

Liberty Mines Inc.

Technical Report Redstone Nickel Mine Ontario, Canada

Report Prepared for

Liberty Mines Inc.

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Technical Report, Redstone Nickel Mine, Ontario, Canada

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SRK Project Number 3CL008.005

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Cover: (top) Photograph of drill core from drill hole R07-06A Redstone Mine, highlighting massive sulphide horizon, and (bottom) electric monorail typical of the unit that may be selected for use below 1600 level at Redstone mine.

Executive Summary

Introduction

The assets of Liberty Mines Inc. ("Liberty") include a 100 percent interest in the operating Redstone Nickel Mine ("Redstone"), which is located 24 kilometres south east of Timmins, Ontario, Canada. Subsequent to a period of closure due to low nickel prices, Redstone recommenced production in August 2009 and has achieved a maximum production rate of 500 tonnes per day.

During May 2009, Liberty commissioned SRK Consulting (Canada) Inc. ("SRK") to prepare a fully updated National Instrument 43-101 Technical Report including resource and reserve estimates for the Redstone project. Liberty is currently producing ore from the Redstone mine and processing it at their on-site nickel concentrator. This Independent Technical Report describes the current status of all aspects of the project and presents the Life-of Mine Plan.

Property Description

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

Infrastructure on site consists of a nickel processing plant, mechanical maintenance shop, trailer office complex, drill core shed, mine dry, compressor house, main fresh air fan and heater, security gate, tailings pond, electrical power distribution system, diesel fuel storage and pump, water supply, and settling and treatment ponds. The underground mine is accessed by a portal, completed in early 2008, from which the underground access ramp extends down to the 1600 level. (approximately 510 metres below surface)

Ore from underground stoping is being processed at Liberty's Redstone nickel concentrator located on site.

Geology and Mineralization

The Redstone property is located in the Archean age Abitibi Greenstone Belt of the Canadian Shield with local geology comprising of intermediate and felsic tuffs and sulphidic iron formation of the Deloro Assemblage disconformably overlain by komatiites and basalts of the Tisdale Assemblage.

Narrow porphyry dykes and sills intrude this volcanic sequence. A massive nickeliferous sulphide zone of variable thickness is preserved at the base of the komatiite unit at Redstone. Exploration and subsequent mining activity has been focussed on this horizon, although economically significant stringer nickeliferous sulphides do occur in the immediate hanging wall of the massive sulphides and structurally emplaced duplications of the massive horizon have been locally identified.

In the massive sulphide mineralization the main nickel sulphide mineral is pentlandite with minor amounts of millerite, violarite, gersdorffite and niccolite. Pyrite and pyrrhotite

constitute 5 percent to 50 percent of the total sulphides with chalcopyrite present as an accessory mineral.

Mineral Resources

The October 19, 2009 SRK Mineral Resource Statement for the Redstone Nickel Mine is summarized in Table i.

Table i. Redstone Mine: Mineral Resource Statement*, SRK Consulting October 19, 2009

Classification	Tonnage	Nickel	Copper	Contained
	(000's t)	(%)	(%)	Nickel (t)
Measured				
Massives	148	2.43	0.03	3,600
Disseminated	0	0.00	0.00	0
Total	148	2.43	0.03	3,600
Indicated				
Massives	41	1.76	0.04	720
Disseminated	410	1.10	0.01	4,500
Total	451	1.16	0.01	5,220
Total Measured & Indicated				
Massives	189	2.29	0.03	4.320
Disseminated	410	1.10	0.01	4.500
Total	599	1.47	0.02	8,820
Inferred				
Massives	151	3.55	0.09	5,360
Disseminated	586	1.06	0.02	6,220
Total	737	1.57	0.03	11,580

* Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. Reported at 0.51% nickel cut-off. Cut-off grades are based on a nickel price of US\$7.00/lb and on a mill recovery of eighty-seven percent. All figures have been rounded to reflect the accuracy of the estimate. Mineral reserves as stated within this report are a subset of these mineral resources.

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.

The resource estimate is based on a domainal three dimensional ("3D") geological interpretation of the mineralization that integrated information from a total of seven hundred and eighty diamond drill holes largely drilled on a variety of drill spacings. Drilling both from surface as well as from underground platforms was incorporated. Additional data from underground development sampling was also applied. Drill data was appropriately composited and capped prior to grade estimation.

The Redstone block model was created using Datamine with 3 x 3 x 2 metre blocks. Block grades were estimated using ordinary kriging ("OK") methodology. Resources are classified as Measured, Indicated or Inferred based primarily on elevation, which is directly proportional to data density and geological confidence. Resources have been depleted for mining to date.

The resource model was completed by Mr Glen Cole, P. Geo., Principal Resource Geologist, of SRK Consulting (Canada) Inc., Toronto. By virtue of his background and

professional experience, Mr Cole is an independent "Qualified Person" as defined by National Instrument 43-101.

Mine Plan

- Historical shrinkage stoping methods without backfill, employing non-recoverable rib pillars was not expected to remain viable as the mine developed deeper due to increasing stress at depth;
- The mine has adopted sublevel longhole retreat (15 metre vertical spacing), accessed from the main decline, for the future mining method;
- Underground ramp access with diesel truck haulage is suitable for this deposit down to 1600 level;
- The use of a proven electric monorail system below 1600 level will complement diesel trucking above 1600 level while enhancing capital and operating costs;
- The monorail provides an opportunity to handle increases to mine production as it doesn't have the same ventilation or interference issues as diesel trucks;
- SRK estimates a mine life of more than 2 years (26 months) with an average ore mining production rate of 10,000 tonnes per month based on a 5 day per week work schedule;
- No underground primary crushing is required, as ore will be trucked to the process plant;
- Backfill is not required in the mined stopes as sufficient pillar has been designed to prevent unexpected closure;
- Based on the actual mine records, mine water inflow is expected to average 100 litres per hour.

Mineral Processing

Redstone ore is now being processed, as available, at the existing Liberty owned Redstone nickel concentrator, which is located less than 500 metres east of the Redstone mine's underground portal. The Redstone plant, designed to process up to 2,000 tonnes per day of high MgO Ni-Cu-PGE mineralization, was commissioned in July 2007. The plant was on care and maintenance from November 2008 until June 2009 when nickel prices rebounded and has since resumed processing nickel ore from Liberty's Redstone and McWatters mines.

Since plant restart in August 2009, 30,400 tonnes of Redstone ore have been processed with recoveries of 95 percent on average head grades of 1.50 percent nickel.

Future predicted nickel recoveries for Redstone mine ore are based on previous plant performance, future plant upgrades, and metallurgical testing performed on drill core from the Redstone deposit.

Environmental

Liberty has conducted environmental studies and obtained the necessary permits to be able to conduct mining operations at the Redstone mine.

Laboratory testing and analysis of the rock types at the Redstone site show that, on aggregate, these rocks are unlikely to be acid generating.

Liberty has prepared a Spill Prevention and Contingency Plan, an Emergency Response Plan, and has developed and implemented environmental monitoring programs to address its regulatory obligations. Liberty has prepared a closure plan in compliance with Mine Development and Closure under Part VII of the Mining Act and Ontario Regulation 240/00.

Mineral Reserves

The December 31, 2009 SRK Mineral Reserve Statement for the Redstone Nickel Mine is summarized in Table ii.

Table ii. Redstone Mine Mineral Reserve Statement, SRK Consulting December 31, 2009

Classification	Zone	Quantity	Grade	Cont	Contained Metal	
		Tonnage	Ni (%)	(tonnes)	(lbs)	
Proven	Above 1600L	57,100	1.37	780	1,719,000	
Proven	Below 1600L	5,800	1.21	70	154,000	
Proven	Sub Total	62,900	1.35	850	1,873,000	
Probable	Above 1600L	54,200	0.70	379	836,000	
Probable	Below 1600L	142,800	1.04	1,483	3,269,000	
Probable	Sub Total	197,000	0.95	1,862	4,105,000	
Proven/Probable	Total	259,900	1.04	2,712	5,978,000	

The independent mineral reserve estimate prepared by SRK is reported in accordance with Canadian Securities Administrator's National Instrument 43-101 and conforms to generally accepted Canadian Institute of Mining ("CIM") "Estimation of Mineral Resources and Mineral Reserves Best Practices" guidelines.

Sublevel longhole mining was determined to be the optimal mining method for both the massive zone in the lower part of the mine and for the disseminated zone located in the central portion of the orebody.

Economics were applied to each stope based on an NSR calculation, appropriate mine operating costs for each mining method, a Ni price of \$7.00 US and an exchange rate of 1.00 Cdn = 0.90 US.

The mineral reserve estimate was completed by Mr. Philip Bridson, P. Eng., Sr. Associate Mining Engineer, of SRK Consulting (Canada) Inc. By virtue of his background and professional experience, Mr. Bridson is an independent "Qualified Person" as defined by National Instrument 43-101.

Project Economics

The mine plan was incorporated into a financial model to determine the Life of Mine ("LoM") economics at the study nickel price of US\$7.00 per pound.

LoM NSR revenue based on plant feed of 259.9kt at 1.04% Ni is estimated at \$ 29.8 million. LoM costs are estimated at \$18.5 million for operating and \$8.4 million for capital. Undiscounted pre-tax LoM cash flow is estimated at \$2.9 million, yielding an IRR of 116 percent and an NPV of \$2.3 million at an 8 percent discount rate.

The project economics are most sensitive to fluctuations in exchange rate between the Canadian and US dollars.

Project Risks and Opportunities

Uncertainty in the exchange rate between Canada and the United States is the largest economic risk faced by Redstone Mine. Current economics are based on an exchange rate

of 1.00 Cdn = 0.90 US. The 300 smelter contract is the specific instrument that ties this project to the exchange rate and potentially returns a variable revenue based on the fluctuation in the dollar. In the unlikely event that the Canadian dollar rose over 1.10 the project economics could be significantly reduced depending on the prevailing nickel price.

The monorail material handling system proposed for use below 1600 level is a proven and reliable mining technology in Europe and Africa but has never been applied in North America. The risk is "resistance to change" by the workers who will be asked to embrace the technology. Any commissioning issues for the monorail which may have been resolved oversees may resurface in North America. Keeping a close relationship with the equipment representatives should allow for transfer of technological and operations techniques thereby mitigating this risk.

The monorail infrastructure provides an opportunity for increasing production without increases to infrastructure. Increases in productivity are not bottlenecked since the electric monorail is not restricted by ventilation or interference (queuing) in haulage excavations.

The mine is currently conducting exploration drilling in the hanging wall (approximately 100 metres distance perpendicular to existing ore strike). This drilling is giving indication of as yet undiscovered hanging wall resource. If this early indication continues then opportunity to expand resource without significant capital development exists.

The geology model and classified resource estimate reflect current knowledge of the Redstone mineralization continuity and associated grade trends. Currently modelled resources below approximately 510 metres below surface (1600 level) are a combination of inferred and indicated resources. An early opportunity exists to upgrade the resources in the deeper portion of the sulphide deposit by increasing the drilling density as well as by increasing our understanding of the structural framework upon which the Redstone sulphide deposit is based. Such an improved structurally based resource body will not only lead to upgraded resources but also to reduced risk in future mining decisions based on this model.

Conclusions and Recommendations

Redstone Mine shows an economic mineral reserve and a positive cash flow. SRK recommends continuing planned development and mining of the orebody.

During the development and extraction phase, the following activities should be considered:

- Potential to expand reserves at depth suggests that an exploration program be planned from the bottom levels of the mine;
- Detailed engineering for application of the monorail technology should be undertaken;
- Completion of detailed engineering plans and schedules as required for effective implementation, cost control and project management.

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1 Introduction

1.1 Background of the Project

The assets of Liberty Mines Inc ("Liberty") include a 100 percent interest in the operating Redstone Nickel Mine ("Redstone"), which is located 24 kilometres south east of Timmins, Ontario, Canada.

The Redstone Nickel Project was discovered in the late 1970's by BHP Utah Mining which later optioned the property in 1989 to Timmins Nickel Ltd. Timmins Nickel proceeded to develop and mine the property until financial constraints and low nickel prices forced a shut-down. Mining ceased at the 230 metre level. (750 foot level).

Timmins Nickel in 1990 performed a deep drilling program and determined the deposit extended to depth. In 1995 Blackhawk Mining Inc. performed drilling and defined a resource from the 230 metre level to the 335 metre level. (750 foot level to the 1100 foot level). The mine was placed back into production only to be shut-down in early 1996 due to financial constraints and low nickel prices.

In 2000 Timmins Metal Corp. purchased the property and in September of 2003 ownership of the property was purchased by Liberty. In 2005 Liberty dewatered the mine and proceeded with rehabilitation of the underground.

Subsequent to this period of closure, dewatering and rehabilitation, Redstone re-commenced production in May 2006 and achieved a maximum production rate of 200 tonnes per day.

In June 2006, SRK Consulting (Canada) Inc. ("SRK") was retained by Liberty to compile a resource estimate and a technical report for the Redstone Nickel Mine property. During the period August 2006 to June 2007, SRK and Liberty worked together to compile a validated database based on the drilling program completed in June 2007.

SRK prepared a National Instrument 43-101("NI43-101") compliant resource estimate and classification for the Redstone Mine dated July 11, 2007 which was the first auditable resource estimation conducted at Redstone. SRK prepared a technical report, "Mineral Resource Estimation for the Redstone Nickel Mine, Ontario, Canada", dated August 23, 2007.

In late 2008 Liberty commissioned SRK to prepare an interim technical report for the Redstone Mine to reflect the status of the mine at that time. SRK prepared a technical report, "Interim Technical Report for the Redstone Nickel Mine, Ontario, Canada", dated December 16, 2008.

During May 2009, Liberty commissioned SRK to prepare a fully updated National Instrument 43-101 Technical Report including resource and reserve estimates for the Redstone mine. Liberty is currently mining ore underground which is being processed at the Redstone nickel concentrator. This current Independent Technical Report describes the current status of all aspects of the project and presents the Life-of Mine ("LoM") Plan.

In August of 2009 Liberty re-entered the mine and is developing the resource to meet full production in 2010

1.2 Qualification of SRK

SRK is an independent, international consulting company providing focused advice and problem solving. SRK provides specialist services to mining and exploration companies for the entire life cycle of a mining project, from exploration through to mine closure. Among SRK's 1500 clients are most of the world's major and medium-sized metal and industrial mineral mining houses, exploration companies, banks, petroleum exploration companies, agribusiness companies, construction firms and government departments. Formed in Johannesburg, South Africa, in 1974 as Steffen, Robertson and Kirsten, SRK now employs more than 750 professionals internationally in 30 permanent offices on six continents. A broad range of internationally recognized associate consultants complements the core staff.

SRK employs leading specialists in each field of science and engineering related to the minerals sector. Its seamless integration of services and global base have both made the company the world's leading practice in due diligence, feasibility studies and confidential internal reviews.

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 the SRK Group to provide its clients with conflict-free and objective recommendations on crucial judgement issues

1.3 Project Team

This independent Technical Report was compiled by Mr. Glen Cole, P. Geo. (APGO) and Mr. Andrew MacKenzie, P. Eng. (APEO) with assistance from:

- Mr. William Randall, P.Geo. on geology modelling and resource estimation;
- Mr. Bruce Murphy for the hard rock geotechnical assessment;
- Mr. Phil Bridson, P. Eng. on underground mine planning;
- Mr. Carlo Cattarello, P.Eng. on mineral processing;
- Ms. Jill O'Hara on environmental aspects;
- Mr. Rod Doran, P. Eng. on environmental aspects.

Mr. Cole and Mr. MacKenzie are the principal authors of this report.

Mr. Cole, P. Geo is a Principal Resource Geologist with SRK. He has been practicing his profession continuously since 1986 and has extensive experience in estimating mineral resources for base and precious metals projects in North America as well as in Southern and West Africa. Mr. Cole visited the project on two occasions; initially on August 17, 2006 and then again during the

period 4 to 6 June 2007. By virtue of his education, relevant work experience and affiliation to a recognized professional association Mr. Cole is an independent qualified person as this term is defined by National Instrument 43-101.

Mr. MacKenzie, P. Eng is a Principal Mining Engineer with SRK. He has been practising his profession continuously since 1994 and has extensive experience in mine design, planning and economic modelling. By virtue of his education, relevant work experience and affiliation to a recognized professional association Mr. MacKenzie is an independent qualified person as this term is defined by National Instrument 43-101.

Mr. William Randall, P.Geo is a former employee of Liberty. Mr. Randall was previously the Vice-President of Exploration for Liberty Mines Inc. and assisted SRK during the early stage of SRK's commission.

Mr. Bruce Murphy, FSAIMM is an SRK Principal Consultant, Rock Mechanics. Mr. Murphy is an independent qualified person.

Mr. Bridson, P. Eng is an Associate Mining Engineer with SRK. Mr. Bridson is an independent qualified person.

Mr. Cattarello, P.Eng is a Metallurgical Engineer with over fifty years of experience as a processing engineer in Canada and Mexico. He was commissioned by Liberty to assist with the project. Mr. Cattarello is an independent qualified person.

Ms. Jill O'Hara is an employee of Liberty. Ms. O'Hara is the Environmental Coordinator for Liberty.

Rod Doran P. Eng was retained indirectly by Liberty to assist with closure planning.

This report benefited from the review of Mr. Ken Reipas, P. Eng. SRK Principal Mining Engineer.

1.4 Basis of the Technical Report

This technical report is based on the following sources of information:

- SRK's previous 2008 technical report;
- A resource block model prepared by SRK;
- Structural and geotechnical assessments undertaken by SRK;
- A net smelter return model prepared by SRK based on input parameters provided by Liberty;
- Site visits including inspection of the underground mine;
- Discussions with Liberty technical and management staff;
- Mining, mineral processing, and environmental project information provided by Liberty;
- Additional information obtained from the public domain sources.

1.5 Site Visit

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

Mr. Glen Cole visited the project Redstone site on two occasions; initially on August 17, 2006 and then again during the period 4 to 6 June 2007.

Mr. Andrew MacKenzie visited the Redstone mine and the Redstone mill on several occasions since July 2009. The most recent site visits occurred in October and November 2009.

Mr. Carlo Cattarello visited the Redstone mill on numerous occasions since March 2006. The most recent site visit was completed on October 30, 2008.

Mr. Philip Bridson visited the Redstone mine site and the Redstone mill site in June and November 2009

Mr. Ken Reipas visited the Redstone mine site and the Redstone mill site on June 10 -11, 2009.

Mr. Bruce Murphy visited the Redstone mine site in 2008.

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 January 8, 2010, 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.

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, 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 performed an independent verification of land title and tenure as summarized in Section 3 of this report. SRK did not verify the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties but have relied on the client's solicitor(s) to have conducted the proper legal due diligence. SRK verified the tenure information on the Ministry of Northern Development and Mines Mining Claims Information System as of the effective date of this technical report.

Much of the Redstone 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.

3 Property Description and Location

3.1 Introduction

The general location of the Redstone Mine is shown in Figure 1. The Redstone property is located 24 kilometres south east of Timmins. The Redstone Mine property is located in the west central part of Eldorado Township, Porcupine Mining Division in Ontario. Eldorado Township is located within the Regional Municipality of Timmins. A detailed location map of the Redstone Mine in relation to Central Ontario infrastructure is provided in Figure 2.



Figure 1. Location of the Redstone Mine in Central Ontario, Canada





3.2 Land Tenure

The Redstone property consists of a total of three patented mining leases (1,002 hectares) held by Liberty Mines Inc. (Table 1). Each lease confers mining and surface rights to Liberty. These legally surveyed claims are shown in Figure 3.

SRK verified the ownership status of these tenements on the Ministry of Northern Development and Mines Mining Claims Information System. As of the effective date of this technical report, all mining claims are valid until January 31, 2024.

Licence Number.	Description	Area (Ha)	Title	Start Date	Expiry Date
107436	CLM 243	251.3	Liberty Mines Inc	2003-Feb-01	2024-Jan-31
107435	CLM 244	386.2	Liberty Mines Inc	2003-Feb-01	2024-Jan-31
107434	CLM 245	364.6	Liberty Mines Inc	2003-Feb-01	2024-Jan-31
Total:		1,002.1	-		

	Table 1.	Redstone	Property	Mineral	Tenure	Status
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3.3 Underlying Agreements

The company Timmins Metal Corporation was vended into Liberty Mineral Exploration Inc. on September 15, 2003 in exchange for 2,840,000 shares of the company. The name "Liberty Mineral Exploration Inc" was then changed to Liberty Mines Inc. on June 30, 2005.

On May 31, 2006 1001931 Ontario Limited and Timmins Metal Corporation were amalgamated with Liberty Mines Inc, so now Liberty Mines Inc. owns one hundred per cent of the Redstone property with no subsidiary involved. There are also no outstanding agreements relating to the ownership of the Redstone Property.



Figure 3. Redstone Property Mining Claim Plan

4 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Redstone property is located 24 kilometres south east of Timmins and is accessible through a network of secondary forestry roads extending south from South Porcupine (Figure 3). Two wheel drive vehicles can access the property in all seasons.

Timmins is a thriving mining community with a rich mining history and is the largest centre of commercial and social activity in the region. Most mining and exploration related equipment, services, supplies and personnel are sourced from Timmins. Modern telecommunications, a scheduled airline, partial rail service and numerous truck transportation companies service Timmins and vicinity.

The physiography of Eldorado Township is characterized by low relief and a thick cover of proglacial lacustrine clay and silt, which results in poor drainage and extensive areas of wet muskeg. Local relief is approximately 30 metres associated with diabase dykes rising above an average elevation of approximately 290 metres. Thick alder and cedar swamps cover approximately half of the property. The area is drained northward by the Redstone River, which drains into the Nighthawk Lake, the Frederick House River and eventually into Hudson's Bay.

Forestry companies have harvested most of the local area. Spruce, pine and fir were cut, leaving little merchantable timber on the property. Other local resources include an abundance of water and modest amounts of sand and gravel.

The climate is typical of northern boreal forest areas, with extended periods of sub zero temperatures in the winter months of November through to March. Moderate temperatures prevail during the summer months with temperatures in the range of 10-30 degrees Celsius accompanied by moderate precipitation. Refer to Figure 4. Experience indicates that most preliminary exploration activities can be executed in the summer months.



Timmins, ON, Canada

Figure 4. Typical Climate Chart for Timmins, Ontario (www.climate-charts.com)

The Redstone surface area is large enough to accommodate all future construction of mining and processing facilities with related tailings and waste storage areas. Figure 5 is a site photograph. Figure 6 is a plan showing the design of the recently constructed processing facility (mill buildings and associated tailings and waste areas) at Redstone.



Figure 5. Redstone Site Photo

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Figure 6. Plan View of Mill Site Showing Associated Infrastructure

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5 History

The details of this section are modified from a comprehensive summary by Harron (2003). The earliest recorded geological observations in the area were by Burwash in 1896, who mapped along the Eldorado / Adams townships boundary. Additional reconnaissance style geological mapping observations along the Redstone River appear in Burrows (1912). Harding and Berry (1939) geologically mapped Adams and Eldorado townships for the Ontario Division of Mines at a scale of 1:63,360 and Pyke (1975) re-mapped the same townships at a scale of 1: 31,680 also for the Ontario Division of Mines.

Mineral exploration probably dates back to the 1906 Porcupine "gold rush" as the Redstone River was an important access route to the Timmins area. Approximately 20 old trenches and pits are known on the Redstone property and appear to focus on the gold potential of the iron formations. One pit in the northeast corner of the property exposes massive pyrrhotite containing disseminated chalcopyrite associated with a layer of iron formation.

In 1947 Mercury Investors Company Limited held claims in the vicinity of the northern boundary of CLM 244. Work concentrated on quartz veins hosted in felsic volcanic rocks of the Deloro Group. An initial grab sample assay of 75.5 gpt Au was not substantiated by additional exploration (Pyke, 1975).

In 1951 Dominion Gulf Company completed an airborne magnetic survey of an area south of Timmins that included Eldorado Township. This survey detected the large northeast-trending gabbroic dykes and the extensive iron formations. The extent of any ground follow up is unknown.

In 1959-60, Texasgulf Sulphur Company completed an airborne geophysical survey of the townships covering the Shaw Dome with follow up ground geophysical surveys. Diamond drilling tested several geophysical targets intersecting pyrite and pyrrhotite mineralization.

In 1961 Falconbridge Nickel Mines Limited held claims covering the eastern central part of the current property. Work consisted of geological mapping, which recognized the significance of sulphide mineralization located at the base of the ultramafic volcanic flows. Further work consisted of MAG and HLEM surveys followed by a total of 533 metres of diamond drilling at 13 sites along two sulphide-bearing iron formations (Kilburn, 1961).

Following the announcement of the Kidd Creek discovery, in 1964, Mespi Mines Limited / Acme Gas and Oil Company Limited / B. Lang contracted a combined airborne AMAG and AEM survey over a large area that included the Redstone Property. There is no ground follow-up exploration work recorded as a result of this survey.

In 1964 Mining Corporation (1964) Limited explored a 32 claim area previously explored by Falconbridge Nickel Limited in the east central and south-eastern parts of the current property (Britton, 1964). Work consisted of

MAG and VLEM surveys followed by trenching and 14 diamond drill holes (488 metres). The best assayed intersection from the trenching returned 4.5 gpt Ag and 0.32 percent Ni over 9.1 metres. Diamond drilling is reported to have intersected barren massive and disseminated pyrite as well as pyrrhotite mineralization.

In 1968 Canadian Nickel Company Limited ("Canico") held claims covering most of the current property. Exploration activities included MAG and HLEM surveys and geological mapping, followed by 5 diamond drill holes (1,276 metres) that returned assays containing low concentrations of Ni and Cu.

Mr. R. Draper staked 16 claims in the west central part of the township in 1964. Work in 1968 consisted of MAG and HLEM surveys that outlined numerous conductors. In 1969 the same area was resurveyed with a Crone JEM electromagnetic system that provided better resolution of the electromagnetic conductors, including the conductor associated with the R Zone deposit (AFRI 42A06SE0106).

In 1969 Mr. A. Bessette held 10 claims immediately south of the Draper claims and within the southwest corner of the current property. The extent of exploration work completed on these claims is unknown (Pyke, 1975).

In 1976 Utah Mines Limited staked the former 16 claim Draper property and added an additional 47 claims to the east in 1977 (Godbout, 1978). Exploration work completed to the end of 1979 included geological mapping, MAG and HLEM surveys over the entire property, and 51 diamond drill holes. Thirteen of these tested barren sulphide mineralization associated with electromagnetic conductors and the balance were used to define the "R" Zone mineralization. The "R" Zone is the principal nickeliferous sulphide deposit in the Redstone Mine.

In 1988 BHP-Utah Mines Limited (successor to Utah Mines Limited) completed DDH R52-88 to a depth of 616 metres. The hole was designed to test the depth potential of the sulphide mineralization, but terminated in diabase dyke.

In 1988 TNI acquired a 51 percent interest in a joint venture with BHP-Utah Mines Limited for the development of the Redstone Mine. Drill hole R 52-88 was deepened and intersected 2.76 percent Ni over a core length of 5.9 metres at a depth of 731 metres, demonstrating the existence of potentially economic mineralization to at least that depth.

In 1989 TNI completed a 3,353-metre surface diamond drilling exploration program designed to expand the sulphide mineralization, and to provide more detailed data required for a pre-NI 43-101 reserve calculation. In addition, mine development via a ramp from surface commenced in January 1989. Underground work consisted of extending the ramp down to 229 metres below surface, and the establishment of 11 levels at the 31, 46, 61, 82,104, 125, 152, 183, 198, 213, and 229 metre levels.

In 1991 TNI contracted Overburden Drill Management Limited to conduct heavy mineral geochemical sampling of Quaternary glacigenic sediments and chip sampling of the bedrock in the vicinity of the Redstone (R Zone) deposit. Nineteen vertical reverse circulation drill holes (130.7 metres) were drilled. The holes were drilled 50 to 100 metres apart in an irregular pattern covering a 400 by 500 metres area located to the south (down - ice) of the Redstone deposit. A total of 30 overburden samples and 19 bedrock chip samples were collected (Averill, 1991). Analyses of the sulphide portion of the heavy mineral concentrates indicate that values> 1,000 ppm Ni define the R Zone mineralization for a distance of 300 metres in the down - ice direction.

In 1991 TNI purchased the remaining 49 percent interest in the joint venture from BHP-Utah Mines Ltd. Mining began in November of 1989 and continued until July of 1992, primarily employing conventional shrinkage and up-dip panel stope mining methods with rare long-hole techniques employed for sill and pillar recovery. During this time 270,334 tonnes with an average grade of 2.41 percent Ni were extracted and processed at the nearby Langmuir Mill.

In November 1992, 1001931 Ontario Limited, then a wholly owned subsidiary of Black Hawk acquired the Redstone property and all equipment and infrastructure from the Trustee in Bankruptcy for TNI for \$250,000. Sherritt Gordon Limited ("Sherritt Gordon"), holder of a mortgage on the property was granted a 2 percent net smelter royalty (to a maximum of \$337,500) by Black Hawk. The agreement also specified that after Black Hawk spent \$400,000 on exploration, Sherritt Gordon could elect to convert its net smelter royalty into a 40 percent working interest upon payment of \$160,000 to Black Hawk. On March 30, 1998 the Sherritt Gordon (now Viridian Corporation) royalty agreement was modified to reflect discharge of the mortgage on the property and confirmation of a 2 percent net smelter royalty on production from the property.

During 1994/1995 Black Hawk performed 8,886 metres of surface diamond drilling to define an indicated resource from the 229 metre to the 335 metre level. A total of 25 diamond drill holes intersected the ultramafic-footwall volcanic contact between 229 and 320 metres below surface. The vertical interval between the 320 metre and the 731 metre elevation (DOH R 52-88, 2.76 percent Ni over a true width of 5.9 metres) was not drill tested. Highlights include 12.9 percent Ni over a core length of 1.2 metres at a vertical depth of 262.1 metres in DDH # BH94-1, and 16.84 percent Ni over a core length of 1.8 metres at a vertical depth of 307.2 metres in DDH # BH94-3.

Black Hawk mining subsequently dewatered and placed the mine back into production in November 1995. Before the mine shut down in January 1996 the ramp was extended for another 30 vertical metres to 259 metres below surface, completing development on the 229 metre level and minor development on the 244 metre level. Stopes were prepared but no mining was reported, producing 5,039 tonnes with an average grade of 1.66 percent Ni.

In October 2000, Timmins Metal Corporation (TMC) purchased 1001931 from Black Hawk in order to acquire the property and maintain the status of the existing closure plan. At the same time TMC acquired all rights and obligations attached to the Viridian Corporation (Sherritt Gordon) royalty agreement. In December 2002, Timmins Metal Corp. granted an option to Inco to acquire an initial 60 percent interest in the property, with a further right to acquire an additional 10 percent interest. Inco carried out an exploration program designed to test the continuity of nickeliferous sulphide mineralization in the 335 to 731 metres depth interval, and drilled three UTEM anomalies at sites within 2 kilometres of the R Zone mineralization.

Timmins Metal Corporation was vended into Liberty Mineral Exploration Inc. on September 15, 2003 in exchange for 2,840,000 shares of the company. Liberty Mineral Exploration Inc. name was then changed to Liberty Mines Inc. on June 30th, 2005. On May 31st 2006, 1001931 Ontario Limited and Timmins Metal Corporation were amalgamated with Liberty Mines Inc., presenting Liberty Mines Inc., a one hundred percent ownership of the Redstone Property with no subsidiary involved. Liberty Mines Inc. is listed on the Toronto Venture Exchange.

Dewatering by Liberty Mines Inc. began in September 2005 and was completed by December 2005. During March 2006 Dumas Contracting Ltd. was contracted to begin mine rehabilitation, development, and initial mining. During the months of October and November of 2006 Dumas Contracting Ltd. ("Dumas") was replaced by owner mining with Liberty employees placed in all headings and Dumas Contracting Ltd. was limited to ramp development.

Since the commencement of mining operations in early 2006 up to August 1, 2007 there have been a total of 914 metres of ramp development and 1,188 metres of level development. The ramp was extended down to the 366 metres level, while level development was focused on the 244, 274, and 305 metre levels. Production during the same period has totalled 31,603 tonnes with an average grade of 2.28 percent Ni, with commercial production announced on July 1st, 2007. Of these 31,603 tonnes, 19,671 tonnes have remained stockpiled at the Redstone mine site to be processed by the Redstone mill at a future date. The remaining balance (11,932 tonnes) was shipped for custom milling, a practice that was terminated on April 1st, 2007.

The mine was placed on care and maintenance in August 2008 after nickel prices slumped below \$13.44/kg (\$6 per pound).

Development was recommenced in August 2009 and has totalled 30,500 tonnes of development ore with an average grade of 1.50 percent Ni. Since August 2009, Liberty has employed its own personnel and has purchased all the necessary equipment and has undertaken all mining activities related to the Redstone mine.

6 Geological Setting

6.1 Regional Geological Setting

The Redstone deposit is hosted by komatilitic volcanic flows of the Tisdale assemblage that flank the Shaw Dome and form part of the Abitibi Greenstone Belt ("AGB"). The AGB 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 nine lithotectonic assemblages (Ayer et al., 2002; Sproule et al., 2003). The relationships between these assemblages are ambiguous and may represent a superposition of allochththonous 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 AGB assemblages have distinct and well defined ages as well as spatial distribution (shown on plan in Figure 7):

- 1) Pacaud Assemblage (2750-2735 Ma);
- 2) Stoughton-Roquemaure Assemblage (2723-2720 Ma);
- 3) Kidd-Munro Assemblage (2719-2711 Ma), and the;
- 4) Tisdale Assemblage (2710-2703 Ma).

They also differ considerably in the physical vulcanology 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).

The Shaw Dome is a major anticline centred approximately 20 kilometres southeast of Timmins, Ontario (Muir, 1979; Green and Naldrett, 1981). 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 and the younger Tisdale assemblage (Hall and Houle, 2006).

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. The location of the Redstone Mine on a geological framework defined by Map P 3542 generated by the Ontario Geological Survey (2004) is shown in the Figure 8. 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.



Figure 7. Simplified Regional Geological Setting of the Abitibi Belt



Figure 8. The Location of the Redstone Mine Shown on an Extract from Map P 3542 Produced by the Ontario Geological Survey (2004)

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 (1982) does, however, add

that "there is some intercalation of the komatiites (of the Tisdale assemblage) with the Deloro Group volcanic rocks". Both intrusive and extrusive ultramafic rocks have been identified within the Deloro volcanic package (Hall & Houle, 2006; Houle & Guillmette, 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 (Randall, pers. comm.).

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, wherlites, pyroxenites, and gabbros that intruded sometime between 2725 Ma and 2707 Ma (Stone & Stone, 2000). 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. (2003) and Houle & Guillmette (2004).

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. 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

6.2.1 Introduction

The description on the property geology in this section has been extracted from an internal report by W. Randall (VP. Liberty Mines Inc.). The Redstone deposit appears to conform to a standard Kambalda-type deposit model subject to a considerable amount of post-emplacement tectonic modification. Massive magmatic Ni-Fe sulphide mineralization is hosted by the lower contact of a thick trough of ultramafic cumulate rock that is incised into footwall metavolcanic rocks of the Deloro Assemblage assimilating underlying sulphide facies iron formations. Although outcrop is poor on the Redstone Property, surface mapping by Liberty staff has enabled the generation of an interpretive surface geological map (Figure 9). The contact, and the associated mineralization, strikes at between 120 to 135 degrees, and exhibits an average dip of -60 degrees with variations ranging from -20 to -90 degrees, and plunges slightly to the south-east.



Figure 9. Simplified Surface Geological Map of the Redstone Mine

6.2.2 Lithologies

The footwall volcanic rocks are generally massive tuffs and flows with minor bedding that exhibit local brecciation and foliation spatially associated with the mineralized horizon. The tuffs and flows are of dacitic composition with a definite calc-alkaline affinity, composed primarily of very fine-grained quartz and feldspar. The feldspars have been extensively altered to sericite, epidote, chlorite and biotite. The komatiitic flows that form the hanging wall rocks have cumulate textures proximal to the mineralization and basal contact. Spinifex textures are common in areas more distal to the mineralization and have been identified in core samples consistently throughout the unit. Komatiites associated with the Redstone deposit are Al-undepleted and have been largely altered to serpentine and carbonate minerals.

6.2.3 Intrusives

Numerous quartz-feldspar porphyry sills and dykes intrude both the dacitic rocks and the komatiites, but have not been recognized to cross-cut the sulphide mineralization. These felsic intrusions are generally sub-parallel to the strike of the sulphides, and appear to range from 20 centimetres to approximately 4 metres in diameter. In various instances the porphyritic intrusives are directly in contact with the massive mineralization forcing the latter into highly deformed wedges. Extremely rare instances of where mafic dykes cross-cut the sulphide mineralization have been recorded.
6.2.4 Mineralization and Structure

Nickel-Iron sulphides are predominantly found at, or immediately adjacent to, the basal contact between the komatiitic flow and the footwall dacite. These sulphides occur mainly in massive form with associated stringers, but also as fine disseminations and blebs. Net-textured sulphides have not been identified, except by Robinson & Hutchinson (1982) in very rare cases. The massive sulphide has developed widespread durchbewegung textures, where fragments of the wall rocks have been broken, deformed and rotated within the ductile sulphide matrix (Figure 10). In addition, abundant quartz-carbonate veining can be found within and immediately adjacent to the massive sulphide (Figure 11).

The textures and veining observed are a clear indication that the contact between the ultramafic rock and the dacite has undergone significant amount of deformation related to faulting. The presence of ductile massive sulphide at the base of the paleotrough provided a weak point and allowed the nucleation of a relatively minor fault that is roughly parallel to the primary contact but that sits at the slightly lower stratigraphic level at the base of the embayment (Figure 11). Along the flanks of the mineralized zone the Ni-Fe sulphide departs from the primary contact and projects into the dacitic footwall rocks along the plane of the fault. The projection of this planar deformation zone into the footwall volcanics flanking the trough accounts for the current distribution of massive sulphides along an essentially planar surface. This 'surface' is tangential to the base of the trough at its centre but that lies entirely within dacite at its western extremity. The total amount of displacement along the fault is probably relatively minor, on the scale of tens of metres. Underground mapping has shown that the fault is most probably a left-handed, normal oblique-slip fault.



Figure 10. Durchbewegung Texture within the Massive Sulphide Deposit (fragments of wall rock preserved within ductile sulphide matrix)

Numerous instances of semi-continuous hanging-wall mineralization have been described, and, more recently, mined by Liberty Mines. This mineralization occurs as discontinuous stringers of massive Ni-Fe sulphides within fractured dacitic rocks. In these instances the contact relations are reversed, with dacitic volcanic rocks forming the hangingwall and the ultramafic rocks the footwall. These zones are structural repetitions of the stratigraphy as a result of faulting where the primary contact has been thrusted into the overlying hanging wall komatiite.

This remobilization, in conjunction with known faulting, lends validity to a post-emplacement metamorphic origin for Ni tenor variations and possibly enrichment.

The relative abundance of sulphide stringers compared to the typical Kambalda style model for this deposit type is attributed to the structural modification of net-textured sulphide mineralization.

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Figure 11. Structure Associated Quartz and Carbonate Veining at the Base of the Massive Sulphide Zone from Drillhole RS07-6A

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 12.

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 Redstone) assemblages. This is consistent with the interpretation that komatiite associated Ni-Cu-(PGE) deposits from within lava channels of channelized sheet flows, but not within sheet flows or lava lobes. Tisdale assemblage ultramafic volcanic rocks with high MgO contents (up to 32 percent) 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.





According to published classification systems quoted in Sproule et al (2002), five types of mineralization are recognised in AUK associated Ni-Cu-(PGE) sulphide deposits. These are types 1 through to 5. The Redstone nickel massive sulphide deposit is a classic example of Type 1 mineralization, with subordinate examples of Type 2 mineralization seen.

Type 1 mineralization at Redstone is similar to that at Kambalda, Mt. Keith and Perseverance deposits in Western Australia. The genesis of the Shaw Dome and the Australian deposits is attributed to the combined effect of lava channels (or channelized sheet flows) 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' fro sulphide minerals. Type 2 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

Nickel-iron sulphides are predominantly found at, or immediately adjacent to, the basal contact between the komatiitic flow and the footwall dacites (Refer to Figure 11). These sulphides occur mainly in massive form with associated stringers, but also as fine disseminations and blebs.

Numerous instances of semi-continuous hanging-wall mineralization have been described, and, more recently, mined by Liberty Mines. This mineralization occurs as discontinuous stringers of massive Ni-Fe sulphides within fractured dacitic rocks. In these instances the contact relations are reversed, with dacitic volcanic rocks forming the hangingwall and the ultramafic rocks the footwall.

The massive sulphide mineralization is composed primarily of pentlandite, pyrrhotite, and pyrite with lesser amounts of millerite, violarite, gersdorffite, and niccolite (Robinson & Hutchinson, 1982). Pentlandite occurs as fine to medium grained, euhedral to subhedral, octahedra with a pyrrhotitic matrix and as exsolution lamellae within pyrrhotite (Figure 13). Millerite has been observed to be enclosed by pentlandite, while violarite forms replacement rims around pentlandite octahedra. Nickel tenors within the massive sulphide (100 percent sulphides) exhibit a large range from 8.40 to 29.74 percent Ni. In the Redstone deposit chalcopyrite has been remobilized and now rims either the massive sulphide or, more commonly, the quartz-carbonate veins with higher concentrations observed near the margins of the deposit.

Nickeliferous sulphide mineralization has been delineated over a strike length of up to 274.3 metres down to 508 metres vertically below surface. Further drilling has continued to identify mineralization down to 1,155 metres below surface with core intersections of up to 3.62 percent Ni over 4.65 metres including 7.13 percent Ni over 1.75 metres, and 2.40 percent Ni over 8.5 metres including 14.20 percent over 0.7 metre.



Figure 13. Massive Sulphide Mineralization (including pyrrhotite, pentlandite and pyrite) Near the Basal Contact of a Komatiitic Flow and Footwall Dacite from Drillhole RS07-6A

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9 **Exploration**

9.1 Historical

In addition to diamond drilling activities (a total of 84,142 metres drilled) conducted by five different operators at Redstone between 1976 and 2007 (Table 1), a limited amount of geophysical work has been conducted as well.

The geophysical work conducted by Inco in 2003, deserves mention. Inco conducted a UTEM electromagnetic survey and a magnetic survey over the Redstone property. These surveys identified seven conductive zones localized along AUK / dacite contacts. Inco planned diamond drilling programs to drill test these conductors. Not all of the conductors identified by the Inco surveys have been drill tested. The position of the Redstone property (and other Liberty exploration properties) within a regional aeromagnetic image is shown in Figure 14.

9.2 Future Exploration

In the future exploration drilling at the Redstone Mine will focus on delineating mineralization below 1600 level. This will involve at least one phase of underground diamond drilling from underground drill platforms. Additional exploration is envisaged to evaluate the variable grade disseminated sulphide zone modelled above the massive sulphide zone from working areas.



Figure 14. Plan Position of Redstone (and other Liberty properties) Seen in Relation to Liberty's Regional Claim Outline Overlain on an Aeromagnetic Image of the Area

10 Drilling

10.1 Introduction

During the period 1976 to 2008, a number of exploration companies undertook various phases of drilling activities in the vicinity of the Redstone Mine. Drilling can broadly be classified by that conducted prior to 2004 (historical drilling) and that conducted by Liberty between 2004 and 2008. Details of this drilling are tabulated in Table 2.

Commonw	Daniad	Turne	Drilling details			
Company	Period	туре	No. holes	Total metres	Average metres	
Historical Drilling	(pre-2004)					
Inco	2003	Surface	2	1,570	785	
Black Hawk Mining	1994-5	Surface	25	8,446	338	
Timmins Nickel	1988-91	Underground and surface	35	12,411	355	
Utah Mines Ltd	1976-9	Surface	50	7,135	143	
Sub-total			112	29,562	264	
Liberty Drilling	(2004-2008)					
Liberty Deep	2006-7	Surface	4	4,574	1,143	
Liberty Upper	2006-7	Underground and surface	76	17,409	229	
Liberty Various	2007-8	Underground	588	32,597	55	
Sub-total		-	668	54,580	82	
Total all drilling			780	84,142	108	

 Table 2. A Tabulation of Diamond Drilling Activities Conducted at the Redstone Mine

The majority of the drilling at Redstone was diamond drilling (only 19 reverse circulation holes drilled by Timmins Nickel), although core from the programs drilled prior to 2004 is not available for inspection by SRK. All of the drilling from the above drilling programs was considered for resource estimation purposes. Specifics regarding the Liberty drilling programs are described in the following section. Specific details regarding the historical drilling are not available in a report, but have been summarized by Harron, 2003. Drill core from historical drilling was not available to SRK and minimal exploration records relating to this drilling by Inco, Black Hawk Mining, Timmins Nickel and by Utah Mines Ltd. were available for SRK to review.

A total of 780 drill holes have been drilled to date, totalling 84,142 metres with an average drill depth of 108 metres.

10.2 Drilling by Liberty (2004-2008)

The majority of drilling by Liberty was conducted from underground platforms during 2006 to 2008. In addition, four deep holes were drilled from surface (including two deflections from original holes), averaging 1,144 metres in length (Table 3). A total of 54,580 metres from 668 drill holes has been drilled by Liberty up to 2008 all of which has been used for resource modelling and estimation purposes. The Liberty drilling comprises 65 percent of the total Redstone drilling dataset.

The core size for underground drilling is BQTK, whereas that for surface drilling is NQ. All the drilling done by Liberty is diamond drill core, with the core safely stored on surface for checking and review. The drilling contractor is Bradley Bros from Timmins. The boreholes are numbered by a clear alphanumeric code. The drill core is however not routinely photographed for a digital record.

Drill collars are surveyed by a land surveyor, with the original collar azimuth and plunge setup determined by compass. Downhole surveying is routinely conducted at 25 metre intervals with a Maxibor instrument. Casing is used for surface drilling, but is pulled for underground drilling. 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 (R06-16), highlighting all requisite drilling information in DH logger (Century Systems) output in shown in the following table.

Apr 24, 2007			MINES INC.		REDST	ONE DE	TAILED L	OG				Page 1 of 2
Hole Number: R	06-16										Unit	s: METRIC
Borehole ID: Primary Grid: Primary North: Primary East: Primary Elev: Destination Grid: Destination North Destination Elev:	R06-16 REDSTONE: 3465.00 3470.60 2774.60 UTM83-17 : 5351448.79 487873.95 45.49			P C T L L C C C	roject Number: Jaim #: ogged By: og Finished: Core Storage: Casing:	REDSTONE CLM244 Eldorado tkeast Nov 10, 200 Redstone Mi Pulled	6 nesite			Start Date: Finish Date: Drill Contractor: Core Size: Hole Length: Azimuth: Dip:	Sep 15, 2006 Sep 16, 2006 Bradley Bros. BQTK	129.00 147.30 -16.50
Comments: Survey Tests												
Depth	Az	Dip	Depth	Az		Dip	Depth	Az	Dip -14.20	Depth	Az	Dip
100.0000	147.30	-10.40	125.0000	147.10	-]	-9.40	50.0000	147.50	-14.50	/5.0000	120.30	-12,50

Figure 15. Extract From a Typical Drill Log Output (R06-16) from the Liberty Drilling Program, Highlighting Drilling Details

10.3 Drilling Pattern and Density

The plan position and section of all drilling conducted at Redstone is illustrated in the following figure.

Utah Mines Ltd drilled 50 surface holes to an average drill length of 143 metres. These holes were all directed north (360 degrees) at dips varying from -40 to -65 degrees. The maximum depth below surface achieved was about 250 metres, although drilling typically targets depths less than 100 metres below surface. Drilling was done on about 30 metres sections.

Black Hawk mining drilled 25 surface holes to an average drill length of 338 metres. These holes were usually directed north (360 degrees) at dips usually of about -60 degrees. The depth below surface achieved was usually less than 400 metres. Drilling achieved narrow range coverage of about 20 x 20 metres over a small area.

Inco drilled 2 deep surface holes to an average drill length of 785 metres. These holes were usually directed north (360 degrees) at dips usually of -65 degrees. The maximum depth below surface achieved was about 920 metres. Drilling was designed to drill test geophysical anomalies within deeper portions of the Redstone property.

Timmins Nickel drilled 35 surface and underground holes to an average drill length of 355 metres. These holes were usually directed north (360 degrees) at dips usually of about -60 degrees. The maximum depth below surface achieved was about 1,200 metres, although drilling typically targeted depths less than 400 metres below surface. Drilling achieved a broad coverage of about 150 x 150 metres over the Redstone property.

Liberty drilled 688 drill holes from surface and underground to an average drill length of 82 metres. The underground drilling was fanned in multiple orientations and angles from four underground collar positions. These holes targeted massive sulphide intersections below historical and current workings, typically achieving drill intercepts within the range 250 to 800 metres below surface. The deepest Liberty hole from surface achieved a drill depth of 1,350 metres below surface.

It is evident in Figure 16 that drilling at Redstone becomes sparse with depth. Drilling during 2007-2008 achieved intercepts in the depth range of 900 to 1,200 metres below surface, which addressed a gap in the historical database.

It is the opinion of SRK that the drilling strategy and pattern have produced an adequate drill density to construct resource models for this style of mineralization.





Figure 16. Section Showing Contributions and Drill Coverage of Pre-April 2007 and Post-April 2007 Exploration

11 Sampling Approach and Methodology

11.1 Introduction

Data reviewed in this study and applied for geological modelling and resource estimation was the product of various phases of historical and current exploration programs by different companies. Historical exploration field procedures implemented by exploration staff have not been well recorded and documented, Therefore SRK is unable to comment on the sampling methodology.

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 drill hole R07-51 from 179.5 metres to 192.5 metres is provided in Figure 17.

Apr 24, 2007		LIBERTY MINES INC.	REDSTON	E DETAILED	LOG			
Hole Number:	R07-51							
Detailed Li	ithology		Mineralization Dat	a		Assay Data		
From	То	Lithology	Mineralization Type	e Mineralization Style	Min %	Sample Number	From	То
179.50	181.30	Kosx, Komatiite Spinifex					II	
		RQD						
		173.40 - 181.30 : % RQD 98.10 % Recovery 100.00						
181.30	182.60	DIA, Diabase						
		Shallow ctc's at 20 and 12 deg TCA.						
		RQD						
		173.40 - 181.30 : % RQD 98.10 % Recovery 100.00						
		181.30 - 182.60 : % RQD 92.31 % Recovery 100.00						
182.60	183.40	KPd, Komatiite				C391686	182.60	183.4
		Mod sheared and green chloritized with loc bio. Foln at 0 deg TCA.						
		Structure						
		182.60 - 183.40 : FOL , 0,						
		RQD						
		181.30 - 182.60 : % RQD 92.31 % Recovery 100.00						
102.40	194.10	182.60 - 191.00 : % RQD 94.05 % Recovery 100.00				0204602		
185.40	164.10	Frandark brown biotitis com monodering along core avis containing 1-204	POPN	Net	1 - 5%	C39168/	183.40	184.1
		overall po and lesser pv/pn as						
		patchy net textured and v fine wispy sulfides. Surrounding rock is green						
		chloritized and mod sheared kom.						
		RQD						
		182.60 - 191.00 : % RQD 94.05 % Recovery 100.00						
184.10	191.00	KPd, Komatiite	PO	BL	< 1%	C391689	184.10	185.1
		<1% po/pn fine blebs.				C391690	185.10	186.1
		RQD				C391691	186.10	187.0
		182.60 - 191.00 : % RQD 94.05 % Recovery 100.00				C391692	187.00	187.5
						C391694	100 50	100.5
						C391695	189.50	190.5
						C391696	190.50	191.0
191.00	191.85	STR. Stringer Sulphide	POPN	STR	5 - 10%	C391697	191.00	191.8
	101100	7-10% wispy po/pn seams at 50 deg TCA -fine to occasionally 1-2cm thick.	- OFN	216	5 1070		191.00	191.0
		ROD						
		182.60 - 191.00 : % RQD 94.05 % Recovery 100.00						
		191.00 - 192.50 : % RQD 90.00 % Recovery 100.00						
191.85	192.50	SMS, Semi Massive Sulphide	POPN	SM	10 - 25%	C391698	191.85	192.5
		60% SM to massive po/pn fg seams up to 30cm core length at 15-27 deg TCA.		I			1	
		RQD						
		191.00 - 192.50 : % RQD 90.00 % Recovery 100.00						

Figure 17. Extract from Liberty Drill Log for R07-51 in DH Logger Format

					Page 4 of 8
					-
				Units: METR	ac
ō	Ni %	Cu %	Au gpt	Pt gpt	Pd gpt
183.40	0.1100	0.0100			
04.10	0 1000	0.0500			
104.10	0.1000	0,0500			
185.10	0.0900	0.0100			
186.10	0.1300	0.0100			
187.00	0.1400	0.0050			
187.50	0.2100	0.0100			
188.50	0.1300	0.0050			
189.50	0,1300	0.0050			
191.00	0.2000	0.0100			
191.85	0.0600	0.0500			
171105	010000	0.0500			
192.50	0.1100	0.0500			

11.2 Sampling Protocols

Summary statistics for sample lengths for the Redstone drill database is shown in Table 3. It is noted that the mean sample length for the Liberty drilling sampling slightly exceeds that for the historical drilling, but at a lower standard deviation. Liberty has 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 hanging wall to the massive sulphide. Records of sampling protocols for historical sampling programs are unavailable.

In addition to 5,083 drill sampling data, 3,896 underground development sampling records have been captured and included into the total assay sampling database to be used for geostatistical analyses of the Redstone deposit.

Table 3. Statistics of the Sample Drilling Lengths from RedstoneMine

	Historical		Liberty
	pre-2004	2006-2007	2007-2008
Mean	0.80	0.87	0.91
Standard Error	0.02	0.01	0.01
Median	0.61	1.00	1.00
Mode	0.61	1.00	1.00
Standard Deviation	0.58	0.38	0.37
Sample Variance	0.33	0.15	0.13
Kurtosis	2.61	5.48	0.07
Skewness	1.35	0.74	-0.27
Range	3.83	2.99	2.05
Minimum	0.01	0.01	0.05
Maximum	3.84	3.00	2.10
Count	885	2,003	2,195

The proportional contribution of various data sources to the total sampling database used for geostatistical analyses is shown in Figure 18.



Figure 18. Proportional Contributions of the Various Sampling Database Sources

Histograms of sampling intervals from the various Redstone exploration programs are shown in Figure 19 which highlights the difference between drill data and underground development sampling data.





12 Sample Preparation, Analyses and Security

12.1 Sample Preparation and Analyses

Information regarding the historical INCO, Black Hawk Mining, Timmins Nickel and Utah Mines Ltd. sample preparation, analyses and procedures is not available to SRK. Summarized information regarding 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 six weeks.

In terms of sample preparation, usually after drying core samples are fine crushed to 70 percent <2 millimetre (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 is 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.

12.2 Quality Assurance and Quality Control Program

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 INCO, Black Hawk Mining, Timmins Nickel and Utah Mines Ltd during their respective exploration programs cannot be commented upon by SRK, as documentation to verify exploration aspects such as surveying, drilling, core handling, sampling, assaying and database creation and management are not available. 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 been verified by the SGS Laboratory at Lakefield. The performance of the assayed nickel and copper 'blanks' for the Liberty 2006-2007 drill program is shown in Figure 20, where a particularly wide variance in nickel values is noted The reason for this high variance is not known.

Two commercial certified standards (LBE-1 and LBE-2) and one "uncertified" standard (Ni111) were applied by Liberty. The performance of the Liberty standards for nickel and copper percentages are plotted in Figure 20. The recommended value for the copper and nickel reference materials are as follows:

	Ni %	Cu %
LBE-1	1.090	0.071
LBE-2	6.440	0.200
Ni111	0.420	0.240

Ni% / Cu%

Ni%

1





Sample reference ▲ LBE-1 ▲ LBE-2 ▲ Ni 111

o Ξ 13 15 17 19 5 23 25 27

e ŝ 33 31 29 33

35

12.3 Specific Gravity Database

Specific gravity measurements were collected during the Liberty core drilling program in 2006-7. No reliable specific gravity data exist for any of the previous historical drilling programs.

A total of specific gravity 556 specific gravity determinations were made by ALS Chemex in Vancouver from pulverized core samples using pycnometry. These were all assigned to a single weathering profile with no geo-domain differentiation. The statistics of this dataset is summarized in Table 4. This table differentiates between the total SG dataset (n=556), SG data where Ni percent >0.25 and where Ni percent >0.50.

A histogram of the resultant specific gravity data is shown in Figure 21. The total dataset and where Ni percent > 0.25 is considered. Specific gravity measurements were not only taken for mineralized samples, but for low grade and waste samples as well. A general positive relationship between SG and Ni percent is apparent from the Liberty SG dataset. This positive relationship is highlighted in Figure 22 which shows the relationship between SG and Ni percent, for Ni percent > 0.5 percent.

For resource estimation, two nickel sulphide mineralized horizons have been modelled. The well defined high grade massive sulphide horizon at the base is generally characterized by nickel grades exceeding 0.50 percent. The weighted (to sample length) average of SG for Ni percent >0.50 is 2.93 gcm3 (n = 117). Overlying the massive sulphide horizon is a poorly defined zone containing lower grade stringer nickel sulphides generally with nickel grades locally exceeding 0.25 percent. The weighted average for SG data with nickel grades exceeding 0.25 percent is 2.87 gcm3. These two SG values were applied in the resource estimation process

Detail	Total dataset	Ni%>0.25%	Ni%>0.50%
	(n=556)	(n=175)	(n=117)
Mean	2.87	2.92	2.98
Standard Error	0.01	0.02	0.03
Median	2.80	2.83	2.88
Mode	2.76	2.74	2.82
Standard Deviation	0.28	0.33	0.37
Sample Variance	0.08	0.11	0.14
Kurtosis	8.54	6.90	4.41
Skewness	2.62	2.38	2.02
Range	1.89	1.89	1.86
Minimum	2.51	2.51	2.54
Maximum	4.40	4.40	4.40
Sum	1594.86	510.52	348.77
Count	556	175	117

 Table 4. Statistics of the Specific Gravity Database for Various

 Scenarios



Figure 21. Histogram of Specific Gravity Data for the Total Liberty Dataset (top) and for Ni>0.25% (bottom)



Figure 22. Scatter Plot Showing the Relationship between SG and Ni% from the Liberty Drilling Dataset for Ni% > 0.50

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 INCO, Black Hawk Mining, Timmins Nickel and Utah Mines Ltd. No record is available of the procedures adopted by these companies to undertake data verifications. SRK was able to review the procedures adopted by Liberty exploration staff.

13.2 Control Sampling Assay Protocols

Control sampling procedures applied by Liberty at Redstone include techniques such as the following:

- 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 recently introduced the Century Systems database to Redstone. This system as applied on Redstone is more than just a database, it is a management tool than 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 is a data verification tool, generating data input error and QAQC reports for management action.

13.3 SRK Independent Verifications

During the site visits to Redstone, SRK was able to verify many of the underground drill 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 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 ten additional independent core samples for comparative analyses. These ten samples were taken from 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 (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 5ble 5 and graphically in Figure 23. SRK regards the variance in nickel and copper grades in Table 5 to be acceptable and typical for deposits of this nature.

Sample #	SGS ICP9	3 10Q	ALS CI AA4	hemex 16
	Ni% Cu%		Ni%	Cu%
390323	7.36	0.19	9.17	0.27
390324	0.93	0.06	0.24	0.08
391964	10.90	0.07	8.73	0.00
391966	8.83	0.09	7.79	0.00
391040	0.49	0.00	0.65	0.00
391322	10.50	0.26	9.66	0.01
392162	0.06	0.00	0.05	0.03
391320	0.80	0.07	0.92	0.13
391033	0.34	0.01	1.27	0.05
391961	0.88	0.09	1.14	0.00

average:	4.11	0.08	3.96	0.06



Figure 23. Graph Showing Comparative Ni% Assays for SGS (ICP90Q) and ALS Chemex (AA46)

The verification study shows that although average assays are similar, for higher nickel grades SGS results tend to be higher, whereas at lower nickel grades ALS Chemex yield marginally higher results. These variations are however considered significant.

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14 Adjacent Properties

The areas surrounding the Redstone Project have experienced mining and prospecting activities including geological mapping and diamond drilling with significant discoveries of sulphide mineralization similar to that at Redstone.

In addition to the Redstone Ni-Cu deposit there are four other Ni-Cu-(PGE) deposits / occurrences hosted by Tisdale age AUK within the Shaw Dome structure. These other deposits are not necessary directly correlated with the Redstone deposit, but are discussed here for local significance, especially as these are located in proximity to Liberty claims. These deposits / occurrences are Langmuir 1, Langmuir 2, McWatters and Hart. These mineral occurrences are shown in Figure 24.

At Langmuir 1 the massive sulphide (Type 1) mineralization is delineated over a strike length of 150 metres to a depth of 140 metres, with a maximum width of 1.5 metres and an approximate grade of 2.20 percent Ni. Up to 7 metres of net textured (Type 1) sulphide mineralization grading approximately 1.00 to 2.00 percent Ni and up to 13 metres of disseminated sulphide (Type 2) mineralization grading about 0.30 to 0.90 percent Ni overlie the massive sulphide mineralization. This situation is very similar to Redstone.





At Langmuir 2 the massive sulphide is delineated over a strike length of 200 m, to a depth of 300 m, with a maximum width of 2.5 metres and an approximate grade of 2.40 percent Ni. Up to 12 metres net textured (Type 1) sulphide mineralization grading about 1.00 to 2.00 percent Ni and up to 28 metres of disseminated (Type 2) sulphide mineralization grading about 0.3-0.9 percent Ni overlie the massive sulphide mineralization (reported in Harron, 2003). 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 NI43-101 compliant resource evaluations.

The McWatters deposit is about 15 metres thick and is reported over a strike length of 150 metres and to a depth of 100 metres. This deposit is hosted by steeply dipping serpentinite. The sulphide mineralization is divided into an upper irregular disseminated zone (Type 2 and 4) and a lower massive sulphide zone (Type 1). The McWatters mineral resources are estimated at 792,500 tonnes grading an average of 0.81 percent Ni in the Indicated category (SRK Technical Report, December, 2009).

At Hart nickel mineralization occurs both within iron formation (Type 5 mineralization) and within komatiite flows (Type 1) over a length of about two hundred metres. The Hart deposit has a reported resource of 1,390,000 tonnes grading 1.50 percent Ni in the Indicated category and an additional 286,000 tonnes grading 1.36 percent Ni in the Inferred category (SRK Interim Technical Report, October 2008).

15 Mineral Processing and Metallurgical Testing

15.1 Introduction

On July 17, 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 nickel, copper platinum group metals sulphide mineralization. The plant has been processing mineralized material from Liberty's Redstone and McWatters Nickel Mines.

The Redstone concentrator processed 104,506 wet tonnes of mineralized material from the Redstone mine during the 2007 and 2008 campaigns; and 15,705 wet tonnes of mineralized material from the McWatters mine in late September to October 31, 2008. The concentrator demonstrated, during its operations, suitability to high MgO nickel sulphide mineralization achieving outstanding nickel recovery.

15.2 Processing

15.2.1 Mineralization Type

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

15.2.2 Predicted Metallurgical Recoveries

Predicted nickel recoveries for the Redstone mine mineralized material are based primarily on previous plant performance, as well as metallurgical testing performed on drill core from the deposit. The predicted metallurgical performance for the Redstone plant feed is tabulated in Table 6.

Ni head grade range (%)	Predicted Ni recovery (%)
0.35 - 0.40	78
0 40 - 0 50	80
0.50 - 0.60	82
0.60 - 0.80	85
0.80 - 1.50	90
1.50	90
+1 50	92

Table 6. Predicted Plant Metallurgical Performance for Redstone

Concentrate grade is predicted to range from 10 percent to more than 15 percent nickel as the head grade ranges from low grade to high grade mineralization as shown above.

15.2.3 Previous Plant Performance

The Redstone plant operated between July 14, 2007 to October 31, 2008, at which time the plant was placed on care and maintenance until mid-September 2009. During this operational period the plant processed high MgO komatiitic nickel mineralized material from the Redstone mine. Processing results for the period are considered representative of future operation.

Redstone plant throughput for the period averaged 222 tonnes of mineralization per day with an average head grade of 1.93 percent nickel, producing 1,776.9 tonnes of nickel in concentrate. The concentrate grade averaged 17.9 percent nickel. Average nickel recoveries for the period were 88.1 percent.

The plant started processing Mc Watters development material on September 20, 2008 through to October 31, 2008. During this period 15,705 wet tonnes of mineralized material were processed. An average head grade of 0.51 percent nickel was measured at the mill, achieving average nickel recovery of 83 percent. Recovery fluctuated between 64 and 95 with head grades ranging from 0.33 to 1.15 percent nickel. The metallurgical performance for both mines during operation is summarized in Table 7.

In October of 2009, a test run of 0.45 percent nickel mineralization from McWatters over two shifts yielded an average nickel recovery of 85.90 percent and a concentrate grading 10.08 percent.

Plant Feed from	Year	Tonnes	Head Grade (Ni%)	Con Grade (Ni%)	Average Ni Recovery (%)
Redstone	2007	41,355	2.07	18.71	88.7
Redstone	2008	63,151	1.84	17.48	87.74
McWatters	2008	15,705	0.51	13.73	82.92
Redstone	2009	30,000	1.00	15.00	90.00

Table 7. Redstone Plant Metallurgical Performance

15.2.4 Plant Flow Sheet Description

Crushing

All sulphide mineralization is trucked to the crusher house from the respective mine sites. Surface pads are specifically designed to maintain separate piles for each mine. The crusher coarse bin can store 100 tonnes, which is drawn by a simplicity pan feeder on a variable frequency drive to control tonnage throughput. The pan feeder feeds a 810 x 1070 millimetre (32 x 42 inch) Birdsboro Jaw crusher. All minus 76 millimetre (3 inch) material is then conveyed to a Gator Double Deck screen. The top screen has an opening of 25 x 25 millimetre (1 inch square) and the bottom deck consists of a 10 x 76 millimetre (3/8 x 3 inch) opening. All material over 10 millimetre (3/8 inch) reports to a 298 kW (400Hp) 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 was operated at an average rate of 160 tonnes per hour.

Grinding

Feed product for phase I grinding is drawn from one of the two 800 live tonne fine mineralized material bins via slot feeders. Material is conveyed to a 3.1×4.0 metre (10 x 13 feet) Dominion Ball Mill at a feed rate of 20-23 tonnes per hours. The mill is lined with rubber lifters and shell liners. The slurry density in the mill is maintained at seventy-four to seventy-eight percent at a specific gravity of 2.8. Slurry is pumped to a cyclone bank which consists of 4 Krebs D15 cyclones. Underflow is gravity fed to the mill for regrind and overflow of P80 65 microns reports to the conditioning tank.

The phase II grinding circuit is a mirror image of the phase I circuit with an independent feed belt, pump and cyclone. This gives the circuit the flexibility to treat mineralization from different mines independently to maximize recovery. Phase III consists of an addition of one 3.1×4.0 metre (10×13 feet) Dominion Ball Mill which will be a regrind mill for the Mc Watters circuit to increase throughput from 500 to over 1,000 tonnes per day. The three mills have the flexibility of operating in series to run one type of mineralization at high tonnage of up to 2,000 tonnes per day.

Flotation

The phase I plant's flotation circuit consists of two 14.2 cubic metre (500 cubic feet) tank rougher cells with a slurry grade of 1.6 to 2.2 percent on average. Final concentrate collected at this stage has an average grade of eighteen percent nickel. The tails of the rougher cells is gravity fed to the first of six 14.2 cubic metre (500 cubic feet) 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 three 14.2 cubic metre (500 cubic feet) Scavenger Cleaner cells. In the cleaner stage Talc is further depressed to clean the average nickel grade of five percent to a fourteen to sixteen percent nickel grade. Tails from the cleaner circuit are directed to the feed end of the scavenger to collect any remaining nickel. Phase II and III flotation circuits 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 7.9 metre (26 feet) conventional thickener. Slurry density is then thickened from thirty to sixty five percent.

Concentrate Dewatering

The 6.1 metre (20 feet) thickener pumps the sixty percent density slurry to a 14.2 cubic metre (500 cubic feet) holding tank which feeds the Larox filter press. This state of the art dewatering press operates fully on automation and can produce up to ten tonnes per hour. The average moisture of the concentrate cake is eight percent and is gravity fed to a seventy tonne storage bin. The final product is conveyed from the storage bin where it is weighed before loading into haulage trucks. A new certified truck weigh scale has been installed for this purpose. Samples are collected for assay and moisture content and is then transported to the buyer were the concentrate again is weighed and sampled in the buyer's storage area.

On Stream Analysis

A new Laser Induced Spectrometer on stream analyzer has been installed. This analyzer measures nickel and MgO values on a two minute interval at feed and tails. This enables 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 fully functional.

Reagents

The main reagents consumed are Depramin C which depresses Talc, copper sulphate which is an activator, Potassium Amyl Xanthate a 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 analytical quality control procedures. The laboratory sample load consists of 10 percent from the mill, eighty percent from geology, and ten 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 28 employees. An Operations Superintendent assumes the responsibility for four mill shifters and all activities concerning mill processes. A Mill Metallurgical Supervisor is employed to ensure quality control in the assay laboratory and conduct test work to improve operating costs and nickel recovery.

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 8 are based on historical production data at the lower tonnages and projections to be achieved at higher tonnages.

Throughput (TPD)	500	1000	1500	1800
Labour	\$8.20	\$5.27	\$3.89	\$3.34
Consumables	\$6.58	\$6.44	\$6.38	\$6.37
Electrical Maint.	\$0.82	\$0.50	\$0.47	\$0.42
Mechanical Maint.	\$1.10	\$0.55	\$0.37	\$0.30
Heating	\$0.89	\$0.45	\$0.30	\$0.25
Loader Operations	\$0.33	\$0.16	\$0.11	\$0.09
Power Consumption	\$5.50	\$4.55	\$3.90	\$3.33
Contingency (5%)	\$1.17	\$0.90	\$0.77	\$0.71
Total Cost/Tonne	\$24.59	\$18.81	\$16.19	\$14.81

Table 8. Redstone Plant Operating Cost Estimate

15.6 Future Prospects and Upgrades

The plant is considering the purchasing of a gravity circuit to separate the platinum group metals and gold from the nickel concentrate. The concentrate weighing system was upgraded to include a certified truck weigh scale. A rock breaking system is being sourced to accommodate the oversize muck coming from Redstone and McWatters Mine.
16 Mineral Resource and Mineral Reserve Estimates

16.1 Introduction

At the commencement of production at Redstone in 1989, Timmins Nickel reported a measured resource* of 105,000 tonnes grading 3.24 percent Ni, an indicated resource of 25,750 tonnes grading 3.17 percent Ni and an inferred resource of 287,350 tonnes grading 2.24 percent Ni (Anon, 1989).

In 1995 Black Hawk Mining completed a resource calculation for mineralization identified in the 213 to 335 metres interval (Lapierre, 1995). Resources above the 229 metres level were calculated using 15.24 metres x 30.48 metres blocks multiplied by the calculated true thickness of the massive sulphide mineralization. Grades used in the calculation were derived from drill cores and chip samples collected along drifts. A minimum true width of 1.22 metres and a lower cut-off grade of 1.00 percent Ni were used to define the mineralization of economic interest. Resources below the 229 metre level were based on the results of 20 new drillhole intercepts and were calculated by constructing polygons around each drillhole intercept. The Black Hawk calculation estimated an indicated resource of 49,400 tonnes grading 3.90 percent Ni over an average width of 1.4 metres above the 229 metre level. Inferred resources* in the 229 to 335 metre interval were calculated to be 104,150 tonnes grading 4.19 percent Ni (undiluted).

An estimated 279,632 tonnes grading 2.38 percent Ni has been produced from Redstone between 1989 and 1996 by various operators (Luhta et al, 1997). At mine closure in 1996, inferred resources were reported to be 170,000 tonnes grading 3.28 percent Ni above the 244 metre level (Atkinson et al, 1998).

The mineral resource estimate prepared by SRK and presented herein is the second NI43-101 compliant resource estimate prepared for the Redstone nickel sulphide deposit. It supersedes any previous estimates.

This section summarizes the data, methodology and parameters used by SRK to estimate the mineral resources for the Redstone deposit. The mineral resource model considers all available drilling and underground sampling data as of October 31, 2008.

All resource estimation work was completed by Glen Cole, P.Geo from data received from William Randall, (Former Liberty VP Exploration). The resource estimation and accompanying technical report was reviewed by Dr Jean-Francois Couture of SRK. Previous sections of this report have highlighted some concerns about the documentation and procedures relating to the historical borehole data. These issues concern aspects such as: drilling surveying, sampling approach, lack of documented quality assurance and quality control measures and the inability to reasonably validate and verify a large part of the dataset that was used for resource modelling and estimation.

These historical data are located primarily in the mined out areas. These concerns are not applicable to the Liberty data generated between May 2006 and October 2008.

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 3 was used to construct solids, build composites and the block model, to run grade interpolation and to estimate and tabulate mineral resources. Isatis Version 9.01 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 pre-Liberty data. The database records provided to SRK by Liberty were audited against digital log sheets, sections and plans. Database records reflect original 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 comma separated format (.csv) 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 only two data types viz. drill data from various periods as well as underground chip sampling data.

16.3 Resource Estimation

16.3.1 Database

The database used for resource estimation includes exploration drilling data collected during five exploration programs conducted during the period 1976 to October 2008. Redstone drilling database is presented in Table 2. The total drilling database comprises five thousand and eighty three sample records from seven hundred and eighty drill holes and an additional three thousand eight hundred and thirty six underground development sampling records. The total resource assay database comprises of eight thousand nine hundred and seventy nine 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. Additional information was provided about aspects like structures and RQD. Drilling information from the INCO, Black Hawk Mining, Timmins Nickel and Utah Mines Ltd campaigns are not as detailed. SRK is of the opinion however that

the Redstone dataset is adequate for resource modelling and grade estimation for this style of sulphide mineralization.

16.3.2 Solid Body Modelling

Nickel (and copper) grades are spatially related to two kinds of sulphide mineralization at Redstone. 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, stringer type sulphides occur which are discontinuous in nature and associated with highly variable nickel grades. Evidence of discontinuous structurally duplicated massive sulphides located in the hanging wall of known massive sulphide stopes is observed underground. An additional complexity is the occurrence of barren intrusive dykes which complicate the continuity of known mineralization. The 3D orientation of this intrusive material has not been defined, with the majority of these being thin and probably discontinuous.

With considerable interpretive input from Redstone exploration staff, the following geological solid modelling methodology was adopted:

1. A digital surface was constructed for the base of the massive sulphide from information from underground workings, drift mapping, underground development sampling as well as from all drill hole massive sulphide – dacite footwall intersections see Figure 25.

2. Considering information from all massive sulphide intersections, the average thickness of the basal massive sulphide mineralization is 1.2 m. It was not possible to model all the local variances in the massive sulphide horizon, with large portions of the un-mined massive sulphide horizon only covered by drillhole information. The upper contact of the massive sulphide was then modelled as a surface translated 1.2 metres above the lower defined surface.

3. Sectional analyses of all drillhole information, combined with limited underground information established that stringer type sulphides with variable nickel grades occur in the hanging wall of the massive sulphides up to a perpendicular distance of 20 metres above the basal contact of the massive sulphide. The extent of the lower grade stringer type sulphides zone was then modelled as being defined as having a lower contact shared with the upper surface of the massive sulphide and an upper surface translated 20 metres above the lower defined surface of the massive sulphide.

4. The above methodology enables the creation of surfaces to simplistically define the extent of the two types of mineralization on Redstone. 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 Redstone. The model should be seen as a starting point upon which to attach more detail as this becomes available. It is particularly important that structural geology aspects be focussed on in future updates of the geology model. In addition to the construction of a geology model, an extruded and simplistic 3D model for the mined out workings on Redstone was created from digital mine sections of mine workings up to October 2008. SRK cannot verify the accuracy of this model.

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 26. Simplistic Sectional View of the Result of the Geological Modelling Process Applied at Redstone

16.3.3 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 stringer type sulphide zone. The underground development sampling dataset is combined with the massive sulphide dataset for variography and grade estimation. The geostatistical signature for nickel of the composited underground development data is similar to that of the composited drilling dataset from the massive sulphide zone. This trend is confirmed in a QQ plot (Figure 26) comparing the two sources of nickel data.

All assays were composited to 1.0 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.



Figure 27. QQ Plot of Composited Underground Nickel Data Against Composited Drilling Nickel Data within the Massive Sulphide Zone

16.3.4 Statistics

Basic statistical tabulations for composited nickel and copper from all drilling data sources from within both mineralized zones are presented in Table 9. 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.

Histograms for composited nickel and copper for all data sources combined within the two mineralized zones are provided in Figure 27 and Figure 28. Nickel data is highly skewed with a dominance of low values, although within the massive sulphide zone a significant portion (about 15.00 percent of the total) of the data is in the higher grade tail (exceeding 10.00 percent Ni). The higher grade tail is somewhat smaller in the stringer type sulphide zone.

Copper values are uniformly low in both mineralization zones (Table 9). The majority of the copper assays in the database (96 percent of the total) are less than 0.01 percent.

Statistic	Massive	Massive Sulphide Zone			Stringer Sulphide Zone		
Variable	Length	Ni%	Cu%	Length	Ni%	Cu%	
Count	2323	2323	2323	8037	8037	8037	
Minimum	0.1	0	0	0.33	0	0	
Maximum	1.49	28.17	0.721	1.48	28.17	0.76	
Mean	0.9885	2.4673	0.0229	0.9997	0.1930	0.0048	
Std. Dev.	0.1751	4.0752	0.0669	0.0513	0.9961	0.0223	
Variance	0.0307	16.6074	0.0045	0.0026	0.9923	0.0005	
COV	0.1772	1.6517	2.9260	0.0514	5.1605	4.6144	

Table 9. A Tabulation of Composited Statistics for Nickel andCopper from all Drilling Sources of Data within the TwoMineralized Zones



Figure 28. Histogram for Composited Nickel for all Data Sources within the Two Mineralized Zones



Figure 29. Histogram for Composited Copper for all Data Sources within the Two Mineralized Zones

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16.3.5 Grade Capping

Grade capping decisions were based on careful examination of the composited nickel and copper datasets for all data within the modelled mineralized zones and by consideration of the respective cumulative probability plots (Figure 29 and Figure 30)

For the nickel and copper data, the grade cappings in Table 10 were applied. Base statistics of the validated composted and capped data is tabulated Table 11.

Table 10.	Grade Cap	ping Values	s Applied at	Redstone
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Mineralized Zone	Nickel	Percentile	Copper	Percentile
Massive Zone	25	99.8	0.7	99.9
Stringer Zone	15	99.8	0.4	99.9

Table 11. Base Statistics of Validated Composited and Capped Redstone Data

Statistic	Massive	Massive Sulphide Zone			Stringer Sulphide Zone			
Variable	Length	Ni%	Cu%	Length	Ni%	Cu%		
Minimum	0.1	0	0	0.33	0	0		
Maximum	1.49	25	0.7	1.48	15	0.4		
Mean	0.9885	2.4634	0.0194	0.9997	0.1902	0.0037		
Std. Dev.	0.1751	4.0523	0.0665	0.0513	0.9411	0.0196		
Variance	0.0307	16.4210	0.0044	0.0026	0.8857	0.0004		
COV	0.1772	1.6450	3.4191	0.0514	4.9471	5.2393		





AM – KR – PB – GC – ab



Figure 31. Probability Plots for Composited Copper for all Data Sources within the Two Mineralized Zones (top= massive, bottom= disseminated type)

16.3.6 Variography

All variography was conducted with Isatis version 9.01 software. The initial approach was to perform variography on the raw data but this proved to be

unsuccessful. The datasets were transformed to the Gaussian in all cases, which resulted in workable variograms being calculated.

The data was viewed within the dip of the plane of the mineralization. A variogram map was used to get a sense whether there was any geometric anisotropy within the data. This test proved positive with the major axis of the variogram being approximately parallel with the principle orientation of the orebody. This was a satisfactory result in that it mirrors the understanding of the geology.

Downhole variograms were calculated per metal and zone. The downhole variograms searched orthogonally to the plane of the orebody. These variograms gave an estimation of the nugget effect and the range in the minor or Z axis direction. The nugget effects calculated were reasonable varying from 10 to 35 percent. The minor search axis is vertical to the orebody, the semi-major search axis is along the strike of the orebody and the major (longest range) is down the dip of the orebody.

The Gaussian variograms were then back-transformed by scaling out the proportion of the variance with the raw untransformed validated and capped data.

Table 12. Two Structure Anisotropic Variograms of the RedstoneMineralized Zones

Zone	Variable	C0	C1	C2	R1x	R1y	R1z	R2x	R2y	R2z	Sill	Nugget %
Massive	Ni	5.7473	4.4337	6.2400	5	5	5	20	35	20	16.4210	35
Massive	Cu	0.0015	0.0015	0.0013	10	10	10	25	70	15	0.0044	35
Disseminated	Ni	0.0886	0.6642	0.1328	15	15	15	60	90	35	0.8857	10
Disseminated	Cu	0.0001	0.0002	0.0001	10	10	10	15	25	15	0.0004	18

Two structure spherical variograms were then modelled for the major and semi-major axes directions for each metal and zone. This resulted in a total of eight Gaussian variograms being calculated. These variograms are shown in Figure 31, 32, 33 and 34. These variograms were used for interpolation of grades by ordinary kriging ("OK") and the ranges were also used for the ID2 interpolation methodology which served as a check for the kriged estimate. The parameters for the two structure variograms modelled are tabulated in Table 12 and the rotation used to orientate the search directions of the variograms are tabulated in Table 13.

Table 13. Datamine Rotations Used to Orient the SearchDirections of the Variograms

Rotation Axis	Metal	3	2	1
Massive Angle	Ni	55	-56	-20
Massive Angle	Cu	55	-56	-20
Disseminated Angle	Ni	55	-56	10
Disseminated Angle	Cu	55	-56	10











Figure 34. Downhole Variograms on Disseminated Gaussian Nickel and Gaussian Copper Grades





16.3.7 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 three metres by two metres by two metres in the easting, northing and elevation directions respectively. The parameters of the Datamine block model constructed by SRK are presented in Table 14.

A two split Datamine sub block routine was applied during block model construction to ensure that the modelled mineralized zones are adequately filled.

Aspect	Block Model
Block origin:	
X (m)	3000
Y (m)	2800
Z (m)	1850
Extents:	
X (m)	3810
Y (m)	3650
Z (m)	3100
Rows	270
Columns	425
Levels	625
Percent Model	No
Rotation	No

Table 14. Parameters of the Redstone Block Model Constructedby SRK

Block grades were estimated with the ordinary kriging ("OK") and inverse distance squared ("ID2") estimators. OK was selected as the primary estimator. Block estimations were completed by three passes using search distances defined by variography search ellipse ranges as defined in Table 12. The second pass was twice the variogram range and the third pass was three times the variogram range.

The minimum and maximum number of samples used for grade interpolation was 3 and 20 respectively for the first search, 2 and 20 for the second search and 2 and 20 for the third search. Specific gravity values of 2.93 and 2.87 gcm3 were assigned to the massive and disseminated mineralization respectively.

16.4 Model Validation

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

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, 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.

As the block model was informed by ordinary kriging an additional tool is available to assist in the classification of mineral resources. This tool is the kriging variance which is output for every block. This kriging variance is used to calculate a goodness of estimate called the kriging efficiency. The kriging efficiency is used as a guide to defining resources. In addition SRK have also used proximity to boreholes, the density of the borehole sampling grid and the confidence in the geology to classify each category of resource. The Redstone block model has also been depleted for all mining activities up until the time of this estimate.

Mineral resources for the Redstone 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 independent Qualified Person as defined by National Instrument 43-101. Mineral resources were classified as Measured, Indicated and Inferred Mineral Resources, applying the criteria outlined below and depicted on Figure 35.

Measured Mineral Resources:

- All those resources above 2525 metres elevation;
- Located within high confidence area characterized by high drilling densities and operational stoping and development;
- Confident understanding of the geological model and grade variances, characterized by detailed underground mapping.

Indicated Mineral Resources:

- All those resources above 2340 metres and below 2525 metres elevation;
- Located within medium confidence area characterized by medium drilling densities with limited operational stoping and development;
- Moderate understanding of the geological model and grade variances, defined by extrapolating measured resources and moderate drill density data.



Figure 36. Diagrammatic illustration of the resource classification methodology applied at Redstone

Inferred Mineral Resources:

All those resources above 1855 metres and below 2340 metres elevation; Located within low confidence area characterized by low drilling densities with no operational stoping and development; Poor understanding of the geological model and grade variances with undefined structural complexities.

16.6 Mineral Resource Statement

The three categories of Mineral Resources for the Redstone deposit are reported at a single cut-off of 0.51 percent nickel, which is the cut-off Redstone management believe is achievable at future projected underground mining methods, volumes and associated costs. Resources within estimated mining voids created by mining activity up to 31 October 2008 have been excluded from reported resources.

A classified Mineral Resources statement for the total resource at Redstone is presented in Table 15. The numbers have been rounded to reflect the relative accuracy of the estimate.

Classification	Tonnago	Niekol	Connor	Contained
Classification	ronnaye	NICKEI	Copper	Contained
	(000's t)	(%)	(%)	NICKEI (t)
Measured				
Massives	148	2.43	0.03	3,601
Disseminated	0	0.00	0.00	0
Total	148	2.43	0.03	3,601
Indicated				
Massives	41	1.76	0.04	719
Disseminated	410	1.10	0.01	4,499
Total	451	1.16	0.01	5,219
Total Measured &				
Indicated				
Massives	189	2.29	0.03	4,321
Disseminated	410	1.10	0.01	4,499
Total	599	1.47	0.02	8,820
Inferred				
Massives	151	3.55	0.09	5,360
Disseminated	586	1.06	0.02	6,215
Total	737	1.57	0.03	11,575

Table 15. Redstone Deposit: Mineral Resource Statement*, SRKConsulting, October 19, 2009

* Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. Reported at 0.51% nickel cut-off. Cut-off grades are based on a nickel price of US\$7.00/lb and on a mill recovery of eighty-seven percent. All figures have been rounded to reflect the accuracy of the estimate.

Classified resources categorized by underground mine level are tabulated in Table 16. These resources are also reported at a 0.51 percent nickel cut-off and have been rounded to reflect the accuracy of the estimate.

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Table 16.	Classified Redstone Resources per Underground Mine	е
Level		

Classification	Tonnage (000's t)	Nickel (%)	Copper (%)	Contained Nickel (t)
Measured	· · ·		× 7	
Massives	73	3.08	0.03	2,235
Disseminated	0.00	0.00	0.00	0.00
Total	73	3.08	0.03	2,235
Indicated				
Massives	0.00	0.00	0.00	0.00
Disseminated	280	1.15	0.01	3,215
Total	280	1.15	0.01	3,215
Total Measured &				
Indicated				
Massives	73	3.08	0.03	2,235
Disseminated	280	1.15	0.01	3,215
Total	352	1.55	0.01	5,450
Inferred				
Massives	0.00	0.00	0.00	0.00
Disseminated	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00

Between 1000 and 1600 Level

Classification	Tonnage (000's t)	Nickel (%)	Copper (%)	Contained Nickel (t)
Measured	(00004)			
Massives	70	1.83	0.03	1,283
Disseminated	0.00	0.00	0.00	0.00
Total	70	1.83	0.03	1,283
Indicated				
Massives	0.00	0.00	0.00	0.00
Disseminated	47	0.84	0.01	396
Total	47	0.84	0.01	396
Total Measured &				
Indicated				
Massives	70	1.83	0.03	1,283
Disseminated	47	0.84	0.01	396
Total	117	1.43	0.02	1,679
Inferred				
Massives	0.00	0.00	0.00	0.00
Disseminated	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00

Below 1600 Level:				
Classification	Tonnage	Nickel	Copper	Contained
	(000's t)	(%)	(%)	Nickel (t)
Measured				
Massives	5	1.53	0.01	84
Disseminated	0.00	0.00	0.00	0.00
Total	5	1.53	0.01	84
Indicated				
Massives	41	1.76	0.04	719
Disseminated	83	1.07	0.02	889
Total	124	1.30	0.03	1,608
Total Measured &				
Indicated				
Massives	46	1.73	0.04	803
Disseminated	83	1.07	0.02	889
Total	129	1.31	0.03	1,692
Inferred				
Massives	151	3.55	0.09	5,360
Disseminated	586	1.06	0.02	6,215
Total	737	1.57	0.03	11,575

16.7 Mineral Reserve Statement

The December 31, 2009 SRK Mineral Reserve Statement for the Redstone Nickel Mine it is summarized in Table 17.

Table 17. Redstone Mine Mineral Reserve Statement, SRKConsulting December 31, 2009

Classification	Zone	Quantity	Grade	(1	Contained Metal
		Tonnage	NI (%)	(tonnes)	(IDS)
Proven	Above 1600L	57,100	1.37	780	1,719,000
Proven	Below 1600L	5,800	1.21	70	154,000
Proven	Sub Total	62,900	1.35	850	1,873,000
Probable	Above 1600L	54,200	0.70	379	836,000
Probable	Below 1600L	142,800	1.04	1,483	3,269,000
Probable	Sub Total	197,000	0.95	1,862	4,105,000
Proven/Probable	Total	259,900	1.04	2,712	5,978,000

The independent mineral reserve estimate, prepared by SRK, is reported in accordance with Canadian Securities Administrator's National Instrument 43-101 and conforms to generally accepted Canadian Institute of Mining ("CIM") "Estimation of Mineral Resources and Mineral Reserves Best Practices" guidelines.

The mineral reserve estimate was prepared by Mr. Philip Bridson, P. Eng., Sr. Associate Mining Engineer, SRK Consulting (Canada) Inc. by virtue of his background and professional experience, Mr. Bridson is an independent "Qualified Person" as defined by National Instrument 43-101.

Historical shrinkage methods have been discontinued at Redstone mine in favour of Sublevel Longhole mining methods. Sublevel Longhole was determined to be the optimal mining method for the higher grade massive zone in the lower part of the mine as well as for the disseminated zone located in the central portion of the deposit. Sublevel Longhole is employed in a retreat method eliminating the requirement for backfill. Sublevel Longhole Retreat (SLR) also gives the operator a higher degree of confidence of ore continuity between the 15 metre vertically spaced sills compared to the 30 metre spacing used for shrinkage stoping.

The in-situ mineral resources included in the mineral reserve estimate are based on cut-off grade of 0.54 percent Ni. A Ni price of US\$7.00 per pound and an exchange rate of \$1.00 Cdn = \$0.90 US was used in all calculations.

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

17.1 Redstone Mine Current Status

17.1.1 Redstone Mine Current Status

At the Redstone mine, Liberty has completed rehabilitation and/or development to 1600 level.

The underground mine is accessed via a surface portal and underground decline (-15 percent), a total length of approximately 4600 metres.

All existing ramp excavations meet a minimum excavation size of 4m high x 4m wide. Future ramp and level excavations are planned at 4m high x 4m wide to accommodate mine vehicles, as well as ventilation and service requirements.

Sublevels when in ore are being driven at 3 metres high x 3 metres wide to minimize dilution while allowing for access by LHDs or longhole drilling equipment.

Mine levels above 1200 level have been bulk-headed from the main ramp to constrain ventilation to lower levels. A 186 kW (250 Hp) surface fan supplies fresh air underground where it is channelled through the old workings eventually making its way to 1200 level. From 1200 level the air is delivered via a series of raises and ducting to mine workings on 1200 through 1600 level.

Mine crews are currently focused on development and ore recovery between 1200 level and 1600 level using sublevel (spacing 15 metre vertical) longhole mining techniques. The production rate is 500 tonnes per day, five days per week.

Development plans have been prepared for the area below 1600 level with actual excavation planned to begin in the 1st quarter of 2010.

All lateral development work is being performed by Liberty employees.

17.1.2 Redstone Existing Mine Infrastructure

Redstone mine has infrastructure sufficient to operate the mine and mill as well as provide general and administrative support to Liberty's McWatters mine which is situated nine kilometres from Redstone.

Infrastructure on site currently consists of centrally located:

- Building complex which houses senior mine management, engineering, geology, HR, safety and training, environmental and other administrative services;
- Building complex which houses the warehouse, core shack, electrical services, mechanical shop and shifters wickets;
- Security Building and gates;
- Mine dry;
- Out Buildings include the pump house, mine air heaters and ventilation electrical buildings;
- Mine water processing system;
- Concentrator / Mill complex;
- Tailings storage facility;
- Cold storage building;
- Fuel depot and propane storage tanks;
- Settling and treatment ponds for process water;
- Waste stockpile;
- Warehouse surface laydown;
- Septic system.

The underground mine is accessed via a portal from which the ramp initiates. Underground infrastructure includes:

- Sumps on each mining level;
- Ventilation raises, fans and ducting as discussed under ventilation;
- Two 4160 portable substations;
- Mine lunchroom and refuge stations;
- Bulkheads to redirect air as required;
- Escape manway (timbered through the fresh air raises and old mine working to surface;
- Explosive and cap magazine and "day boxes" at appropriate work headings;
- Toilet facilities.

17.2 Mine Geotechnical

17.2.1 Introduction

The following report sections have been taken from SRK's report, "Mining Plan, Redstone Mine", dated January 2008. The report covers geological and geotechnical conditions, stability assessments, mining spans, ground support and instrumentation. Readers are referred to the full report included in the appendix.

17.2.2 Geotechnical Conditions

The geotechnical parameters for the various geotechnical domains were established following a review of excavation photographs, the geotechnical letter report of the Hunt Engineering group Inc., the Trow computer modelling reports, the geotechnical memo of John Henning, Ph.D, P.Eng. and a limited underground visit. These parameters will need to be further verified by systematic/representative mapping of the excavations within the dacites and the orebody mining areas.

Based on the observations to date the following geotechnical domains have been identified:

- Competent dacite footwall and hangingwall (HW) unit;
- Stronger ultramafic unit;
- Weaker ultramafic unit talc-carbonate schist (more blocky with higher talc content on the joints);
- Highly schistose orebody (the shear zone is more well developed along the dacite-ultramafic contact).

Footwall Dacite Rock Mass Conditions

Within access development, primarily constrained to the footwall volcanics, the ground has been competent to blocky. Initial development within the ramp driven in 1989 has held extremely well, without showing any indications of deterioration in ground conditions. Where blocky, the prevailing joint sets within the footwall volcanics provide weakness planes at high angles causing blocks and wedges, ranging in size from 10 to100 centimetres in diameter, to become dislodged from the back or walls.

The Redstone mine access development is primarily within felsic to intermediate volcanic rocks. Systematic mapping of the strike and dip of the associated joint system produced the main joint sets as indicated in Table 15.

Joint Sets	Mine Dip Direction Range (º)	True North Dip Direction Range (º)	Dip Range (º)	Comments
Main Systematic	28 – 65	058 – 095	40 - 60	Carbonate precipitation occurs
Jointing	297 – 330	327 – 360	48 - 85	on many of the joint sets.
-	15 0 60	045 – 090	15 - 43	Two flat joint sets and a third
Secondary	356	386	24-Oct	parallel to the main fault along
Jointing	176 - 197	206 – 227	Oct-60	the mineralized ultramafic/volcanic contact
	142	172	82	
	155	185	40	
Random Joint	115 – 127	145 – 157	56 - 72	Carbonate precipitation occurs
Sets	282	312	80	on many of the joint sets.
	280	310	36	
	202	232	56 - 78	

Table 18. List of Joint Sets Measured during the SystematicMapping of the Dacites Excavation

Parameters Used in the Geotechnical Evaluation of the Footwall Rocks

The NGI rock quality index (Q) of 4.7 to 7.9 is a reasonable range for the evaluation.

The joint sets used in the evaluation of the potential wedges in the drive and cross-cut are those determined to be systematic and secondary by Liberty. Refer to Table 1916. These reflect the mid points of each of the respective sets. The random joint sets have not been included in the evaluation.

Joint Set Type	Dip	Dip Direction
	50°	046°
Systematic	66°	316º
-	29°	038°
	17º	356°
Secondary	50°	187º

Table 19. Converted Joint Sets used in the Wedge Analysis for theFootwall Cross Cuts and Drive. All are measured against minenorth.

As all the joints have been measured relative to mine north, the two tunnel directions evaluated were 270 degrees (FW drive) and 180 degrees (cross-cut).

Orebody and Hangingwall Rock Mass Conditions

Within the orebody horizon ground conditions display a larger range in variability. The modified shrinkage and panel, narrow vein mining technique used at the Redstone mine leaves a felsic to intermediate volcanic footwall and a primarily ultramafic hangingwall. In areas where faulting and related talc-carbonate schists have been constrained to areas that lie within the 1.5 metre mining width the more massive hangingwall ultramafic rocks are relatively competent.

There is only one fault of significance in the area immediately surrounding the orebody. The associated fault zone is constrained to the main komatiitic ultramafic and felsic to intermediate volcanic contact, along which the nickel bearing sulphides are also found. Due to the coincidence of the orebody and fault zone, mining activities take place within the faulted rocks, meaning that this structure plays a major role in the overall ground conditions of the mine. Where faulting has left a larger imprint, the hanging wall ultramafic rocks above the excavations are talc-carbonate schists, resulting in poor ground conditions; where faulting has not affected the surrounding rocks to such an extent the effect is sufficiently localized that competent ground conditions dominate.

The fault has an overall E-W (approx 270 degrees, mine grid) strike and generally dips south ranging from -40 degrees to -65 degrees.

In areas where a transition in dip occurs from steep to shallow, or vice-versa, ground conditions appear to deteriorate in respect to areas dominated by more consistent dip angles. In such areas the fault zone widens encompassing an area that extends between 2 to 5 metres from the main contact. It is in these areas that the potential for larger scale slabbing is at its greatest, and where such occurrences have been evidenced.

There are considered to be three cases of stope HW conditions based on geotechnical characteristics:

• Type D: Dacite hanging wall, characterized by hard, competent rock with minor jointing. RQD ranges typically above 90 percent

- Type U: Ultramafic hanging wall, rock is moderately hard and competent, weakened by occasional, narrow shear zones containing serpentinite and/or talc that may cause peeling. RQD generally over 50 percent
- Type T: Hanging wall is comprised primarily of ultramafic and talcchlorite schist. Hangingwall conditions are poor to incompetent, prominent zones of talc-chlorite schist create large planes of weakness that may lead to peeling and slabbing. RQD <50 percent.

Parameters Used in the Geotechnical Evaluation of the Hangingwall Rocks

Table 20 provides the geotechnical parameters selected for the stability evaluation in the stoping area (orebody and hanging wall). Theses parameters are based on an evaluation of the photographs and the description of rock mass conditions provided by Liberty. These parameters will be re-evaluated in the specific stoping areas as the stope is planned, and the pillar spacing reevaluated.

Table 20.	Hangingwall Rock Mass	Parameters for	the Three Likely
Hangingw	all Geotechnical Domain	S	

Unit	RQD	Jn	Jr	Ja	Jw	SRF	Q Value	Q' Value
Dacite –upper	95	6	4	1	1	2.5	25.3	63.3
Dacite – lower	85	6	2	2	1	1.5	9.4	14.2
Ultramafic upper	90	6	1.5	3	1	1.5	5.0	7.5
Ultramafic lower	80	6	1	4	1	1.5	2.2	3.3
Talc carbonate - upper	70	9	1	4	1	5	0.4	1.9
Talc carbonate lower	50	9	1	4	1	7.5	0.2	1.4

Stress-orientation

The general trend of the Redstone ore zone is in the range of Azimuth 120 degree. Drawing from the experience at neighbouring mines in the Porcupine mining camp, the orientation of the far-field principal stress is commonly in the range of Azimuth 70 degrees. This suggests that the major principal stresses are likely orientated sub-perpendicular to the strike of the Redstone orebody.

At the current depths of mining (~500 metres – 700 metres below surface), far field stresses are not a significant influence on isolated excavations. However as the stopes are mined these result in abutment stresses that are shed on to adjacent and underlying stopes and pillars. In order to minimize stress damage and the severity of hanging wall failure, the induced stress needs to be considered for both on a mine wide and on a tope specific basis during design of stope and pillar dimensioning exercises.

17.2.3 Stope Hangingwall Stability Evaluation

An initial preliminary estimation of stope span stability was undertaken using the stability graph method of Potvin and Hadjigeorgiou (2001). Table 21and Table 22 provide the Q' values used for the stope hanging wall, the associated Stability Number (N'), the stable hydraulic radius (HR), and the resulting stope heights (for a given 30 metre (~100ft) span) for both a 60 degree and 40 degree stope respectively.

				Design Span	Length
Dacite 60°	Q' First Principals	RMR	Hydraulic Radius	(m)	(m)
Min	14.2	35	6.5	30	23
Max	63	40	12	30	120
Likely	24	38	8.3	30	37
				Design Span	Length
Ultramafic - fair 60°	Q' First Principals	RMR	Hydraulic Radius	(m)	(m)
Min	3.33	55	3.8	30	10
Max	7.5	65	5.1	30	15
Likely	5.0	60	4.3	30	12
				Design Span	Length
Talc-Schist 60°	Q' First Principals	RMR	Hydraulic Radius	(m)	(m)
Min	1.39	55	2.9	30	7
Max	1.94	65	3.5	30	9
Likely	1.40	60	3	30	8

Table 21. Hangingwall Spans of a 60 ° Stope for the Range of Conditions within the Various Geotechnical Domains

Table 22. Hangingwall Spans of a 40 ° Stope for the Range ofConditions within the Various Geotechnical Domains

Dacite 40°	Q' First Principals	RMR	Hydraulic Radius	Design Span (m)	Length (m)
Min	14.2	35	5.3	30	16
Max	63.3	40	9.5	30	52
Likely	24	37	6.9	30	25
Ultramafic - fair 40°	Q' First Principals	RMR	Hydraulic Radius	Design Span (m)	Length (m)
Min	3.33	55	3.4	30	9
Max	7.5	65	4.2	30	12
Likely	5	60	3.8	30	10
Talc-Schist 40°	Q' First Principals	RMR	Hydraulic Radius	Design Span (m)	Length (m)
Min	1.39	55	2.4	30	6
Max	1.94	65	2.9	30	7
Likely	1.4	60	2.4	30	6

17.2.4 Previous Occurrences of Ground Instability

The following is a list of ground instability that has been experienced at the Redstone Mine:

- In stopes where the ore zone hangingwall consists of talc-carbonate schist the ground is extremely schistose, causing abundant slabbing. Stopes have seen large slabs of approx 3 metres x 4 metres x 1 metre peel off the hanging wall once the muck has been pulled, while other stopes have had to be abandoned before completion due to the inability to hold the hangingwall with available ground support techniques while maintaining productivity;
- Where the orebody dip flattens at the inflection point, and where the HW tends to be weaker, the gravity factor becomes far more influential, and an increase in instability and HW slough is noted;
- Splays of the shear zone that anatomise into the HW are resulting in instability. Where these are noted the mining response has been to carry a temporary pillar, place additional posts, or increase the quantity of tendon support to maintain stability;

- High schistose zones in the sill drives need to be supported promptly as these spall and start to unravel unless tight bolting and screen and possible screen straps are installed;
- Stress problems can be an issue if stoping gets out of sequence and a remnant mining situation results;
- Undercutting of the stope hangingwall with the orebody drives. This seeds the failure of the stope hangingwall, both above and below the drive, resulting in increased instability and higher levels of in stope dilution.

17.3 Planned Mining Methods

17.3.1 Redstone Mining Context

- The R Zone is the main nickel-bearing massive sulphide horizon in the Redstone Mine. The deposit strikes at 120° conformable with the enclosing rocks, has an average dip of 60° S with variations from 20 to 90°, and a slight plunge to the southeast;
- Nickel tenors within the massive sulphide (100 percent sulphides) exhibit a large range from 8.40 percent to 29.74 percent Ni;
- The R Zone has been delineated over a strike length of 274 metres, to a depth of 700 metres below surface with widths varying from centimetres to 15.5 metres.
- The average width of the massive sulphide target mining zone is 0.2 metres;
- Within the orebody horizon ground conditions display a larger range in variability. The wall rocks are typically comprised of a felsic to intermediate volcanic footwall and a primarily ultramafic hangingwall. In areas where faulting and related talc-carbonate schists have been constrained to areas that lie within the 1.5 metre mining width, the more massive hangingwall ultramafic rocks are relatively competent.
- There is only one fault of significance in the area immediately surrounding the orebody. The associated fault zone is constrained to the main contact, along which the nickel bearing sulphides are also found. Due to the coincidence of the orebody and fault zone, mining activities take place within the faulted rocks, meaning that this structure plays a major role in the overall ground conditions of the mine;
- In areas where a transition in dip occurs from steep to shallow, or viceversa, ground conditions appear to deteriorate in respect to areas dominated by more consistent dip angles. In such areas the fault zone widens encompassing an area that extends between 2 to 5 metres from the main contact. It is in these areas that the potential for larger scale slabbing is at its greatest, and where such occurrences have been evidenced;
- Drilling has continued to identify mineralization down to 1,155 metres below surface with core intersections of up to 3.62 percent Ni over 4.65 metres.

17.3.2 Hydrogeology

Site hydrology conditions at the mine have evidenced little change during times of mine development and production. Mine operators refer to the mine

as being "Dry" year round with only minimal evidence of water ingress differing from one part of the mine to another.

The mine is developed to 1600L with one sump installed per level. On 1000 and 1600 levels there are dirty/clean wall sumps established to separate fines before clear water is pumped to surface. Fines that are removed from the dirty side of the sump using a suitable LHD are disposed of underground when storage is available or else they are transported to surface for disposal with development rock. Each sump uses a 22 kW (30 Hp) submersible pump to successively lift water via a 100 millimetre (4 inch) pipe from a lower sump to the next higher sump (30 metre vertical lifts). Once 7 level is reached a 56 kW (75 Hp) submersible sump completes the lift to the surface water treatment plant. The underground dewatering system has a capacity of 1,140 litres per minute (250 gpm) and is caused to operate less than 5 minutes per hour when activated by pump floats.

17.3.3 Historical and Selected Mining Methods

Shrinkage mining was used at Redstone mine historically. The method has been discontinued in favour of Sublevel Longhole Retreat or simply Longhole Retreat (LR) but is presented here to demonstrate and define the reason for the change.

Shrinkage stope mining was used successfully for most of Redstone's historical operations to mine vertical or high angled ore veins. The mine benefited from experienced shrinkage miners executing mining to achieve an average of 300 tonnes per day of nickel ore. After ore from the bottom sill (working upwards) was broken, one third was removed and the swell (broken ore has more volume) and remaining ore were used as the working platform. This procedure was repeated until the upper level or some pre-determined point below that level was reached (Figure 36). This method of mining was slow but allowed minimum dilution of the ore veins when done properly. The main disadvantages, which moved the mine away from this method, were recognition that experienced shrinkage miners had become scarce, stability of the hangingwall and uncertainty of movement in the working platform underfoot.



Figure 37. Schematic of the Historical Mining Method that was used at Redstone Mine

In August of 2009 the mine evolved a modification of the shrinkage method best described as Modified Shrinkage/Vertical Crater Retreat (MS/VCR) mining (Figure 37). Redstone executed the method on one panel on the 1600L in anticipation of minimizing exposure to the hangingwall since only the bottom two cuts of any panel would be mined using shrinkage. The mine experienced some difficulties while maintaining or even improving tonnage performances.

To accomplish stope development the following steps were followed:

- 1. Via the footwall access ramp develop the footwall drift first
- 2. Develop draw-point cone raise
- 3. Develop ore sill drill drift in ore
- 4. Mine two shrinkage stope cuts
- 5. Longhole drill upper part of stope
- 6. VCR upper stope in two lifts



Figure 38. Combination of Shrinkage and VCR Mining Method

The method produced between 300 and 500 tonnes per day but was discontinued as it still evidenced unacceptable exposure to workers mining the bottom two shrinkage cuts.

The method in current use successfully combines Longhole methods with retreat. Sublevels are alternated between 12 and 15 metres yielding a vertical stope span of 30 metres. Rib pillars left along strike are designed to maintain overall stability. (Figure 38)





17.3.4 Mining Access Development

Current Practise 1600 Level and Above

- Footwall ramp access: 5.0 metres (w) x 4.0 metres (h);
- The ramp grade is 15 percent;
- Mucking horizons and drill drifts in orebody: 3.0 metres x 3.0 metres;
- Jumbo used to develop through waste for each level or sublevel: 5.4 metres per day;
- Jackleg crews drive the level when in ore: 4.6 metres per day;
- Stopers used for ground support in sublevels;
- Ground support is grouted rebar on a 1.2 metres x 1.2 metres pattern;
- No 9 gauge screen is used on the backs and 0.75 metres (3feet) down each wall in ore development;
- Headings ventilated with flexible ducting;
- Levels and Sublevels are being driven flat;
- Mucking with $3.1m^3$ (4yd) LHD.

Future Development Below 1600 Level

- Footwall ramp access: 4 metres (w) x 4 metres (h);
- The ramp grade is 18 percent;
- Mucking horizons and drill drifts in orebody: 3.0 metres x 3.0 metres;

- Jumbo used to develop through waste for each level or sublevel: 6.7 metres per day;
- Jackleg crews drive the level when in ore: 4.6 metres per day;
- Stopers used for ground support in sublevels;
- Ground support is grouted rebar on a 1.2 metre x 1.2 metre pattern;
- No 9 gauge screen is used on the backs and 0.75 metre (3 feet) down each wall in ore development;
- Headings ventilated with flexible ducting;
- Levels and Sublevels driven flat;
- Mucking with 4 yard LHD;
- Monorail and electric buss-bar (3 metre sections) supported from back in ramp during ground support cycle;
- Monorail and electric buss-bar (3 metre sections) supported from back in entrance to each mucking level below 1600L.

17.3.5 Stoping Current Practice

Refer to Figure 38.

- Stoping panels span 30 metres width and 30 metres in height;
- Sublevel Drill drifts divide the 30 metre stope height as 15 metre underfoot and 12m overhead;
- Pillars with alternating dimensions of 15 metres x 12 metres and 15 metres x 15 metres used for internal support in stope;
- Pillar spacing is consistent at 3 metres down dip and 30 metres along strike;
- Slot development by a contractor (inverse drop raise) proceeds production blasting;
- Blastholes are 64 millimetres (2.5 inches) up and down;
- Boart drill is used for longhole drilling;
- Drilling is in a 2 and 1 pattern (2 1 2 2 1 2 2 1 2) commonly referred to as dice pattern;
- Spacing and burden are both set at 1 metre;
- Upholes length is 10 metres;
- Downholes length is 15 metres;
- Blastholes are loaded with ANFO TM and primed with 50 grain cord;
- Mucking with 1.5m³ (2 yd) LHD (Remote capable);
- Successive rings are blasted depending on void availability;
- Stopes are not pulled empty leaving a protective buffer of muck at the drawpoint;
- Backfill is not being used in this method;
- ROM waste from development can be stored in the pillar drifts for abandonment;
- Dewatering rate approximately 0.14m³ per minute (30 gpm) from the whole mine.

17.3.6 Mining Sequence

To ensure that the induced stresses are limited as much as possible the mining sequence is inverse echelon (inverted Christmas tree pattern), with upper

stopes leading towards the unmined areas. The plan is to have upper stoping levels lead by at least one stope extraction. The ideal lead and lag between stoping levels is yet to be determined but in no cases will stoping generate closures between stopes on a level. All stoping will advance to unmined ground.

The mine is currently conducting exploration drilling in the hanging wall, perpendicular to ore development. This drilling is giving an indication that a hanging wall resource may exist. If exploration can define adequate resources then engineering of parallel ore development and logistics for production of these near parallel stopes will need to be conducted.

17.3.7 Ore and Waste Handling

All underground ore will be mucked from development faces or drawpoints with $1.5m^3$ LHDs (2yd³) and hauled an average of 50 metres (one way) to remuck bays located near the main access ramp. Ore from the remuck bays at or above 1600L (one per level) will be loaded by $3.1m^3$ LHD (4yd³) into 30 tonne trucks and hauled direct to the surface mill. Truck operators will self load their trucks.

Ore from the remuck bays below 1600L (one per level) will be loaded by $1.5m^3$ LHD (2yd³) into 5 tonne ore cars then trammed by electric monorail (see Figure 39) to 1600L where the ore will be dumped into a remuck. Ore from 1600L remuck will be loaded by $3.1m^3$ LHD (4yd³) into 30 tonne trucks and hauled direct to the surface mill. Electric monorail train operators will self load their ore cars.

The mill is located approximately 350 metres from the Redstone mine portal.

Primary ore crushing will not be required underground as all ore transport to surface will be by monorail or truck. Secondary blasting will be conducted in remucks or drawpoints as may be required from time to time.

All development waste rock will be trammed to surface for permanent storage at the existing waste pad.



The life of mine ("LoM") planned quantity of development waste rock is154kt.

Figure 40. Electric Monorail Configuration Planned for Redstone Below 1600 Level

17.4 Mineral Reserve Estimate

17.4.1 Methodology

The following methodology was used for estimating Redstone mineral reserves:

- SRK's resource block model was updated to reflect any existing mined out openings including development in ore and stopes;
- An NSR model was created based on terms provided by Liberty that are based on an existing nickel concentrate sales agreement;
- Current site operating costs reviewed by SRK and adjusted where appropriate were input to the cost model;
- Cut off grade was calculated for the mining method;
- Using the resource block model and the cut off grade, typical underground mineable shapes were created in 3D;
- The resource block model was used to tabulate the in-situ tonnes and nickel grades for the typical mining shapes (stopes);
- Using an Excel spreadsheet, factors were applied for dilution and mining recovery, and stope results were assessed in terms of nickel grade and dilution amounts;
- This process was conducted iteratively as required, to optimize the planned stopes;
- Economic viability was checked for mineable material based on the NSR formula (Ni price and exchange rate), and estimated site operating costs;
- A 3D development model of the Redstone deposit was updated to provide underground ramp access to all planned mining areas. Life-of-mine ("LoM") development requirements were tabulated;
- A LoM development and production schedule was generated for potentially economic stopes. An economic evaluation was performed on the entire schedule. The material in the LoM schedule includes proven and probable reserves. The mineral reserves exclude inferred mineral resources.

Figure 40 demonstrates the methodology and decision path taken to estimate the Redstone mineral reserves.




17.4.2 Net Smelter Return

SRK prepared an NSR model using terms supplied by Liberty which are based on a current nickel concentrate sales agreement with Xstrata Nickel. Other inputs to the NSR model included process metallurgical recovery, a nickel price of US\$15,430 per tonne (US\$7.00 per pound), and a currency exchange rate of \$1.00 Cdn = \$0.90 US. Table 23 shows the key input parameters to the NSR calculation.

NSR Calculation	
Xstrata Terms	
Ni Con Grade	>=10%&<15%
Payable Accountability	88%
	>=15%&<20%
	89%
	>=20%
	90%
Cu Con Grade	0.01
Payable Accountability	85%
Co Con Grade	0.003
Payable Accountability	50%
Smelting US\$/tonne con milled	\$250
Ni Refining US\$/lb accountable Ni	\$0.75
Cu Refining US\$/lb accountable Cu	\$0.56
Co Refining US\$/lb accountable Co	\$2.55
Ni Price Participation US\$/lb accountable Ni	5% if Ni>\$6/lb
Cu Price Participation US\$/lb accountable Cu	10% if Cu>\$1.20/lb
MgO Penalty US\$/tonne con milled	\$7.50/% if >4%&<=7%
I ransportation US\$/tonne con milled	\$0.00
NSR Calc:	47 00
NI Price US\$/Ib	\$7.00
	\$2.70
	\$15.00
EXR \$1.00Can = \$0.90US	\$0.90
Mill recovery	87%
NI Con Grade	15.00%
Cu Con Grade	1.00%
	0.03%
	4.47
tonnes to ibs	2204.6226

17.4.3 Cut Off Grade

Mine operating costs were estimated for the Longhole mining method, based on actual unit costs for labour and consumables provided by Liberty and reviewed as acceptable by SRK. These costs were applied along with first principal mining development and stoping performance calculations to estimate the unit mining costs. Estimated unit costs based on current practices for processing, surface truck haulage and general and administration were added to obtain the estimated site cost.

The NSR model was then used to calculate in-situ nickel grade cut-off values to be used in delineation of typical mining shapes.

Table 24 shows the cut off grade calculation.

	Longhole COG
Xstrata Terms	
Ni Con Grade	>=10%&<15%
Payable Accountability	88%
· · ·	>=15%&<20%
	89%
	>=20%
	90%
Cu Con Grade	=1.00%
Payable Accountability	85%
Co Con Grade	=0.30%
Payable Accountability	50%
Smelting US\$/tonne con milled	\$250.00
Ni Refining US\$/lb accountable Ni	\$0.75
Cu Refining US\$/lb accountable Cu	\$0.5611
Co Refining US\$/lb accountable Co	\$2.5503
Ni Price Participation US\$/lb accountable Ni	5% if Ni>\$6/lb
Cu Price Participation US\$/lb accountable Cu	10% if Cu>\$1.20/lb
MgO Penalty US\$/tonne con milled	\$7.50/% if >4%&<=7%
Transportation US\$/tonne con milled	\$0.00
NSR Calc:	
Ni Price US\$/lb	\$7.00
Cu Price US\$/lb	\$2.70
Co Price US\$/lb	\$15.00
ExR \$1.00Cdn = \$0.90US	\$0.90
Mill recovery	87%
Ni Con Grade	15.00
Cu Con Grade	1.00
Co Con Grade	0.30
MgO	4.47
tonnes to los	2204.6226
Mineable resource tonnes	1,000
Mineable Resource COG NI grade	0.34
Mineable Ni Contonnes	51
Mineable Cu Metal in Ni Con tonnes	0.31
Mineable Co Metal in Ni Con tonnes	0.09
Accountable Ni Metal in Ni Con tonnes	4
Accountable Cu Metal in Ni Con tonnes	0.27
Accountable Co Metal in Ni Con tonnes	0.05
Accountable Ni Metal in Ni Con Ibs	9.218
Accountable Cu Metal in Ni Con Ibs	587
Accountable Co Metal in Ni Con Ibs	104
Liberty Gross NSR Revenue Cdn\$	\$75.183
Xstrata Smelting TC Cdn\$	(\$8,700)
Xstrata Ni Refining Cdn\$	(\$7.682)
Xstrata Cu Refining Cdn\$	(\$366)
Xstrata Co Refining Cdn\$	(\$293)
Xstrata Ni Price Participation Cdn\$	(\$512)
Xstrata Cu Price Participation Cdn\$	(\$98)
Xstrata MgO Penalty Cdn\$	(\$123)
Xstrata Transportation Cdn\$	\$0
Sub Total Processing Costs	(\$17,774)
Liberty NSR Revenue Cdn\$	\$57,409
Liberty NSR Net Revenue/tonne con	\$1,832.98
Liberty NSR Net Revenue/tonne ore	\$57.41
Mining Cost per tonne ore	(\$38.47)
Milling Cost per tonne ore	(\$14.81)
Admin Cost per tonne ore	(\$3.25)
Haulage Cost per tonne ore	\$0.00
Liberty Margin per tonne ore	\$0.88

Table 24. Redstone Cut Off Grade Calculation

17.4.4 Typical Mining Blocks and Pillars

Stope outlines representing potentially economic resource blocks were designed using AMINE software. The outlines were based on practical mining shapes and thus incorporated limited amounts of internal dilution.

The in-situ resources in the mining shapes were selected using a cut-off grade of 0.54% Ni for longhole mining.

A minimum mining width for ore development of 3.0 metres was observed for the underground designs to accommodate the planned mining equipment.

The in-situ tonnes and grades inside the mining shapes were tabulated and conservative factors for dilution and mineability (mining losses) were applied.

This process was conducted iteratively, as required, to optimize the planned stopes.

17.4.5 Dilution and Mining Losses

Dilution estimates include planned dilution and external wall dilution. The dilution applied was determined from historical experience at site as well as estimations according to stope width and mining method.

Planned dilution material nickel grade was estimated directly from the block resource model as part of the mining shape volume. External dilution material nickel grade was estimated by the resource geologist, using the block resource model. The nickel grade applied to the external dilution tonnage ranges from zero to 0.30 percent Ni based on the mining method and gradational nature of the Ni mineralization at the deposit boundary.

External wall dilution is the waste that falls off the walls of the stope outside the stope mining line and is removed in the course of mining. Wall dilution will vary from mining level to mining level and is directly related to wall rock stability, mining method used, ground support and wall opening exposure. Wall dilution at Redstone was determined by historical record, mining method and wall exposure.

Total external dilution in the Redstone mine plan from all mining methods was estimated to be 35 percent.

17.4.6 Mineral Reserve Estimate

The December 31st, 2009 SRK Mineral Reserve Statement for the Redstone nickel mine is summarized in Table 25.

Classification	Zone	Quantity	Grade	Contained Meta	
		Tonnage	Ni (%)	(tonnes)	(lbs)
Proven	Above 1600L	57,100	1.37	780	1,719,000
Proven	Below 1600L	5,800	1.21	70	154,000
Proven	Sub Total	62,900	1.35	850	1,873,000
Probable	Above 1600L	54,200	0.70	379	836,000
Probable	Below 1600L	142,800	1.04	1,483	3,269,000
Probable	Sub Total	197,000	0.95	1,862	4,105,000
Proven/Probable	Total	259,900	1.04	2,712	5,978,000

Table 25. Redstone Mine Mineral Reserve Statement, SRKConsulting December 31st, 2009

The independent mineral reserve estimate, prepared by SRK, is reported in accordance with Canadian Securities Administrator's National Instrument 43-101 and conforms to generally accepted Canadian Institute of Mining ("CIM") "Estimation of Mineral Resources and Mineral Reserves Best Practices" guidelines.

The mineral reserve estimate was prepared by Mr. Philip Bridson, P. Eng., Sr. Associate Mining Engineer, SRK Consulting (Canada) Inc. By virtue of his background and professional experience, Mr. Bridson is an independent "Qualified Person" as defined by National Instrument 43-101.

Sublevel Longhole was determined to be the optimal mining method for the higher grade massive zone in the lower part of the mine as well as for the disseminated zone located in the central portion of the deposit.

The in-situ mineral resources included in the mineral reserve estimate are based on a cut-off grade of 0.54 percent nickel. A Ni price of US\$7.00 per pound and an exchange rate of 1.00 Cdn = 0.90 US was used in all calculations.

Details of the mineral reserve including stope types, NSR values, mining and other site costs and margin are shown in Table 26.

Stope Data	Liberty Economics				Mineral Reserve			
Zone Level	Stope NSR	Stope Mine Cost	& Other Cost	Stope Margin	Stope Net Revenue	Category	Tonnes	% Ni
	\$/tonne	\$/tonne	\$/tonne	\$/tonne	\$			
Sub Level LH								
Above 1600 L	\$ 145.25	\$ (38.47)	\$ (18.06)	\$ 88.72	\$ 5,065,743	PR	57,100	1.37
Above 1600 L	\$ 74.40	\$ (38.47)	\$ (18.06)	\$ 17.87	\$ 968,370	PB	54,200	0.70
Below 1600 L	\$ 128.36	\$ (38.47)	\$ (18.06)	\$ 71.83	\$ 416,612	PR	5,800	1.21
Below 1600 L	\$ 110.62	\$ (38.47)	\$ (18.06)	\$ 54.09	\$ 7,724,127	PB	142,800	1.04
Total Proven/Probable	\$ 127.02	\$ (38.47)	\$ (18.06)	\$ 70.49	\$ 14,174,853		259,900	1.04

Table 26. Redstone Mineral Reserve Details

17.4.7 Production Rate

The Redstone Mine production rate as estimated by SRK is consistent over the Life of Mine ("LoM") and independent of where the production is sourced.

The upper portion of the mine from 1200L to 1600L is currently being mined by sublevel longhole methods and trucked to surface using 30 tonne diesel trucks. Once the electric train is installed production from below 1600L will be via the monorail train to the 1600L.

Total planned mine production from Redstone is 259,900 tonnes at 1.04 percent Ni mined at an average production rate of 500 tonnes per day, five days per week from January 2010 through February 2012. Refer to Table 27.

	Tonnes	Nominal Rate Mined	Distribution
		Tonnes / day	%
Above 1600L	11,300	500	43
below 1600L	148,600	500	57
Total	259,900	500	100

Table 27. Production Rates by Mining Method

17.5 Underground Mine Model

Redstone's future mine development model (1600 level to 2200 level) is shown in Figure 41 below. The model was created using AMINE software and is juxtaposed beside a two dimensional resource vertical projection that indicates where stoping panels are located. Existing development from surface to 1600 level has been completed at the time of this report and is not shown in Figure 41.



Figure 42. Future Development Model Below 1600 L

17.5.1 Mine Access

Mine access currently exists via a surface portal and -15 percent decline to 1600 level. Below 1600 level a -18 percent decline is planned to the bottom of the mine (2200 level)

All future decline development planned below 1600 level is 4m wide x 4m high to allow for development and production equipment requirements. The total planned length for the -18 percent decline is 970 metres. From surface elevation of 0 metres the combined ramps provide continuous access down to the lowest mining level at an elevation of 690 metres.

The mine's second exit from below 1600 level is via a 3m x 3m fresh air raise (FAR). The FAR will be equipped from 2200 Level through to 1600 level with a timbered manway. Secondary egress from 1600 level and higher is via a timbered manway installed in the fresh air corridors and raises from 1600 level to surface.

17.5.2 Stoping Access

Five typical level plans are shown in the following five figures.



Figure 43. Development Layout 1600 L

LL LL			
80			
36			
	LOC.	Redstone Project	
	AREA	Mono-Rai Ramp Study	
MINES INC.	1	1600 Level	
	SCALE	1:1000	
	- States	I I I I I I I I I I I I I I I I I I I	



Figure 44. Development Layout 1800 L

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	LOC. Redstone Project
	AREA Mono- Rail Tran Ramp Study
MINES INC.	1800 Level
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-	SCALE: 1:1000 Plot date:



Figure 45. Development Layout 1900 L

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	AREA Mono Pail Tran Ramo Study
	TTLE 1900 Level
WIINES INC	•
	SCALE: 1:1000 Plot date:



Figure 46. Development Layout 2100 L

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36	
	LOC. Redstone Project
	AREA Mono- Rail Tran Ramp Study
MINES INC.	2100 Level
V	
	SCALE: 1:1000 Plot date:



Figure 47. Development Layout 2200 L

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LL LL	
000	
2	LOC. Redstone Project
	AREA Mono- Rail Tran Ramp Study
MINES INC	TTLE 2200 Level
	SCALE: 1:1000 Peri data:
	Plot dote:

17.5.3 Ventilation System

Fresh air is introduced to Redstone mine using a 186 kW (250 Hp) surface mounted axial fan that downcasts through the old mine workings. Downcast air is isolated from the ramp by level bulkheads. The air works its way through the old workings to 1400 level and then flushes the ramp back to surface. Air for 1600 level is currently drawn from the 1400 level intersection and directed with flex tubing to the appropriate work areas. As the air works its way up-ramp towards surface portions of air are drawn by fan and flex tubing to ventilate appropriate work areas.

Effective total ventilation is measured in the ramp where a minimum flow volume of 100 cubic metres per second (212k cfm) is maintained.

Ancillary fans include 10 units between 18 kW and 22 kW (25 and 30 Hp) each. Ventilation tubing is 760 millimetres (30 inches) on levels, 609 millimetres (24 inches) at the working face and 1016 millimetres (40 inches) in the decline. Mine technical services are considering the purchase and installation of Variable Frequency Drives (VFD's) to reduce the operating costs of the ventilation system.

A series of 3m x 3m vent raises (See Figure 41) will be driven by Alimak to connect the new development below 1600 level to historical development at 1600 and above. The use of electric monorails for tramming ore to 1600 level from depth will mean less than 50 cubic metres per second will be required to support the 500 tonne per day production rate below 1600 level.

17.5.4 Life of Mine Development Requirements

Life of mine development requirements are detailed below in Table 28. Development dimensions are planned at 4m x 4m in waste and 3m x 3m in ore headings.

Stope Development Ore	Ni%		2010	2011	2012	ΤΟΤΔΙ
	11170		tonnes	tonnes	tonnes	tonnes
Above 1600L	1.04		111,300	-	-	111,300
Below 1600L	1.05		8,700	120,000	19,900	148,600
Total Production	1.04		120,000	120,000	19,900	259,900
Capital Development Waste		Waste Tonnes	metres	metres	metres	Total Metres
1600L		25,313	375	-	-	375
1700L		16,875	250	-	-	250
1800L		22,950	340	-	-	340
1900L		23,625	350	-	-	350
2000L		17,888	265	-	-	265
2100L		22,950	28	312	-	340
2200L		20,925	-	310	-	310
Total Lateral Cap Dev		-	1,608	622	-	2,230
Waste Tonnes		150,525	108,540	41,985	-	150,525
FAR Vent		-	150	-	-	150
Waste Tonnes		3,645	3,645	-	-	3,645
Total Cap Dev Metres		-	1,758	622	-	2,380
Total Waste Tonnes		154,170	112,185	41,985	-	154,170

Table 28. Development Requirements

17.6 Development and Production Schedule

Underground development is categorized as "capital" or "operating waste development" or "operating ore development".

Capital waste development is defined as development required to maintain infrastructure including: development of the ramp, level accesses, FAR accesses, remuck bays, electric sub stations, sumps and the FAR itself. Total lateral capital waste development is 2,230 metres plus 150 metres of raise. Total capital waste tonnage is 154,170 tonnes.

Operating waste development is defined as development required to maintain stope operations including: development of stope accesses, truck loading stations and cut and fill stope backslashes. Operating waste development for this report was not defined at Redstone.

Operating ore development is defined as any development required in ore. This includes the over cut and undercut for the longhole stopes.

Jumbo crews working in 4m x 4m capital development waste headings have performances planned at 3.35m per 10.5 hour shift.

Longhole stope inverse raises and longhole drilling will be performed by a contractor.

Blasting and mucking will be carried out by Liberty personnel. Stope mucking is scheduled at 500 tonnes per day. The LoM production schedule is summarised by quarter in Table 29.

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	2010				2011				2012	
Stope	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Total
Tonnes Above 1600L	30,000	30,000	30,000	21,300						111,300
Tonnes Below 1600L				8,700	30,000	30,000	30,000	30,000	19,900	148,600
Total Mined Tonnes	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	19,900	259,900
Percentage Above 1600L	100%	100%	100%	71%						43%
Percentage Below 1600L				29%	100%	100%	100%	100%	100%	57%

Table 29. LoM Production Schedule

17.7 Manpower, Equipment and Services

17.7.1 Mine Manpower

The average mine and mill personnel other than Administrative and Technical are estimated at 48 persons as listed in Table 30. Administration and technical service personnel (30 persons) vary regarding time allotted to Redstone. Residual time for these persons has been allocated to Liberty's adjacent projects namely McWatters and Hart.

The mine operates five days a week with two 10.5 hour shifts per day. The mine is owner operated with only underground Boart drilling and raise development work being contracted out. Management and technical staff will work a Monday to Friday dayshift schedule.

The development miners shown in Table 30 include the manpower requirements for both capital and operating development. Table 30 also states the average percentage of time that personnel are accountable to Redstone instead of Liberty's other two projects.

The mill operates twenty-four hours a day, seven days a week with a staff of twenty-eight employees. An Operations Superintendent assumes the responsibility for four mill shifters and all activities concerning mill processes.

Table 30 shows the peak labour force currently present at site. This labour strength is expected to remain active until the end of mine life.

Category	Shift	Men/Shift	Total	Time Allocated
Administration and Technical	•		Teta	
VP exploration	Days 5&2	1	1	20%
Mine Manager	Days 5&2	1	1	40%
Mine Super	Days 5&2	1	1	40%
Mill Manager/Metallurgist	Days 5&2	1	1	50%
Mine Trainer	Days 5&2	1	1	40%
Safety Officer	Days 582	1	1	40%
Accountant	Days 582	1	1	40%
Pavroll Specialist	Days 582	1	1	40%
IBA Coordinator	Days 582	1	1	40%
Health/Safety/Training	Days 582	1	1	45%
Socurity & Eirct Aid	Days 582	1	0	45%
Environmental Coordinator	Days 502	<u> ۲</u>	1	40 /0
	Days 582	1	1	20%
Popoiving/counter attendent	Days 502	1	1	20 /0
Chief Coologiet	Days 5&2	1	1	40%
Mine Ceologist	Days 5&2	1	1	20%
Mine Geologist	Days 5&2	1	1	40%
Mine Geologist Sampler	Days 5&2	1	1	40%
Mine Engineer	Days 5&2	1	1	33%
Mine Planner	Days 5&2	1	1	33%
Mine Lead Surveyor	Days 5&2	1	1	60%
Chief Electrician	Days 5&2	1	1	40%
Chief Mechanic	Days 5&2	1	1	40%
Janitor	Days 5&2	1	1	50%
Subtotal			30	
Supervision				
Mill Foreman	Days 5&2	1	4	50%
Underground Foreman	Shifts 5&2	1	2	50%
Subtotal			6	
Underground Development	.	_		
Development Miners	Shifts 5&2	2	4	100%
Truck/Monorail driver	Shifts 5&2	2	2	100%
Raise Mining	Shifts 5&2	Contractor		
Subtotal			6	
Underground Production				
Boart Drillers	Shifts 5&2	Contractor		
Production Miners	Shifts 5&2	3	6	100%
Subtotal			6	
Mill				
Operator	Days 5&2	4	16	50%
Millwright	Days 5&2	2	8	50%
Lab	Days 5&2	2	4	50%
Subtotal			28	
Services				
General Laborer	Shifts 5&2	1	3	100%
Mechanics	Days 5&2	1	1	100%
Electricians	Days 5&2	1	1	50%
Subtotal			5	
Total Mine			81	
Effective Total			48	persons

Table 30. Redstone Mine Manpower Requirements

17.7.2 Mining Equipment

Equipment in use or planned for use at Redstone mine is shown in the following table.

	Owned	Contracted	Required
G&A Equipment	• • • • • •		
Pickups	8		
Personal Carrier	4		
Wheel Loader	2		
Forklift	- 1		
Grader	1		
Underground Equipment			
1-Boom Jumbo	1		
4 vd scoop	1		
2 yd scoop	2		
30t Truck	3		
Boom Truck	1		
Kettle Anfo loader	1		
Boart Buggy Drill		Contractor	
Jacklegs and Stopers (each)	5		
Pumps	30		
Auxiliary Vent Fans	10		
Power center	2		1
Main Vent Fan	1		
Compressor	2		
Tractor	2		
Kubotas Lift Truck	2		
Electric monorail			1
Total	79		2

Table 31. Mining Equipment

All minor repairs to equipment when underground will be affected on the levels while all major repairs will be conducted in the surface maintenance shop or contracted out to an independent shop in the community of Timmins.

One mechanical tractor is shared between the mechanical and electrical staff so that small parts, consumables or tools can be brought by the tradesmen to the respective workplace.

17.7.3 Ventilation

See section 17.5.3 Ventilation

17.7.4 Dewatering

The Redstone mine makes about 100 litres per hour and is considered a dry mine. Discussion regarding dewatering can be reviewed under section 17.3.2 Hydrogeology.

17.7.5 Electrical Power Distribution

Power for the underground mine will be used to power dewatering pumps, auxiliary ventilation fans, the face jumbo and production drills. After the electric monorail is installed power will also be used to motivate the monorail up the ramp (2 x 29kW motors). The monorail regenerates power when going down-ramp effectively braking the train while providing a power benefit to the operation.

A 4,160volt feeder cable has been installed in the decline and power will be distributed with portable transformers and breakers on each level. One \$80,000 substation (4,160 volt) has been called out in capital requirements to satisfy the electric monorail distribution requirements below 1600 level.

17.7.6 Equipment Maintenance

The existing surface maintenance shop is located at McWatters Mine, 9 kilometres from Redstone, and is equipped to meet foreseeable maintenance requirements. The Redstone mine has a relatively small overall layout size, and it will not be difficult to transport equipment to the shop as needed. Minor equipment repairs will be performed underground near the mine workings. Regular preventative maintenance will be performed at the surface shop.

17.7.7 Materials and Supplies Handling

Areas have been designated in the mine to store all consumable materials. Explosives and cap magazines have been established and commissioned underground. Materials will be transported by scissor lift, man carrier or LHD and monorail.

17.7.8 Redstone Mine Site Infrastructure

Redstone mine hosts infrastructure sufficient to operate the mine and mill as well as provide general and administrative support to Liberty's McWatters mine which is situated nine kilometres from Redstone.

Infrastructure on site currently consists of centrally located

- Building complex which houses senior mine management, engineering, geology, HR, safety and training, environmental and other administrative services;
- Building complex which houses the warehouse, core shack, electrical services, mechanical shop and shifters wickets;
- Security Building and gates;
- Mine dry;
- Out Buildings include the pump house, mine air heaters and ventilation electrical buildings;
- Mine water processing system;
- Concentrator / Mill complex;
- Tailings storage facility;
- Cold storage building;
- Fuel depot and propane storage tanks;
- Settling and treatment ponds for process water;
- Waste stockpile;
- Warehouse surface laydown
- Septic system.

The underground mine is accessed via a portal from which the ramp initiates.

17.8 Recoverability

Redstone ore will be processed at the Redstone mill owned by Liberty.

Refer to section 15 Mineral Processing, Mineralogy and Metallurgical Testing.

17.9 Environmental Considerations

17.9.1 Environmental Studies

Environmental permitting is in place for Redstone mine.

17.9.2 Environmental Liabilities

Underground mining operations are accessed by a ramp extending from a portal at surface. Bulk mining with sublevel longhole techniques will be utilized. All ore is brought to surface and directly hauled to the Redstone nickel concentrator less than 500 metres from the portal. Any development waste rock is trucked to surface and stockpiled for various future applications throughout the site.

There is a fuel depot, a machine shop and propane storage tanks on site as well as a settling pond and an adjacent water treatment pond.

Liberty has prepared a Spill Prevention and Contingency Plan. The purpose of this plan is to help prevent or reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result. This is achieved through detailed information and guidance on actions important for the prevention of spills and procedures to detect and respond to them when they occur. The structure of the plan is designed in accordance with the requirements of Ontario Regulation 224/07 – Spill Prevention and Contingency Plans.

Table 32 lists risk agents and their corresponding reporting thresholds:

Table 32. Reporting Thresholds

Risk agent	Reporting Threshold
Cement /Concrete/ Asphalt	Spill of Cement /Concrete/ Asphalt in surface water is reportable. Release on land is not reportable unless within 50 m from surface water is
	defined.
Sewage	Release of raw or partially treated sewer to surface water is reportable.
	Release to the land is reportable if larger than 20 m ³ .
Ammonium nitrate	Spill of ammonium nitrate in surface water is reportable. Release on land of less than 2300 kg is not reportable unless within 50 m from
	Release of more than 2300 kg is reportable, very low probability event.
Ore leachate	Uncontrolled leachate from failed or overtopped detention ponds which releases to surface water is reportable. No threshold for quantity
Water treatment reagents	Spill of reagent in surface water is reportable. Release on land of less than 2300 kg is not reportable unless within 50 m from surface wa
	Release of more than 2300 kg is reportable, very low probability event.
Water treatment reagent solution	Uncontrolled release of more than 20 m ³ from failed or overtopped tanks is reportable. Very low frequency event.
Organic reagents / solvents	Spill of solvent in surface water is reportable. Release on land of less than 450 kg is not reportable unless within 50 m from surface water
	Release of more than 450 kg is reportable, very low probability event.
Organic reagents / solvents	Release of 100 kg and less is not reportable unless it is released within 50 m of surface water during an extreme rainfall event.
Sulphuric acid	Release of more than 450 kg is reportable, very low probability event. Release of 454 kg and less is not reportable unless it is released
Wastewater	Uncontrolled release of more than 20 m3 from failed or overtopped tanks is reportable. Very low frequency event.
Wastewater	Uncontrolled release of more than 20 m3 from failed or overtopped tanks is reportable. Very low frequency event.
Wastewater	Uncontrolled release of more than 20 m3 from failed or overtopped tanks is reportable. Very low frequency event.
Off-spec treated water	Uncontrolled release of more than 20 m3 from failed or overtopped tanks is reportable. Very low frequency event.
Off-spec treated water	Uncontrolled release of more than 20 m3 from failed or overtopped tanks is reportable. Very low frequency event.
Off-spec treated water	Uncontrolled release of more than 20 m3 from failed or overtopped tanks is reportable. Very low frequency event.
Off-spec treated water	Uncontrolled release of more than 20 m3 from failed or overtopped tanks is reportable. Very low frequency event.
Treated / fresh water	Release according to permit is not reportable
Tailings slurry	Uncontrolled release of more than 20 m ³ from failed or overtopped tanks is reportable. Very low frequency event.
Process water in tailings slurry	Uncontrolled release of more than 20 m³ from failed or overtopped tanks is reportable. Very low frequency event.
Tailings leachate	Uncontrolled leachate to surface water is reportable. No threshold for quantity is defined.
Tailing	Uncontrolled tailings to surface water are reportable. No threshold for guantity is defined.
Tailing	Uncontrolled tailings to surface water are reportable. No threshold for guantity is defined.
Potassium hydroxide	Release of more than 450 kg is reportable, very low probability event. Release of 454 kg and less is not reportable unless it is released
Potassium hydroxide solution	Uncontrolled release of more than 20 m3 from failed or overtopped tanks is reportable. Very low frequency event.
Diesel fuel / gasoline	Release to water is reportable.
Sector Sect	Regulation exempts less than 100 L of fuel under circumstances.
	Release less than 100 L to the land is not reportable unless it is released within 50 m of surface water during an extreme rainfall event.
	Release to the land of larger than 100 L of fuel is reportable. Very low frequency event.
Vehicle Oils, Lubricants, Antifreeze and Fuels	Release to water is reportable.
	Regulation exempts less than 100 L of fluid under circumstances.
	Release less than 100 L to the land is not reportable unless it is released within 50 m of surface water during an extreme rainfall event.
	Release to the land of larger than 100 L of fuel is reportable. Very low frequency event.
Ethylene glycol	Release to the land of larger than 100 L of glycol is reportable. Very low frequency event. Release less than 100 L to the land is not
	during an extreme rainfall event.
Lubricating oils and greases	Release to water is reportable.
	Regulation exempts less than 100 L of oil under circumstances.
	Release less than 100 L to the land is not reportable unless it is released within 50 m of surface water during an extreme rainfall event.
	Release to the land of larger than 100 L of fuel is reportable. Very low frequency event.
Bunker C Fuel Oil	Release to water is reportable.
	Release less than 100 L to the land is not reportable unless it is released within 50 m of surface water during an extreme rainfall event.
	Release to the land of larger than 100 L of fuel is reportable. Very low frequency event.
Hazardous and liquid wastes	Release to water is reportable.
	Release of 10 kg and less is not reportable unless it is released within 50 m of surface water during an extreme rainfall event.
	Release to the land of larger than 10 kg of waste is reportable. Very low frequency event.

ce water during the extreme rainfall and flooding. No threshold is rom surface water during the extreme rainfall and flooding. antity is defined. ce water during the extreme rainfall and flooding. water during the extreme rainfall and flooding. sed within 50 m of surface water during an extreme rainfall event. sed within 50 m of surface water during an extreme rainfall event.

not reportable unless it is released within 50 m of surface water

Wastes generated or created on site are stored in approved containers. All waste oil is pumped and stored in an 1100 liter (250 gallon) steel tank located beside the maintenance shop. All other wastes (contaminated soil, oil filters and waste chemicals) are stored in 200 liter (45 gallon) waste material drums to be removed from site by a certified waste hauler and disposer.

Waste ammonium nitrate from explosives (contaminated or non-contaminated) is stored in waste ammonium nitrate bins where it is picked up by Nordex Explosives Ltd. and transported to their site for disposal.

17.9.3 Emergency Response Plan

An Emergency Response Plan ("ERP") was developed to identify potential worst-case emergency situations and responses, to outline the responsibilities of employees during these emergencies and to ensure that all requirements of applicable laws are met. Water from underground workings is pumped to the treatment plant to remove particulates and metals. The underflow from a thickener is sent to the Redstone mill and does not enter the Redstone settling or treatment ponds. The overflow from the thickener is pumped to the Redstone settling pond, which in turn overflows to the treatment pond and finally through the discharge weir into a drainage ditch. The ERP was established to deal with any one of the three discharge levels:

E1 – Emergency Level 1 corresponds to elevated contaminant concentrations within the footprint of the mine water settling pond. Contaminant elevations consist of any level exceeding the regulated monthly average threshold for each contaminant (i.e. - copper, nickel, arsenic, zinc, lead, total suspended solids, ammonia and radium 226).

E2 – Emergency Level 2 corresponds to elevated contaminant concentrations within the footprint of the mine water treatment pond. Contaminant elevations consist of any level exceeding the regulated monthly average threshold for each contaminant (i.e. - copper, nickel, arsenic, zinc, lead, total suspended solids, ammonia and radium 226).

E3 – Emergency Level 3 corresponds to elevated contaminant concentrations from the treatment pond discharge weir. Contaminant elevations consist of any level exceeding the regulated monthly average threshold for each contaminant (i.e. - copper, nickel, arsenic, zinc, lead, total suspended solids, ammonia and radium 226).

Parameter	Daily MISA/ C of A/ MMER Concentration Limit	Monthly MISA/C of A/ MMER Average Concentration Limit
Total Suspended Solids	30 mg/L	15 mg/L
Total Ammonia Nitrogen	20mg/L	10mg/L
Arsenic	0.5 mg/L	0.25 mg/L
Copper	0.3 mg/L	0.15 mg/L
Nickel	0.75 mg/L	0.375 mg/L
Lead	0.3 mg/L	0.15 mg/L
Zinc	1.0 mg/L	0.5 mg/L
рН	C C	6.0 – 9.5
Radium 226	1.11 Bq/L	0.37 Bg/L
Acute Toxicity		50%

Table 33. MISA/MMER Monthly Average Thresholds

Sampling is undertaken daily at the settling pond; on an as needed basis at the treatment pond; and thrice weekly at the discharge weir. If any results exceed the thresholds, various actions are taken by the environmental staff to contain the water in one or all of the noted areas. For example, a level E3 emergency requires the installation of stop logs in the treatment pond discharge channel to contain the water within the treatment pond. If it is apparent that the ponds will fill to their maximum water heights before the concentration is reduced, the mine water system will have to be shut down. This will effectively halt the mining activities until problem has been rectified.

17.9.4 Acid Rock Drainage

Four main rock types can be identified at the Redstone site: footwall intermediate volcanics, mineralized ultramafic flows, felsic dykes, and mafic dykes. Each rock type was sampled according to the Guidelines and Recommended Methods for the Prediction of Metal Leaching ("ML") and Acid Rock Drainage ("ARD") at Mine sites in British Columbia. The samples were then sent to the ALS CHEMEX lab in Vancouver for analysis of total sulphur, paste pH, and Acid Base Accounting ("ABA").

Testing revealed that the rock types to be extracted during mining show pH values that are non-acid generating, both from ABA and Shake Flask tests. Neutralizing Potential Ratio ("NPR") values and sulphide-S percentages also show that, on aggregate, these rocks are unlikely to be acid generating as they average NPR>>4 and sulphide-S percent<0.3. The few samples of andesitic composition with NPR<4 and sulphide-S percent>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.

17.9.5 Environmental Permits

The following permits were obtained to be able to commence mining operations at the Redstone project:

a) Certificate of Approval for Industrial Sewage Works by the Ontario Ministry of the Environment

b) Permit to Take Water to Dewater and Use water.

c) Certificate of Approval for Air for the operation of the site with respect to fugitive emissions from the mine portal that discharges the return air; a surface ore storage pile; a surface waste rock pile; and haul road. In addition, the permit approves the use of a propane fired mine heater exhausting into the atmosphere; maintenance welding exhausting into the atmosphere; a standby diesel generator set to provide power during emergency situations, exhausting into the atmosphere; and fuel storage tanks used to refuel on site vehicles, exhausting into the atmosphere.

17.9.6 Environmental Monitoring

Liberty has developed and implemented environmental monitoring programs to address its regulatory obligations under the Ontario Environmental Protection Act for the project and the Metal Mining Effluent Regulations ("MMER") of the Fisheries Act.

Twice monthly monitoring of receiving water quality as per MMER regulations at maximum specified frequency for the duration of mine life (i.e., pH, TSS, and deleterious substances weekly; acute toxicity monthly; chronic toxicity twice yearly; effluent characterization four times per year).

Waste water is pumped from the underground to the water treatment plant. In conjunction with settlement and treatment ponds, the water is treated to below regulatory limits. Monitoring is done at the treatment ponds and discharge weir.

Domestic sewage generated from the mill, mine dry, offices and underground is directed to a septic system on site located north of the mine dry. The dry is equipped with a potable water system fed from a well. It is equipped with softening, sulphur and UV systems. Domestic water is monitored for E. coli and coliform bacteria.

Fugitive emissions from the haul road and rock piles are monitored and treated with water as necessary to control dust.

17.9.7 Redstone Nickel Concentrator and Tailings Ponds

The Redstone mill can process up to 2,000 tonnes per day of altered komatiite nickel bearing ore. Tailings are pumped from the mill to the tailings basin.

The ore from Redstone mine is milled at the Redstone mill. As such, the tailings produced are kept at the Redstone tailings pond. A 12 metre diameter (40 foot) deep cone paste thickener in the mill is capable of producing a paste consisting of 60 percent solids for discharge into the tailings basin to minimize the amount of water to be contained.

Fresh water is pumped from the Redstone River to the Redstone underground mine and to the mill. The underground utilizes the water for drilling, washing of stopes and general cleaning. The mill uses the water for general purposes within the crushing and grinding circuits. Recycled water is pumped into the mill process via the recycle pond.

The water is utilized for process water requirements (e.g. chemical mixing, ball mill feed, pump glands etc.) thus minimizing the use of river water.

17.10Life of Mine Plan

17.10.1 Concentrator Feed Schedule

The concentrator feed schedule for Redstone ore was developed at 500 tonnes per day for five days per week at Liberty's request. The concentrator feed schedule for Redstone ore is shown in Table 34.

Table 34: Processing Schedule for Redstone Ore

		2010				2011 2			2012		
	Ni%	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Total
Above 1600L	1.04	30,000	30,000	30,000	21,300						111,300
Below 1600L	1.05				8,700	30,000	30,000	30,000	30,000	19,900	148,600
Tonnes Milled		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	19,900	259,900
Ni%		1.04	1.04	1.04	1.04	1.05	1.05	1.05	1.05	1.05	1.04

17.10.2 Operating Costs

Operating Cost Summary

The total operating costs estimated for the Redstone mine are shown in Table 35.

Table 35. Estimated Total Redstone Operating Costs

	Average
	Operating Cost
	\$ per tonne Cdn
Sub Level LH	\$38.47
Concentrator	\$14.81
Site Administration	\$3.25
U/G Haulage to Concentrator	\$0.00
Total Sub Level LH	\$56.53

Underground sublevel longhole mining costs are per tonne mined, concentrator and G & A are per tonne processed.

SRK considers that the operating cost estimates and technical economic results presented for Redstone mine meet or exceed pre-feasibility level accuracy and are therefore suitable to support a production decision and an estimate of Mineral Reserves. The historical Redstone mine and mill operating achievements have been incorporated into the estimates presented wherever possible.

Mine Operating Cost

Actual Redstone mine operating costs provided by Liberty were used to provide the cost estimate for Sublevel Longhole. (Table 36).

	Average
	Operating Cost
	\$ per tonne Cdn
Stopes & development:	
labor	\$ 12.72
explosives	\$5.24
rockbolts	\$0.80
LHD& trucking:	
labor	\$7.48
Maintenance:	
labor	\$3.12
supplies	\$3.14
tires	\$1.59
General:	
propane	\$0.42
hydro	\$2.69
tires	\$1.09
contractor services	\$0.09
rental equipment	\$0.00
powertrain	\$0.11
Total Sub Level I H	\$38.47

Table 36. Redstone Mine Operating Cost Estimate

Process Operating Cost

The process plant operating cost estimate is shown in Table 37.

Table 37. Redstone Plant Operating Cost Estimate

Throughput (TPD)	1800
Labour	\$3.34
Consumables	\$6.37
Electrical Maint.	\$0.42
Mechanical Maint.	\$0.30
Heating	\$0.25
Loader Operations	\$0.09
Power Consumption	\$3.33
Contingency (5%)	\$0.71
Total Cost/Tonne	\$14.81

General and Administration Operating Cost

The general and administration cost estimate for a year at full production is shown in Table 38. The estimate, prepared by Liberty and reviewed by SRK, is based on actual and projected costs. Average site G&A cost per tonne attributed to Redstone is estimated at \$3.25 per tonne milled.

G&A Cost Item	Cost/Year
Labor	1,504,230
Supplies	35,993
Equip costs	179,192
Buildings	58,054
Environmental monitoring & permits	89,016
Water treatment	59,215
Communications	27,092
Travel & bussing	9,676
Professional associations & certification	3,290
Recruiting & medicals	2,709
Specialized software/hardware	21,266
Accounting & legal services	61,924
Insurance	100,626
Total	2,152,303

Table 38. Liberty G&A Cost Estimate

The reader is reminded that the \$3.25 per tonne of G&A costs attributed to Redstone mine is only a portion of the total G&A costs. Since the Redstone Mill processes 1500 tonnes per day, seven days a week from McWatters and only 500 tonnes per day for five days a week from Redstone the mine is only assigned its fraction of the total G&A costs.

Surface Ore Haulage Operating Cost

Haulage costs for transporting the ore production to the concentrator are included in operating costs since the underground ore truck will continue from the portal to the concentrator, less than 500 metres, where it will dump directly into the crusher.

17.10.3 Capital Costs

Up to the time when activities resumed at Redstone mine in August 2009, Liberty reports that the capital costs shown in Table 39 had already been spent for the Redstone project.

Item	\$ 000's
Purchase price (Includes road, portal, ramp)	\$ 688
Settling & Treatment Ponds	\$ 700
Treatment Facility	\$ 350
Shop and tools	\$ 170
Transformer (5 Meg)	\$ 750
mine air heater & fan	\$ 120
Compressor & Compressor Building	\$ 115
Closure Bond	\$ 80
Ramp & Level Development (800 to 1600L)I	\$ 9,300
Fuel stations	\$ 120
Mine dewatering and Rehab (Sept 2005-April 2006)	\$ 3,500
Total Capital Costs prior to August 2009	\$ 15,893

Table 39. Redstone Sunk Capital Costs

The Redstone mine has large portion of its mobile mine equipment needs already satisfied. Capital expenditures regarding mobile mine equipment purchases are necessary for production below 1600 level. Specifically that equipment is a monorail material handling system capable of moving people, equipment, ore and waste as well as mine consumables over the life of mine.

Table 40 shows the cost of capital development at Redstone including development below 1600 level and capital costs for purchase and installation of the monorail system.

			2010		2011		Total
U/G Development:	\$/metre	Metres	\$M	Metres	\$M	Metres	\$M
Lateral	\$1,500	1,608	\$2.412	622	\$0.933	2,230	\$3.345
Raise	\$5,000	150	\$0.750			150	\$0.750
Raise Manway	\$1,890						
U/G Construction			\$0.120				\$0.120
Train:	\$/metre	Metres	\$M				\$M
Train Complex			\$1.350				\$1.350
Electrical Substation			\$0.080				\$0.080
Engineering Support			\$0.220				\$0.220
Switches			\$0.135				\$0.135
Rail/Electrical Bus	\$1,110	970	\$1.077				\$1.077
Rail/Electrical Bus Inst	\$225	970	\$0.218				\$0.218
Closure:							
Contingency	15%		\$0.954		\$0.140		\$1.094
Total			\$7.316		\$1.073		\$8.389

Table 40. Mine Capital Cost Requirements

17.10.4 LoM Plan Economic Results

A life of mine pre-tax cash flow model was developed for the Redstone mine.

The average Redstone mine production rate is 500 tonnes per day (five days per week basis) which is processed in a separate circuit specifically for Redstone. The total concentrator feed will be approximately 1,800 tonnes per

day as a result of the combined Redstone and McWatters production schedules. The mine costs are calculated against the mine production schedule while the concentrator and site administration costs are calculated against the concentrator feed schedule.

The following assumptions were used in the analysis:

Ni Price	\$7.00 US
Exchange Rate	1.00 Cdn = 0.90 US
Discount Rate	8%

The results of the LoM analysis are shown in Table 41and Table 42.

	2010	2011	2012	Total
	\$M	\$M	\$M	\$M
Revenue	\$18.00	\$18.06	\$3.00	\$39.06
Xstrata Processing Cost	(\$4.26)	(\$4.27)	(\$0.71)	(\$9.23)
Prospector's Royalty				
NSR	\$13.74	\$13.79	\$2.29	\$29.82
Operating Costs	(\$8.55)	(\$8.55)	(\$1.41)	(\$18.50)
Operating Margin	\$5.20	\$5.25	\$0.88	\$11.32
Capital	(\$7.32)	(\$1.07)		(\$8.39)
Pre Tax Cash Flow	(\$2.12)	\$4.17	\$0.88	\$2.93
NPV @ 8%	\$2.31			
Payback Years	1.51			
C1 (US ¢/lb Ni)	\$4.88	\$4.87	\$4.85	\$4.87
C1 + Capital (US ¢/lb Ni)	\$7.86	\$5.30	\$4.85	\$6.45

Table 41.	Redstone	Economic	Model	Results -	- page '	1
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Table 42.	Redstone	Economic	Model	Results -	· page 2
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		2010	2011	2012	Total
Ore/Waste Mined	Tonnes	120,000	120,000	19,900	259,900
Ore/Waste Mined	tonnes/day	500	500	500	
Ore Milled	Tonnes	120,000	120,000	19,900	259,900
Ore Milled	tonnes/day	500	500	500	
Revenue	Cdn \$/t ore milled	\$150.00	\$150.51	\$150.51	\$150.28
Xstrata Processing Costs	Cdn \$/t ore milled	(\$35.46)	(\$35.58)	(\$35.58)	(\$35.53)
Prospector's Royalty	Cdn \$/t ore milled				
NSR	Cdn \$/t ore milled	\$114.54	\$114.93	\$114.93	\$114.75
Operating Costs	Cdn \$/t ore mined/milled	(\$71.22)	(\$71.22)	(\$70.86)	(\$71.19)
Operating Margin	Cdn \$/t ore mined/milled	\$43.32	\$43.71	\$44.07	\$43.56
Capital	Cdn \$/t ore mined	(\$60.97)	(\$8.94)		(\$32.28)
Total Margin	Cdn \$/t ore mined/milled	(\$17.64)	\$34.77	\$44.07	\$11.28

Taxes

SRK does not provide expert advice on taxation matters.

The results of tax calculations are based on information provided by Liberty and documentation publicly available. The Redstone project is subject to income and/or revenue taxes as follows:

- Ontario mining tax: 10 percent;
- Ontario income tax: 10 percent;
- Ontario capital tax: 0 percent;
- Federal capital tax: 0 percent;
- Federal income tax: 15 percent.

No municipal taxes or other levies were considered in the current scope. Liberty has an impairment charge of about \$30 million written off from 2008. As a result, Liberty anticipates that they will not be paying tax on the pre-tax cashflow at Redstone.

The impairment charge is published in Liberty's financial statements posted on Sedar and/or is accessible from www.libertymines.com corporate financials archive.

At the time of printing, the amount of income tax payable for the duration of the Redstone project is anticipated to be zero.

Markets

Liberty ships its nickel in concentrate exclusively to Xstrata Nickel's smelter in Sudbury, Ontario.

17.10.5 Sensitivity Analysis

This section presents the results of sensitivity analyses performed on changes to the following financial inputs:

- Ni Price;
- Cdn/US Exchange Rate;
- Ni Grade;
- Production Tonnes;
- Operating Costs;
- Capital Costs

Figure 47 and Figure 48 show the cash flow and NPV sensitivity results for the LOM. The base reflects the LOM with a cash flow of \$2.9M Cdn and NPV at 8% of \$2.3M Cdn.

The impact on both cash flow and NPV is greatest in the following order:

- Cdn/US exchange rate;
- Ni Price;
- Ni Grade;
- Operating Cost;
- Production Tonnes;
- Capital Cost.

Figure 49 shows the impact of the Ni price (US\$) in \$0.50 increments on the LOM cash flow and NPV. The break even Ni price for the Redstone project is \$6.42 per pound.



Figure 48. Cash Flow Sensitivity



Figure 49. Net Present Value Sensitivity



Figure 50. Nickel Price Sensitivity

17.10.6 Project Risks and Opportunities

The most significant project risks are discussed below.

Project Economics

Experience over the past decade confirms that the metal markets are subject to wide fluctuations in metal demands and prices.

Liberty's greatest sensitivities for the Redstone Mine are to changes in the Canadian and US exchange rates from a base of 1.00 Cdn = 0.90 US, and to changes in the price of nickel. Locking in one or two year terms for fuel, energy and contracting needs would alleviate some of this risk since it is unlikely that energy or contracting costs have much downside potential.

Underground Mining

With the narrow vein sublevel longhole method, production delays and/or ore loss could be caused by blast failure or "bridging" in the blasted material. A risk of ore being left in the stope and not reporting to the drawpoint is possible since the orebody dip varies. Dips of less than 55 degrees do not favour ore flow. When these dip angles are encountered carefully engineered stoping plans (including resuing techniques) will be required to recover the ore without increasing dilution.

Monorail Material Handling

The monorail material handling system proposed for use below 1600 level is proven in Europe and Africa but has never been used in North America. The risk is resistance to change by the workers who will be asked to embrace the technology. Any commissioning issues which may have been resolved oversees may resurface in North America. Keeping a close relationship with the monorail manufacturer should permit a transfer of technological and operations techniques to identify and mitigate these potential problems.

The most significant project opportunities are discussed below.

Inferred Mineral Resources

The mine is currently conducting exploration drilling in the hanging wall (perpendicular to ore development). This drilling is giving indication that hanging wall resource exists. If exploration can define adequate resource then engineering will need to develop a plan so that sublevels with multiple drawpoints can be retreated simultaneously.

The geology model and classified resource estimate reflect current knowledge of the Redstone mineralization continuity and associated grade trends. Currently modelled resources below approximately 510 metres below surface (1600 level) are mainly classified as inferred. An opportunity exists to upgrade the resources in the deeper portion of the sulphide deposit by increasing the drilling density as well as by increasing our understanding of the structural framework upon which the Redstone sulphide deposit is based. Such an improved structurally based resource body will not only lead to upgraded resources but also to reduced risk in future mining decisions based on this model.

Mine Design

The monorail systems and technology has been proven in Europe and Africa over the past 40 years. Mine decline development is currently planned at 4 metres x 4 metres and at a maximum decline angle of -18 percent. This design is considered conservative and if practise in the field supports the design then opportunity exists to reduce capital and operating costs further by altering excavation design to maximise the monorail capabilities.

The maximum operation specifications of the monorail include operating at minus 36 percent grades and excavations as small as 3m x 3m which implies the potential to reduce the planned capital cost of ramp development. The train is powered by electricity so ventilation demands will be low compared to conventional diesel trucks. That reduction in ventilation demand implies an opportunity for the mine to reduce the size of fresh air raises as well as the amount of heating required when operating the mine in winter conditions. If the mine ever wanted to boost production beyond 500 tpd then another train could be added to alleviate any bottlenecks commonly encountered when diesel trucks are added to boost production.

Nickel Price

Over the past five years nickel prices have fluctuated between \$3 and \$23 dollars per pound. Economic forces that drove these fluctuations can largely be attributed to rapid growth in China. With growth expectations in that country expected to meet or exceed 8 percent in 2010 and beyond as well as cancellation of many large capital projects for nickel operators it is possible that the future nickel price will exceed the study price of \$7.00 per pound, yielding significantly improved mine economics.

18 Other Relevant Information

All data and information considered relevant to this project has been included in this report.

19 Conclusions

Geology and Mineralization

The understanding of the geological controls determining the distribution of nickel mineralization at Redstone and the continuity of the higher grade massive sulphide is well understood down to approximately 285 metres below surface. This understanding has been gained from close spaced drilling, detailed underground geological mapping and from the knowledge gained from an extended period of stoping. An acceptable drill density has allowed the massive sulphide zone to be extrapolated down to approximately 510 metres below surface (1600 level) as an indicated resource.

Our understanding of the nickel grade distribution within the lower grade structurally – controlled stringer zone in the hangingwall has been limited by a smaller dataset on this mineralization type (minimal stoping information) and by an imperfect understanding of the structurally elements that influence its continuity. An increased appreciation of the structural controls of the stringer type nickel mineralization should result in increased resources from this zone.

An accelerated and well managed diamond exploration program from 2006 to April 2007 by Liberty has considerably increased the quality of the Redstone resource dataset, which has facilitated resource modelling and estimation in this study. The Liberty component of the total dataset equates to 43 percent of drilling metres and 38 percent of sampling data. It is fortunate that the majority of this exploration is focussed on deeper future mining areas. The exploration methodologies and protocols practiced by Liberty exploration staff conform to industry 'best practices'.

In a relatively short period of time (since mid 2006), Liberty management have introduced a quality management system that compares well to industry standard. Sampling protocols, drilling procedures, database management and overall quality assurance and quality control are areas that have received attention. The implementation of industry standard database management systems and 3D modelling software packages on Liberty have contributed considerably to the high exploration standards.

The geology model and classified resource estimate reflect current knowledge of the Redstone mineralization continuity and associated grade trends. Currently modelled resources approximately 510 metres below surface (1600 level) are a combination of inferred and indicated resources. A significant opportunity exists to upgrade the resources in the deeper portion of the sulphide deposit by increasing the drilling density as well as by increasing our understanding of the structural framework upon which the Redstone sulphide deposit is based. Such an improved structurally based resource body will not only lead to upgraded resources but also to reduced risk in future mining decisions based on this model.
Mining

- A shrinkage stoping method without backfill, employing non-recoverable rib pillars is not expected to remain stable as the mine goes deeper due to the increased overburden stress, "fair" ore strength and multiple fault structures;
- Long hole mining over 30m vertical spacing would increase the risk of dilution since the orebody undulates appreciably over that distance;
- SRK concludes that sublevel longhole retreat (15 metre vertical spacing) is the preferred method for mining the underground disseminated mineralization;
- Based on the actual mine records, mine water inflow is expected to average 100 litres per hour;
- Underground ramp access with diesel truck haulage is suitable for this deposit down to 1600 level;
- The use of a proven electric monorail system below 1600 level will complement diesel trucking above 1600 level while enhancing capital and operating costs;
- The monorail system provides an opportunity if the mine production rate is ever increased as it doesn't have the same ventilation or interference issues as diesel trucks;
- SRK estimates a mine life of 2 years (26 months) with an average ore mining production rate of 10,000 tonnes per month;
- No underground primary crushing is required, as ore will be trucked to the process plant.

Mineral Processing

- Liberty's existing Redstone nickel concentrator will efficiently handle the Redstone ore, as a third circuit specifically for Redstone material will be activated;
- Planned metallurgical recovery of nickel ranges from 85 percent to 95 percent based on historical milling results and the planned mill nickel head grade;
- Based on actual mill results, the Redstone ore will produce a saleable nickel concentrate with a grade of approximately 15 percent nickel;
- The existing, permitted tailings management facility adjacent to the Redstone mill has sufficient capacity for tailings generated over the planned life-of-mine.

Environmental

- Liberty has prepared a Spill Prevention and Contingency Plan to help prevent or reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that may result;
- Liberty has an Emergency Response Plan ("ERP") to identify potential worst-case emergency situations and responses, to outline the responsibilities of employees during these possible emergencies and to ensure that all requirements of applicable laws are met;
- Rock types at site were sampled and subjected to analysis of total sulphur, paste pH, and Acid Base Accounting ("ABA"). Testing revealed that the rock types to be extracted during mining show pH values that are non-acid

generating, both from ABA and Shake Flask tests. Neutralizing Potential Ratio ("NPR") values and sulphide-S percentages also show that, on aggregate, these rocks are unlikely to be acid generating;

- Liberty has obtained the necessary permits to be able to conduct mining operations at the Redstone project site;
- Liberty has developed and implemented environmental monitoring programs to address its regulatory obligations under the Ontario Environmental Protection Act for the project and the Metal Mining Effluent Regulations ("MMER") of the Fisheries Act;
- Liberty has prepared a closure plan in compliance with Mine Development and Closure under Part VII of the Mining Act and Ontario Regulation 240/00, including the Mine Rehabilitation Code of Ontario as set out in Schedule 1 of Ontario Regulation 240/00.

Mineral Reserves

- SRK estimates Redstone's Proven and Probable Mineral Reserves at 259,900 tonnes with an average grade of 1.04 percent Ni. A nickel price of US\$15,430 per tonne (US\$7.00 per pound) and an exchange rate of \$1.00 Cdn = \$0.90 US was used in the estimation;
- The in-situ Mineral Resources included into the Mineral Reserve estimate are based on a cut-off grade of 0.54 percent Ni for the sublevel longhole mining method.

Project Economics

- The Redstone underground mine is economically viable at the study nickel price of US\$7.00 per pound;
- LoM net NSR revenue based on plant feed of 259,900 tonnes at 1.04 percent Ni is estimated at \$29.8 million;
- Mine site unit operating costs are estimated at \$56.53 per tonne mined;
- The estimated unit cost for processing at 1,800tpd is \$14.81per tonne milled;
- The LoM average general and administration operating cost is estimated at \$3.25 per tonne milled;
- Surface ore haulage costs to the Redstone mill are included in the mine operating cost;
- LoM operating costs are estimated at \$18.5 million;
- Total project capital requirements are estimated at \$8.4 million;
- Undiscounted pre-tax LoM cash flow is estimated at \$2.9 million;
- The estimated project NPV at a 8 percent discount rate is \$2.3 million;
- The project IRR is estimated at 116 percent excluding sunk costs;
- The economic viability of the project is contingent upon the realization of metal prices forecasts, exchange rate predictions, and the success of mine operators in meeting production targets. The latter can be achieved through stringent project scheduling and cost control measures managed by the owner's team.

Project Risks and Opportunities

The most significant project risk is to the economic viability of the Redstone mine operation should the nickel price or exchange rate experience significant negative variances from the values used in the economic assessment. The most significant project opportunity is the conversion of Inferred Mineral Resources to the Indicated classification through additional exploration.

20 Recommendations

Geology and Exploration

Significant nickel and copper mineralization has been identified at the Redstone Mine. Confidence in estimating mineral resources at Redstone, and their classification, is determined by various factors, including the following:

- An appreciation of the variables associated with komatiite-associated Ni-(Cu) deposits;
- An understanding of the 3D structural geological framework of the nickel sulphide mineralization;
- The drilling density;
- Proximity to historically mined out areas, with associated detailed geological mapping and sampling;
- Whether the available data was derived pre-2004 or after 2004. Data derived after 2004 was generated by Liberty using industry best practices.

It is significant to note that largest portion of the geological model is located between 510 metres and 1,150 metres below surface. The confidence of the geological model in this zone is low, due to the lack of informing data. SRK considers that this initial geological model and resource estimate for Redstone represents a 'starting point' or framework upon which to base future exploration. SRK believes that if best practice guidelines are continued to be applied in future exploration practices, that there is a strong potential to increase the Inferred Resources in this zone and to upgrade the current Inferred resources to Indicated with additional drilling.

SRK is of the opinion that there is good potential to grow the mineral resources for the Redstone project with additional exploration. SRK recommends that Liberty considers the following aspects during future exploration drilling:

- Increase the drill density in the area of 510 to 1,150 metres depth;
- Produce a detailed structural model for the Redstone Mine, which would improve the quality of the 3D geological model;
- Consideration should be given to getting an experienced structural geologist on site to provide insight and training for Redstone exploration staff to facilitate structural data collection, interpretation and 3D modelling;
- Attempt to map out the extent of known 'hanging wall stinger zones' and to reconcile with the structural model;
- Geologically map the larger intrusions which occur in proximity to the zones of mineralization and incorporate into the 3D model;
- Attempt to map out the thicker portions of the massive sulphide zone towards the margins of the deposit and incorporate into the 3D geological model;

- Continue with the current QAQC protocols relating to sample preparation and analyses. Consideration should be given to acquiring a new 'blank' standard;
- With the availability of Datamine on site, it would be beneficial to model new drill data soon after receipt to assess impact on drilling program;
- The resource model should be 'updated' once the geological model has been 'upgraded' and when the data density in the zone between 510 and 1,150 metres has increased considerably;
- Geology staff should attempt to identify large 'hanging wall stringer zones' which could be mined economically.

The focus on exploration drilling, which commenced in 2006, needs to continue. Liberty has planned an intensive exploration program at Redstone, which is scheduled to run from 2007 (already commenced) to 2010. The total planned drill metres are estimated at 29,000 metres, which will be achieved from a combination of deep surface drilling and from underground development drifts on two levels.

Mining

- A monorail system is recommended to access and service the mining planned below 1600 level. (the costs are included in the capital estimate).
- Detailed engineering for application of the monorail technology needs to be undertaken early to meet scheduled production in years 2011 and 12 (\$250k);
- The mine plans presented in this report are not for construction, and detailed engineering is required before implementation at the Redstone site. SRK recommends the preparation of optimized underground driving layouts incorporating all relevant detailed site information with sign off by Liberty's technical and operations staff. (costs are included in mine operating cost);
- A grade control program should be implemented including monthly reconciliations, and careful tracking of underground ore sources and surface stockpile balances. (costs are included in the mine operating cost).

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CERTIFICATE AND CONSENT To accompany the report entitled: Technical Report Redstone Nickel Mine Ontario, Canada. Dated January 8, 2010.

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. I am an expert in geostatistical techniques and geological and resource modelling. Since 2006, I have estimated and audited mineral resources for a variety of early and advanced base and precious metals projects in Africa, Canada, Chile and Mexico. Between 1989 and 2005 I have worked for Goldfields Ltd at several underground and open pit mining operations in Africa and held positions of Mineral Resources Manager, Chief Mine Geologist and Chief Evaluation Geologist, with the responsibility for estimation of mineral resources and mineral reserves for development projects and operating mines. Between 1986 and 1989 I worked as a staff geologist on various Anglo American mines;
- 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 personally inspected the Redstone Project and surrounding areas on January 14, 2008;
- 5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I, as a qualified person, am independent of the issuer as defined in Section 1.4 of National Instrument 43-101;
- 7) SRK Consulting (Canada) Inc. was retained by Liberty Mines Inc. to prepare a technical report for the Redstone Mine in accordance with National Instrument 43-101 and Form 43-101F1 guidelines. This assignment was completed using CIM "Best practices" and Canadian Securities Administrators National Instrument 43-101 guidelines;
- 8) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Redstone Project or securities of Liberty Mines Inc.;
- 9) 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; and
- 10) I consent to the filing of the technical report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the technical report.

Glen Cole, P.Geo Principal Resource Geologist

Toronto, Canada January 8, 2010

CERTIFICATE AND CONSENT the report entitled: Technical Benert Redstone Nickal

To accompany the report entitled: Technical Report Redstone Nickel Mine Ontario, Canada. Dated January 8, 2010.

I, Andrew MacKenzie, residing at 11 Joliette Place, Keswick, Ontario do hereby certify that:

- 1) I am a Principal Mining Engineer with the firm of SRK Consulting (Canada) Inc. (SRK) with an office at Suite 2100, 25 Adelaide Street East, Toronto, Ontario, Canada;
- 2) I am a graduate of Queen's University in Kingston, ON with a B.Sc. in Mining Engineering, 1994. I have practiced my profession continuously since 1994. I am an expert in underground mine planning. From 1994 to 1999 I worked at INCO Sudbury's underground mines holding positions in mine engineering and mine operations, including positions of Mine Planner, Divisional Engineer and Project Manager. From 1999 to 2003 I was principal consultant for Paste Systems Inc. and MacKenzie Consultancy based in Sudbury, Ontario. From 2003 to 2009 I was the Manager of Engineering for Dynatec Corporation. As such I was responsible for cost estimates, feasibilities and engineering projects for dozens of mine contracting efforts throughout North America. As a Principal Mining Engineer with SRK I have completed a variety of projects involving scoping studies, feasibility studies, due diligence reviews and independent reporting;
- 3) I am a Professional Engineer registered with the Association of Professional Engineers of the province of Ontario (#90470477);
- 4) I have visited the Redstone Mine site and the Redstone Mill site in August and September 2009;
- 5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I, as a qualified person, am independent of the issuer as defined in Section 1.4 of National Instrument 43-101;
- 7) I am the principal author of this technical report and accept professional responsibility for assembly of all sections of this technical report;
- SRK Consulting (Canada) Inc. was retained by Liberty Mines Inc. to prepare a technical report for the Redstone Mine in accordance with National Instrument 43-101 and Form 43-101F1 guidelines. This assignment was completed using CIM "Best practices" and Canadian Securities Administrators National Instrument 43-101 guidelines;
- 9) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Redstone Project or securities of Liberty Mines Inc.;
- 10) 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; and
- 11) I consent to the filing of the technical report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the technical report.

Toronto, Canada January 8, 2010

Andrew MacKenzie, P. Eng Principal Mining Engineer

CERTIFICATE AND CONSENT To accompany the report entitled: Technical Report Redstone Nickel Mine Ontario, Canada. Dated January 8, 2010.

I, Carlo Cattarello, residing at 424 Amwell St, Haileybury, Ontario, Canada do hereby certify that:

- 1) I am a registered Professional Engineer in Ontario since 1967 with my present office at 424 Amwell St., Haileybury, Ontario, Canada;
- 2) I am a graduate of Michigan Technological University in Houghton, Michigan, with a BSc. in Metallurgical Engineering in 1961. From 1961 to 1983 I held senior Metallurgical positions (Mill Superintendent) with major Canadian mining companies. From 1983-2003, I was a Professor of milling and metallurgy at Haileybury School of Mines. From 2003 to the present, I have done consulting work for numerous mining companies and formed Cattarello Metallurgical Consultants Inc. in 2007 to formalize my consulting career and have continued to do work in Canada and Mexico;
- 3) I am a Metallurgical Engineer registered with the Professional Engineers of Ontario (#1922);
- 4) I have personally inspected the Redstone Mill on October 30, 2009;
- 5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I, as a qualified person, am independent of the issuer as defined in Section 1.4 of National Instrument 43-101;
- 7) I have reviewed Section 15: Mineral Processing, Mineralogy and Metallurgical Testing and accept professional responsibility for this section of the technical report;
- I was retained by Liberty Mines Inc. to review the metallurgical data contained in a technical report for the Redstone Mine in accordance with National Instrument 43-101 and Form 43-101F1 guidelines;
- 9) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Redstone Project or securities of Liberty Mines Inc.;
- 10) 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; and
- 11) I consent to the filing of the technical report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the technical report.

Darlo attacelle

Haileybury, Canada January 8, 2010

Carlo Cattarello, P.Eng Consulting Metallurgist

CERTIFICATE

To accompany the report entitled: Technical Report Redstone Nickel Mine Ontario, Canada. Dated January 8, 2010.

I, Philip Bridson, residing at 25 Herman Mayer Drive, Lively, Ontario do hereby certify that:

- 1) I am a Senior Mining Engineer 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 Michigan Technological University in Houghton, Michigan with a B.Sc. in Mining Engineering, 1972 and a B.Sc. in Engineering Administration 1972. I have practiced my profession continuously since 1972. I am an expert in underground long range and short range mine planning and scheduling, financial evaluations, Life of Mine development and analysis, project evaluations and strategic planning. From 1972 to 2008 I worked at Canadian and US underground mines holding positions as a miner, Blasthole Engineer, First Line Supervisor, Design Engineer, Sr. Development Engineer, Sr. Project Engineer, Sr. Long Range Planning Engineer, Sr. Planning Supervisor and Sr. Business Planner. Since 2009 I have worked as a consultant mining engineer with SRK Consulting (Canada) Inc, based in Sudbury. As a Mining Engineer I have completed a variety of projects for mining companies involving scoping studies, pre-feasibility studies, feasibility studies, project evaluations, and Life of Mines for projects in Canada, US and Australia. As a Qualified Person I have been directly involved in producing annual NI 43-101 mineral reserve statements and reports for Hudson Bay Mining & Smelting, Noranda Brunswick Mine, Falconbridge and Xstrata since 1990 to 2008;
- 3) I am a Professional Engineer registered with the Association of Professional Engineers of the province of Ontario (#5181011);
- 4) I have visited the Redstone Mine site and the Redstone Mill site in June 2009;
- 5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I, as a qualified person, am independent of the issuer as defined in Section 1.4 of National Instrument 43-101;
- 7) I am responsible for the preparation of Sections 16 and 17 of this technical report;
- 8) SRK Consulting (Canada) Inc. was retained by Liberty Mines Inc. to prepare a technical report for the Redstone mine in accordance with National Instrument 43-101 and Form 43-101F1 guidelines. This assignment was completed using CIM "Best practices" and Canadian Securities Administrators National Instrument 43-101 guidelines;
- 9) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Redstone Project or securities of Liberty Mines Inc.;
- 10) 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; and
- 11) I consent to the filing of the technical report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the technical report.

Sudbury, Canada January 8, 2010 Philip Bridson, P. Eng Consulting Sr. Mining Engineer



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Project number: 3CL008.005

Toronto, January 8, 2010

To: Securities Regulatory Authorities B. C. Securities Commission (BCSC) Alberta Securities Commission (ASC) Ontario Securities Commission (OSC) L'Autorité des marchés financiers (AMF) Toronto Stock Exchange (TSX)

CONSENT of AUTHOR

I, Andrew MacKenzie, do hereby consent to the public filing of the technical report entitled "Technical Report Redstone Nickel Mine Ontario, Canada" (the "Technical Report") dated January 8th, 2010 and any extracts from or a summary of the Technical Report under the National Instrument 43-101 disclosure of Liberty Mines Inc. and to the filing of the Technical Report with any securities regulatory authorities.

Dated this 8th day of January 2010.

Andrew MacKenzie, P. Eng Principal Mining Engineer



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Project number: 3CL008.005

Toronto, January 8th, 2010

To: Securities Regulatory Authorities B. C. Securities Commission (BCSC) Alberta Securities Commission (ASC) Ontario Securities Commission (OSC) L'Autorité des marchés financiers (AMF) Toronto Stock Exchange (TSX)

CONSENT of AUTHOR

I, Glen Cole, do hereby consent to the public filing of the technical report entitled "Technical Report Redstone Nickel Mine Ontario, Canada" (the "Technical Report") dated January 8th, 2010 and any extracts from or a summary of the Technical Report under the National Instrument 43-101 disclosure of Liberty Mines Inc. and to the filing of the Technical Report with any securities regulatory authorities.

Dated this 8th day of January 2010.

Glen Cole, P. Geo Principal Mining Engineer



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APPENDIX A

Mining Plan Redstone Mine 3CL008 0002 0080114F

January 2008