This drilling delineated an upper and lower zone to the deposit, but significant mineralization was not located beneath or along strike to the deposit. The complete set of drill logs for the 1964-1965 drilling is not on file at the Ministry of Northern Development and Mines.

In 1967 three diamond drill holes totaling 1,298 ft were completed, fulfilling sufficient assessment work to bring the claims to lease. These holes were not drilled on the main mineralized ultramafic body. This work failed to indicate any economic mineralization

### **Urban Quebec Mines Ltd. (1965)**

In 1965, Urban Quebec Mines Ltd. completed 10 diamond drill holes (2,476 ft) on a small group of claims in the northwest corner of what is now the McWatters Property. The drill holes intersected mafic volcanics, rhyolite, rhyolite porphyry and serpentinized peridotite. Mineralization within the peridotite consisted of 1-3 percent, locally 3-5 percent disseminated pyrite and pyrrhotite. Assay results from the Urban Quebec drill program indicate anomalous Ni results in five holes (Table 5-2). Urban Quebec did not report any follow up work.

**Table 5-2 Select Drill Results Urban Quebec Mines Ltd.**

Hole #	Results
Q-1	0.33% Ni/ 20 ft
Q-2	0.17% Ni / 15 ft
Q-3	0.35% Ni / 7.0 ft
Q-4	0.13% Ni / 5.0 ft, 0.17% Ni, 5.0 ft
Q-5	0.29% Ni /31.5 ft



### **National Explorations Limited (1965)**

In 1965, National Explorations Limited conducted ground geophysical surveys, and completed 10 diamond drill holes (3,786 ft) on a group of claims which is now the central part of the McWatters Property. Drill holes intersected felsite, andesite, monzonite, altered syenite, and peridotite. Up to 5 percent disseminated pyrite was intersected within the andesite, but did not return anomalous Ni assays. Follow Up work was not reported.

### **Silverplace Mines Limited (1966)**

In 1966, Silverplace Mines Limited completed 2 diamond drill holes (704 ft) on a claim which is now situated on the east end of the McWatters property. The holes intersected granite, greenstone breccia, and serpentinite. Core was assayed for gold and silver only. Follow up work was not reported.

### **Ontario Geological Survey (1967)**

In 1967 the Ontario Department of Mines completed a mapping program which covered Langmuir Townships (Pyke 1970). The geology was mapped as a northeast-southwest series of peridotite intrusions in contact with a sequence of felsic volcanic rocks, sediments and narrow iron formations.

### **E. Galata (1967)**

In 1967, E Galata completed 4 diamond drill holes (2,000 ft) on small block of claims which is now the northwest corner of the McWatters property. The drill holes intersected diorite, rhyolite, granite porphyry and peridotite. Hollinger Mines completed a property visit and documented a Ni- Cu showing which contained 1.5 percent Ni, 0.14 percent Cu from trench grabs. The mineralization was located at the contact of the peridotite with the rhyolite. Follow up work was not reported.

### **Falconbridge Nickel Mines Ltd (1969, 1970)**

In 1969, Falconbridge Nickel Mines Ltd. conducted ground geophysical surveys and completed seven diamond drill holes (3,031.5 ft) on a group of claims, which are now the northwest portion of the McWatters property. The drill holes intersected a variety of volcanics rocks types including peridotite. Traces of pyrite and chalcopyrite were noted on the logs, however assays were not reported. Follow up work was not reported

### **Tontine Mining Limited, 1970**

Under the terms of an agreement dated February 23, 1970, Tontine Mining Limited purchased the assets of McWatters Gold Mines.

### **Canadian Jamieson Mines Limited, 1970, 1971**

In 1970 Canadian Jamieson Mines Limited reached an agreement with Tontine Mining Limited whereby Canadian Jamieson would evaluate previous work on the property and if warranted, bring the property into production. In 1971

Canadian Jamieson Mines Limited conducted geophysical surveys, metallurgical testing and diamond drilling on the property. Results of the work were inconclusive. The reports pertaining to the Canadian Jamieson evaluation are not on file at the Ministry of Northern Development and Mines. The work is referenced from (OGS Study 20).

### **Cantri Mines Limited (1971)**

In 1971, Cantri Mines completed 4 diamond drill holes (1,769 ft), on a small group of claims situated on what is now the eastern edge of the McWatters property. Drill holes were planned to test geophysical responses obtained from surveys of previous operators. Rhyolite, felsite, porphyry and serpentinite were intersected in the drill holes. Disseminated pyrite was noted in the drill holes, with the highest assay of 0.13 percent Ni over an unknown width (assays not documented on drill logs). Hole 2 was abandoned and was recommended for re-drilling during a later program. Cantri Mines did not report any follow up work.

### **Seaway Copper Mines Limited (1971)**

In 1971 Seaway Copper Mines Limited acquired the claims held by Cantri Mines. A prospectus for work on the project was prepared, however work was not reported.

### **International Nickel Company (1971)**

In 1971 International Nickel Company completed a ground magnetometer survey on a small group of claims in what is now the northeast corner of the McWatters Property. Further work was not reported by International Nickel.

### **Pamour Porcupine Mines Ltd. (1975)**

In 1975, Pamour Porcupine Mines Ltd. completed a single drill hole (404 ft) on a single claim in the northwest corner of what is now the McWatters Property. Diorite and Serpentinized peridotite were intersected in the drill hole, with only a trace of pyrite. The highest assay result was 0.17 percent Ni / 6.0 ft. Follow up work was not reported.

### **Noranda Exploration Co. Ltd. (1977)**

In 1977, Noranda Exploration Co. completed geological and geophysical surveys on two claims on what is now the north part of the McWatters property. A weak zone of conductivity was identified but was not recommended for drilling. Follow up work was not reported.

### **Canadian Nickel Co. Ltd. 1987**

In 1987 Canadian Nickel Co. Ltd completed airborne electromagnetic surveys parts of Langmuir and Eldorado townships. The survey covered the majority of what is now the McWatters Property. Canadian Nickel did not report any follow up work.

### **Ontario Geological Survey (1988)**

In 1988, the O.G.S. completed an airborne electromagnetic and magnetic survey over the Timmins Area, which included Langmuir Township. A number of strong airborne electromagnetic and magnetic features were identified, many which may not have been evaluated

### **Timmins Nickel Inc. (1991)**

In 1991, Timmins Nickel Inc. completed ground HLEM and magnetic surveys over a small portion of what is now the McWatters Property. Timmins Nickel did not report any follow up work on the McWatters portion of the property.

### **Outokumpu Mines Ltd. (1994, 1995)**

In 1994 Outokumpu Mines Ltd completed ground geophysical surveys, mechanical stripping, and diamond drilling (7,011 ft) on the northwest corner of what is now the McWatters property. Thick sequences of ultramafic rocks were intersected; however sulphide mineralization was not encountered. Mechanical stripping was completed on an area 246 ft by 246 ft, to expose the ultramafic/volcanic contact, and the historical showing identified by Galata (1967). Outokumpu did not complete any additional work.

### **Liberty Mineral Exploration Inc. (2001 - 2004)**

In 2001, Liberty Mineral Exploration Inc. purchased the assets 2004428 Ontario, which included the nine claims that formed the McWatters Property. Liberty Mineral Exploration conducted a drill program on the McWatters deposit that spanned over three years totalling 7,965 metres of drill core.

### **Liberty Mines Inc. (2005 – present)**

Liberty Mineral Exploration Inc. name was then changed to Liberty Mines Inc. on June 30th, 2005. Based on the diamond drilling conducted by Liberty Mineral Exploration a NI 43-101 compliant resource estimate by Roscoe Postle Associates Inc. was commissioned by Liberty. The result was an indicated resource of 540,400 tonnes at an average grade of 1.06 percent Ni, reported at a 0.5 percent Ni cut-off grade.

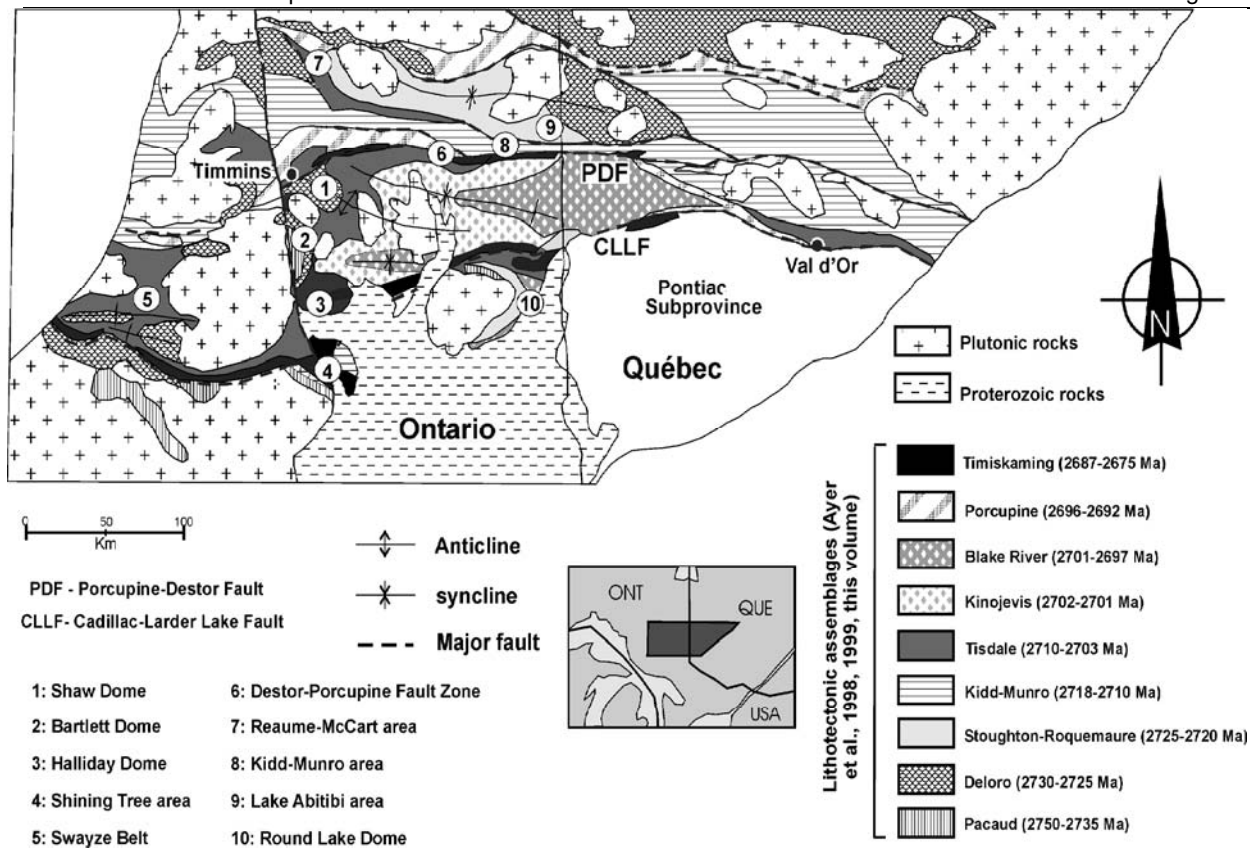
During 2006 and 2007 Liberty carried out a drill program consisting of 12,676 metres of drill core. The program was designed both as an exploration and in-fill drill program in view imminent mining operations on the deposit.



## 6 Geological Setting

### 6.1 Regional Geology

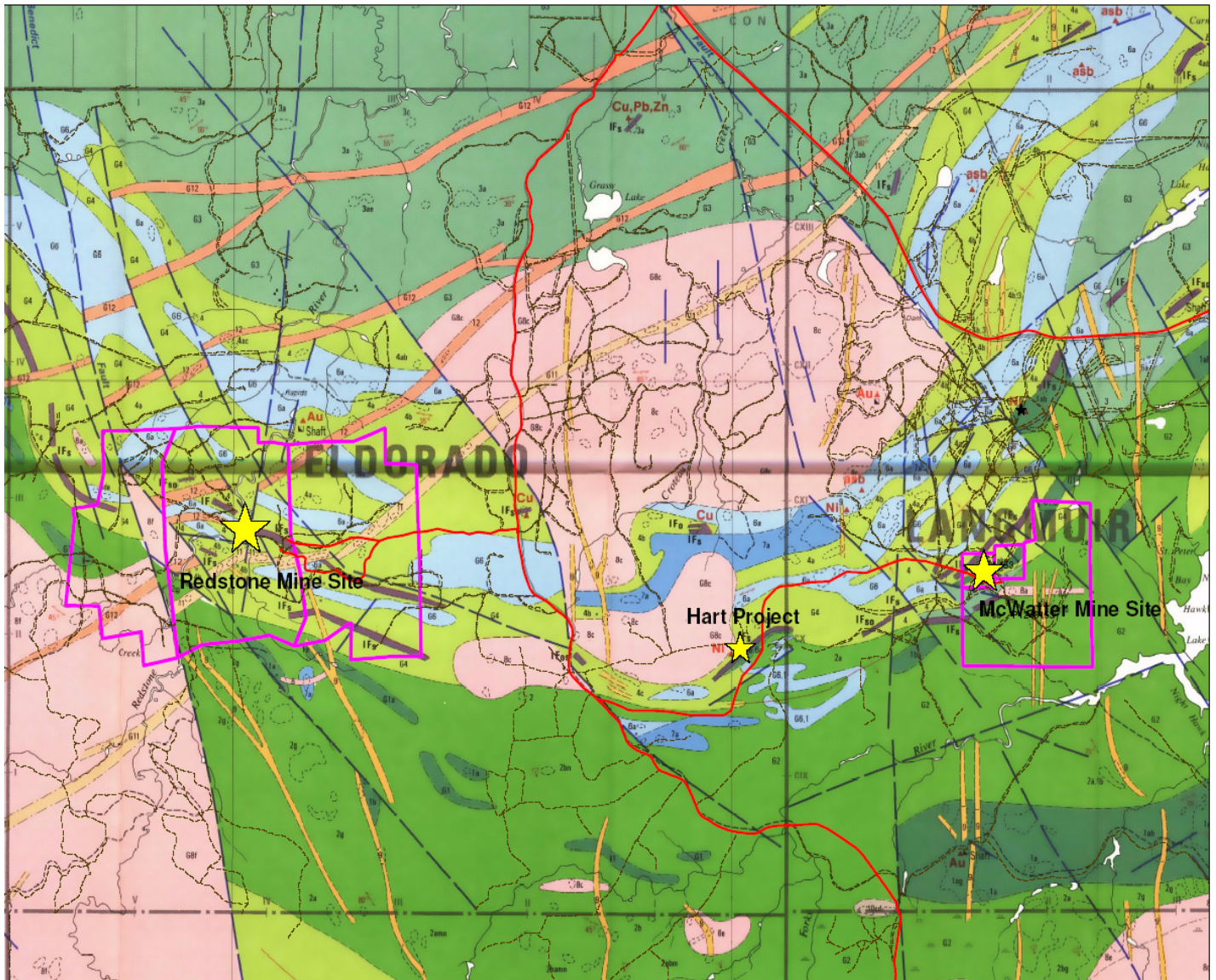
The McWatters deposit is hosted by ultramafic rocks that form part of, or intrude, the Tisdale assemblage that flank the Shaw Dome and form part of the Abitibi greenstone belt (AGB). The Abitibi greenstone belt is one of the youngest parts of the Archean Superior Province forming what is considered one of the largest and best-preserved belts of its kind in the world. The Abitibi belt developed between 2.8 to 2.6 Ga (Jackson and Fyon, 1991) and has been subdivided in 9 lithotectonic assemblages (Ayer et al., 2002; Sproule et al., 2002). The relationships between these assemblages are ambiguous and may represent a superposition of allochthonous terranes (each terrane having been formed in a different tectonic environment), or a tectonically complex and structurally deformed single autochthonous terrane formed along a convergent margin, or a combination of both these. Even though the AGB has been subdivided into 9 distinct lithotectonic assemblages, only four of these are generally accepted to contain komatiitic rocks and therefore considered prospective for ultramafic-hosted Ni-Cu-(PGE) sulphide deposits. These four assemblages have distinct and well defined ages as well as spatial distribution (Figure 6-1): the Pacaud assemblage (2750-2735 Ma), the Stoughton-Roquemaure assemblage (2723-2720 Ma), the Kidd-Munro assemblage (2719-2711 Ma), and the Tisdale assemblage (2710-2703 Ma). These four assemblages differ considerably in the physical volcanology and geochemistry of the komatiitic flows. It is important to note that the latter two of these assemblages contain larger volumes of high magnesium, Al-undepleted komatiites (>5 percent), while the Tisdale assemblage contains more andesitic rocks and sulphide facies iron formations (Sproule et al., 2003)



**Figure 6-1 Simplified regional geological setting of the Abitibi Greenstone Belt.**

The Shaw Dome is a major anticline centred approximately 20 km southeast of Timmins, Ontario (Muir, 1979; Green and Naldrett, 1981; Figure 6-2). The anticlinal structure may be a result of regional folding that affected rocks north of the Shaw Dome or, more probably, due to the diapiric action of a large granitic body which partially outcrops in the central south-east portion of the dome. Volcanic rocks associated with the Shaw Dome have been associated with the Deloro assemblage (2730 to 2725 Ma: Ayer et al., 1999) and younger Tisdale assemblage. Pyke (1982) further sub-divided these assemblages into three volcanic formations: lower, middle, and upper volcanic formations. The lower formation of the Deloro assemblage is not exposed in the Shaw Dome, while the middle formation occupies the central part of the Dome north of the Redstone mine and the exposed granitic intrusive rocks depicted in Figure 6-2. The upper volcanic formation of the Deloro was described by Pyke (1982) to contain a relative abundance of sulphide facies iron formations and a predominance of intermediate to felsic volcanic rocks of dacitic to andesitic composition. Pyke (1982) does not mention the presence of extrusive komatiitic rocks in this assemblage having mapped all of the ultramafic rocks contained within this supracrustal package as intrusive in nature (Pyke, 1970, 1975). Pyke (1982) does, however, add that “there is some intercalation of the komatiites (of the Tisdale assemblage) with the Deloro Group volcanic rocks”. Since, both intrusive and extrusive ultramafic rocks have been identified within the Deloro volcanic package (Hall & Houle, 2003; Houle et al., 2004; Houle & Guilmette, 2005) outlined by Pyke (1982). Therefore, either the

assumption that the Deloro assemblage is devoid of komatiitic flows needs to be revised, or the disconformity that delineates the contact between Deloro and Tisdale rocks modified.



**Figure 6-2 Location of the McWatters Mine shown on an extract from Map P2455 produced by the Ontario Geological Survey.**

Stone & Stone (2000) divided the komatiitic rocks into two horizons making no reference to stratigraphy: the lower komatiitic horizon (LKH) and the upper komatiitic horizon (UKH). The UKH consists of extrusive komatiitic rocks intercalated with calc-alkalic volcanic rocks and sulphide facies iron formations, while the LKH consists of komatiitic rocks that intrude the underlying felsic to intermediate volcanic flows and interbedded iron formations. The rocks that form the LKH are mostly dunites, whelrlites, pyroxenites, and gabbros that intruded sometime between 2725 Ma and 2707 Ma (Stone & Stone, 2000 and references therein). The UKH rocks are cumulate, spinifex textured and aphyric komatiites that extruded sometime before 2703 Ma (Corfu et al., 1989). The UKH komatiitic intrusions are

interpreted to represent part of the feeder system that resulted in the eruption of channelized komatiitic flows that are, at least initially, cogenetic and form what is now a large dyke-sill-lava complex. Observations and interpretations by Stone & Stone (2000) are supported by later mapping of Adams, Shaw, Langmuir, and Carman Twps by Houle et al. (2004) and Houle & Guillmette (2005).

To date five Ni-Cu-(PGE) deposits have been discovered in the Shaw Dome (Redstone, Hart, McWatters, Langmuir #1, Langmuir #2), and numerous showings have been identified (Galata, etc). These five deposits occur in komatiitic rocks found within the Deloro assemblage near the base of the Tisdale assemblage.

Proterozoic dykes of the Matachewan swarm and the Abitibi swarm intrude all of the rocks described so far. The Matachewan dykes generally trend north to north-west while the younger Abitibi swarm trends north-east.

## 6.2 Property Geology

There are no outcrops in the immediate area of the McWatters deposit. Four main rock types have been identified through diamond drill core: footwall intermediate volcanics, mineralized ultramafic flows, felsic dykes, and mafic dykes. Based on whole rock data (Appendix I), the intermediate volcanic rocks range in composition from basaltic andesite to andesite, classified using a total alkalis versus silica (TAS) diagram. The ultramafic rocks are of komatiitic composition plotting near the 100 percent Mg apex on the Jensen cation plot (Jensen, 1976), however the extrusive nature of the body is uncertain as associated textures (spinifex, flow breccia) have not been identified to date. Its spatial association and similar silicate and sulphide mineralogy to other extrusive bodies is the basis of the classification. The dykes are syeno-diorites and gabbros respectively (also using a TAS diagram).

The komatiitic rocks, which host the mineralization are serpentinized and locally altered to talc, chlorite and carbonate. Massive and cumulate textures are locally preserved and are best developed near the center of the body where pyroxene occurs as an intercumulus phase. The contained sulphide minerals observed in decreasing abundance were pyrite, heazlewoodite and minor chalcopyrite, occurring predominantly as disseminations but also as pods, veins, and massive to semi-massive veins. Rather than being situated along the basal contact of a trough-shaped flow, the sulphides in the McWatters deposit occupy irregular volumes suspended within a large mass of ultramafic cumulates that apparently lack any kind of komatiitic flanking sheet flows or any other indication of a volcanic origin. The massive sulphide bodies are, however, often associated with andesitic wedges that appear to be fault bound.

The McWatters deposit differs markedly from the rest of the known deposits in the Shaw Dome. The ultramafic body hosting the McWatters deposit is discordant, evidently cutting up through the iron formation that sits immediately on its north flank, as indicated by recent, more detailed magnetic surveys conducted by Liberty. The ultramafic body displays a characteristically high magnetic response that can be traced for several kilometers to the west, and appears to cross-cut the predominant stratigraphy.

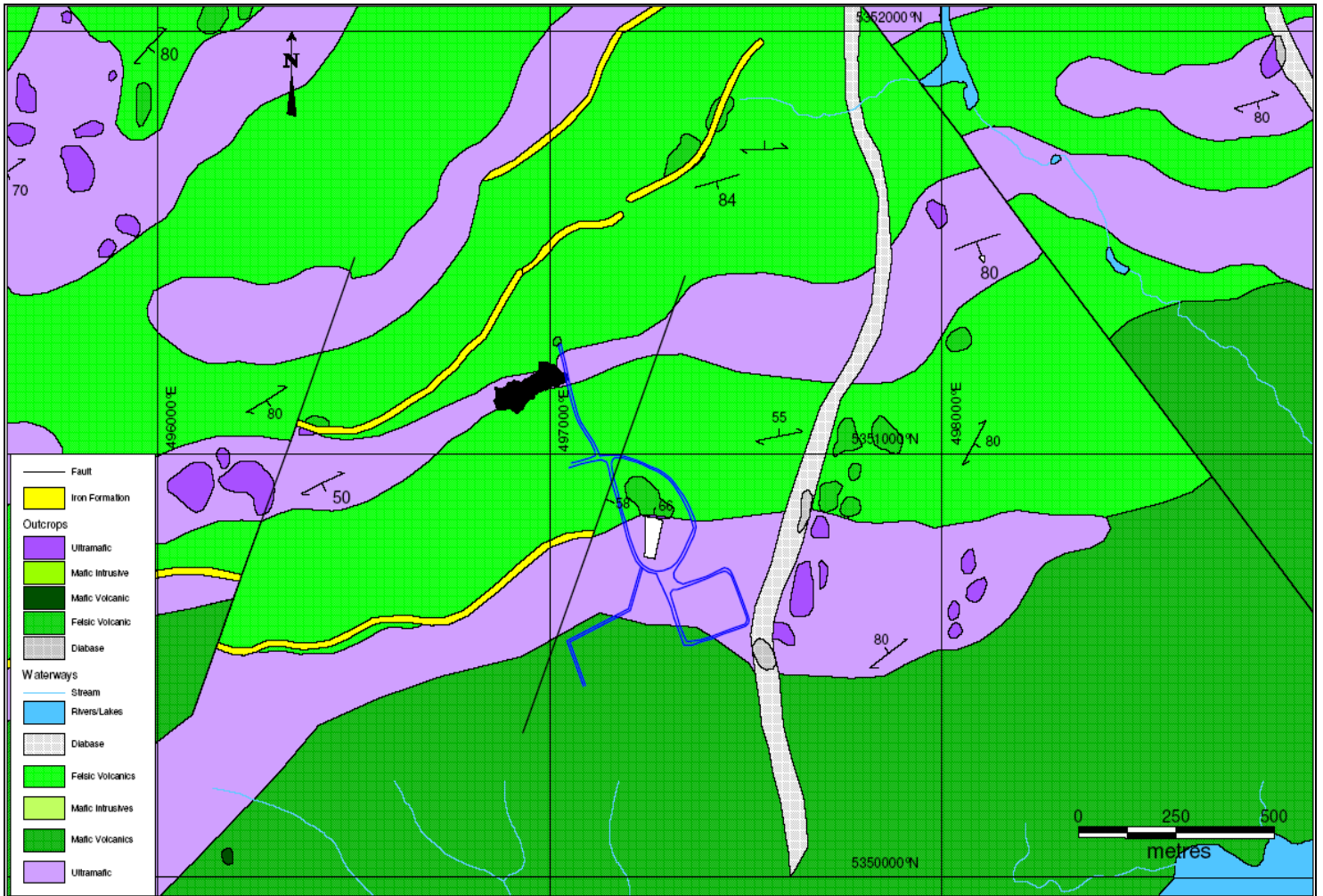
Several drillholes along the strike length confirm the presence of ultramafic rocks along most of this magnetic anomaly, making it possible to conclude that it represents a continuous ultramafic body. The discordant nature of this ultramafic unit suggests that it is intrusive, and therefore has a markedly different genesis relative to its extrusive counterparts in the Shaw Dome.

Along some sections the mineralization is present in more than one distinct volume, and it is possible that these each represent different intrusions or pulses within a single intrusion along the same path at different times. The outlines of the ultramafic body are only moderately understood, and it is entirely possible that multiple orebodies exist within the same ultramafic massif, both at depth and on strike. Although this deposit offers a more challenging target for drill-based exploration due to its complexity, it also offers a much greater potential for the discovery of a very large deposit because of its greater size. Kambalda-type flow-hosted deposits are limited in size by the constraints imposed by the geometry of the lava flows, whereas an intrusion has the potential to be much larger. A probable analog to the McWatters deposit is the giant Mt Keith deposit in Australia (299 Mt at 0.57 percent Ni, of which 0.28 percent is hosted by silicate minerals; Butt and Brand, 2003 (<http://www.crcleme.org.au/>), which is also hosted by a subvolcanic dunitic intrusion. In the terminology of Leshner and Keays (2002) these correspond to Type II deposits. It should be noted that Leshner and Keays (2002), like most of the recent literature about dunite-hosted disseminated sulfide deposits of this type, referred to them as being hosted by channelized lava flows, but recent work at Mt Keith has shown it to be intrusive in origin.

Even though rock exposure is extremely limited in the area surrounding McWatters deposit, the scope of work on the property has enabled a detailed geological map to be produced by Liberty staff.

Figure 6-3 is a plan map of the property geology, including the deposit outline and basic layout of the surface infrastructure.





**Figure 6-3 Simplified surface geological map of the McWatters deposit.**

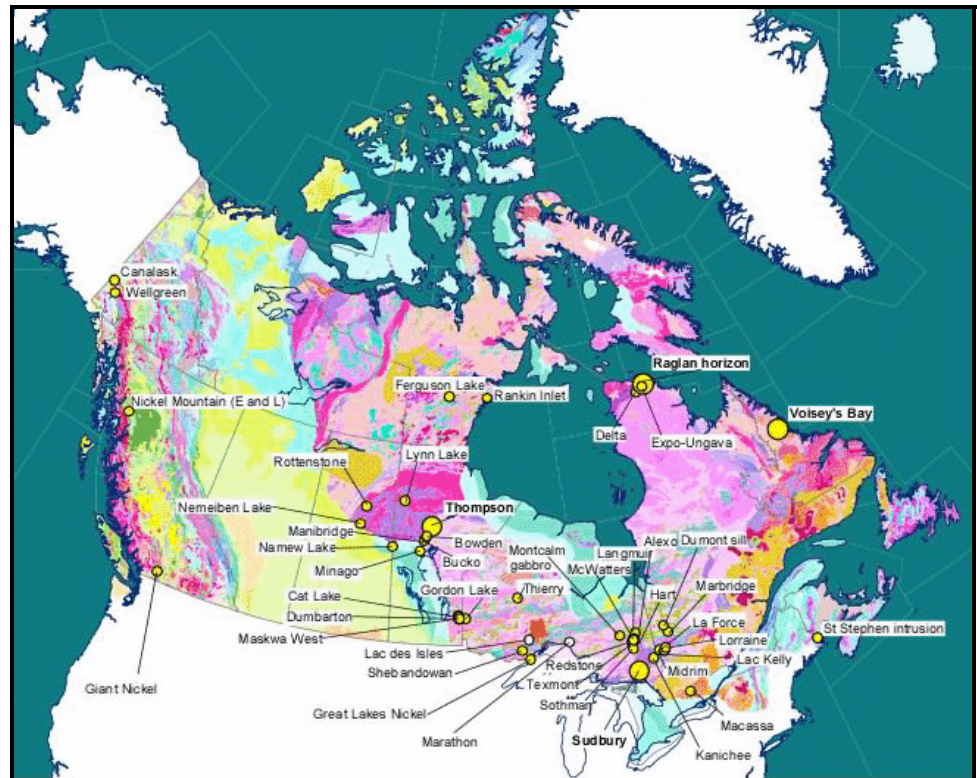
## 7 Deposit Types

The distribution of magmatic Ni-Cu-PGE sulphide deposits in Canada, with a resource size greater than 100,000 tonnes is shown in Figure 7-1.

Considerable research by various writers over the years indicates that komatiite hosted nickel deposits in the Timmins area are similar to the Archean age nickel deposits of the Kambalda and Windarra areas in Western Australia.

In the AGB four of the assemblages contain komatiites. Komatiite-associated Ni-Cu-(PGE) deposits have only been identified within the Kidd- Munro and Tisdale (including McWatters) assemblages. This is consistent with the interpretation that komatiite associated Ni-Cu-(PGE) deposits form within lava channels of channelized sheet flows or intrusives, but not within sheet flows or lava lobes.

Tisdale assemblage ultramafic volcanic rocks with high MgO contents (up to 32%) are defined as aluminium undepleted komatiites (“AUK”). Individual flows are usually less than 100 metres thick and typically occur at or near the base of ultramafic sequences. The flow units can be recognised by the presence of chilled contacts, the distribution of spinifex textures, marked compositional or mineralogical changes at unit boundaries and the presence of ultramafic breccia or sulphidic sediments at contacts. Intrusive counterparts have also been recognized in the Tisdale assemblage.



**Figure 7-1 Map showing the distribution of magmatic Ni-Cu-PGE sulphide deposits in Canada, with resources greater than 100,000 tonnes (after Wheeler et al, 1996)**

The following three paragraphs are largely based on Lesher & Keays (2002), parts of which are paraphrased.

Komatiite-hosted Ni-Cu-PGE deposits are one of several lithological associations within the broader group of magmatic Ni-Cu-PGE deposits. Mineralization occurs in both extrusive and intrusive settings and experimental studies indicate that komatiitic magmas/lavas were emplaced at very high temperatures. Deposits of this association are mined primarily for their Ni contents, but they contain economically-significant amounts of Cu, Co, and PGE.

Komatiite-associated nickel sulphide deposits are part of a continuum of lithotectonic associations in the family of magmatic Ni-Cu-PGE deposits, which contains a variety of mineralization types (Table 7-1 from Lesher & Keays, 2002).

**Table 7-1 Classification of mineralization types in komatiite-associated magmatic Ni-Cu-PGE deposits**

Origin	Magmatic						Hydrothermal-Metamorphic		Tectonic
Type	I basal/footwall		II strata-bound internal			III reef	IV		V
Subtype	Ia stratiform	Ib footwall vein	IIa blebby	IIb interstitial	IIc cloudy	IIIa stratiform	IVa meta-sediment	IVb vein	Va offset
Sulphide distribution	at or near the bases of komatiitic peridotite or komatiitic dunite units	veins or stringers in host or wall rocks associated with Type Ia mineralization	coarse disseminations within komatiitic peridotite or dunite units	fine disseminations within komatiitic peridotite or dunite units	very fine disseminations within komatiitic peridotite or dunite units	at or near contact between lower cumulate zones and upper gabbro zones within strongly differentiated units	layers in sulphidic metasediments associated with Type I mineralization	veins in wall rocks associated with Type I mineralization	faults and shear zones within host or wall rocks associated with Type I mineralization
Sulphide textures	massive, net-textured, disseminated; sometimes xenolith- or xenomelt-bearing	massive	blebby	intercumulus, interstitial or lobate	intercumulus, interstitial	disseminated, rarely net-textured	layered, banded, laminated	massive to disseminated, typically associated with quartz and/or carbonate	brecciated, typically heterolithic; durchbewegung
Ore tenor	typically moderate-low, slightly fractionated	variable, commonly enriched in Cu-PPGE relative to associated contact ores	moderately high, relatively unfractionated	typically high, relatively unfractionated	variable (high to low)	typically high, relatively fractionated	variable, commonly depleted in Cr and Ir relative to associated magmatic ores	variable, commonly depleted in Cr and Ir relative to associated magmatic ores	variable, commonly depleted in Cr, Pt, and Au relative to magmatic ores
Timing and paragenesis	early magmatic, segregated prior to or during emplacement	early or late magmatic, injected during initial emplacement or formed via fractional crystallization of MSS	intermediate magmatic, segregated during crystallization of cumulate host rock	intermediate magmatic, segregated during crystallization of cumulate host rock	late magmatic but metamorphically modified, segregated during crystallization of cumulate host rock	late magmatic, segregated during final stages of crystallization of host rock	late magmatic or syn-metamorphic	syn-metamorphic, mobilized in hydrothermal fluids	syn-tectonic, mobilized from massive or net-textured sulphides
Examples (see Table 2)	Alexo, Kambalda, Katinniq, Langmuir, Windarra	Kambalda, Alexo, Katinniq	Damba-Silwane, Otter shoot (Kambalda)	Mt. Keith, Dumont, Perseverance Main	Katinniq, Perseverance Main	Delta, Romeo II, Fred's Flow, Boston Creek Unit	Jan shoot (Kambalda), Langmuir, Redstone, Thompson	Kambalda, Langmuir, Donaldson West	Thompson, Nepean, Perseverance 1A, Redross, Redstone, Trojan, Windarra



Most of the deposits in the Shaw Dome are **Type I** (stratiform basal), including Liberty's Redstone and Hart deposits. **Type Ib** (magmatic footwall vein) mineralization is a minor mineralization type associated with Type I deposits, but is an important ore type in other associations (e.g., Cu-PPGE-rich footwall veins at Sudbury). **Types IIa** (blebby disseminated) and **IIc** (cloudy disseminated) are common minor mineralization types associated with Types I and Ib. **Type III** (stratiform "reef") mineralization is a more recently-recognized primary mineralization type in this association and is normally subeconomic, but is an important ore type in other associations (e.g., Bushveld, Stillwater). **Type IVa** (Ni-enriched metasediment) mineralization occurs in many deposits where Type I ores are intimately associated with sulphidic metasedimentary rocks, as is the case with the Hart deposit. **Type IVb** (hydrothermal vein) mineralization is a relatively minor, but genetically important secondary ore type. **Type V** (offset) mineralization is associated with almost all Type I deposits and is common both at Redstone and Hart deposits.

The McWatters deposit conforms to various mineralization types: **Type I** (basal massive sulphide layer), **Types IIa** and **IIc** (disseminated zone overlying the massives), and possibly **Type IVb** as there are clear indications of hydrothermal activity in the sulphide mineralogy.

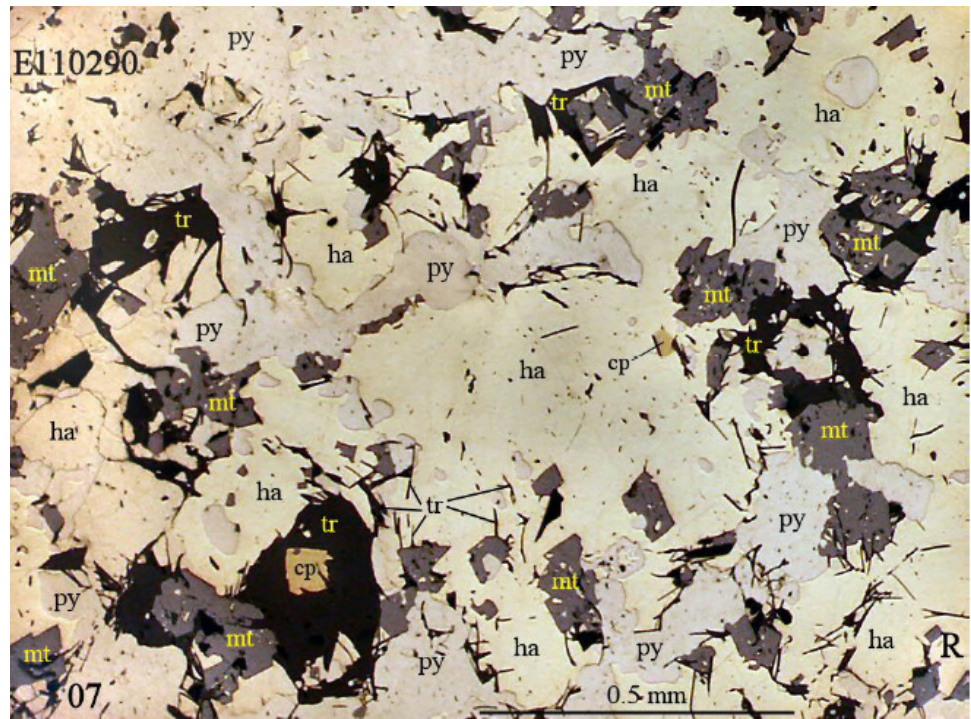
The genesis of the Shaw Dome and the Australian deposits is attributed to the combined effect of lava channels (or channelized sheet flows) and intrusives, which provides the heat and metal sources, and sulphide bearing iron formations in the footwall that provide an external sulphur source. Thermal erosion of the underlying rocks by the komatiite flows is considered to be the dominant mechanism for adding sulphur to the magma and to the creating a depositional 'trough' for sulphide minerals. Type II mineralization characteristically contains disseminated sulphide mineralization within channelized flows resulting in large tonnage low grade deposits. Characteristics of this deposit type which should be used in exploration methodologies include:

- Geological mapping of komatiite flow units;
- Presence of sulphidic footwall rocks;
- Lithogeochemical surveys can detect AUK komatiites;
- Airborne and ground electromagnetic surveys will detect the location of massive sulphide mineralization, whereas magnetic surveys should detect pyrrhotite rich sulphide mineralization.

## 8 Mineralization

The McWatters mineralized zone can be readily subdivided in two distinct zones: an upper zone of altered dunitic rocks containing disseminated sulphides, and a basal, lower zone consisting of massive sulphides. The upper zone directly overlies the lower zone, which is principally in contact with wedges of andesitic, footwall volcanic rocks. The two zones combined form an orebody approximately 150 metres in strike length by 30 metres to 40 metres in width extending down to a depth of approximately 160 metres. The body dips steeply to the south at an average dip of approximately 82 degrees.

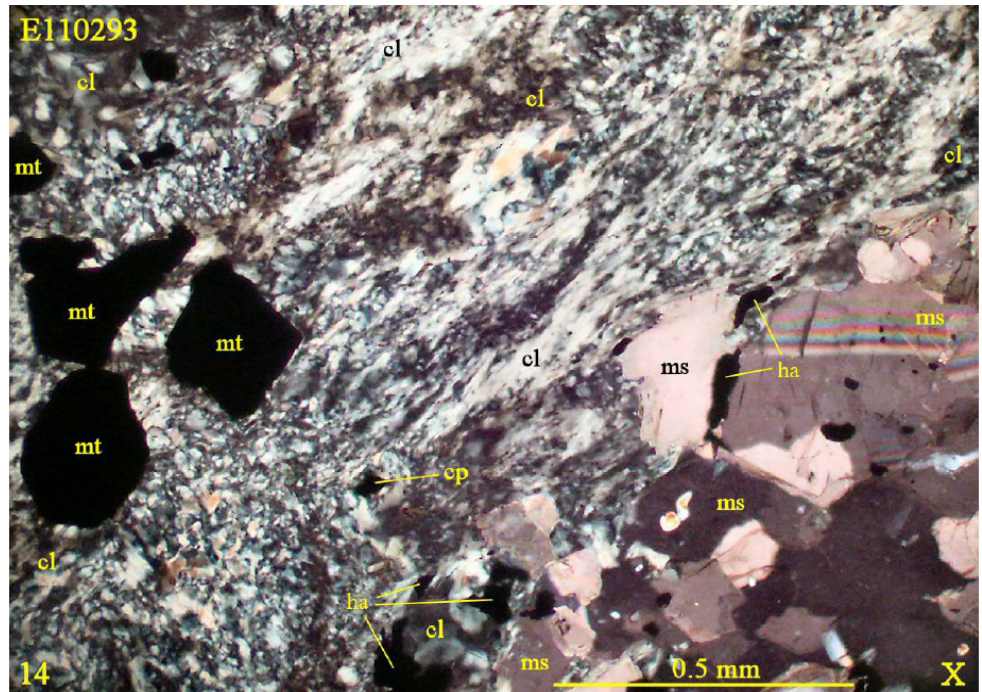
Historically mineralization was thought to consist of pyrite, pentlandite, millerite, and minor chalcopyrite in order of decreasing abundance. However, petrographical work carried out by Liberty did not find evidence for this mineralogical assemblage, but instead a more unique and less common assemblage consisting primarily of pyrite and heazlewoodite (Figure 8-1). Heazlewoodite ( $\text{Ni}_3\text{S}_2$ ) is one of the most nickel rich sulphide minerals, and is generally thought to be of hydrothermal origin, most often found in dunites and lherzolites.



**Figure 8-1 Thin section microphotograph of mineralized core from the McWatters deposit showing the predominant sulphide assemblage: Heazlewoodite (ha) and Pyrite (py).**

Thin section studies of the upper zone revealed a mineralized core consisting of altered dunite/peridotite that is dominated by anhedral olivine (and possibly pyroxene) grains that were altered completely to antigorite-magnetite; antigorite was in turn altered slightly to strongly to talc. In other instances the dunite/peridotite is dominated by chlorite with lesser magnesite/ankerite. Sulphide mineralization in this upper zone consists primarily of pyrite and

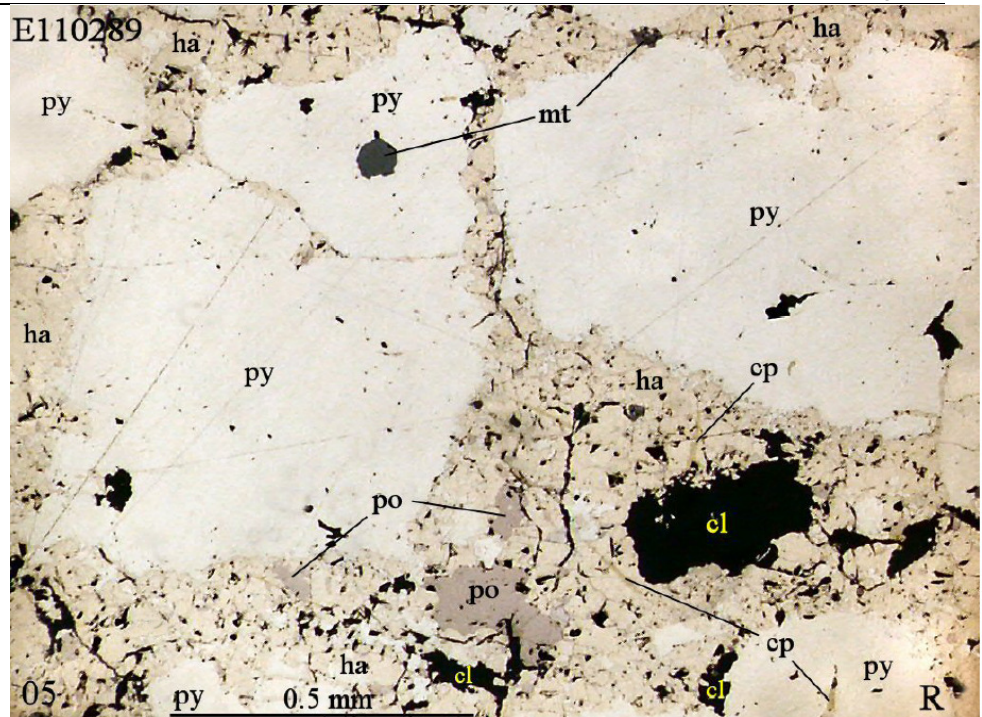
heazlewoodite (1 to 10 percent modal abundance), with trace amounts of chalcopyrite and chromite. Heazlewoodite grains are generally between 0.05-0.2 mm in size (Figure 8-2).



**Figure 8-2 Microphotograph of a thin section showing the mineral assemblage of the disseminated zone at McWatters. Magnetite (mt), Chlorite (cl), Heazlewoodite (ha), Magnesite (ms), Chalcopyrite (cp).**

The massive sulphide dominated lower zone is also comprised primarily of pyrite (40 percent-50 percent) and heazlewoodite (30 percent-40 percent) (Figure 8-3). Heazlewoodite grain sizes range up to 1.5 millimetres. Other common minerals include (in order of decreasing abundance): pyrrhotite, chlorite, tremolite, magnetite, and chalcopyrite.





**Figure 8-3 Microphotograph of a thin section showing mineralogy of the massive sulphide dominated basal layer at McWatters. Pyrite (py), Pyrrhotite (py), Chlorite (cl), Heazlewoodite (ha).**

The mineralogical observations appear to support the interpretation that ultramafic body hosting the mineralization is intrusive. The mineralization could be interpreted as hydrothermally modified magmatic sulphides.

## 9 Exploration

### Historical

A review of the historical exploration activities on the property can be found in Section 5.

### Future

The ultramafic body that hosts the McWatters ore zone continues at depth and trends east-west over several kilometres. Future in-mine exploration will focus on drill testing the depth extension from drill bays on the 155 metre level of the mine. These drill bays have not been included in the Life of Mine Plan outlined in Section 17.

During 2008, Liberty tested the airborne geophysical response of the McWatters ore body in order to determine which method detected a recognizable signature. The VTEM system successfully detected an electromagnetic response associated with the deep seated, flat lying massive sulphide layer. The entire strike length of the ultramafic body was subsequently flown using this very same system. Future exploration will target geophysical anomalies associated with ultramafic, discordant bodies that exhibit similar characteristics to those detected at McWatters.

## 10 Drilling

### Introduction

During the period 1961 to 1995, a number of exploration companies undertook various phases of drilling activities in the vicinity of the McWatters Mine. Poor records exist of the diamond drilling during this period, and the results have not been used in the present study. The block model used in this study was based on drilling conducted by Liberty Mineral Exploration Inc. and Liberty. Total drilling amounted to 20,641 metres of diamond drill core. Details of this drilling are tabulated in Table 10-1.

**Table 10-1 A tabulation of diamond drilling activities conducted at the McWatters Mine.**

Company	Period	Type	Drilling details		
			No. Holes	Total Metres	Average Metres
Liberty Mineral Expl.	2001-04	Surface DD	49	7965	163
Liberty Mines	2006-07	Surface DD	92	12676	138

Diamond drilling conducted by Liberty Mineral Exploration Inc. consists of 49 vertical holes, for which very limited survey data was collected. Original drill logs and assay certificates from Swastika Laboratories, Kirkland Lake, ON (Canada), were found. Surface plan maps showing drill hole locations were also located, which aided in reconstructing drill hole locations. Approximately 75 percent of the casing were left in the ground enabling Liberty to survey a majority of the holes, adding confidence to the data. All the drill core belonging to this phase of drilling are stored on the Redstone Mine site, and have been either checked or relogged in its entirety. All sampling matched the tags and assay certificates.

### Drilling by Liberty (post 2004)

All drilling by Liberty was conducted from surface. A total of 92 holes with an average length of 138 metres were completed on the site. All the drilling done by Liberty was diamond drill core, with the core safely stored on surface at the Redstone Mine site for checking and review.

The core size for surface drilling was NQ, the size being deemed a natural balance between productivity and accuracy. The drilling contractor for over 90 percent of the program was Laframboise Drilling from Hilliardton, ON. Bradley Bros of Timmins performed a limited number of geotechnical holes. The boreholes are numbered by a clear alphanumeric code. The drill core was not routinely photographed for a digital record, although representative core intersections were photographed.

Drill collars were surveyed by a land surveyor, with the original collar azimuth and plunge setup determined by compass and/or cut grid lines. Downhole surveying was routinely conducted at 25 metre intervals with a Maxibor instrument. Casing is used for one hole per set-up for all surface drill locations, with collar pickets installed with clear labels indicating location, hole names, azimuth, and dip. Core orientation is achieved with the EzyMark system. In terms of geotechnical data, RQD and recovery percentages have been routinely collected.

An example of the output of a typical Liberty drill log (MCW-07-65), highlighting all requisite drilling information in DH logger (Century Systems) output is shown in Figure 13.

### **Drilling Pattern and Density**

Liberty Mineral Exploration drilled 49 surface holes to an average drill length of 163 metres. These holes were all vertical drill holes. The maximum depth below surface achieved was about 250 metres, although drilling typically targets depths less than 150 metres below surface. Drilling was done on a 15 metre by 15 metre pattern with one drill hole per set-up.

Liberty drilled 92 drill holes from surface average drill length of 138 metres. These holes were all drilled grid north, with dip angles ranging from -86 to -39.2 degrees. Set-ups typically consisted of 2-3 drill holes fanning with varying dip angles. Drilling was designed to achieve a drill spacing that fell somewhere in the 7.5 metre to 10 metre range. The tight drill spacing was to ensure accuracy while modelling the sulphide concentrations in the disseminated zone, especially in the 0.5 percent to 0.8 percent range. The plan position of all drilling conducted at McWatters is illustrated in, and a typical cross-section showing drill spacing is illustrated in Figure 10-3.

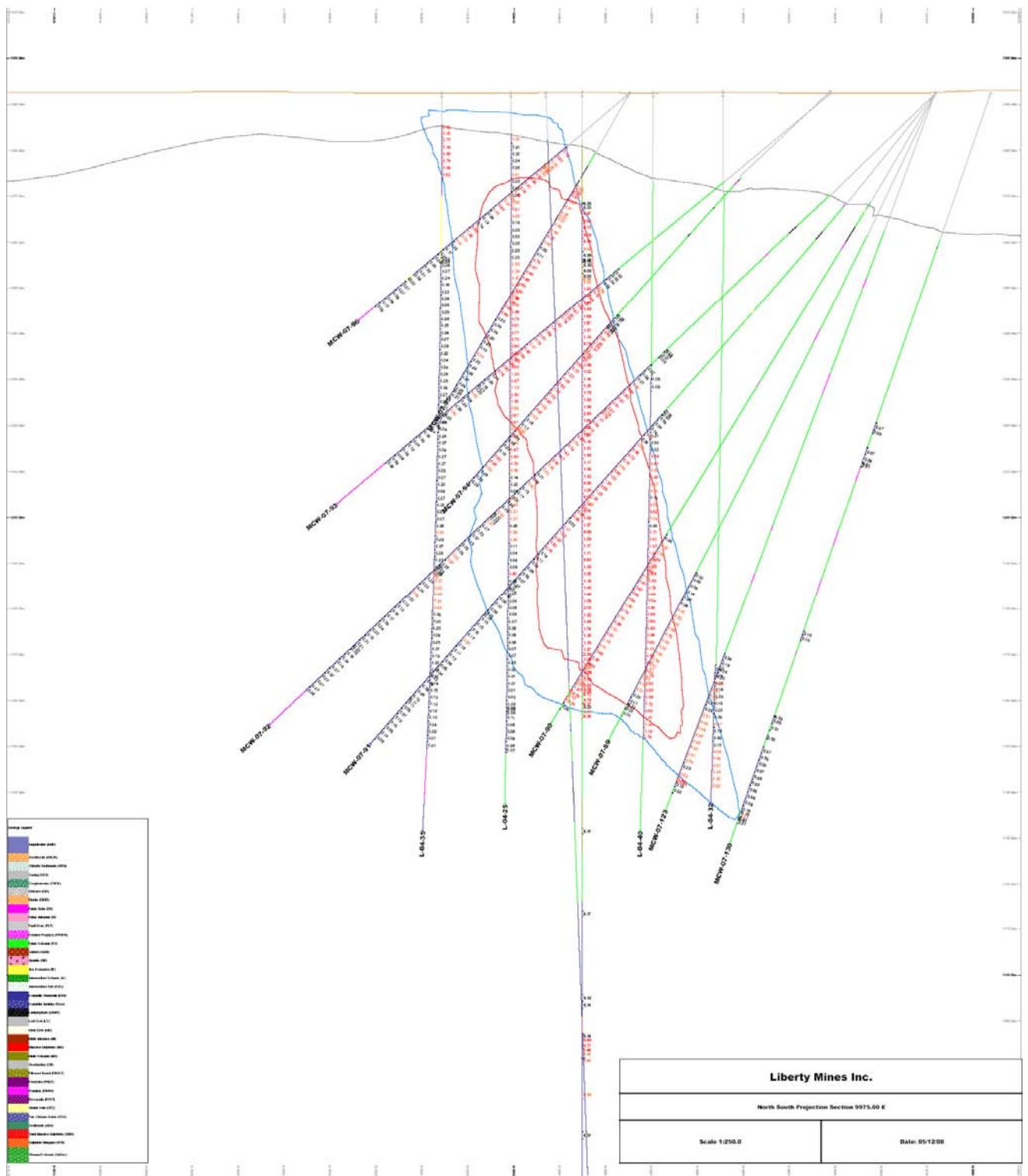
It is the opinion of SRK that the drilling strategy and pattern have produced an adequate drill density to construct resource models of high enough confidence to enable accurate reserve estimates and subsequent financial predictions.





**Figure 10-1 Plan section of diamond drill hole collars by Liberty shown on the McWatters grid.**





**Figure 10-2 Geological cross-section of the McWatters deposit showing geology, assay data, and drill hole traces.**


# 11 Sampling Approach and Methodology

## Introduction

Data reviewed in this study and applied for geological modeling and resource estimation was the product of historical and current exploration programs by two different companies. Historical exploration field procedures implemented by exploration staff have been summarized in the NI 43-101 compliant Technical Report on the McWatters Nickel Deposit, Timmins, ON, prepared by Roscoe Postle Associates Inc (RPA). This report is filed on SEDAR under Liberty Mines Inc., on the 9<sup>th</sup> of November, 2005. As stated in this report, it is the opinion of RPA that sampling procedures implemented by Liberty Mineral Exploration met the minimum requirements set out in *Mineral Exploration Best Practices Guidelines*.

SRK was able to review core handling, logging or sampling procedures implemented during the current Liberty drilling programs. All drill core is transported to the secure Redstone core yard, near the main office, where it is logged. Core is marked for sampling and mechanically split. Half of the split core is submitted for sample preparation and analyses (and sometimes for specific gravity), whereas the other half remains stored in the original core boxes. The results of drill core logging and sampling are recorded into DH logger (Century Systems) format, with adequate detail on lithology and mineralization recorded. Assay analyses results for Ni percent, Cu percent, Au gpt, Pt gpt and Pd gpt are recorded adjacent to lithology descriptions. Au, Pt and Pd have not been routinely sampled however. An extract from the drill log for diamond drill hole MCW-07-65, including the header information, is shown in Figure 11-1.

May 07, 2008



LIBERTY MINES INC.

LIBERTY MINES DETAILED LOG

Page 1 of 5

Hole Number: MCW-07-65										Units: METRIC	
Borehole ID: MCW-07-65			Project Number: MCWATTERS			Start Date: Jun 27, 2007					
Primary Grid: MCWATTERS			Claim #: CLM453			Finish Date: Jun 28, 2007					
Primary North: 4937.23			Township: Langmuir			Drill Contractor: Laframboise Drilling					
Primary East: 10045.58			Logged By: calbert			Core Size: NQ					
Primary Elev: 1292.73			Log Finished: Jun 29, 2007			Hole Length: 149.30					
Destination Grid: UTM:			Core Storage: Redstone Minesite			Azimuth: 360.00					
Destination North:			Casing: Left in hole			Dip: -57.00					
Destination East:											
Destination Elev:											
Comments:											

Survey Tests

Depth	Az	Dip	Depth	Az	Dip	Depth	Az	Dip	Depth	Az	Dip
0	360.00	-57.00	35.0000	1.10	-56.80	59.0000	3.10	-56.30	83.0000	2.00	-57.00
107.0000	350.00	-57.00	149.3000	343.00	-57.30						

Detailed Lithology


From		To	Lithology	Mineralization Data					Assay Data							
From	To			From	To	Mineralization Type	Mineralization Style	Min %	Sample Number	From	To	Ni %	Cu %	Au gpt	Pt gpt	Pd gpt
0	13.00		CAS, Casing													
13.00	18.60		FV, Felsic Volcanic Light grey to light green felsic volcanic (Dacite). Massive to pyroclastic with quartz-carb-epidote infilling in fractures. Weathered & vuggy from 13.0 to 17.0m.													
18.60	18.95		MD, Mafic Dike Dark grey/brown mafic dyke. Sharp upper contact @ 35 degrees to CA. No mineralization.													
18.95	35.50		FV, Felsic Volcanic Light grey to light green felsic volcanic (Dacite). Massive to pyroclastic with quartz-carb-epidote infilling in fractures. No mineralization.													
35.50	39.30		FD, Felsic Dike Hard grey/green/pink felsic dyke. Sharp upper contact @ 30 degrees to CA. Locally blocky/broken. Structure 35.50 - 39.20 : F, 80, sharp upper contact, broken/blocky.	35.50	39.30	PY	DIS	1 - 5%								
39.30	44.45		FV, Felsic Volcanic Light grey to light green felsic volcanic (Dacite). Massive to pyroclastic with quartz-carb-epidote infilling in fractures. Locally blocky/broken. Structure 42.60 - 42.80 : BLKY, 40, broken/blocky felsic volcanic.	39.30	44.45	PY	DIS	< 1%								

**Figure 11-1 Extract from Liberty drill log for MCW -07-65 DH  
Logger format**

### 11.1.1 Sampling Protocols

Liberty sampling during the exploration program carried out on the McWatters site has followed industry best practices, as set out in *Mineral Exploration Best Practices Guidelines*. Liberty have sampled all mineralized core intercepts, which include a footwall sample below the massive sulphide basal contact as well as sample coverage of all mineralized intercepts in the disseminated zone to the massive sulphide. Figure 11-2 shows an extract from a typical drill log produced by Liberty, showing sampling procedures and logging details.

May 07, 2008



LIBERTY MINES INC.

LIBERTY MINES DETAILED LOG

Page 5 of 5

Hole Number: MCW-07-65

Units: METRIC

Detailed Lithology		Mineralization Data						Assay Data							
From	To	Lithology	From	To	Mineralization Type	Mineralization Style	Min %	Sample Number	From	To	Ni %	Cu %	Au gpt	Pt gpt	Pd gpt
								C394860	88.00	89.00	0.2400				
								C394862	90.00	91.00	0.2700				
								C394864	92.00	93.00	0.3900				
								C394866	94.00	95.00	0.1800				
								C394868	96.00	97.00	0.2700				
								C394833	61.00	62.00	0.0300				
								C394835	63.00	64.00	0.0300				
								C394837	65.00	66.00	0.0600				
								C394839	67.00	68.00	0.3700				
								C394841	69.00	70.00	0.1800				
								C394843	71.00	72.00	0.2500				
								C394845	73.00	74.00	0.3300				
								C394847	75.00	76.00	0.4600				
								C394849	77.00	78.00	0.8300				
142.80	144.20	<b>STR, Stringer Sulphide</b> Stringers of Pyrrhotite/Pentlandite/Pyrite in chloritic komatiite. Strongly magnetic.	142.80	144.20	POPNCP	STR	10 - 25%	C394915	142.80	144.20	2.2100	0.1200			
144.20	145.15	<b>MS, Massive Sulphide</b> Massive sulphides of pyrite/pentlandite/pyrrhotite/chalcopyrite. Majority is pyrite/pentlandite.						C394916	144.20	145.15	12.2500	0.5900			
145.15	149.30	<b>KPd, Komatiite</b> Very soft purple/grey/green Komatiite. Numerous irregular/wispy carb-quartz-chl stringers with several containing po/py/pn. Sharp upper contact @ 75 degrees to CA. Locally blocky/broken.	145.15	149.30	POPN	BL	5 - 10%	C394917	145.15	146.20	0.1500	0.0050			
								C394918	146.20	147.20	0.1300	0.0050			
								C394919	147.20	148.20	0.1400	0.0050			
								C394920	148.20	149.30	0.5300	0.0100			

Structure

From	To	Structure Type	Angle to Core Axis	Description
35.50	39.20	F	80	sharp upper contact, broken/blocky.
42.60	42.80	BLKY	40	broken/blocky felsic volcanic.
45.10	45.12	FLT	20	minor gouge
55.55	55.65	FLT	55	Broken gravel
56.30	61.00	BD	47	well layered & altered with pink carb.
70.45	71.00	FLT	15	blocky/broken, soapy, missing core.
71.90	73.10	FLT	20	blocky/broken, some gouge @ lower contact.
139.00	139.80	BLKY	30	blocky/broken, some clay gouge.

**Figure 11-2 Extract from Liberty drill log MCW-07-65 Sampling Procedures and Logging Details**

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

### **12.1.2 Sample Preparation and Analyses**

Information regarding the historical Liberty Mineral Exploration sample preparation, analyses and procedures is available in the NI 43-101 compliant Technical Report on the McWatters Nickel Deposit, Timmins, ON, prepared by Roscoe Postle Associates Inc (RPA). Summarized information regarding the Liberty program is documented here.

The primary laboratory used by Liberty for drill core analyses is ALS Chemex, with sample preparation undertaken at the ALS Chemex Timmins sample preparation facility and subsequent analyses undertaken at the ALS Chemex Vancouver laboratories. Total turn-around time is reported to be about four weeks.

In terms of sample preparation, usually after drying core samples are fine crushed to 70 percent <2 millimetres (code CRU-31) and split with a riffle splitter. Split samples are pulverized and then split again to 85 percent <75 microns (code PUL-31).

Generally analyses are conducted for only nickel and copper, with analyses for Platinum, palladium and gold conducted on request. The assay method used is aqua regia digestion followed by fusion and AAS (analytical code AA46). Analyses for precious metals are reported from an aqua regia leach and using conventional ICP-AES analyses (analytical code ME-ICP41).

The ALS Chemex has ISO 9001 and ISO17025 registration in North America. SRK is unable to comment on the security measures in place during the sample handling processes during the various phases of data generation, as no information relating to this aspect is available.

Analytical results are returned by ALS Chemex to Liberty electronically with data directly updated to the Century Systems database. Certificates of Analyses are received for all assay data, which is checked against the original digital data. The original master pulps are stored for 90 days subsequent to the submission of the Certificates of Analyses, thereafter they are returned to site on request for storage.

### **12.1.3 Quality Assurance and Quality Control Programs**

Quality control measures are typically set in place to ensure the reliability and trustworthiness of exploration data. This includes written field procedures and independent verifications of aspects such as drilling, surveying, sampling and assaying, data management and database integrity. Appropriate documentation

of quality control measures and analysis of quality control data are an integral component of a comprehensive quality assurance program and an important safeguard of project data.

The field procedures implemented by Liberty Mineral Exploration during their exploration program can be found in the NI 43-101 compliant Technical Report on the McWatters Nickel Deposit, Timmins, ON, prepared by Roscoe Postle Associates Inc (RPA). Aspects of the quality control measures implemented by Liberty have been reviewed by SRK. It is SRK's opinion that recent quality control measures implemented and documented by Liberty, meet industry best practice guidelines.

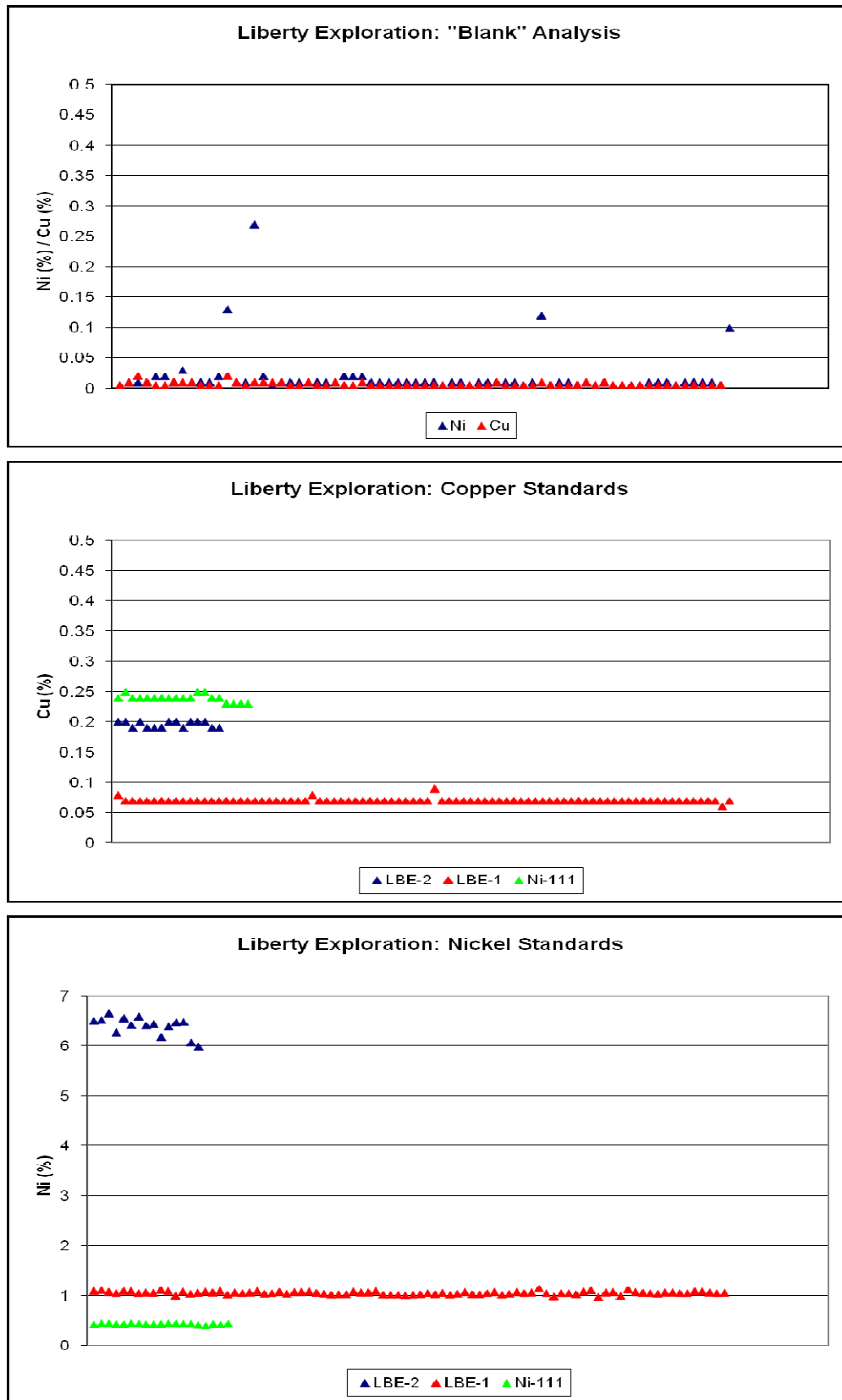
Analytical control measures typically involve internal and external laboratory measures implemented to monitor the precision and accuracy of the sampling, preparation and assaying process. They are also important to prevent and monitor the voluntary or inadvertent contamination of samples. Assay certificates and Quality Assurance and Quality Control Reports from ALS Chemex were made available to SRK, who noted that internal and external laboratory control measures were in place.

In addition to the inferred quality assurance measures taken by ALS Chemex in Vancouver, a series of external analytical quality control measures to monitor the reliability of assaying results delivered by ALS Chemex Laboratories is implemented by Liberty. A series of blanks and standards were inserted at approximately every 10 to 20 samples (usually about 2 per batch).

Certified blank samples are used by Liberty. These blanks have recently also been verified by Liberty, by sending ten blank samples to the SGS Laboratory at Lakefield. The results of the assayed nickel and copper 'blanks' are shown in Figure 15.2. A slight variance is noted in a limited number of outstanding samples (4). The reason for this is unknown, but is most probably due to a sampling error where waste ultramafic was used instead of the standard blank material.

Two commercial certified standards (LBE-1 and LBE-2) and one 'uncertified' standard (Ni111) were applied by Liberty. The results of the Liberty standards for nickel and copper percentages are plotted in Figure 12-1. The recommended value for the copper and nickel reference materials are as follows:

	<b>Ni %</b>	<b>Cu %</b>
LBE-1	1.090	0.071
LBE-2	6.440	0.200
Ni111 0	0.420	0.240



**Figure 12-1 Plot for the control Nickel and Copper samples used by Liberty (top=blank, middle=copper and bottom=nickel).**

### 12.1.4 Specific Gravity Data

Specific gravity measurements were collected during the Liberty core drilling program in 2006-7. All specific gravity data has been determined at the ALS Chemex laboratories in Vancouver from core pulp samples using the pycnometer method.

A total of specific gravity 235 determinations are available for the McWatters deposit. These were all assigned to a single weathering profile with three geo-domain differentiated. A summary of the weighted averages of this dataset is summarized in Table 12-1. This table differentiates between data from massive sulphides, disseminated ore and from other rock types. A histogram of the total specific gravity dataset is shown in Figure 12-2.

Specific gravity measurements were taken for mineralized samples from a whole spectrum of grades. A general positive relationship between specific gravity and Ni percent is apparent from the McWatters dataset. This positive relationship is highlighted in Figure 12-3 that shows the modeled linear relationship between specific gravity and Ni percent. The correlation coefficient between specific gravity and Ni percent is 0.6523.

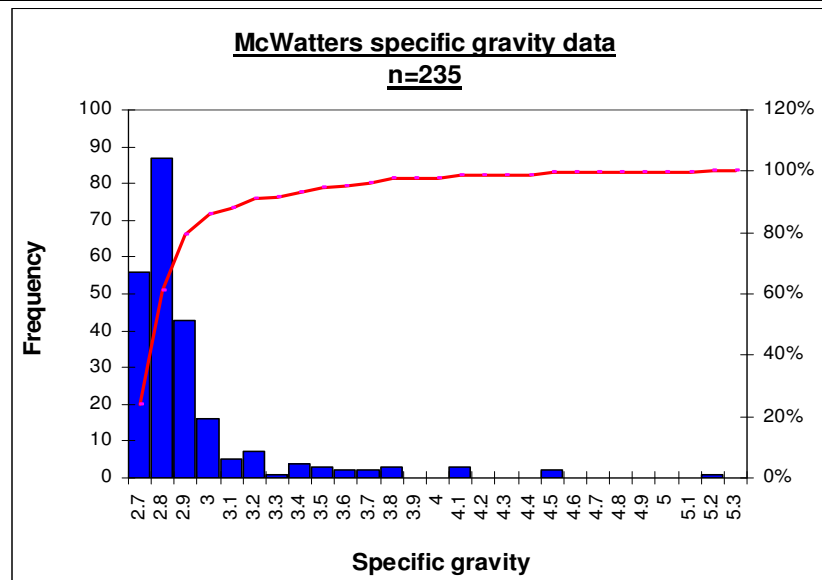
For resource estimation, the modelled linear relationship between specific gravity and nickel grade was applied to estimate the grade for each block in the resource model.

The linear relationship is: specific gravity =  $0.1584 \times (\text{Ni } \%) + 2.6782$

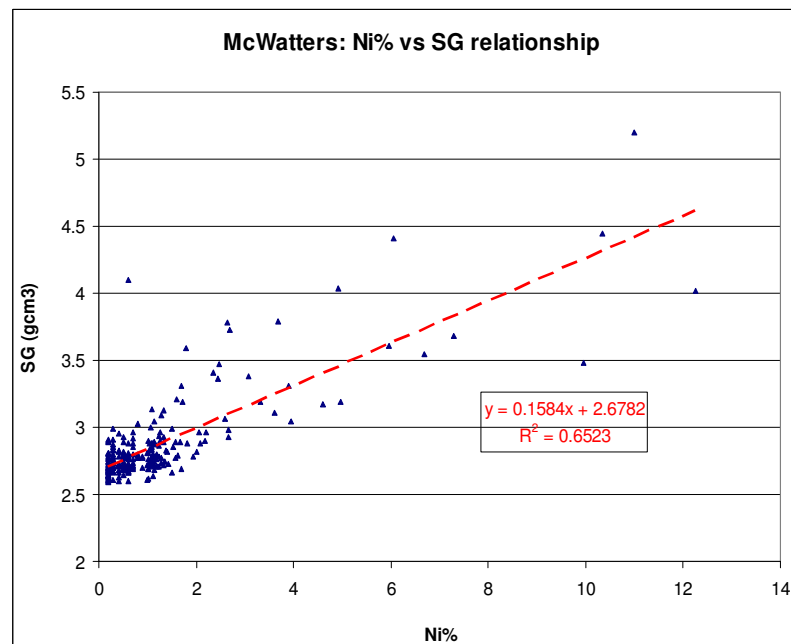
**Table 12-1 Summarized weighted averages per rock type of the specific gravity database**

Weighted SG averages			
Rock Type	Samples	Ni%	S. G.
Disseminated Ore	200	0.74	2.77
Other Rock types	9	1.58	3.12
Massive Sulphides	26	4.41	3.48
<i>averages:</i>	235	1.18	2.86





**Figure 12-2 Histogram of specific gravity data (gcm<sup>3</sup>) for the total McWatters database.**



**Figure 12-3 Scatter plot showing the relationship between SG and Ni% from the McWatters dataset**

## **13 Data Verification**

### **13.1 Historical data verifications**

It is good practice for exploration staff to implement field procedures designed to verify the collection of exploration data and to minimize the potential for inadvertent data entry errors.

SRK was unable to comment on the procedures adopted by Liberty during the 2002 to 2004 drilling campaign since no record is available of the data verification procedures adopted during this period. SRK was however able to review the procedures adopted by Liberty exploration staff for the recent 2006 to 2007 drilling campaign. A well structured data entry protocol is adopted by Liberty, with all verified data being captured in an industry standard Century Systems database.

### **13.2 Control Sampling Assay protocols**

Control sampling procedures applied by Liberty at McWatters is similar to that adopted for its Redstone exploration drilling campaign. Techniques such as the following are applied:

- Validation of the assay results in the database compared with the original assay certificates;
- Taking replicate core samples from a second split of the pulverized sample at the laboratory;
- Duplicate analyses of selected samples;
- Sieve tests to verify the grinding on the pulp required for assaying;
- Insertion of routine blank samples to check for possible sample contamination during the preparation and assaying process;
- Application of appropriate grade certified control samples (standards);
- A check assaying program with an umpire laboratory.

Liberty has introduced the Century Systems database to all its exploration projects. This system as applied on McWatters is more than just a database, it is a management tool that combines borehole logging, mine mapping and assay data in a way that integrates seamlessly with Datamine, which is the modelling and design software applied. Century Systems also functions as a data verification tool, generating data input error and QAQC reports for management action.

### **13.3 SRK independent verifications**

During the site visit to McWatters, SRK was able to verify many of the underground drillhole collars positions and review most of the exploration

protocols and procedures applied by Liberty exploration staff. In addition SRK selected five drill holes from the recent Liberty drill program for high level logging which was compared to database information. Generally logging compared well, to that observed.

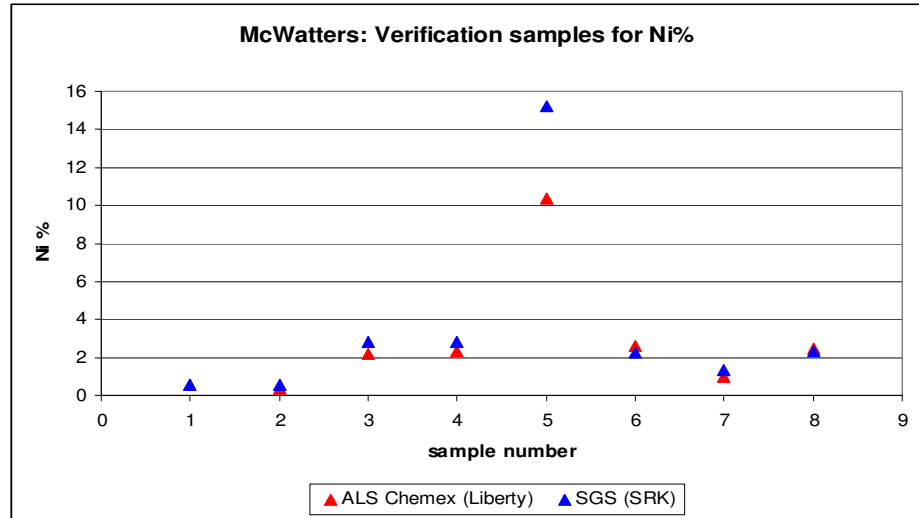
Assay results were compared to actual core intersections and a good correlation between sulphide mineralization and higher grades was observed.

SRK also took eight additional independent core samples for comparative analyses. These eight samples were taken from recently drilled remnant split Liberty core from previously sampled positions, taking care to sample core of varying sulphide mineralization (low as well as high grade samples taken).

The SRK samples were submitted to SGS Laboratories in Toronto for independent analyses. In contrast to Liberty, which analysed by aqua regia digestion (which yields a partial leach only) followed by AAS (ALS Chemex code AA46), SRK elected to have a 'near total' four acid digestion followed by ICP-AES (analytical code ICP90Q). The comparative results from this verification study are provided in Table 13-1 and graphically in Figure 13-1. SRK regard the variance in nickel and copper grades in Table 13-1 to be acceptable and typical for deposits of this nature.

**Table 13-1 Comparative analyses for SRK check assay verification**

	Sample #	ALS Chemex (Liberty) ICP90Q		SGS (SRK) AA46	
		Ni%	Cu%	Ni%	Cu%
1	E103670	0.56	0.03	0.59	0.03
2	E103671	0.37	0.03	0.57	0.02
3	E103672	2.17	0.05	2.81	0.05
4	E103676	2.36	0.15	2.82	0.15
5	E103682	10.35	1.32	15.20	1.06
6	E098946	2.60	0.07	2.29	0.05
7	E098947	0.99	0.01	1.37	0.02
8	E098948	2.47	0.08	2.34	0.12
average:		2.73	0.22	3.50	0.19



**Figure 13-1 Graph showing comparative Ni% assays for SGS (ICP90Q) and ALS Chemex (AA46).**

The verification study suggests that average nickel assays for SGS (ICP90Q) tend to be higher than that of ALS Chemex (AA46) for all grades.

Considering that average grades have been distorted by high grade sample E103682 and the small comparative database, these variations are however not seen as significant

## 14 Adjacent Properties

Liberty owns a large portion of the surrounding claims, including 3 of the 4 known deposits of the Shaw Dome. McWatters is located in the central portion of Langmuir Township (Figure 6-2). The Redstone nickel deposit is located to the west in neighbouring Eldorado Twp and is the westernmost deposit known to date. The Redstone Mine is currently in production and is equipped with concentrating facilities on site. Going eastward, located between McWatters and Redstone, is the Hart nickel deposit, which lies entirely within Liberty's claim package. Langmuir #2, to the north, is shared with Inspiration Mining Corp, who owns part of the claims containing the mineralized zone. Langmuir #1 is the fourth deposit, and lies within a claim group whose mining rights belong to Inspiration Mining Corp.

The Redstone deposit has a recently calculated NI 43-101 compliant measured and indicated resource of 418,931 tonnes with an average grade of 2.32 percent Ni. This resource estimate only reflects ore contained in the upper 508m of the deposit, where current mining activities are taking place. The neighbouring Hart deposit has an historical inferred resource of 700,000 tonnes grading 0.9 percent Ni. An extensive drill program has been carried out during 2007 and early 2008 on the Hart project in order to provide a NI 43-101 compliant resource in the near future. In addition to the known deposits in the area there are many other prospects, including the Galata showing (up to 7.5 percent Ni) and the recently discovered mineralized intervals by Golden Chalice Resources.

Both Langmuir #1 and Langmuir #2 are past producing mines with total reported production of 111,502 tonnes with an average grade of 1.74 percent Ni, and 1,133,750 tonnes with an average grade of 1.50 percent Ni. Neither of these deposits have NI 43-101 compliant resource evaluations.

All nickel deposits of the Shaw Dome are hosted by ultramafic rocks, which have generally been interpreted as extrusive komatiitic flows, with the exception of McWatters. The latter deposit may be hosted by an ultramafic dyke that cross-cuts an iron formation.

## **15 Mineral Processing and Metallurgical Testing**

### **15.1 Introduction**

On the 17<sup>th</sup> of July, 2007, Liberty commissioned the Redstone Nickel concentrator, located on the Redstone Mine site. The plant is designed to process up to 2,000 tonnes per day or high MgO Ni-Cu-PGE ore, even though permitting currently restricts throughput to a maximum of 1,500 tpd. The plant has been processing ore from Liberty's Redstone Nickel Mine. The ore type produced at the Redstone mine is similar to the ore type predicted to be produced at McWatters.

McWatters ore will be processed at the Redstone nickel concentrator, which is approximately 9 km due west of the McWatters site. Predicted nickel recoveries for the McWatters Mine ore material are based on previous plant performance (operating on similar ore from the Redstone Mine), future upgrades, and metallurgical testing performed on drill core from the McWatters deposit.

Present nickel recoveries achieved at the plant average 87.05%, while the average predicted Ni recovery used in this feasibility study is 88%. This one percent increase can be attributed to the incorporation of an on-stream analyzer (LIBS) that is currently being installed. This analyzer measures nickel and MgO values on a 2 minute interval at feed, tails and concentrate locations. This added automation lowers reaction times and therefore boosts recoveries. In order to predict recoveries at head grades lower than those typically produced at Redstone, numerous open cycle tests were conducted on low grade material from the McWatters deposit. The head grade of the tested material ranged from 0.6% - 0.9% Ni. Tests were conducted by Process Research Associates Ltd., of Richmond, B.C. (Canada), using parameters intended to emulate the Redstone Mill. Reported recoveries ranged from 78.4% to 89.9%.

### **15.2 Ore Processing**

#### **15.2.5 Ore Type**

The Redstone Mill has been specifically built to process Ni ore with a high MgO content. The Ni deposits in the Shaw Dome are typically hosted by komatiitic flows with an average MgO content ranging from 18 percent to over 30 percent.

#### **15.2.6 Previous Plant Performance**

The Redstone plant has been in operation since July 14<sup>th</sup>, 2007 to the present day. During this period the plant has processed high MgO komatiitic Ni ore

from the Redstone Mine. Processing results for the first quarter of 2008 are representative of plant performance. Ore throughput for the quarter averaged 209.5 tonnes of ore per day with an average head grade of 1.88 percent Ni, producing 1763.7 tonnes of Ni concentrate. The concentrate grade averaged 16.4 percent Ni. Average nickel recoveries for the quarter were 87.05 percent. The metallurgical performance for the first quarter of 2008 is summarized in Table 15-1.

**Table 15-1 First quarter of 2008 plant metallurgical performance**

Month	Tonnes	%Ni Head Grade	%Ni Con Grade	Ni Con Shipped	% Ni Recovery
January -08	4255	1.87	16.98	413.52	86.23
February -08	8252	1.73	16.84	719.06	87.12
March -08	6560	2.06	15.57	631.13	87.50

For the quarter, daily feed head grade ranged from 1.6 percent-2.2 percent Ni with an MgO content of approximately 13 percent-18 percent. This ore type is consistent with ore to be produced from the McWatters Mine.

## 15.2.7 Plant Flow Sheet Description

### Crushing (Figure 15-1)

All ore is trucked to the crusher house from the respective mine sites. Surface ore pads are specifically designed to maintain separate ore piles for each mine, but to blend the ore from the same source in order to achieve a homogenous ore type. The crusher coarse ore bin can obtain 100 mt of storage, which is drawn by a simplicity pan feeder on a variable frequency drive (VFD) to control tonnage throughput. The pan feeder then feeds a 32" x 42" Birdsboro Jaw crusher. All 3" minus material is then conveyed to a Gator Double Deck screen. The top screen has an opening of 1" square and the bottom deck consists of a 3/8" x 3" opening. All material over 3/8" reports to a HP 400 cone crusher. This crushed material is then conveyed back to the screen deck for screening. The final crushed product is conveyed to two 800 live metric tonne bins for mill feed. The crusher house is currently operating at an average rate of 120tph.

### Grinding (Figure 15-2)

Feed product is drawn from two 800 live tonne fine ore bins via a slot feeder. Material is conveyed to a 10'X13' Dominion Ball Mill at a feed rate of 20-21 tph. The mill is lined with rubber lifters and shell liners. The slurry density in the mill is maintained at 74 percent-78 percent at a 2.8 S.G. Slurry is pumped to a cyclone bank which consists of 4 Krebs D15 cyclone. Underflow is gravity fed to the mill for regrind and overflow of P80 65m reports to the conditioning tank.

Phase II grinding circuit is a mirror image of Phase I mill with independent feed belt, pump and cyclone. This is to separate ore contamination from a high Ni, lower MgO Redstone ore versus a moderate Ni, higher MgO content McWatters ore. This gives the circuit the flexibility to treat each ore body independently to maximize ore recovery.

Phase III consists of an addition of one 10' .5" x 13' Dominion Ball Mill which will be a regrind mill for the McWatters circuit to increase throughput from 500 tpd to 1,000 tpd. The three mills have the flexibility of operating in series to run one type ore at high tonnage of up to 2,000 tpd.

### **Flotation (Figure 15-3)**

The plant's flotation circuit consists of 2 x 500 cu.ft tank cells for Rougher with a slurry grade of 1.6 percent - 2.2 percent on average. Final concentrate collected at this stage has an average grade of 20 percent Ni. The tails of the rougher cells is gravity fed to the first of six 500 cu.ft Scavenger tank cells. The last cell reports to the tailings discharge box, and all concentrated nickel collected is pumped to the cleaning stage which consists of 3 x 500 cu.ft Scavenger Cleaner cells.

In the cleaner stage MgO's are further depressed to clean the average nickel grade of 5 percent to a 14 percent-16 percent Ni grade. Tails from the cleaner circuit are directed to the feed end of the scavenger to collect any remaining nickel. Phase II and III operate in a similar fashion with the addition of more cells for residence time, along with rougher cleaner cells to upgrade the rougher concentrate. All final concentrate reports to the 20' conventional thickener. Slurry is then thickened from a 20 percent to a 65 percent density.

### **Concentrate Dewatering**

The 20' thickener pumps the 65 percent density slurry to a 500 cu.ft holding tank which feeds a Larox Filter Press. This state of the art dewatering press operates fully on automation and can produce up to 6 mt/hr. The average moisture of the concentrate cake is 8 percent and is gravity fed to a 80 tonne storage bin.

The final product is conveyed from the storage bin where it is weighed before loading into haulage trucks. Samples are collected for assay and moisture content and is then transported to the buyer where the concentrate again is weighed and sampled in the buyer's storage area.

### **On Stream Analysis**

A new LIBS on stream analyzer has been purchased and is in the process of installation. This analyzer measures nickel and MgO values on a 2 minute interval at feed, tails and concentrate locations. This will enable plant operation to react to MgO and head grade changes in a timely manner elevating recoveries while lowering chemical consumption and, therefore, reducing operating costs. The on stream analyzer is expected to be fully functional by the time McWatters ore is to be processed.

### **Reagents**

The main reagents consumed are Depreman C which depresses MgO, copper sulphate which is the activator, Potassium Amyl Xhantate which is the collector, and DVX which acts as a frother.



## 15.3 Laboratory

The laboratory is located in the Redstone Mill and is under the supervision of the mill manager. The laboratory is equipped with a jaw crusher, ring, puck and riffler for sample preparation. The wet lab consists of a hot plate and digestion station. All sample assaying is done by atomic absorption. Concentrate samples are sent to a certified independent analytical laboratory as part of routine QA/QC procedures.

The laboratory sample load consists of 10 percent from the mill, 80 percent from geology, and 10 percent from the environmental department.

## 15.4 Plant Personnel

The mill manager is responsible for the construction, operation and budgeting of the mill complex. The plant operates 24 hours a day, 7 days a week with a staff of 31 employees. Working under the Mill Manager, a Mechanical Superintendent is responsible for three millwrights and any mechanical contractors on site. The Electrical Supervisor, with a crew of two electricians, is responsible for all of the plant automation and any electrical contractors on site. An Operations Superintendent assumes the responsibility for four mill shifters and all activities concerning mill processes. A Mill Metallurgical Supervisor is employed to ensure QA/QC in the assay laboratory and conduct test work to improve operating costs and Ni recoveries.

Crews are divided into four operating crews headed by a Mill Shifter, who is responsible for two mill operators, along with a crusher and loader operator.

## 15.5 Plant Operating Costs

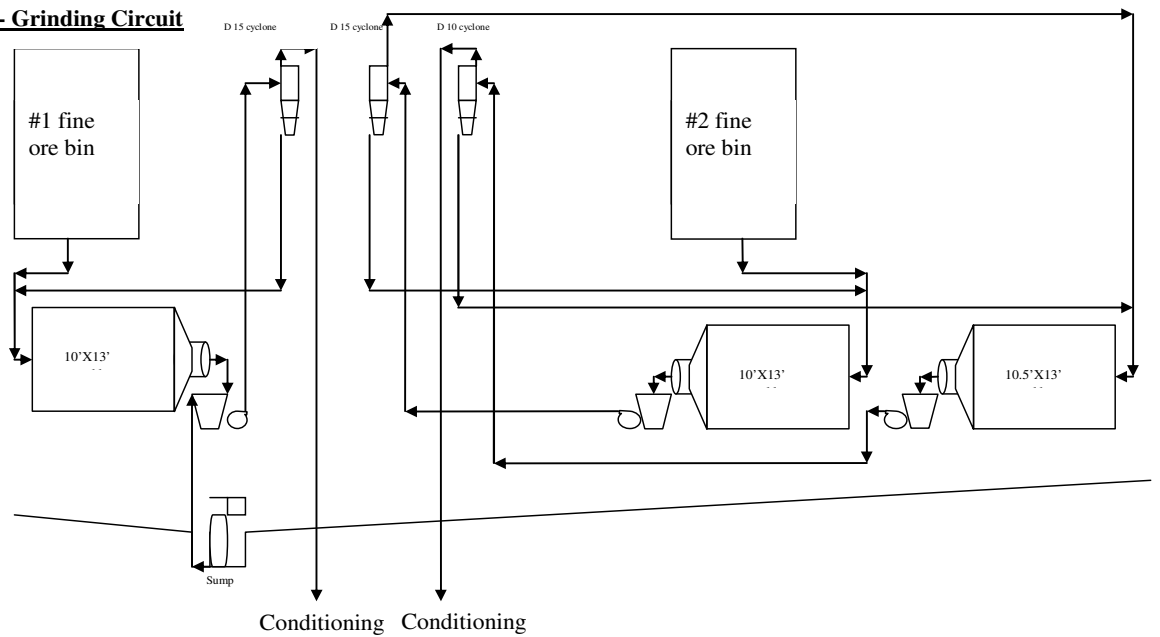
Plant operating costs summarized in Table 15-2 are based on historical production data at lower tonnages than those shown. The plant will be operating at approx 1,500 tonnes per day when McWatters is in production.

**Table 15-2 Redstone plant operating costs**

	500 tpd	1000 tpd	1200 tpd	1500 tpd
Man Power	\$ 9.39	\$ 4.70	\$ 3.91	\$ 3.13
Chemical	\$ 5.12	\$ 5.12	\$ 5.12	\$ 5.12
Electrical	\$ 0.55	\$ 0.50	\$ 0.47	\$ 0.42
Mechanical	\$ 1.02	\$ 0.95	\$ 0.90	\$ 0.80
Analysis	\$ 0.14	\$ 0.14	\$ 0.14	\$ 0.14
Hydro	\$ 4.67	\$ 4.67	\$ 4.67	\$ 4.67
<b>Total cost/tonne</b>	<b>\$ 20.89</b>	<b>\$ 16.08</b>	<b>\$ 15.21</b>	<b>\$ 14.28</b>

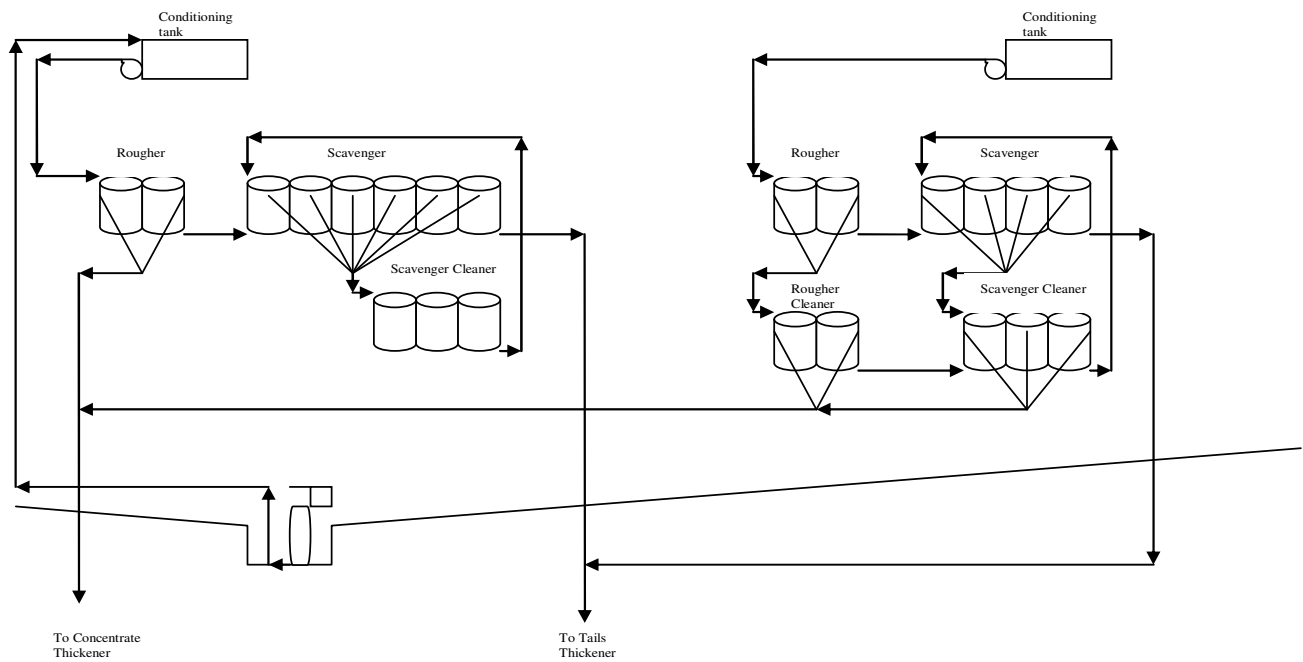


**Flow Sheet- Grinding Circuit**



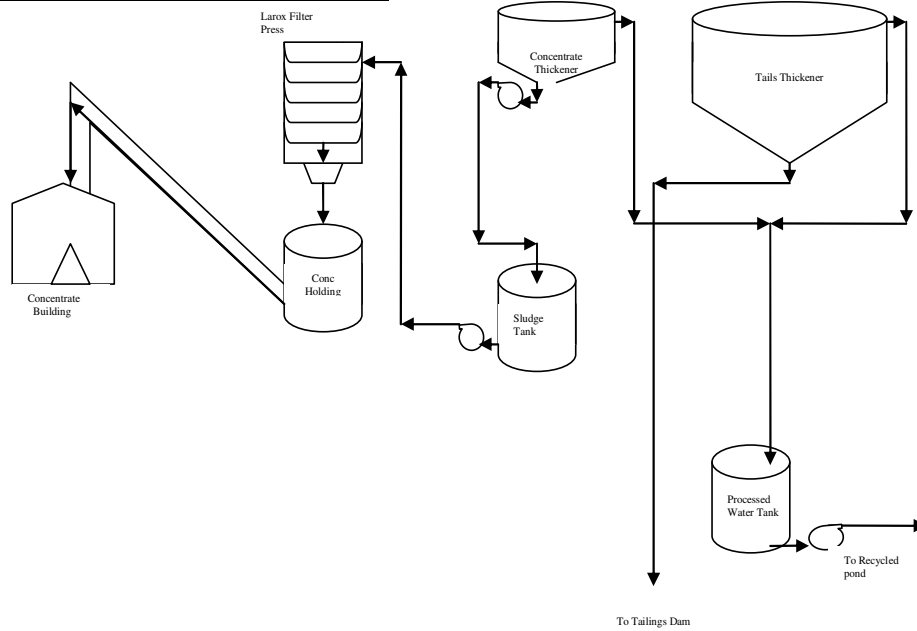
**Figure 15-2 Flow Sheet - Grinding Circuit**

### Flow Sheet- Flotation Circuit



**Figure 15-3 Flow Sheet - Flotation Circuit**

### **Flow Sheet- Dewatering and Shipping**



**Figure 15-4 Flow Sheet – Dewatering and Shipping**

## **15.6 Future Prospects and Upgrades**

The introduction of the LIBS on stream analyzer is predicted to increase recoveries and lower operating costs. The possibility of using a different talc suppressant is being evaluated. If this product performs successfully the change would halve the costs of this particular flocculent, in so doing significantly reducing operating costs.

The plant is also evaluating the possibility of introducing a gravity circuit to separate the PGE's from the nickel concentrate

## 16 Mineral Resource and Mineral Reserve Estimates

### 16.1 Introduction

Unclassified historical resources have been reported for McWatters (ODM Geological Report 86). This historical estimate is unverified and as such is non- NI 43-101 by definition. A total of 477,768 tons grading 0.73 percent nickel in the Upper Zone and 165,790 tons grading 1.92 percent nickel in the Lower Zone for a total of 26,749,814 pounds of nickel was reported.

In 2005, Roscoe Postle Associates Inc. completed an updated NI 43-101 compliant resource estimate for the McWatters nickel deposit. Due diligence for this resource estimation included a review and compilation of all 2003 and 2004 sample assay data, survey data and surface topography. Aspects of the RPA (2005) resource estimate include:

- Data composited to one meter lengths;
- Block model dimensions of 2.5m x 2.5m x 2.5m;
- ID<sup>5</sup> grade interpolation used within geologically defined solids;
- Indicated and Inferred resources classified according to data density and search radii criteria;
- Search radii of 100m for Inferred and 35m for Indicated resources;
- A density of 3.2t/m<sup>3</sup> was assumed;
- Nickel grades were capped at 9 percent.

The Mineral Resource estimate at a cut off of 0.5 percent nickel is tabulated in Figure 16-1

**Figure 16-1 Mineral Resource Estimate for the McWatters Nickel Property (RPA, 2005)**

Cut off Ni%	Zone	Tonnes	Grade Ni %	Contained metal Ni (lbs)
<b>Indicated Resources</b>				
0.5	Upper	496,500	0.77	16,823,000
0.5	Lower	43,900	4.29	8,305,600
<b>Total</b>		<b>540,400</b>	<b>1.06</b>	<b>25,128,600</b>
<b>Inferred Resources</b>				
0.5	Lower	4,300	4.29	817,900
<b>Total</b>		<b>4,300</b>	<b>4.29</b>	<b>817,900</b>

SRK was commissioned by Liberty in October 2007 to compile an updated NI43-101 compliant resource estimate for the McWatters Nickel Deposit. This resource estimate supersedes the previous estimates.

This section summarizes the data, methodology and parameters used by SRK to estimate the mineral resources for the McWatters Nickel Deposit. The mineral resource model considers all available drilling data.

All resource estimation work was completed by Glen Cole, P.Geo from data received from William Randall, P.Geo from Liberty. The resource estimation and accompanying technical report was reviewed by Dr JF Couture of SRK.

The mineral resources presented herein are reported in accordance with the Canadian Securities Administrators' National Instrument 43-101 and have been estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the mineral resource will be converted into mineral reserve.

Datamine Studio Version 2.1 was used to construct solids, build composites and the block model, to run grade interpolation and to estimate and tabulate mineral resources. Isatis Version 5.1.7 was used to undertake geostatistical analyses of the dataset and to generate variograms for nickel and copper.

## **16.2 Database validation**

The data verifications adopted by SRK and Liberty are discussed in Section 13. Minimal data verification was possible for the data generated prior to 2006.

Database records reflect original drill data, except for the lithology codes which have been simplified and standardized by Liberty according to reasonable geological criteria. These lithology codes facilitated the geological modelling process.

The Excel and Datamine format database provided to SRK was checked for any missing data, overlapping intervals and for duplicated data inputs. The assay database comprises of a single data type viz. diamond drill data from various periods.

## **16.3 Resource Estimation**

### **16.3.8 Database**

The database used for resource estimation includes exploration drilling data collected during various exploration programs conducted during the period 2002 to 2007. The McWatters drilling database that was received from Liberty



on 14 January 2008 comprises of 153 drill holes from the following diamond drill sources:

- Diamond drilling by Liberty during 2002 -2004 (L-series) = 49 holes
- Diamond drilling by Liberty during 2006 -2007 (MCW-series) = 92 holes
- Other diamond drilling (RTH and TH-series) = 12 holes

The total resource assay database comprises of 6,667 records. The borehole database received from Liberty contains information about drill collar location, assay results for nickel and copper (and sometimes precious metals), lithology and surveying for all Liberty drill holes.

SRK is of the opinion however that the McWatters dataset is adequate for resource modelling and grade estimation for this style of sulphide mineralization.

### 16.3.9 Solid Body Modelling

Nickel (and copper) grades are spatially related to two kinds of sulphide mineralization at McWatters. The highest, most continuous grades are associated with the basal massive sulphide mineralization horizon which is locally highly variable in thickness. Overlaying the massive sulphide mineralization, disseminated type sulphides occur which are discontinuous in nature and associated with highly variable nickel grades. An additional complexity is the occurrence of barren intrusive dykes which complicate the continuity of known mineralization. The 3D orientation of such intrusives has been modelled by Liberty.

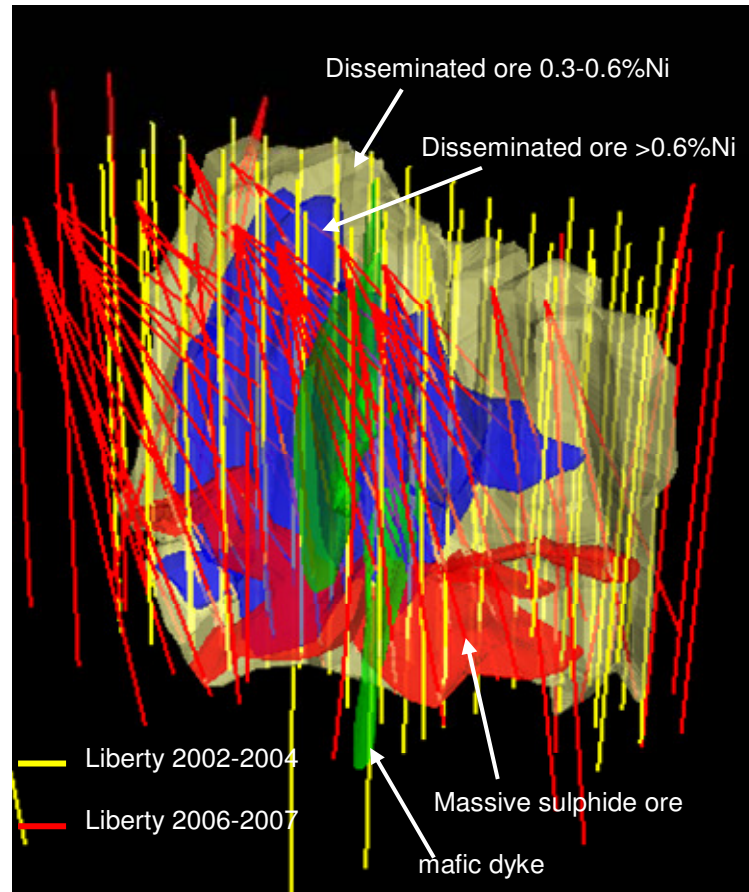
With considerable interpretive input from Liberty exploration staff, the following geological entities were modelled:

The basal massive sulphide horizon was delineated from drill intersections; For the disseminated ore body, shells to estimate low grade ore (0.3 percent Ni) distributions as well as to estimate high grade ore (0.6 percent Ni) distributions were constructed for use as hard boundaries in the grade estimation process.

Mafic dykes cross cut the modelled ore domains and have been modelled accordingly from drillhole data. In addition felsic dykes have also been modelled (non-cross cutting). These intrusives have been coded and removed during ore resource determinations. Ore domains (massives, 0.3 percent Ni and 0.6 percent Ni domains) are reported excluding material (and sampling data) from barren intrusives.

The above methodology enables the creation of surfaces to simplistically define the extent of the two types of mineralization on McWatters (Figure 16-1). These surfaces will also become hard boundaries for the selection of data representing the two mineral types for geostatistical analyses and variography.

It is recognised that this geological model is a simplification of the reality on McWatters. No weathered surfaces have been modelled, as all drilled material is considered fresh by all available logging detail and by site inspection of the Liberty core by SRK.



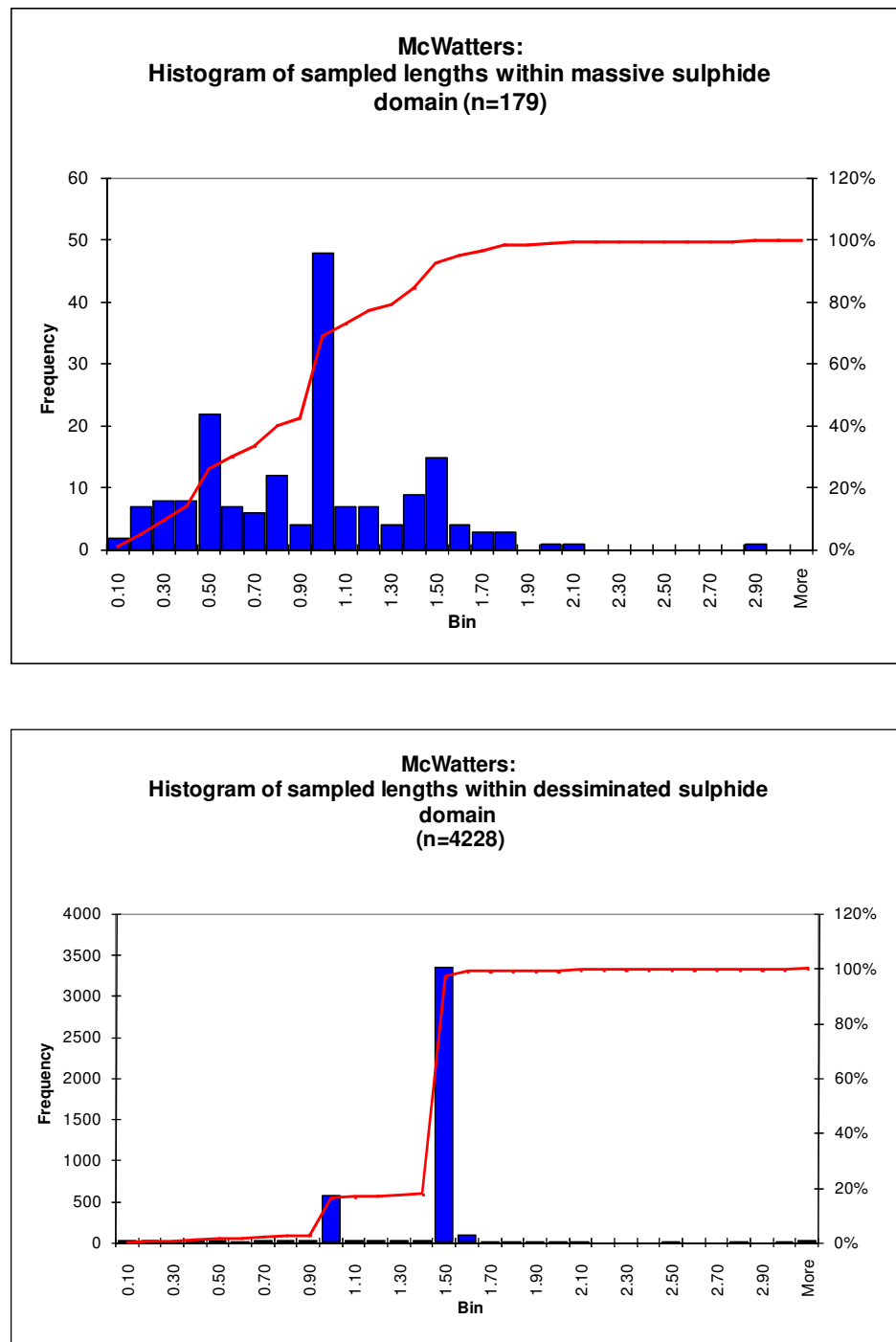
**Figure 16-2 Simplistic oblique sectional view looking NNW of the result of the geological modeling process applied at McWatters.**

### 16.3.10 Compositing

Composite files were created using uncapped values starting at the drillhole collar position and defined within each of the two 'mineralized zones' viz. the lower massive sulphide zone and the overlaying disseminated type sulphide zone.

All assays were composited to 1.5 metre intervals and extracted to a workspace for statistical analyses and grade interpolation.

Certain intervals within the historical database (within the mineralized zones) were not sampled for reasons unknown. These intervals were assigned a value of zero in the compositing process. The original sample drill widths within both types of mineralized solids are illustrated in Figure 16-3.



**Figure 16-3 Histogram of original sampled widths within modeled massive and disseminated sulphide ore zones.**

### 16.3.11 Statistics

A tabulation of summary statistics (uncapped and capped) of composited drill data within the massive and disseminated sulphide domains is provided in

Table 16-1. After excluding all data within modelled mafic dykes, composited datasets were generated for the 3 modelled ore domains with the following sizes (massive sulphides= 149, 0.3 Ni percent domain= 4330 (inclusive of 0.6 Ni percent domain) and the 0.6 Ni percent domain= 1499).

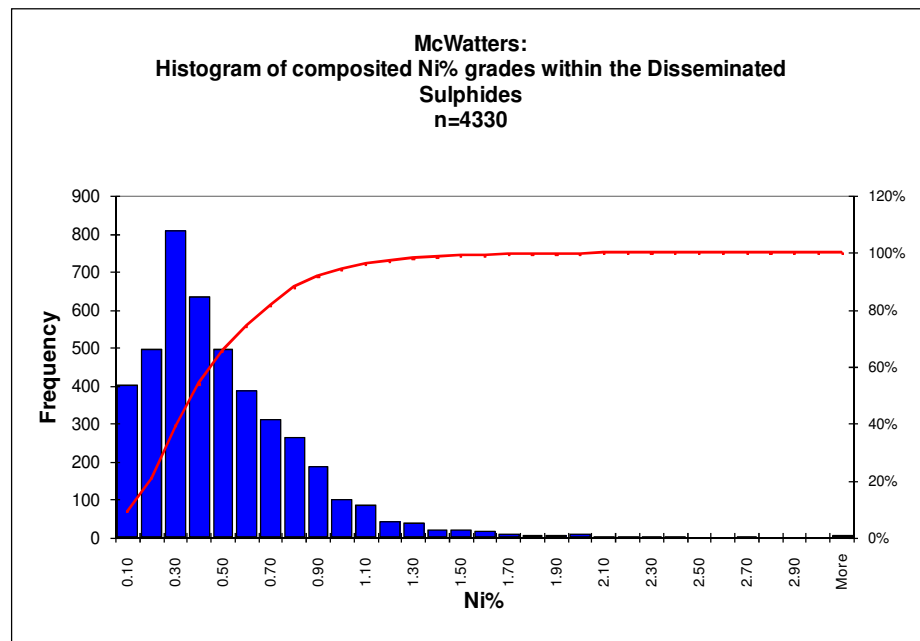
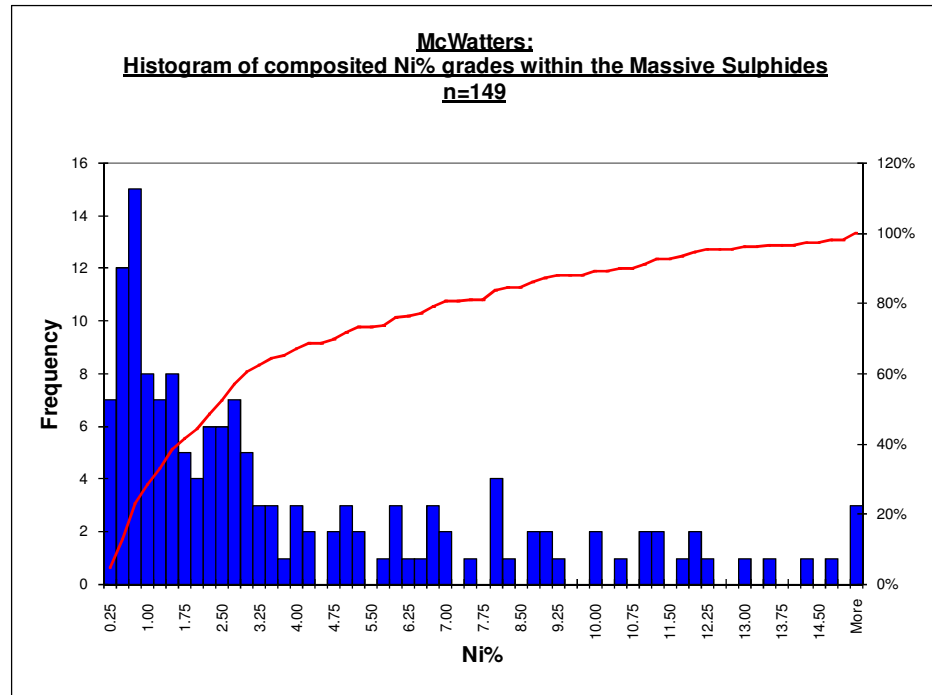
The statistical signature of each of these mineralized zones is substantially different, justifying the decision to separate these two data populations for geostatistical analyses which should result in higher confidence grade estimations.

**Table 16-1 A tabulation of summary statistics of composited drill data with both modelled ore types**

<b>McWatters: Summary statistics on composited domainal drill data:</b>										
<b>Ore Domain</b>	<b>N</b>		<b>Max</b>		<b>Min</b>		<b>Mean</b>		<b>Variance</b>	
	uncapped	capped	uncapped	capped	uncapped	capped	uncapped	capped	uncapped	capped
Massive Sulphides:	149	149	15.80	15.00	0.00	0.00	3.88	3.87	15.84	15.59
Disseminated Sulphides:										
0.3% Ni domain *	4,330	4,330	4.59	2.50	0.00	0.00	0.45	0.45	0.11	0.11
0.6% Ni domain	1,499	1,499	4.59	2.50	0.00	0.00	0.72	0.72	0.13	0.12

(\* inclusive of 0.6% Ni domain data)

Histograms for composited nickel grades within the two mineralized zones are provided in Figure 16-4. Nickel data is highly skewed with a dominance of low values, although within the massive sulphide zone a significant portion (about 10 percent of the total) of the data is in the higher grade tail (exceeding 10 percent Ni). The higher grade tail is insignificant in the stringer type sulphide zone.

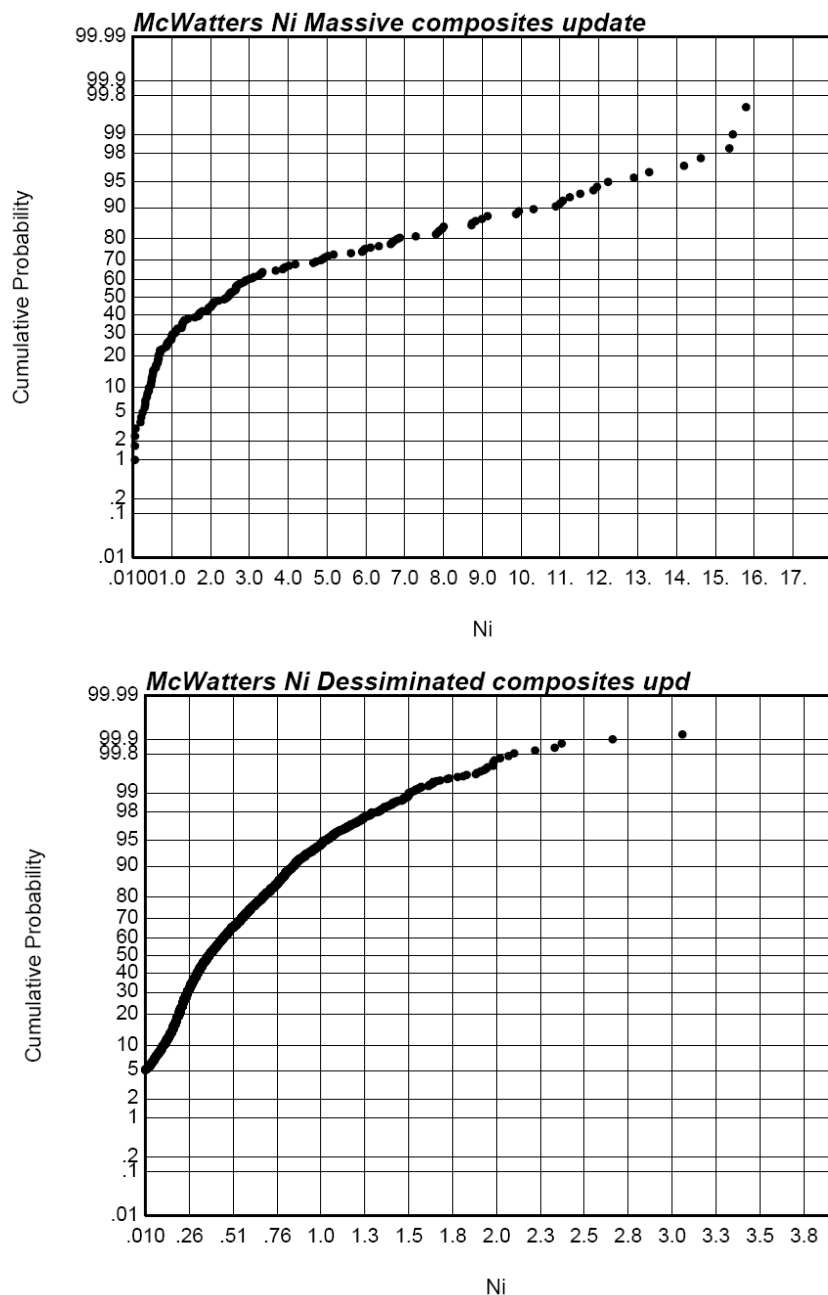


**Figure 16-4 Histogram for composited nickel within the two modeled mineralized zones.**

### 16.3.12 Grade capping

Based on careful examination of the composited nickel datasets for all data within the modelled massive sulphide and disseminated mineralized zones and by consideration of the probability plots for nickel composite data within these zones (Figure 16-5) the following cappings were applied:

Massive sulphide zone: 15 percent Ni  
Disseminated sulphide zone: 2.5 percent Ni



**Figure 16-5 Probability Plots for composited nickel for data within the massive sulphide and disseminated sulphide zone.**

### 16.3.13 Variography

Isatis software version 5.1.7 was used to generate all variograms. Traditional experimental variograms were modeled from the composited datasets from the two mineralization zones (basal massive sulphide and overlying disseminated type sulphides) for nickel and for all three principle directions.

The very low copper grades at McWatters motivated that copper was not analysed for. A single spherical structure variogram (including a nugget effect) was constructed and fitted for each direction for nickel (primary = N090, secondary = N180 and normal to the reference plane) and inputted into the Datamine Grade process. Nickel had slightly different search ellipses (ranges) in the disseminated sulphide domain to the massive sulphide domain reflecting different geological imprints.

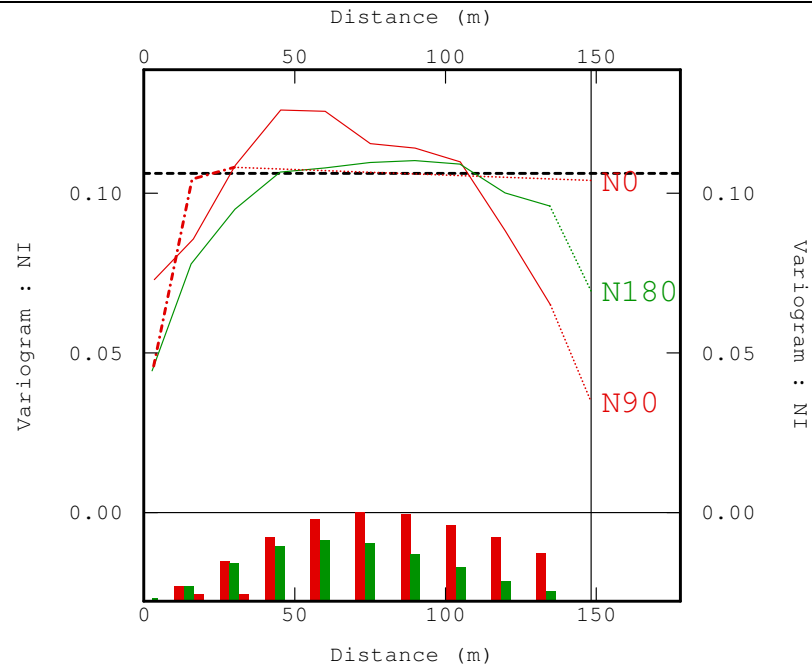
Variograms for the disseminated sulphide domain was modelled with the reference plane inclined at -80 degrees to the south, whereas the massive sulphide domain was modelled with the reference plane at 0 degrees. An illustrative experimental variogram for nickel in the disseminated sulphide zone is shown in Figure XX (all 3 directions). Modelled ranges for all directions for both mineralized zones are tabulated in Table 16-2.

For nickel the major axis (Y) is orientated at N090 degrees, the regular minor axis (X) orientated at N180 degrees and the Z axis being orientated perpendicular to these. These directions coincide with local modelled geological orientations, yielding the 'best' variograms.

**Table 16-2 Variography analyses ranges for nickel for all modelled directions and for both the two mineralization zones.**

Modelled direction:	Nickel percent (m)
Massive Sulphide Zone	
X Axis	30
Y Axis	20
Z Axis	3
Disseminated Sulphide Zone	
X Axis	45
Y Axis	30
Z Axis	18





**Figure 16-6 Illustrative experimental variograms for the three modeled directions within the disseminated sulphide domain derived from composite data.**

#### 16.3.14 Block Model and grade estimation

Criteria used in the selection of block size includes the borehole spacing, composite assay length, a consideration of potential mining unit sizes as well as the geometry of the modelled mineralized zones. The block size was set at 2.5 metres by 2.5 metres by 2.5 metres in the easting, northing and elevation directions respectively. The parameters of the Datamine block model constructed by SRK are presented in Table 16-3

A two split Datamine sub block routine was applied during block model construction (with a minimum block size of 0.65 metres by 0.65 metres by 0.65 metres) to ensure that the modeled mineralized zones are adequately filled.

**Table 16-3 Parameters of the McWatters Block Model constructed by SRK**

Aspect	Block Model
Block origin:	
X	9900
Y	4900
Z	1125
Rows	84
Columns	60
Levels	70
Percent Model	No
Rotation	No

Block grades were estimated using ordinary kriging (OK) grade estimation methodologies.

Block grade estimation was completed in a single pass using the search ellipse ranges defined by variography as outlined in the previous section.

For the all classes of Mineral Resources defined in this study, applied search ellipse ranges are:

Massive sulphides: X=30 metres, Y=20 metres and Z=3 metres for nickel;  
Disseminated sulphide type sulphides: X=45 metres, Y=30 metres and Z=18 metres for nickel

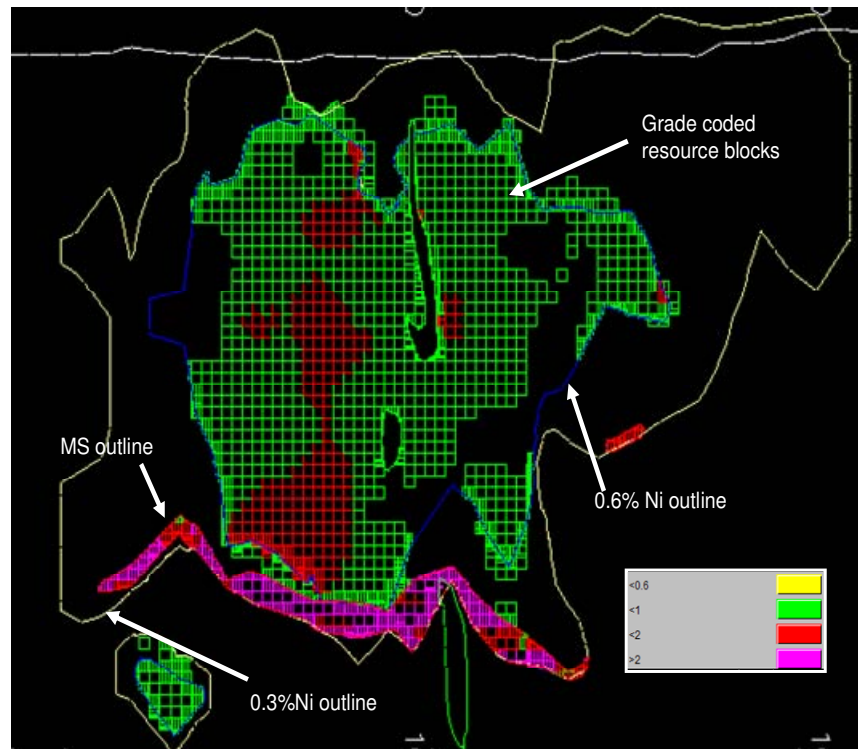
In addition, the minimum and maximum numbers of samples used for grade estimation were set at 4 and 20 respectively. Additional fields for mineralization type and classification were added to the block model.

Specific gravity values appropriate to the mineralization code were added to the model (values previously discussed).

## 16.4 Model validation

Global and local grade estimates were checked for appropriateness. Original nickel drilled grades were compared with block grades on a section-by-section basis. Grade estimation by ordinary kriging (OK) was found to appropriately reflect general grade trends and appropriately correspond to proximal borehole grades.

An example of the McWatters block grade estimation output generated by OK is shown in Figure 16-7, which is a west to east section (looking north) showing nickel block grade distribution relative to modelled ore zone outlines.



**Figure 16-7: West to east section (looking north) showing nickel grade distribution relation to ore zone outlines.**

## 16.5 Mineral Resource Classification

Mineral resources have been estimated in conformity with generally accepted CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” Guidelines. Mineral resources are not mineral reserves and do not have demonstrated economic viability.

SRK is not aware of any known environmental, permitting, and legal; title, taxation, socio-economic, marketing or other relevant issues that could potentially affect this estimate of mineral resources. Mineral reserves can only be estimated based on the results of an economic evaluation as part of a preliminary feasibility study or a feasibility study. As such no mineral reserves have been estimated by SRK as part of the present assignment. There is no certainty that all or any part of the mineral resource will be converted into mineral reserve.

Mineral resources for the McWatters deposit have been classified according to the “CIM Standards on Mineral Resources and Reserves: Definitions and Guidelines” (December, 2005) by Glen Cole, P. Geo an appropriate Qualified Person as defined by NI43-101. Mineral resources were classified as Indicated and Inferred Mineral Resources using the search distance to informing data criteria tabulated in Figure 16-8. For the well defined massive sulphide domain, Indicated resources are defined within the primary modelled variogram ranges, whereas Inferred resources are defined within four times the primary variogram ranges. For the less well defined disseminated sulphide domain, Indicated resources are defined within the primary modelled variogram ranges, whereas Inferred resources are defined within two times the primary variogram ranges.

**Figure 16-8 The classification scheme for McWatters highlighting search distances in each direction modelled for nickel in both modelled ore domains.**

Details	Classification	
	Indicated	Inferred
← confidence →		
<b>Massive Sulphide domain</b>		
direction		
X dist	30	120
Y dist	20	80
Z dist	3	12
<b>Disseminated sulphide domain</b>		
direction		
X dist	45	90
Y dist	30	60
Z dist	18	36

## 16.6 Mineral Resource Statement

The two categories of Mineral Resources for the McWatters deposit are reported at a single cut-off of 0.5 percent nickel, which is the cut-off Liberty management believe is achievable at future projected underground mining methods, volumes and associated costs. This cut-off has also been verified in feasibility studies within this project.

A classified Mineral Resources statement for the McWatters resource is presented in Table 16-4. The numbers have been rounded to reflect the relative accuracy of the estimate.

**Table 16-4 McWatters Deposit Mineral Resource Statement, SRK Consulting January 28, 2008.**

Mineral Resource Statement - January 28, 2008*				
SRK Consulting (Canada ( Inc)				
	Zone	Tonnes	Ni (%)	Contained Ni
				(t) (lbs)
Indicated:	Disseminated Zone ( <i>Upper</i> )	665,308	0.72	4,790 10,557,640
	Massive Zone ( <i>Lower</i> )	49,562	3.93	1,948 4,292,922
	<b>Sub total:</b>	<b>714,870</b>	<b>0.94</b>	<b>6,738 14,850,561</b>
Inferred:				
	Massive Zone ( <i>Lower</i> )	13,829	3.39	469 1,033,242
	<b>Sub total:</b>	<b>13,829</b>	<b>3.39</b>	<b>469 1,033,242</b>

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. Resources are reported at a cut off grade of 0.5% Ni.

A Mineral Resource grade sensitivity analyses tabulating the sensitivity of both classified ore types at McWatters to grade is shown in **Error! Reference source not found.**(Massive Sulphide ore) and Table 16-6. (Disseminated sulphide ore)

**Table 16-5 Grade sensitivity tables for massive sulphide ore**

**Indicated**

*At cut-off Ni% grades:*

Above	Volume (m <sup>3</sup> )	Tons (t)	Ni%
0.20	15,195	49,604	3.93
0.40	15,192	49,597	3.93
0.50	15,179	49,562	3.93
0.60	15,132	49,430	3.94
0.70	15,044	49,186	3.95
0.80	14,965	48,965	3.97
1.00	14,653	48,083	4.02
1.20	14,119	46,560	4.12
1.40	13,574	44,991	4.22
1.60	13,115	43,652	4.30
1.80	12,603	42,143	4.39
2.00	11,812	39,785	4.54

**Inferred**

Above	Volume (m <sup>3</sup> )	Tons (t)	Ni%
0.20	4,320	13,829	3.39
0.40	4,320	13,829	3.39
0.50	4,320	13,829	3.39
0.60	4,320	13,829	3.39
0.70	4,319	13,827	3.39
0.80	4,312	13,808	3.40
1.00	4,290	13,746	3.41
1.20	4,232	13,579	3.44
1.40	4,167	13,391	3.47
1.60	4,082	13,142	3.50
1.80	3,977	12,834	3.55
2.00	3,848	12,451	3.60

**Table 16-6 Grade sensitivity tables for disseminated sulphide ore**

**Indicated**

*At cut-off Ni% grades:*

Above	Volume (m <sup>3</sup> )	Tons (t)	Ni%
0.20	618,110	1,703,289	0.49
0.40	338,638	941,200	0.64
0.50	238,269	665,308	0.72
0.60	172,234	482,725	0.79
0.70	114,552	322,296	0.86
0.80	63,207	178,699	0.94
1.00	15,087	43,156	1.15
1.20	4,416	12,752	1.32
1.40	929	2,704	1.46
1.60	5	14	1.67
1.80			
2.00			

## **16.7 Mineral Reserve Statement**

For the mineral reserve statement, refer to Section 17.6.5.



# **17 Additional Requirements for Technical Reports on Development Properties and Production Properties**

## **17.1 Mining Operations**

### **17.1.15 Introduction**

The total probable reserve for the McWatters deposit is 596,800 tonnes at an average grade of 0.93% Ni. The conversion of indicated resources to probable reserves at McWatters was based on the stope outlines and dimensions for resources at or above a diluted 0.6% Ni cutoff grade. Where development warranted, an incremental cut-off of 0.5% Ni was employed. The McWatters reserve estimate excluded those resources contained within the presently unrecoverable portions of the crown, sill and rib pillars and incorporates planned and unplanned dilution, as well as production losses.

The McWatters deposit is hosted by a subvertical ultramafic body, and consists of a relatively large disseminated sulphide zone underlain by a sub-horizontal high grade, massive sulphide zone. Two distinct mining methods are utilized for the McWatters project in order to maximize recovery of both these zones. The main method is longhole stoping which produces 83% of the tonnes from the disseminated zone, and accounts for 66% of the total recoverable Ni. These are large blasthole stopes that minimize development requirements. Mining recoveries are planned at 90% for primary stopes and 75% for rib pillars. External dilution is estimated at 15% for primary stope and 20% for pillars.

Longwall panel mining is used in the basal low angle, higher grade areas. A total of 7% of the tonnes and 27% of the recoverable nickel are produced via this method. This method utilizes jacklegs and slushers and is fairly labor intensive. Recovery for this mining method is 80% for uniform panels and 60% for irregular panels. Dilution for all panels is 5%.

Unconsolidated backfill is used in all long hole stopes after mining is completed to help stabilize the ground conditions. This backfill will be development waste from McWatters, Redstone and the Hart project. Any Potentially Acid Generating (PAG) material from Hart will also be used as backfill. This will also help reduce overall closure costs for the three operations.

Ore will be trucked 9 kilometres to the existing concentrator at the Redstone Mine site. Nickel recoveries are projected to range from 70% to 91% according to ore grade, and are based on current mill recoveries, test work, and

future upgrades. The average Ni recovery for the life of mine is 88%.

All required permitting was completed during the last quarter of 2007. Construction began on site during December 2007 and has progressed continuously since that date. This study does not take completed work into account. Completed work, as set out in this report, includes all surface infrastructure (with the exception of the water treatment plant that is 75% complete) and over 250 metres of ramp advance.

All closure and environmental costs have been allocated to this project, even though the existing facilities will be shared with the Hart mine. This will lower the expenditures for the Hart mine plan.

A summary of the financial results of the McWatters Mine Feasibility Study can be viewed in Table 25.7.4.2.

### **17.1.16 Mining Method**

The McWatters ore body consists of a sub-vertical, large zone of disseminated nickel sulphides over-lying a sub-horizontal massive sulphide basal layer. The two zones present distinct sizes and geometry and are, therefore, conducive to two distinct mining techniques.

The upper disseminated zone is suited to longhole stope mining since it forms a primary sub-vertical body that is approximately 25 metres wide over a strike length of 110 metres. As such, the vast majority of the stopes in this portion of the ore body will have a stope width ranging between 10 and 25 metres, thinning above the 65 metre level, where crown pillar stability becomes a concern. Three operating levels are to be established in or at the base of this zone at the 65m, 100m, and 135m levels. Access to the longhole stopes is to be via 5m x 5m footwall ramps, drifts, and cross-cuts from the footwall ramps.

The basal massive sulphide zone exhibits an inconsistent and unpredictable flat lying geometry, making it suitable to more labor intensive and selective longwall mining methods. The average panel widths of these stopes ranges from 4m to 5m, with an average dip of 20 degrees. These stopes will be accessed from the same 5m x 5m footwall ramp, drifts and cross-cuts as above, as well as an additional fourth level established at the 155m level.

### **17.1.17 Longhole Stope Mining**

This is the main method to be used at the mine, and will account for 83% of the ore tonnes produced. The mine will essentially constitute a single stope 80-110 metres long that will be subdivided into various mining blocks. These blocks will be primarily separated by a temporary central pillar 20 metres wide down the centre of the deposit and covering its entire vertical span. The resultant stopes will have mining widths that vary between 15 and 40 metres and generally dip at approximately 83 degrees from horizontal.

The stope will be accessed by a footwall ramp and cross-cuts. Cross-cuts will access the stope at three horizons:

1. 65m level overcut
2. 100m sub level
3. 135m level undercut / extraction drifts

All sill development will be 5 metres wide x 5 metres high, and will be excavated using a mechanized equipment.

Draw points to pull broken muck will be situated at the 135m level off the footwall ramp. The 135m undercut will be opened up as cones with 64mm diameter holes (uppers) on a 1m x 1m pattern, 10m high. All broken ore from the three mining elevation will be extracted on the 135m level. This implies that full production will only occur once the ramp reaches the 135m level and the lower stopes are at blasting stages.

Stope sequencing will advance from the 135m level up to the overcut, and be split into two blocks by the central pillar retreating from longitudinal extremities towards the pillar. The pillar will be recovered after the primary stoping is completed and the central stope (LH1 in Table 25.7.3.1) has been completely backfilled. At this point selective mining of the pillar is to commence leaving a final 4 metre pillar between the active stope and the backfilled portion of the mine. Remote mucking capabilities are to be employed during this phase of mining. Once selective mining has been completed, remaining open stopes are to be backfilled with unconsolidated waste material.

Once backfilling is completed to the 65m level a ramp will be driven to the 40m level where an additional sublevel will be established to extract the bottom portion of the crown pillar. Stope widths at this horizon will be kept to a maximum of 15m to ensure crown pillar stability. The drill pattern employed on this level will be similar to those employed at the 65m and 100m sub levels. A remaining resource of 91,755 tonnes @ 0.574 % Ni has been planned to be left as the permanent crown pillar. Future pillar extraction might be achievable depending on the geotechnical information gathered during the production period.

The mining recoveries for longhole stoping are estimated at 90% for the stopes and the crown pillar based on these being primary sequenced stopes. The mining recovery is dropped to 75% for the rib pillar recovery within the mine, based on this being secondary stoping sequence.

The dilution for the longhole stopes has been set at 15%. The planned dilution for both types of pillar mining has been increased to 20% due to backfill and increased ground stress due to the primary mining sequence.

### **17.1.18 Longwall Panel Stope Mining**

Several small tonnage, higher grade independent blocks are planned from the footwall ramp accessing down to the 155m level block, and, at various elevations off the main level sills.

These zones will utilize a modified, mechanized panel extraction method with mechanized equipment or jackleg (size dependent) longwall pilot and slash

mining, incorporating strategically located pillars as required. Where size is large enough and dip angles shallow mechanized equipment will be employed for drilling as well load, haul and dump (LHD). Where stope widths are small and exhibit a more sub-vertical dip angle jacklegs will be employed for drilling and mechanical scrapers used to convey muck for LHD. This latter option will be largely based on current practices at the Redstone mine where stope dimensions and layout are very similar to those predicted in certain panels within McWatters. A safe and efficient pillar system is employed at Redstone that will also be incorporated into all the panel stopes to ensure ground stability.

The final dimensions of these panels will be determined when access is provided as they are of an erratic nature.

The mining recoveries for this type of mining were set at 80% due mainly to the pillars that are required. In areas where the ore geometry is extremely irregular the planned recovery was reduced to 60% to compensate. Due to the highly selective nature of this type of mining the dilution was limited to 5%.

#### **17.1.19 Geotechnical Studies**

Rock quality data used throughout this study has been primarily obtained from Liberty's Engineering staff. The Engineering department includes Dr. Yi Huang, PhD Mining Engineering, whom has reviewed the available geotechnical data and formed an integral part of the mine plan and design, including stope and pillar layout.

Geotechnical data from McWatters has been primarily derived from drill core, and was initially limited to Rock Quality Designation (RQD) collected by Liberty's geologists. Additionally, numerical modelling of ground stability, various rock strength tests, and third party assessments are being completed. Further studies are to be conducted when mining horizons are reached by underground excavations.

The primary source of information that formed the basis of mine planning and pillar requirements was Liberty's operating Redstone mine, where underground mining activities have been carried out by Liberty since 2006. The deposit is hosted by similar rock types as McWatters. Ground support policies, predicted ground stability, as well as the dimensions and layout of the crown and rib pillars at McWatters have been primarily based upon ground conditions observed at Redstone. A crown pillar evaluation of the McWatters deposit was conducted by John G. Henning, Ph.D., P.Eng. This study was also taken into account.

#### **17.1.20 Mine Equipment**

The major mine equipment that is used to complete development, mining at 1,200 tonnes per day with backfill at McWatters is shown in Table 17-1

**Table 17-1 Tabulation of major mining equipment**

Equipment	Quantity	Comments/ Specifications
Loader	1	966 (used)
Scooptram	2	6 yard bucket
Haul Truck	3	2 x 30 tonne, 40 tonne
Jumbo Drill	2	Electric, 14 ft booms
Boom Truck	1	
Scissor Lift	1	
Mine Utility Cart	1	
Pick Up/ Van	2	On lease
Stopemaster	2	Kabuta

### 17.1.21 Ore and Waste Handling

Mined ore is to be hauled up the footwall ramp to surface by 30 and 40 tonne haul trucks. Trucks will be loaded by 6 yard scoop trams from draw points located at the 100 metre and 135 metre levels. 1,200 daily tonnes are to be hauled to surface by this method.

Ore stored on surface will then be hauled approximately 9 kilometres to the Redstone Mill. Four 30 tonne Euclid haulage trucks will transport 1,200 tonnes per day during the night shift to avoid busy hours on the roads and to coordinate with crushing schedules. Ore haulage costs are predicted to be \$3.50 per tonne.

All the development waste from operations will be hauled to surface where it will be used for construction purposes and stored for subsequent stope backfill. Unconsolidated waste material will be hauled back underground and used as unconsolidated backfill for major longhole stopes.

### 17.1.22 Mine Ventilation

During the initial stages of development, air will be provided from the portal down the ramp via three in line 1.2m diameter, 150HP axial vane fans utilizing 1.2m diameter rigid duct. This will provide a nominal 28 cms until the main vent raise is intersected on 65m level and connected to the surface, where a permanent ventilation fan will be installed.

The permanent set up will include a 1.83m diameter, 150HP fan on surface forcing air down the 3m x 3m vent raise system connecting all levels to the 155m elevation. Exhausting will occur up the main decline. Duty will be 90 cms.

All secondary work places are to be ventilated by auxiliary fans and flexible ducting.

### **17.1.23 Pumping**

Initial dewatering will be from level sumps at each working horizon utilizing 30HP submersible pumps discharging in required lifts to the surface ponds.

Permanent dewatering system will be constructed as the planned elevations are reached. This system will consist of 2 pumping stations, one on the 80m elevation and a lower installation on the 155m level. Each pump station will consist of 2 x 60HP stationary pumps with associated pump box and agitator which are fed by all the secondary level pumps or decant systems. Only one pump will be used at any one time - the other one is a spare.

### **17.1.24 Milling**

All Ni ore extracted from the McWatters Mine will be processed at the Redstone Mill, located approximately 9 km distant from the mine portal, accessed by a series of all weather gravel roads. For mill flow sheets and a description of its operation, please refer to Section 15.

Predicted nickel recoveries for the McWatters Mine ore material are based on previous plant performance (operating on similar ore from the Redstone Mine), future upgrades, and metallurgical testing performed on drill core from the McWatters deposit.

Present nickel recoveries achieved at the plant average 87.05%, while the average predicted Ni recovery used in this feasibility study is 88%. This one percent increase can be attributed to the incorporation of an on-stream analyzer (LIBS) that is currently being installed. This analyzer measures nickel and magnesium oxide values on a 2 minute interval at feed, tails and concentrate locations. This added automation reduces reaction times and therefore boosts recoveries.

In order to predict recoveries at head grades lower than those typically produced at Redstone, numerous open cycle tests were conducted on low grade material from the McWatters deposit. The head grade of the tested material ranged from 0.6% - 0.9% Ni. Tests were conducted by Process Research Associates Ltd., of Richmond, B.C. (Canada), using parameters intended to emulate the Redstone Mill. Reported recoveries ranged from 78.4% to 89.9%.

### **17.1.25 Backfilling**

Backfilling has been planned at the McWatters project to help minimize the size of the required crown pillar. During production, backfill is not required for stope stability but is required to allow for partial crown pillar recovery and to ensure that there is no surface subsidence. Based on the McWatters Project Crown Pillar Study by John Henning, P.Eng (2007) the currently planned crown pillar will be stable with backfill.

The backfill used will be unconsolidated waste fill from McWatters, Redstone and Hart properties. All the waste generated at McWatters will be placed back underground as fill. In addition, any potential acid generating material will also be used as fill. This will help reduce the overall closure cost of the three properties. The fill from Hart and Redstone will be hauled as a backhaul during production utilizing the surface ore trucks, this will be the initial fill. The fill from McWatters will be utilized after production is completed to minimize material handling and truck rental. For placing the backfill underground, current underground trucks will be utilized and whenever possible this will be done on the backhaul during production.

The overall backfill cost is estimated at \$1.59 per tonne of ore.

### **17.1.26 Development**

A 5 metre by 5 metre ramp will be driven from a portal at surface to the 155m level at grade of -15%. Ground support will consist of welded mesh screen and 1.8m mechanical bolts on a 1.2m x 1.2m pattern on the back, and install 1.8m mechanical bolts on walls on a 1.2m x 1.2m pattern. In intersection areas, 2.4m mechanical bolts and welded mesh screen will be installed on the back.

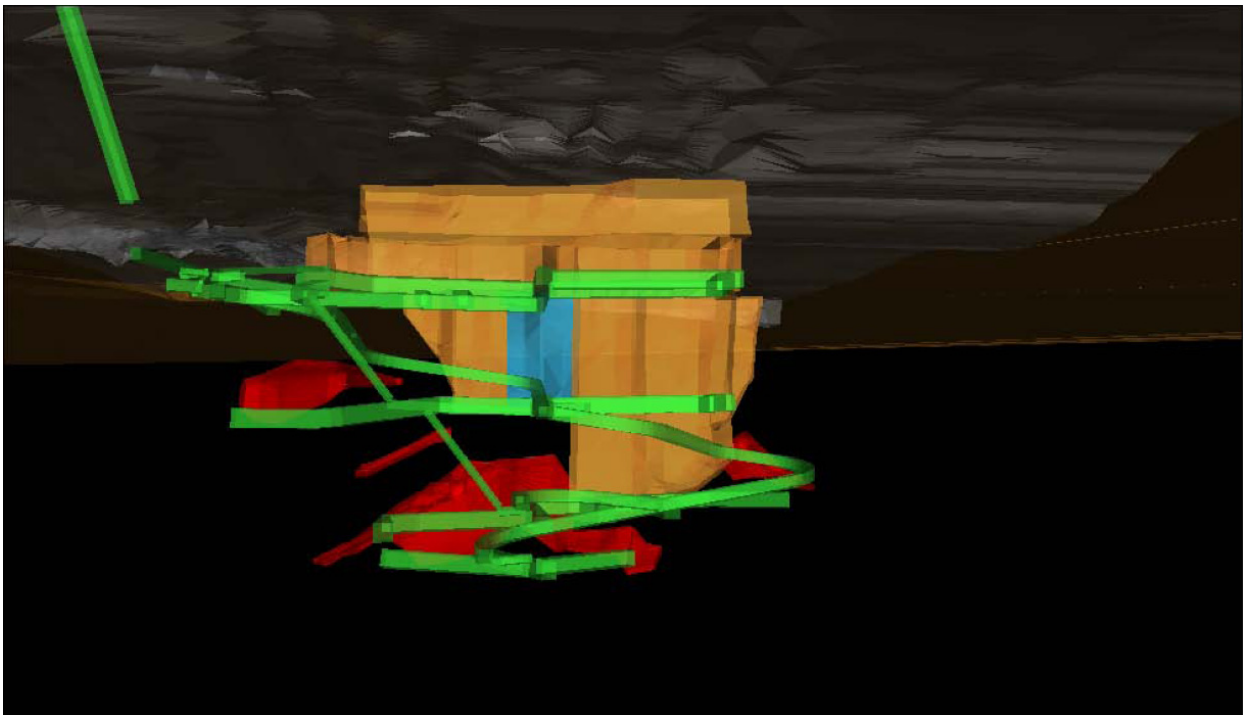
Ore drifts 5m wide x 5m high will be driven in each production level and x-cuts 5m wide x 5m high will be used to connect ore drifts and ramp. For ore drifts and x-cuts, the support method is to install welded mesh screen and 1.8m rebar on a 1.2m x 1.2m pattern on the back. On the walls, split sets will be installed on 1.2m x 1.2m pattern.

The ventilation raise is planned 3m wide by 3m high at a dip angle less or equal to 49° above horizontal, connecting surface to 155m level. The support method will be to install 1.8m mechanical bolts in a 1.2m x 1.2m pattern on the back and 1.2m mechanical bolts in a 1.2m x 1.2m pattern on the walls. Figure 17-1 and Figure 17-2 show two views of a 3D model of the proposed infrastructure and production stopes.





**Figure 17-1 Worm's view of underground workings (green) panel stopes (red) longhole stopes (gold)**



**Figure 17-2 Side view of underground workings (green) panel stopes (red) longhole stopes (gold) rib pillar (blue)**

## 17.2 Production and Development Schedules

Mine production and development have been scheduled for a 28 month period that began January 1<sup>st</sup>, 2008. The schedule is based on the mining reserves detailed in section 19.4. This involved detailed scheduling of the construction of surface infrastructure, the portal, ramp, waste, and ore development, as well as scheduling for production stope sequencing.

The mine schedule is designed to deliver 1,200 tonnes of ore per day to the Redstone Mill over a 15 month period. Prior to achieving full production, ore production from stope development will average approximately 390 tonnes per day for a 6 month period. A summary of the production schedule is shown in Table 17-2; a summary of the total development schedule is shown in Table 17-3.

**Table 17-2 Life of Mine ore production schedule**

Period	Total Tonnes	Grade (Ni%)	Stope (tonnes)	Ore Dev. (tonnes)
Q1 – 08	0	0	0	0
Q2 – 08	8,150	0.71	0	8,150
Q3 – 08	29,052	0.80	0	29,052
Q4 – 08	70,786	1.37	52,552	18,234
Q1 – 09	108,000	1.15	108,000	0
Q2 – 09	108,000	1.09	108,000	0
Q3 – 09	108,000	0.74	108,000	0
Q4 – 09	98,305	0.64	98,305	0
Q1 – 10	67,505	0.68	67,505	0
Total	596,797	0.93	541,362	55,436

**Table 17-3 McWatters total mine development schedule**

Development	Adv (m)	Feb. 08	Mar. 08	Apr. 08	May. 08	Jun. 08	Jul. 08	Aug. 08	Sept. 08	Oct. 08	Nov. 08	Dec. 08
Ramp	1520	15	185	185	185	208	185	185	185	172	15	0
Vent Access	180	0	0	0	80	30	0	50	10	10	0	0
Stope XC	251	0	0	0	0	54	45	27	35	3	87	0
Ore Drifting	831	0	0	0	0	78	140	108	140	113	184	68
Drawpoints	156	0	0	0	0	0	0	0	0	72	84	0
Safety Bay	46	0	8	8	6	6	6	6	6	0	0	0
Raises	226	0	0	0	0	0	50	59	56	36	25	0
Undercut in draw point	100	0	0	0	0	0	0	0	0	35	65	0

## 17.3 Mining Costs

### 17.3.27 Mine Operating Costs

Estimated mine operating costs are based on signed contracts where they existed. In the absence of a contract agreement, industry standard rates were used. Contingencies of 15% were applied for development, 10% for production, 5% for construction and 25% for supplies. The total overall cost is

estimated \$89.21 per tonne and the combined longwall and longhole mining cost component is estimated at \$36.67 per tonne. The operating cost per mining methods are estimated at \$103.56 per tonne for longwall mining and \$34.75 per tonne for longhole mining. The longhole mining cost is relatively low compared with similar operations in the mining industry. This is due to the fact that waste development costs are excluded as this will be completed prior to production and will be a capital expenditure. The mining costs can be broken into the categories listed in Table 17-4.

**Table 17-4 Breakdown of the total operating mining costs**

Area	Cost (\$/tonne)
Ore Development	\$7.09 per tonne
Backfilling	\$1.59 per tonne
Longhole Drilling	\$2.52 per tonne
Longwall Contracting	\$3.70 per tonne
Operating Cost (Equipment op., equipment leasing, Liberty labour, water treatment)	\$21.77
Total Operating Mining Cost	\$36.67

### 17.3.28 Capital Cost

The 1,200 tpd McWatters mine is to achieve full production by December, 2008. Estimated capital costs involved are shown in Table 17-5. Capital equipment costs are relatively low as most equipment is to be leased. The table includes contingencies as described in section 17.3.27.

**Table 17-5 McWatters Mine capital cost tabulation**

Item	Cost
Capital Development	\$10,404,006
Road and Portal	\$1,700,000
Capital Equipment	\$1,035,800
Construction	\$3,214,785
Total	\$16,354,591

### 17.3.29 Mill Operating Costs

Mill operating costs are shown in Section 15, Table 15-2.

### 17.3.30 General and Administrative Operating Costs

The estimated general and administrative costs are \$4.30 per tonne is shown tabulated in Table 17-6

**Table 17-6 McWatters predicted General and Administrative Operating Costs**

Item	Cost
Permits	\$18,505
Insurance and Taxes	\$1,120,000
Site Operating Costs	\$420,000
Labour	\$1,005,544
Total	\$2,564,029

The G&A cost estimate is based on actual figures provided by Liberty related to the Redstone Project.  
Further details relevant to this breakdown can be found in Sections 17.3.31 and 17.3.32.

### **17.3.31 Personnel**

The majority of mine and plant personnel will be from the Timmins area. Timmins has a long history of mining and therefore provides a large base of labour with mining skills and experience. Qualified labour is in high demand.

### **17.3.32 Safety and Environment Department**

The Health and Safety (“H&S”) Superintendent covers all Liberty projects, dividing his time between Redstone and McWatters mine sites. The department includes a Chief of Security and one trainer/safety engineer that also work on both sites.

Allocated specifically to the McWatters mine site are four security guards and underground safety representatives that form part of the mining work force. These representatives are trained by the H&S Superintendent and the H&S trainer, to act in a responsible and safe manner.

Mine rescue is provided by a local mining company operating in the immediate vicinity. Hospital services are provided through the Timmins District Hospital, and the site has ambulance coverage directly from South Porcupine.

The environmental department operates separately from the Health and Safety department, and also divides its duties between the two operational mines. The department is run by the Environmental Superintendent, and includes an Environmental Coordinator.

## **17.4 Infrastructure**

### **17.4.33 Site Access**

The McWatters mine is located approximately 24 km southeast of Timmins, ON (Canada). It is accessible by all weather gravel roads to the property starting from South Porcupine. Half load season will not affect ore haulage to the Redstone Mill, as the gravel roads joining the sites are not regulated by government bodies and are maintained by Liberty.

### **17.4.34 Power Supply and Distribution**

Power is provided from Timmins through the Hydro One grid (provincial power distributor) via 27.6KV line to a step down transformer at site (27.6KV/4160v). Site distribution is via 4160v buried cables to shop secondary distribution and then stepped down to 600v and 110v as required for site services and temporary underground feed.

Ultimately, after underground development is advanced to the 100m level, a 4160v hung cable will feed a step down transformer at that level (4160v/600v) and distributed where needed as 600v, and again, stepped down to 110v where required.

### **17.4.35 Water Supply**

Underground process water is provided from an excavated pond in a swamp that is self-replenishing. The water is pumped underground through a buried 100mm plastic line to the portal where it joins service lines feeding underground.

Domestic water is sourced from a drilled well on site and piped to the dry and service buildings through buried 50mm plastic lines.

Potable drinking water is provided by a local supplier feeding on-site dispensers.

### **17.4.36 Environmental Considerations**

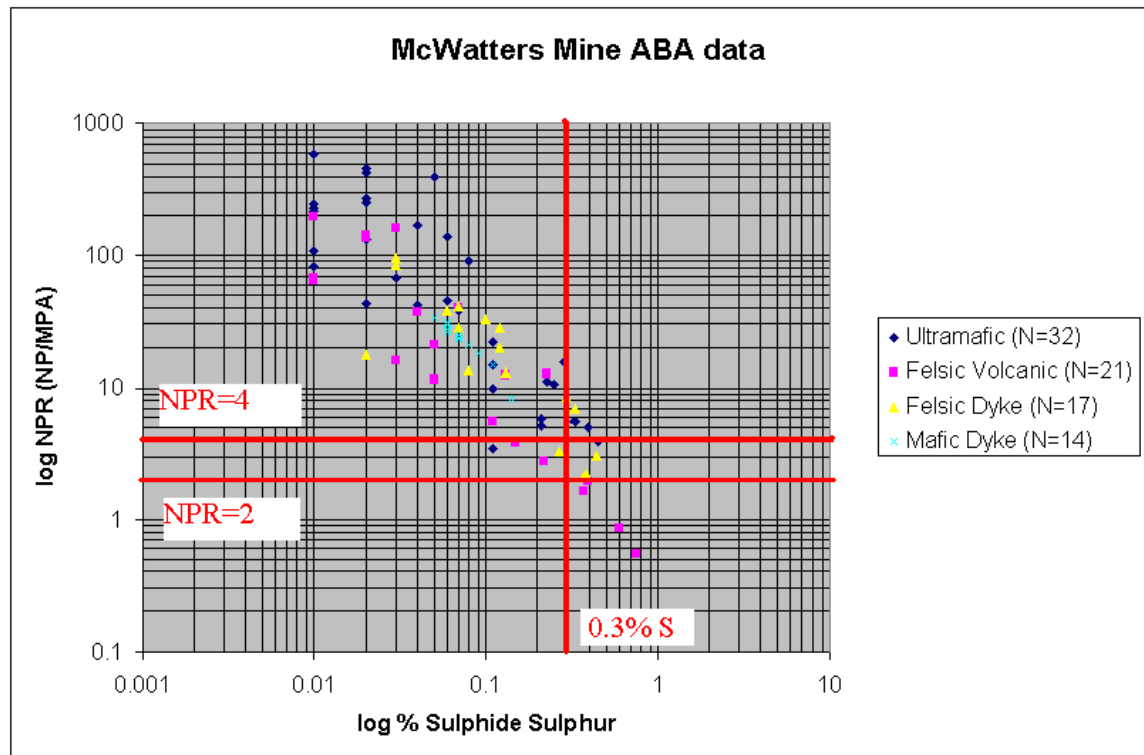
### **17.4.37 Metal Leaching & Acid Rock Drainage Assessment**

Acid-Base Accounting (ABA) has become widely adopted as a method of mine rock characterization and prediction of post-mining drainage quality (Sobek et al., 2000). ABA is a screening procedure whereby the acid-neutralizing potential (assets) and acid-generating potential (liabilities) of rock samples are determined. The neutralizing potential (NP) is a measure of the amount of acid-neutralizing compounds and is calculated from the amount of acid neutralized by the sample in  $\text{CaCO}_3$  equivalents. The maximum potential acidity (MPA, or AP) is the maximum amount of sulphuric acid that can be produced from the oxidation of sulphur minerals in the rocks, and determines a percent of sulfur present that is multiplied by a constant. The neutralization

potential (NPR) is the ratio of NP/MPA, and can be used for identifying and separating acidic rock drainage generating material (Price, 1997).

Price (1997) provides a recommended minimum number of samples based on the tonnage of disturbed rock, summarized in Table 6-1 of the mentioned draft. Using these guidelines the minimum number of samples required per rock type would be 26 ultramafic samples and 8 samples of each of the three remaining rock types. In order to ensure thorough representation of the rock qualities 32 ultramafic samples were collected, along with 21 intermediate volcanic, 17 felsic dyke, and 14 mafic dyke samples. All these were sampled from available diamond drill core, attempting to accurately represent the entire body of rock associated with the deposit. This was achieved by sampling intersections that represent the entire strike length, width and depth of the deposit and related waste rock. Samples were then analyzed for total sulphur (Leco), paste pH, and ABA.

NPR results were then plotted on a log NPR versus log S% diagram (Figure 25.5.1). As stated in Price (1997), section 8.3.4, materials with a sulphide-S content less than 0.3% and a pH greater than 5.5 are considered safe to excavate. Materials with an NPR greater than 4 are also considered to be of no ARD concern and do not require further test work. Rocks with an NPR between 2 and 4 have a low potential to be acid generating; the only materials in this range reported to produce ARD are field test pads (Price, 1997). These three lines have been plotted on the mentioned diagram as reference lines.



**Figure17-3 NPR vs % Sulphide Sulphur for ore and waste at the Proposed McWatters Mine, Ontario**

Figure 25.5.1 shows that 90.5% of the samples analyzed have values that exceed 0.3% sulphide-S and/or have an NPR greater than 4, and would be considered to pose no ARD concern, and therefore would not require additional testing. Of the 9.5% of samples that plot in the quadrant of the diagram delineated by  $\text{NPR} > 4$  and  $\% \text{ sulphide-S} > 0.3$  only 4 plot below the  $\text{NPR} = 2$  line. These 4 samples are all intermediate volcanic rocks of andesitic composition and deserve to be studied in more detail.

The average NPR for intermediate volcanic samples is 48.4, while the average  $\% \text{ sulphide-S}$  is 0.16, and the average pH is 8.7. The three samples considered in the previous paragraph have an average pH of 9, with all of them being 8.8 or higher. Considering all of the above, these samples that plot in the lower right-hand quadrant, while of note, do not to affect the overall ARD potential of the intermediate volcanic rocks which comprise the vast majority of the waste rock, and can be considered, on aggregate, to be non-acid generating.

The ultramafic rocks that are to form the mine walls do not plot in the lower right-hand quadrant, with the exception of one sample that has an NPR of 3.91 and 0.45  $\% \text{ sulphide-S}$ . This sample can be considered to have no effect on the ARD potential of the geological unit and is therefore considered to be non-acid generating and requires no further test work. The mafic dyke samples plot entirely in the upper left-hand quadrant, and can be considered to be of no ARD concern. Samples collected from the felsic dyke also plot, for the most part, in the upper left-hand quadrant, with only three sample plotting in the lower right-hand quadrant. However, these samples all have corresponding values of  $\text{NPR} > 2$ , pH values  $> 9$ , and belong to a rock type that averages an NPR of 25.6, 0.17  $\% \text{ sulphide-S}$ , and 9.1 pH. On aggregate, the felsic dyke material is likely to be non-acid generating and of no ARD concern.

In addition to the ABA performed on the four predominant rock types associated with the proposed McWatters mine, shake flask tests were performed on two samples of each petrographic unit. The pH measured in the shake flask leachate, regardless of initial solution pH, ranged from 8.2 to 8.74, indicating that these rock types are indeed non-acid generating.

In conclusion, testing revealed that the rock types to be extracted during mining of the proposed McWatters mine show pH values that are non-acid generating, both from ABA and Shake Flask tests. NPR values and sulphide-S percentages also show that, on aggregate, these rocks are unlikely to be acid generating as they average  $\text{NPR} \gg 4$  and  $\% \text{ sulphide-S} < 0.3$ . The few samples of andesitic composition with  $\text{NPR} < 4$  and  $\% \text{ sulphide-S} > 0.3$  yielded an average pH of 9, indicating that they are unlikely to have a negative impact on the overall ML and ARD potential of the rock type.

## **17.4.38 Waste Management Systems**

All of the garbage and recyclables on site will be picked up on a regular schedule by Waste Management Inc. There is no garbage disposal site planned or at the McWatters Project.

Waste oils will be collected on site and transported offsite for recycling by a local contractor.

## **17.4.39 Water Treatment System**

All water from the mine along with site storm water will be treated in the settling/treatment pond system.

If required to lower high nickel values in the effluent a Nalmet system will be installed in the mine water stream to the settling pond. The system will consist of a large reaction tank where the Nalmet will interact with the soluble metals. If necessary a flocculent may be added to the mine water stream after the Nalmet treatment. The high residence time (24 days under normal conditions) will allow ample time for precipitation of the nickel flocculent. Present experience at the Redstone Mine shows that the Nalmet process operates well at the ambient pH of approximately 8.3. If increased pH becomes necessary for effective nickel removal, sulphuric acid will be used to reduce the pH values in the discharge stream to below MISA values.

## **17.4.40 Storage Sites**

A new certified 25,000 litre double walled fuel storage facility will be installed on a concrete pad at the McWatters Mine.

All explosives are shipped directly to temporary underground storage locations – there is no surface explosive storage facility planned or in use at the McWatters site.

Nalmet and sulphuric acid (if required for pH adjustment) will be stored in designed designated areas at the mine site.

## **17.4.41 Consultation with Aboriginal Peoples**

On April 15<sup>th</sup>, 2008, Liberty signed an Impact and Benefits Agreement ("IBA") with the Mattagami, Matachewan and Wahagoshig First Nations ("MMW"). The IBA encompasses all of the Corporations mining properties in the Shaw Dome Nickel Belt ("Properties") near Timmins Ontario (which includes the Redstone and McWatters Mines and the advanced Hart nickel project), and is in effect for the life of any mining project developed on the Properties.

The IBA includes provisions for job training, employment, scholarships, business relationships and financial participation in community development projects. It also streamlines the exploration of the Properties and the permitting of economic deposits through direct consultation and input from the MMW.

## **17.4.42 Closure Plan**

The McWatters Mine Production Closure Plan, prepared by B. H. Martin Consultants Ltd., was submitted, for filing under Part VII of the Mining Act, with the Ministry of Northern Development and Mines on the 20<sup>th</sup> of June of 2007. The submitted closure plan met all standards and regulations set out in the act and was duly filed.



## **17.5 Financial Analysis**

### **17.5.43 Mine Operating Costs**

Please refer to Section 17.3.27

### **17.5.44 Plant Operating Costs**

Please refer to Section 15.

### **17.5.45 G&A Costs**

Please refer to Section 17.3.30

### **17.5.46 Total Operating Costs**

The total operating costs used in the McWatters life of mine plan are shown in Table 17-7, based on 1,200 tonnes per day.

**Table 17-7 Total operating costs based on ore production of 1,200 tonnes per day**

	Cost (\$ / tonne)
Mining	\$36.67
Haulage	\$3.50
Processing	\$14.50
G&A	\$4.30
Total	\$58.97

### **17.5.47 Total Costs**

The total life of mine estimated cost per tonne for the McWatters project is based on current contract rates and current industry standard estimated costs. The overall cost is estimated at \$89.21 per tonne. A breakdown of the total cost per tonne are listed in Table 17-8

**Table 17-8 A summary of total mining costs, including all capital expenditures**

	Cost (\$ / tonne of ore)
Development cost	\$17.73
Longwall mining mining	\$3.70
Equipment operating cost (Fuel, electricity, supply)	\$11.83
Liberty labour cost	\$10.50
Consulting work	\$0.10
Capital/equipment expenditures	\$9.97
Surface transportation (ore haulage to Redstone plant)	\$3.50
Mobile equipment lease cost	\$5.26
Mill cost	\$14.50
Backfill	\$1.59
Closure/Water Treatment Env.	\$3.71
Longhole Drilling	\$2.52
G & A	\$4.30
Total estimated cost projection	\$89.21

## 17.6 McWatters Life of Mine Plan

### 17.6.48 Capital Expenditures

The capital expenditures for the McWatters project is estimated at \$16,354,592 and will be expended during 2007 and 2008. This includes all waste development, equipment, and surface infrastructure. Of this total over 40% has been completed, including all surface infrastructure (with the exception of the water treatment plant that is 75% complete). Most of the work completed has been under budget. The capital expenditure is itemized in Table 17-9.

**Table 17-9 Tabulation of capital expenditure at McWatters**

Item	Total Cost (\$)
Capital Development	\$10,404,006
Capital Equipment	\$1,035,800
Access road	\$1,200,000
Portal	\$500,000
Vent raises	\$280,000
Environmental ponds	\$1,000,000
Communications system	\$120,000
Electrical system	\$1,181,700
Surface shop	\$300,000
Fuel Storage	\$180,000
Additional construction costs	\$153,085
Total	\$16,354,592

#### 17.6.49 Marketing

Nickel concentrate is sold to both Xstrata Nickel and Jilen Jien Nickel Industry Company Ltd. (“JJNICK”), as part of separate off-take agreements.

A formal off-take agreement with Xstrata Nickel (Canada) was signed on March 1<sup>st</sup>, 2008, and is valid until March 1<sup>st</sup>, 2013. On March 1<sup>st</sup>, 2013, the contract is renewable upon agreement between Liberty and Xstrata. Liberty has been shipping concentrate to the Xstrata Nickel smelter in Sudbury, Ontario, Canada since mid-November. Concentrate shipped prior to the date of formal signing was under agreed upon terms that formed the basis of the signed contract.

On April 29<sup>th</sup> 2008 a revised off-take agreement was signed with JJNICK and is in effect until November 23<sup>rd</sup> 2010. Under terms of the agreement JJNICK are to receive 20 tonnes of nickel concentrate per day, from either Redstone or McWatters ore. As announced May 8<sup>th</sup>, 2008, Liberty has arranged a \$15,000,000 credit facility with JJNICK associated with the revised off-take agreement.

Smelter recovery rates used in this feasibility study reflect rates stipulated in the above agreements, but cannot be disclosed as part of confidentiality clauses in these contracts.

## **17.6.50 Mine Plan**

### **Mineral Reserve Statement**

The conversion of indicated resources to probable mineral reserves at McWatters was based on planned stope outlines respecting a diluted 0.6% Ni cutoff grade. Where appropriate, an incremental cut-off of 0.5% Ni was employed. A minor component of inferred resources was also incorporated into the mineral reserves. The McWatters mineral reserve estimate excludes those resources contained within the presently unrecoverable portions of the crown, sill and rib pillars and incorporates planned and unplanned dilution, as well as production losses. The total probable reserve for the McWatters deposit is 596,800 tonnes at an average grade of 0.93% Ni.

The NI43-101 mineral reserve estimation using stope shapes, tonnes, grades, and costing information as provided by Liberty, was completed by Mr. Alan Linden, Principal Consultant and reviewed by Ms. Christine Linden, P. Eng., Senior Consultant, of SRK Consulting (Canada) Inc., Sudbury, Ontario. By virtue of her background and professional experience, Ms. Linden is a “Qualified Person” as defined by NI 43-101.

A break down of the reserves per mineable stope can be found in Table 17-10. Stopes are preceded by Panel or LH, referring to the principal mining method planned to be employed: longwall panel mining and long hole mining respectively. Of particular note is the importance of stope LH1, the central long hole stope, as it comprises a large percentage of the production, both in terms of tonnage and recovered metal.

**Table 17-10 Breakdown of the estimated mineral reserves per stope**

Zone	Production Level	Tonnes	Grade (Ni%)	Nickel (lbs)
Panel 1	100m	7,061	3.30%	513,894
Panel 2	135m	7,411	5.49%	896,491
Panel 3	135m	6,119	3.45%	465,027
Panel 4	155m	897	3.80%	75,033
Panel 4 (dev)	155m	1,509	2.00%	66,526
Panel 5	155m	5,632	0.81%	99,967
Panel 6	135m	2,237	3.77%	185,783
Panel 7	155m	15,194	2.70%	905,015
LH 1	100m and 135m	239,861	0.87%	4,603,248
LH 2 W	65m	46,352	0.75%	764,563
LH 3	65m	13,385	0.67%	196,692
LH 4	100m	38,202	0.58%	486,956
LH 4B	65m	9,800	0.64%	137,624
LH PR 1	100m	56,726	0.64%	802,660
LH 2 E	65m	12,838	0.68%	191,846
LH 1A	100m and 135m	12,832	0.57%	159,960
LH 3 A	65m	8,153	0.53%	95,372
LH 4A	100m	11,773	0.53%	136,397
LH 2 W A	65m	2,201	0.59%	28,698
LH CR	35 M	98,614	0.62%	1,355,370
<b>Total</b>		<b>596,800</b>	<b>0.92%</b>	<b>12,170,000</b>

The general layout of the stopes is shown in Figure17-4

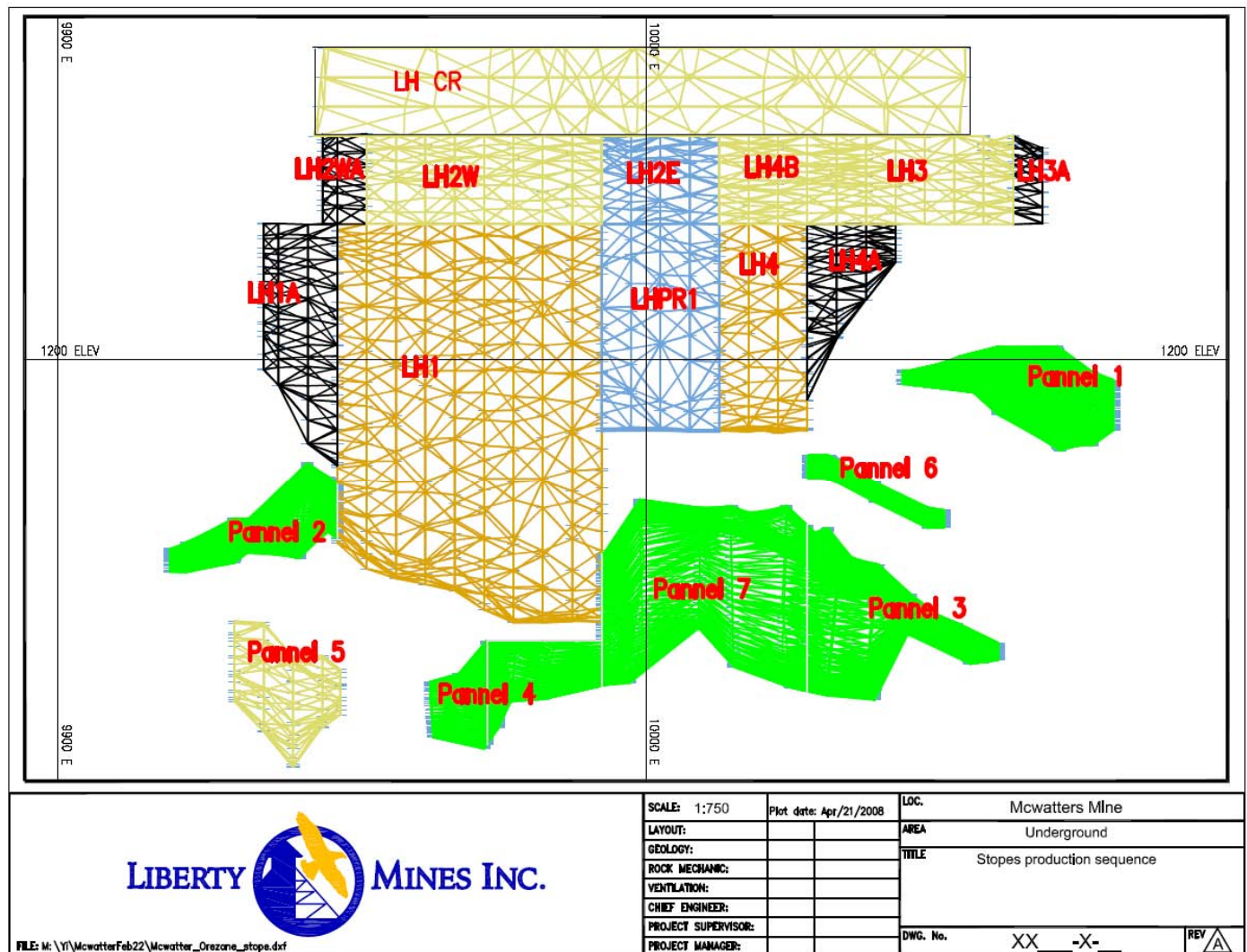


Figure17-4 McWatters Mine stope layout

### McWatters Life of Mine Plan

The McWatters mine is planned to produce 106,988 tonnes in 2008, 422,305 tonnes in 2009 and 67,505 tonnes in 2010. A detailed ore production schedule is tabulated in Table 17-11. The nickel price used for the McWatters project was \$12.50 US which was based on current forecasts for 2008 through 2010 provided by Salman Partners, Toronto, Ontario. For the purpose of this study \$1CDN:\$0.98US was assumed and remains constant for the life of mine. The following table shows the estimated pre-tax cash flow for the McWatters project:

**Table 17-11 Summary of the financial analyses at McWatters**

Tonnes of ore produced	596,797
Tonnes of Ni sold (mill recovered)	5232.15
Total Revenue	\$107,165,695
<i>Operating Costs</i>	
Mining Cost	\$21,875,842
Surface Transportation	\$2,088,793
Closure	\$1,640,600
Consulting	\$60,000
Milling Cost	\$8,653,570
G & A	\$2,564,049
Net Operating Profit	\$78,282,841
Capital Costs	\$16,354,592
Pre Tax Cash Flow	\$53,928,248
Internal Rate of Return (IRR)	385%
Net Present Value (NPV) at 5% discount rate	\$46,121,200

### 17.6.51 Taxes

The McWatters Mine is subject to all applicable Canadian Federal and Ontario Provincial taxes and royalties. Combined Federal and Provincial tax rates are estimated to be approximately 32%. A 10% Ontario Mining Tax is also expected.

In addition to government taxes, Liberty will pay a Net Smelter Return (“NSR”) of 3 percent on the production generated from the McWatters Mine. This NSR may be reduced to 1.5 percent with a one-time cash payment of \$1,000,000.

### 17.6.52 Sensitivity Analysis

A simplistic sensitivity analysis was performed to show the effects of changing nickel prices on NPV at various discount rates. Table 17-12 shows the NPV sensitivity analysis.

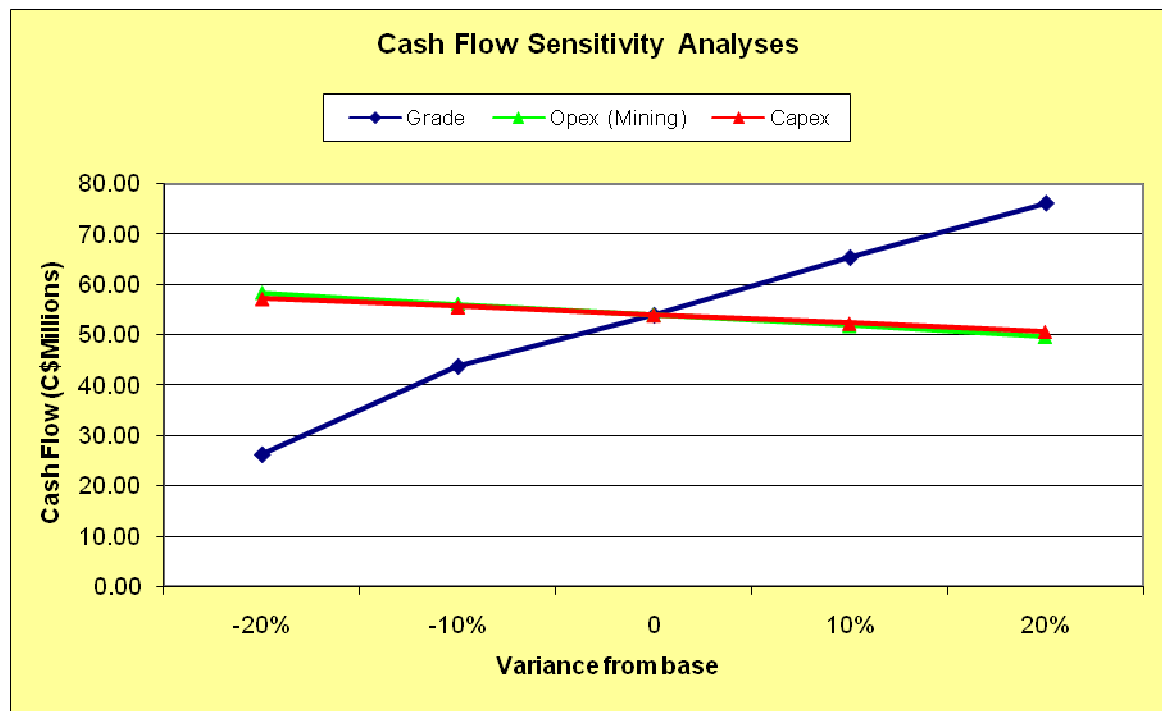
**Table 17-12 Sensitivity Analyses: NPV vs nickel price at various discount rates (quoted in C\$million)**

Ni Price / lb	Discount Rate		
	2.5%	5.0%	7.5%
US\$10.00	<b>29.9</b>	<b>27.5</b>	<b>25.4</b>
US\$12.50	<b>49.9</b>	<b>46.1</b>	<b>42.8</b>
US\$15.25	<b>71.8</b>	<b>66.7</b>	<b>62.0</b>
US\$18.00	<b>93.8</b>	<b>87.2</b>	<b>81.2</b>

A cash flow sensitivity analyses (and NPV analyses) shows that McWatters cash flow is highly sensitive to grade (range \$26.30m for -20% from base to \$76.13m for +20% from base) and nickel price, whereas it is fairly insensitive to opex and capex (with these two variables having similar trends).

Figure 17-5 shows cash flow sensitivity to grade, operating costs (Opex), and capital expenditures (Capex). Base case cash flow estimate is \$53,928,248.





Item	-20%	-10%	0%	+10%	+20%
Grade	\$26.30	\$43.79	\$53.93	\$65.35	\$76.13
Opex	\$58.30	\$56.12	\$53.93	\$51.74	\$49.55
Capex	\$57.20	\$55.56	\$53.93	\$52.29	\$50.66

**Figure 17-5 Diagram showing cash flow sensitivity to changes in grade (Ni%), operating costs (Opex), and capital expenditures (Capex).**

## 18 Conclusions and Recommendations

Significant nickel mineralization has been identified at the McWatters Mine. The confidence in estimating mineral resources at McWatters is high as the geological constraints are well understood and the drilling density is high. As a consequence the mineral resource estimate is of high enough confidence to warrant conversion to mineral reserves and the formulation of a mine plan, schedule, and financial analysis. These last items have formed the basis of the Feasibility Study, the results of which are summarized in this report.

An indicated mineral resource estimate of 714,870 tonnes grading an average 0.93% Ni (calculated based on a 0.5% Ni cut-off grade) was identified. The resultant block model was used by SRK engineers to formulate a viable mine plan and schedule that incorporates methodology and rates appropriate to the deposit size, geometry, and geographic location.

The McWatters ore body consists of a sub-vertical, larger zone of disseminated nickel sulphides over-lying a sub-horizontal massive sulphide basal layer. The two zones present distinct sizes and geometry and are, therefore, conducive to two distinct underground mining techniques: longhole stope mining and conventional panel stope mining. The former of the two methods is scheduled to produce 83% of the ore, and is therefore the most important mining method to be employed. Stopes are to be accessed via an underground ramp from surface. This same ramp will also serve as a haulage route utilized to transport ore to surface using underground haulage trucks. Ore is then transported by a series of all weather gravel roads to Liberty's operating Redstone processing plant 9 kilometers away.

Based on a 0.6% cut-off grade a probable mineral reserve of 596,800 tonnes at an average grade of 0.92% Ni was identified. Where appropriate, selective portions of the deposit are mined at a reduced 0.5% cut-off grade. The resultant financial analysis was positive, and indicated a pre-tax cash flow of 53,930,000, based on \$12.5 per pound of nickel. Financial results are positive down to a break-even price of \$5.50 per pound of nickel. Based on current and predicted market conditions, and given the relatively short 2 year life of mine, the results are considered highly positive.

The results of this feasibility study are highly dependent on the accuracy and quality of the data used to calculate key parameters. While the majority of the data has been derived from reliable and accurate information, there are key areas that would benefit from increased investigations:

- Prior to reaching the target ore zone, conduct advanced rock quality tests on available and relevant drill core;
- Use the information gathered above to generate spatially sensitive models of rock quality characteristics that can aid in determining predicted ground conditions;
- Revise planned pillar dimensions and locations based on the above data.;

- Once underground conduct further geotechnical investigations prior to final stope layout and crown pillar determination;
- Conduct and complete an extensive underground sampling program following industry best practices. Use these results to compare and update the generated block model to reflect the increased data density and confidence. This should also occur prior to final stope layout. This could prove particularly important in the upper disseminated zone;
- Upon underground excavations reaching the relevant horizons, geology to accurately sample, map and update models of the massive sulphide zones. Many of these zones are located in the deepest part of the orebody where drill hole inaccuracies can escalate;
- Engineering to revise the proposed mining method for massive sulphide zones (longwall panel stopes) to reflect improved ore model described above. The potential exists to employ a less labour intensive, more cost effective mining method if ore geometry improves;
- Geology to assess structural components of the ore body once underground to determine structural controls on mineralization;
- Exploration department to determine the depth potential of the ultramafic body, as well investigate the strike potential based on geological observations and interpretations.

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## **CERTIFICATE and Consent**

To accompany the report entitled: Mineral Resource Estimate for the McWatters Nickel - Deposit in Ontario, Canada.

I, Glen Cole, residing at 15 Langmaid Court, Whitby, Ontario do hereby certify that:

- 1) I am a Principal Resource Geologist with the firm of SRK Consulting (Canada) Inc. (SRK) with an office at Suite 1000, 25 Adelaide Street East, Toronto, Ontario, Canada;
- 2) I am a graduate of the University of Cape Town in South Africa with a B.Sc (Hons) in Geology in 1983; I obtained an M.Sc (Geology) from the University of Johannesburg in South Africa in 1995 and an M.Eng in Mineral Economics from the University of the Witwatersrand in South Africa in 1999. I have practiced my profession continuously since 1986;
- 3) I am a Professional Geoscientist registered with the Association of Professional Geoscientists of the province of Ontario (APGO#1416) and am also registered as a Professional Natural Scientist with the South African Council for Scientific Professions (Reg#400070/02) ;
- 4) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the McWatters Deposit or securities of Liberty Mines Inc.
- 5) That, as of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading;
- 6) I have read National Instrument 43-101 and Form 43-101F1 and I am a Qualified Person for the purpose of NI 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 7) I, as the qualified person, am independent of the issuer as defined in Section 1.4 of National Instrument 43-101;
- 8) I am responsible for the Resource estimation portion of this report;
- 9) I have personally inspected the McWatters deposit and surrounding areas in November 2007;
- 10) SRK Consulting (Canada) Inc. was retained by Liberty Mines Inc. to prepare a mineral resource estimate for the McWatters Nickel Deposit. This assignment was completed using CIM "Best practices" and Canadian Securities Administrators National Instrument 43-101 guidelines;
- 11) I hereby consent to use of this report for submission to any Provincial regulatory authority



Glen Cole, P.Geo.  
Principal Resource  
Geologist

Toronto, Canada  
May 16, 2008

## CERTIFICATE AND CONSENT

**To accompany the report entitled: Technical Report for the McWatters Nickel Deposit, Ontario, Canada.**

I, Christine Linden, residing at 2 Cognac Court, Sudbury, Ontario do hereby certify that:

- 1) I am a Senior Consultant with the firm of SRK Consulting (Canada) Inc. (SRK) with an office at 1A Serpentine Street, Copper Cliff, Ontario, Canada;
- 2) I am a graduate of Queen's University at Kingston, Ontario with a B.Sc in Mining Engineering in 1993. I have practiced my profession continuously since 1993;
- 3) I am a Professional Engineer registered with the Professional Engineers of Ontario (100124751) and with the Association of Professional Engineers and Geoscientists of Saskatchewan (09246);
- 4) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the McWatters Nickel Project or securities of Liberty Mines Inc.
- 5) That, as of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading;
- 6) I have read National Instrument 43-101 and Form 43-101F1 and I am a Qualified Person for the purpose of NI 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 7) I, as the qualified person, am independent of the issuer as defined in Section 1.4 of National Instrument 43-101;
- 8) I am responsible for Section 17 of this report;
- 9) I have personally inspected the McWatters Nickel Project and surrounding areas on the 13<sup>th</sup> of May, 2008;
- 10) SRK Consulting (Canada) Inc. was retained by Liberty Mines Inc. to prepare a technical report for the McWatters Nickel Project. This assignment was completed using CIM "Best practices" and Canadian Securities Administrators National Instrument 43-101 guidelines;

I hereby consent to use of this report for submission to any Provincial regulatory authority.



Christine, Linden, P.Eng.  
Senior Consultant

Sudbury, Canada  
16 May 2008



## **CERTIFICATE and Consent**

To accompany the report entitled: Mineral Resource Estimate for the McWatters Nickel Deposit in Ontario, Canada.

I, William Randall, residing at 21 Dale Avenue, Toronto, Ontario do hereby certify that:

- 1) I am the Vice President of Exploration for Liberty Mines Inc, with head office at 311A 8925-51 Avenue Edmonton, AB, Canada, T6E 5J3;
- 2) I am a graduate of the University of Toronto in Canada with a B.Sc (Hons) and an M.Sc.both in Geology;
- 3) I am a Professional Geoscientist registered with the Association of Professional Geoscientists of the province of Ontario (APGO#1516);
- 4) As of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading;
- 5) I have read National Instrument 43-101 and Form 43-101F1 and I am a Qualified Person for the purpose of NI 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I am responsible for the compilation of this report;
- 7) I have personally inspected the McWatters deposit and surrounding areas on various occasions dating back to late 2006;
- 8) I hereby consent to use of this report for submission to any Provincial regulatory authority.



Will Randall, P.Geo.  
VP Exploration, Liberty Mines  
Geologist

Toronto, Canada  
May 16, 2008