

**NI 43-101 TECHNICAL REPORT,  
RESOURCE ESTIMATE UPDATE AND  
PREFEASIBILITY STUDY AND MINERAL RESERVE ESTIMATE FOR  
BELL CREEK MINE  
HOYLE TOWNSHIP  
TIMMINS, ONTARIO, CANADA**

NTS: 42-A-11 Southeast  
Longitude: 81° 10' 41" West, Latitude: 48° 33' 45" North  
UTM (NAD 83, Zone17): 486,860.5 m East, 5,377,802 m North

**PREPARED FOR:**

**LAKE SHORE GOLD CORP.**  
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## 1.0 SUMMARY

The preparation of this Technical Report was supervised/co-authored by Natasha Vaz (P. Eng., MBA), Dean Crick (P. Geo.) and Ralph Koch (P. Geo.) on behalf of Lake Shore Gold Corporation ("Lake Shore", "LSG") for the Bell Creek Mine and conforms to NI 43-101 Standards of Disclosure for Mineral Projects. These individuals are considered Qualified Persons (QPs) under 43-101 definitions.

The purpose of this technical report is to provide an update of the total estimated resource pool for the Bell Creek Mine, and a full description of study work completed on the mine design, cost estimate, and economic evaluation of a portion of the indicated resource subset between the 300 metre elevation (300L) and 775L. This study work has been completed at a prefeasibility study level (as defined under CIM guidelines) to substantiate a statement of Mineral Reserves for the Bell Creek Mine.

The revised mineral resource estimate uses exploration data collected by LSG from underground and surface drilling completed since the previous resource report submitted to SEDAR titled "National Instrument 43-101 Technical Report, Scott Wilson RPA, Lake Shore Gold Bell Creek NI 43-101 Technical Report, January 14, 2011, having an effective date of October 25<sup>th</sup>, 2010" and is prepared in accordance with National Instrument 43-101, Standards and Disclosure for Mineral Projects. The effective date of this report is November 1, 2012.

The Bell Creek Mine is located in the Porcupine Mining District, Hoyle Township, approximately 20 kilometres (km), by road, Northeast of Timmins, Ontario. Access to the property is via a 6.7 km all-season asphalt and gravel road north of Ontario Provincial Highway 101.

The Bell Creek Mine property comprises 12 patent claims and two patents covering a total area of approximately 320 ha. All claims are either patented or leased mineral claims or patented veteran lots (Vet Lots) and remain valid in perpetuity so long as the annual taxes remain paid in full. The Schumacher property is a Boer War Vet Lot with an area of approximately 64 ha. LSG owns 100% interest in the Property subject to underlying royalties. The claims are all in good standing.

Gold mineralization was first discovered on the property through a joint venture between Rosario and Dupont Canada Exploration between 1980 and 1982. Between 1986 and 1991 Canamax Resources Inc. explored and developed the Bell Creek Mine. Access to mineralization was through a 290 metre deep shaft. Mine levels were developed to the ore zones, and an internal ramp was developed from the 240 metre level to access ore below shaft bottom to a vertical depth of 300 metres. Falconbridge Gold operated Bell Creek Mine from 1991 to 1992 followed by Kinross until mine closure in 1994.

Total production during the period prior to the 1994 mine closure totaled 576,017 tons of ore resulting in 112,739 ounces of gold (0.196 ounces per ton or approx. 5.57 grams per tonne). The historical milling recovery was approximately 93 percent.

In January 2007, LSG entered into an agreement with Porcupine Joint Venture to acquire the Bell Creek Mine and Bell Creek Mill. The Bell Creek Mine included the shaft, hoist, headframe, ore bin, collar house, hoist building, mine dry, office complex, underground mine workings and historic (non-NI 43-101 compliant) mineral resources.

Portal construction for an advanced exploration ramp began in May 2009. The ramp provided access to historic mine workings, and provided platforms for exploration diamond drilling. A number of sublevels were established at 15 metre vertical intervals below the 300 metre level and a bulk sample taken.

The ramp currently extends to the 610L, and a total of 5,836 metres of sill development (along mineralized zones) has been completed. Total un-reconciled LSG production amounts to 376,102 tonnes at 4.68 g/t Au (combined stope production and sill development). Mill recovery is estimated to be 95.1% (based on recovery for 2012 production).

The Bell Creek Mine declared commercial production effective January 1, 2012.

The Bell Creek Mine property is underlain by carbonate altered, greenschist facies Archean-aged, metavolcanic and clastic metasedimentary rock units belonging to the Tisdale and Porcupine assemblages. The strike is generally west-northwest and west-east. The rock units dip steeply south, however, at depth the dip undulates to vertical and then expresses a steep dip to the north (Powers, 2009).

Gold mineralization in the Bell Creek Mine occurs in steep south dipping, sheet like, shear hosted mineralized zones. A series of seven zones and two splays have been identified. Of these the bulk of the mineralization occurs within the North A Zone which has been historically exploited. Mineralization and setting of these zones is similar.

The North A Zone outcrops approximately 200 metres north of the Bell Creek headframe and consists of a marker quartz vein that varies from 0.1 metres to 2 metres in width with an associated alteration halo. Adjacent to the quartz marker vein is a grey to buff coloured altered zone which contains 5% to 15% pyrite and pyrrhotite, with accessory chalcopyrite and arsenopyrite. Up to 30% of the gold in the North A Zone occurs within the alteration halo, in discrete sulphide zones and in vein-brecciated wall rock zones that extend up to five metres from the margin of the core vein (Kent, 1990).

The Mineralized domains used to estimate resources have been modeled on vertical north-south sections on 25 metre centres, with consideration for structural setting and lithology. Section spacing was reduced in areas of greater drill density. Underground development was used as an aid in the interpretation and design of the mineralized zones.

The sectional interpretations were used to create three-dimensional (3D) solids or wireframes representing the mineralized zones that are used for estimation of tonnes and grade. A total of nine mineralized domain solids were created.

The Mineral Resource estimate for the Bell Creek Mine is based on diamond drill assays composited to 1.0 metre length. Only intersections within each solid were used to estimate grades. A total of 625 drill holes were used in the estimate including 131 historic surface and underground holes, and 494 surface and underground drill holes completed by LSG. Development chip or muck sample assay data was not used in the estimate.

The resource totals 4.68 Mt grading 4.72 grams per tonne (g/t) Au amounting to 710,300 ounces of gold in the Measured and Indicated category and 6.08 Mt grading 4.62 g/t Au amounting to 903,700 ounces of gold in the Inferred category. The Resource was estimated using the Inverse Distance to the power two ( $ID^2$ ) interpolation method with all gold assays capped to 44 gpt for the North A including the Hanging and Footwall splay veins and 34 gpt for all other domains. An assumed long-term gold price of

US\$1,200 per ounce and 0.93 \$US/\$CDN exchange rate were used. The base case estimate assumes a cut-off grade of 2.2 g/t Au with no allowance for dilution. The total estimated resources for Bell Creek Mine are summarized in Table 1.1

**Table 1.1: Total Estimated Resources**

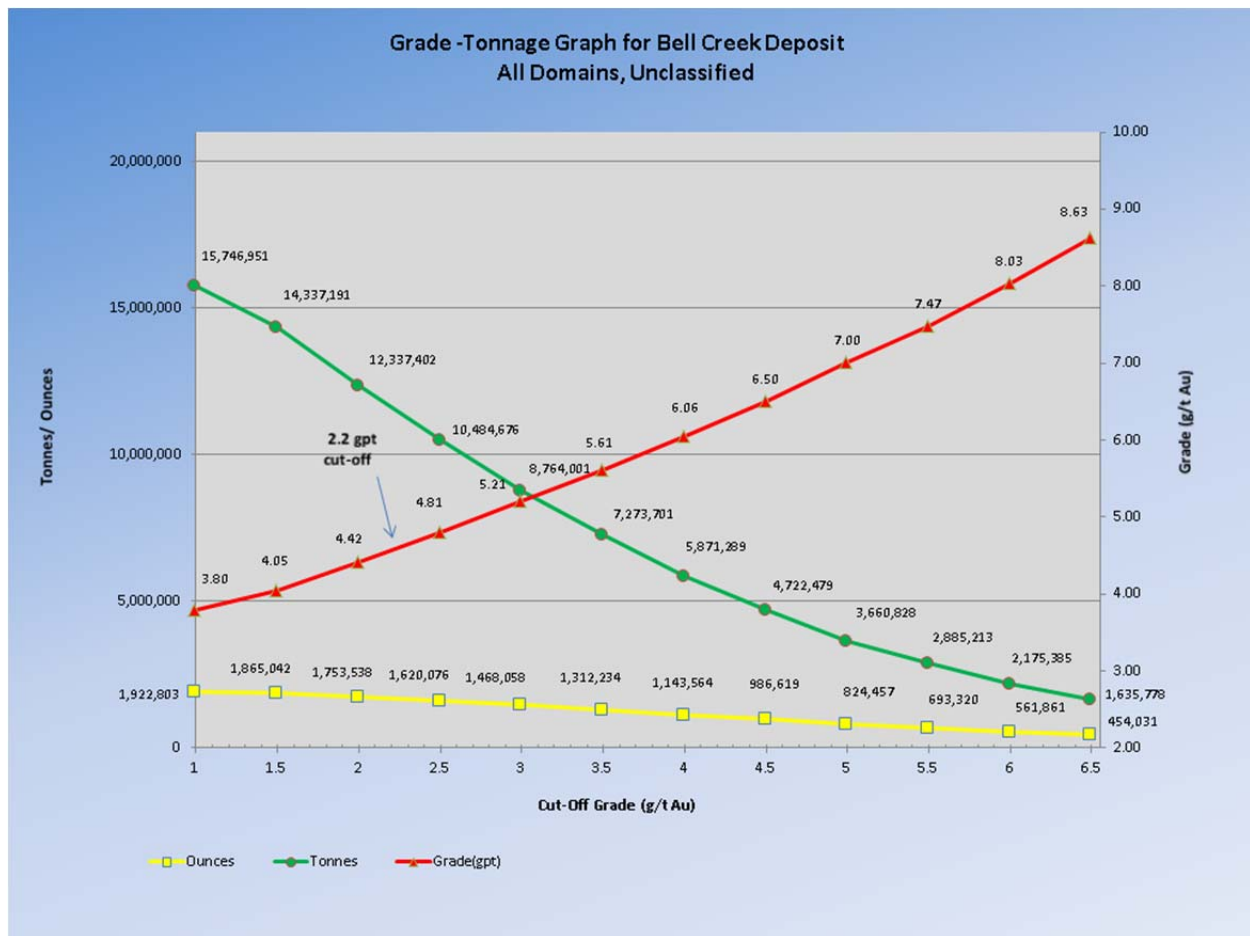
Category	Tonnes	Grade (g/t Au) (capped)	Ounces Au (capped)
Measured	268,000	4.34	37,400
Indicated	4,417,000	4.74	672,900
<b>Subtotal Measured and Indicated</b>	<b>4,685,000</b>	<b>4.72</b>	<b>710,300</b>
<b>Inferred</b>	<b>6,080,000</b>	<b>4.62</b>	<b>903,700</b>

*Notes:*

- 1. CIM definitions were followed for classification of Mineral Resources.*
- 2. Mineral Resources are estimated at a cut-off grade of 2.2 g/t Au.*
- 3. Mineral Resources are estimated using an average long-term gold price of US\$1,200 per ounce and a 0.93 \$US/\$CDN exchange rate.*
- 4. A minimum mining width of two metres was used.*
- 5. Capped gold grades are used in estimating the Mineral Resource average grade.*
- 6. Sums may not add due to rounding.*
- 7. Mr. Ralph Koch, B.Sc. P. Geo., is the Qualified Persons for this resource estimate.*

A sensitivity analysis was carried out to examine the impact on the tonnage, grade, and contained ounces by increasing the cut-off grade. The results are presented graphically in Figure 1.1. It should be noted that this is only a graphical presentation of potential opportunities to optimize the resource.

**Figure 1.1: Cut-Off Grade Sensitivity**



Recommendations consist primarily of diamond drilling to increase sufficient resource conversion from inferred to indicated in order to complete a robust mining plan. The bulk of this drilling would be completed from the 600L diamond drill drift and would comprise 60 drill holes totaling 30,000 metres at an all-in cost of \$3.5 million. This drill coverage would be sufficient to bring the drill hole spacing to 25 metre centres to a depth of 940 metres.

An additional 16 deep drill holes are recommended to be completed from a single cut-out set 150 metres back from the 600L drill drift (cut-out is complete). The objective of the deep holes will be to bring drill hole spacing to 50 metre centres within the 30 metre thick mineralization occurring at a depth of 1,100 metres. The deep drilling would total 12,000 metres at an all-in cost of \$1.5 million.

The remainder of the recommended diamond drilling consists of short “bazooka” drill holes to check for splay veins and would total 4,200 metres at an all-in cost of \$302,000.

Cost of additional production reconciliation recommended to improve resource estimates is \$20,000 and cost of data compilation to define exploration targets west of the diabase dike is \$10,000.

All recommended work should be completed in 2013 except for the 600L drilling which may carry over to Q2 2014. The total cost of all recommended work is \$ 5.33 million.

The subset of the total Bell Creek Mine resource pool considered in the prefeasibility study includes the indicated resource material located between the 300L and 775L. The estimated in-situ indicated resource between 300L and 775L (from the November 2012 Block Model) is summarized in Table 1.2.

**Table 1.2: Estimated Indicated Resource (300L to 775L)**

Deposit	Tonnes	Grade (g/t)	Ounces
Bell Creek Mine (300L to 775L)	1,383,874	4.8	214,128

A mine design was completed on this indicated resource to estimate the probable reserves. Mining shapes (stope wireframes) were designed for all resources included in the mining plan and the in-situ resource within the stope wireframes (including any low grade or barren material) was extracted from block model data. External dilution was estimated for each stope based on stope geometry and a 90% mining recovery factor was applied to account for unplanned losses. Any diluted stopes above 3.0 g/t were included in the mining plan, while stopes below 3.0 g/t were excluded from the plan (and therefore not included in the reserves).

The conversion from indicated resource to estimated probable reserves for the Bell Creek Mine are summarized in Table 1.3.

**Table 1.3: Bell Creek Mine Estimated Reserves**

Item	Tonnes	Grade (g/t Au)	Ounces
In-situ Indicated Resource above 3.0 g/t (300L to 775L)	1,383,874	4.8 g/t	214,128
In-situ Resource outside of Stope Wireframes*	-278,961	4.7 g/t	-42,561
In-situ Resource in Stope Wireframe above 3 g/t not mined**	-159,516	3.5 g/t	-17,683
Total Dilution Mined	213,630	0.2 g/t	1,324
Left in permanent Sill and Rib Pillars	-90,534	4.3 g/t	-11,845
Mining Recovery Factor	-79,583	4.1 g/t	-10,963
Stopes not mined at the end of the mine life***	-28,858	3.3 g/t	-3,082
<b>Total Reserves Mined to Surface</b>	<b>960,052</b>	<b>4.2 g/t</b>	<b>129,318</b>

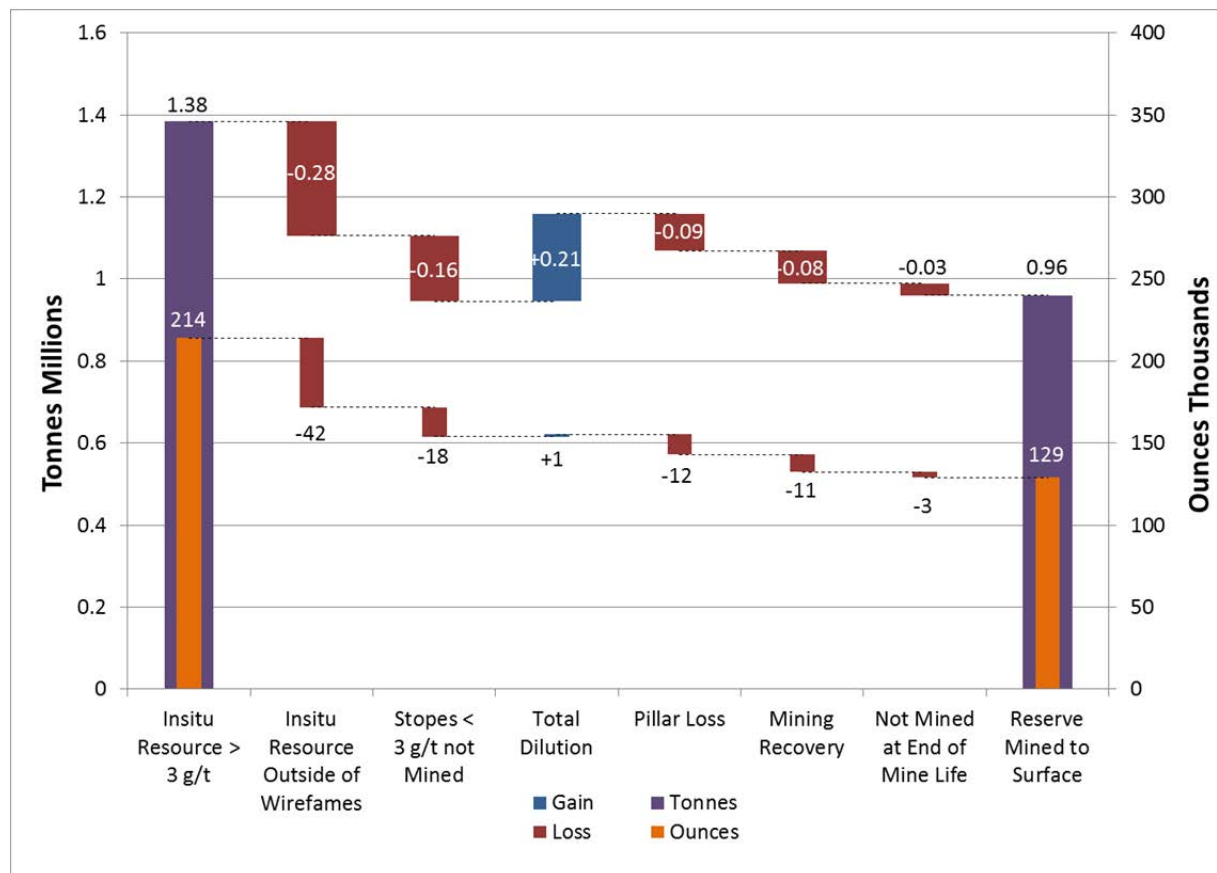
*\*These are Block Model "blocks" above 3 g/t that are randomly dispersed throughout the resource away from the mining areas and did not get included in Stope Wireframes.*

*\*\*These are Block Model "blocks" above 3 g/t that are included in stope wireframes, but the stopes (once diluted) are below 3 g/t and will not be mined.*

*\*\*\*These stopes are near the ramp and can only be mined at the end of the mine life and at low production rates. At this late stage of mining, the stopes do not support the operating costs.*

The resource conversion to reserve is shown graphically in Figure 1.2.

**Figure 1.2: Resource to Reserve Conversion**



A detailed development schedule, production profile, and mine design was completed to estimate the capital and operating costs required to access, develop, and extract the reserves.

Key outcomes of the study show the reserves support a nominal five year mining plan (from Q1 2013 to Q1 2018) at an average production rate of 485 tonnes per day. The reserves will be extracted at an average operating cost of \$138 per tonne (\$1,080 per ounce sold) and a total sustaining capital cost of \$32 million. The estimated net present value (NPV) discounted at 8% interest will be \$28.9 million. Sensitivities indicate the cash flow will be most sensitive to gold price and ore grade and least sensitive to the sustaining capital cost.

## **2.0 INTRODUCTION**

The preparation of this Technical Report is supervised/co-authored by Natasha Vaz (P. Eng, MBA), Dean Crick (P. Geo) and Ralph Koch (P. Geo) on behalf of Lake Shore Gold Corporation (Lake Shore) for the Bell Creek Mine and conforms to NI 43-101 Standards of Disclosure for Mineral Projects. These individuals are considered Qualified Persons (QPs) under 43-101 definitions.

Lake Shore (LSG) is a publicly traded company founded in 2002 and listed on the Toronto Stock Exchange. The company trades under the symbol LSG with a head office at 181 University Avenue, Suite 2000, Toronto, Ontario, Canada M5H 3M7.

The purpose of this technical report is to provide an update of the total estimated resource pool for the Bell Creek Mine, and a full description of study work completed on the mine design, cost estimate, and economic evaluation of a portion of the indicated resource subset between the 300 metre elevation (300L) and 775L. This study work has been completed at a prefeasibility study level (as defined under CIM guidelines) to substantiate a statement of Mineral Reserves for the Bell Creek Mine.

The authors have prepared this report using a combination of publicly available and confidential information. This report is source from an amalgamation of several reports listed in Item 27 – References.

### **2.1 LIST OF QUALIFIED PERSONS**

Natasha Vaz (P. Eng, MBA), Director, Technical Services & Project Evaluations for LSG, is responsible for Items 13, 15, 16, 17, 18, 19, 20, 21, 22, 24, 25, and 26.

Dean Crick (P. Geo), Director of Geology for LSG, is responsible for Items 1, 4, 25, and 26.

Ralph Koch (P. Geo), Chief Mines Resource Geologist for LSG is responsible for Items 1, 2, 5-12, 14, 25, and 27.

The Qualified Persons listed above are full time employees of LSG. These individuals are intimately aware of the work going on at the Bell Creek Mine and have visited the site on numerous occasions.

### **2.2 UNITS AND CURRENCY**

Metric and Imperial units are used throughout this report. The currency used is in Canadian dollars unless otherwise noted.

Common conversions used include converting one ounce of gold to grams of gold with a factor of 31.104 grams per troy ounce.

## 2.3 LIST OF ABBREVIATIONS

Table 2.1 lists the common abbreviations that may be used in the report.

**Table 2.1: Abbreviations**

Unit or Term	Abbreviation or Symbol
Dollars Canadian	\$C
Percent	%
Percent moisture (relative humidity)	% RH
Less than	<
Greater than	>
Degree	°
Degree Celsius	°C
Degrees Fahrenheit	°F
Micrometre (micron)	µm
Year (annum)	a
Atomic Absorption	AA
Advanced Exploration Project	AEP
Silver	Ag
Above mean sea level	amsl
Arsenic	As
Arsenopyrite	aspy
Gold	Au
Gold equivalent grade	AuEq
Azimuth	AZ
British thermal unit	Btu
Carbon in leach	CIL
Carbon in pulp	CIP
Centimetre	cm
Square centimetre	cm <sup>2</sup>
Cubic centimetre	cm <sup>3</sup>
Copper	Cu
Day	d
Days per year (annum)	d/a
Days per week	d/wk
Diamond bore hole	ddh, DDH
Diamond drill hole	ddh, DDH
Dry metric ton	dmt
Dead weight tonnes	DWT
Foot	ft
Square foot	ft <sup>2</sup>
Cubic foot	ft <sup>3</sup>
Cubic feet per second	ft <sup>3</sup> /s, cfs
Gram	g

Unit or Term	Abbreviation or Symbol
Grams per litre	g/l
Grams per tonne	g/t, gpt
Billion years ago	Ga
Gallon	gal
Gallon per minute	gpm
Hour	h (not hr)
Hectare (10,000m <sup>2</sup> )	ha
Inch	in, “
Square inch	in <sup>2</sup>
Cubic inch	in <sup>3</sup>
Kilo (1,000)	k
Potassium	K
Kilogram	kg
Kilograms per hour	kg/h
Kilograms per square metre	kg/m <sup>2</sup>
Kilograms per cubic metre	kg/m <sup>3</sup>
Kilometre	km
Kilometres per hour	km/h
Square kilometre	km <sup>2</sup>
Thousand tonnes	kt
Litre	L
Litres per minute	L/m
Pound(s)	lb
Life of mine	LoM
Metre	m
Million	M
Million grams	M g
Million Troy ounces	M oz
Gram metres	m.g/t
Metres per minute	m/min
Metres per second	m/s
Square metre	m <sup>2</sup>
Cubic metre	m <sup>3</sup>
Million Years	Ma
Metres above sea level	masl
Milligram	mg
Milligrams per litre	mg/L
Minute (time)	min
Minute (plane angle)	min, ‘
Milliliter	mL
Millimetre	mm
Month	mo
Miles per hour	mph

Unit or Term	Abbreviation or Symbol
Million tonnes	Mt
No Personal Liability	N.P.L.
Sodium	Na
National Instrument 43-101	NI 43-101
Ounces	oz
Page	p, pg
Lead	Pb
Preliminary Economic Assessment	PEA
Pyrrhotite	po
Parts per billion	ppb
Parts per million	ppm
Pounds per square inch	psi
Pyrite	py
Quality Assurance/Quality Control	QA/QC
Quart	qt
Revolutions per minute	rpm
Rock Quality Description	RQD
Second (time)	s
Second (plane angle)	sec, “
Specific gravity	SG
Short ton (2,000 lb)	st
Metric ton (tonne) (2,000 kg)	t
Tonne (1,000 kg)	t
Short ton (US)	t (US)
Tonnes per year	t/a
Tonnes per day	t/d, tpd
Tonnes per hour	t/h
Short tons per day (US)	tpd (US)
Short tons per hour (US)	tph (US)
Short tons per year (US)	tpy (US)
Volt	V
Weight/weight	w/w
Week	wk
Wet metric ton	wmt
Yard	yd
Cubic yard	yd <sup>3</sup>
Year (US)	yr

## **2.4 DEFINITIONS**

The following definitions of Mineral Resources and Mineral Reserves have been prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council on November 27, 2010.

### **2.4.1 Mineral Resource**

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated, and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource, which has a lower level of confidence than a Measured Mineral Resource.

A “Mineral Resource” is a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals in or on the Earth’s crust in such form and quantity and of such a grade or quality that it has a reasonable prospect for economic extraction. The location, quantity, grade, geological characteristics, and continuity of a Mineral Resource are known, estimated, or interpreted from specific geological evidence and knowledge.

### **2.4.2 Inferred Mineral Resource**

An “Inferred Mineral Resource” is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes.

### **2.4.3 Indicated Mineral Resource**

An “Indicated Mineral Resource” is the part of the Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings, and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

### **2.4.4 Measured Mineral Resource**

A “Measured Mineral Resource” is the part of the Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate applications of technical and economic parameters, to support production planning and evaluation for the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

#### 2.4.5 Mineral Reserve

Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve.

A Mineral Reserve is the economically mineable part of the Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting minerals and allowances for losses that may occur when the material is mined.

#### 2.4.6 Probable Mineral Reserve

A “Probable Mineral Reserve” is the economically mineable part of an Indicated and, in some circumstances, a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting that economic extraction can be justified.

#### 2.4.7 Proven Mineral Reserve

A “Proven Mineral Reserve” is the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, the economic extraction is justified.

### 2.5 GLOSSARY

Table 2.2 summarizes common technical words accompanied by a simple explanation of the term or word as the term pertains to this report.

**Table 2.2: Glossary**

Term	Explanation
Assay	The chemical analysis of mineral samples to determine the metal content.
Capital Expenditure	All other expenditures not classified as operating costs.
Composite	Combining more than one sample result to give an average result over a larger distance.
Concentrate	A metal-rich product resulting from a mineral enrichment process such as gravity concentration or floatation, in which most of the desired mineral has been separated from waste material in the ore.
Crushing	Initial process of reducing ore particle size to render it more amenable for further processing.
Cut-off Grade (CoG)	The grade of mineralized rock, which determines whether or not it is economic to recover its gold content by further concentration.
Dilution	Unwanted waste, which is mined with ore.
Dip	Angle of inclination of a geological feature / rock from the horizontal.
Fault	The surface of a fracture along which movement has occurred.
Footwall	The underlying side of an orebody or stope

Term	Explanation
Gangue	Non-valuable components of the ore.
Grade	The measure of concentration of “gold” within mineralized rock.
Hangingwall	The overlying side of an orebody or stope.
Haulage	A horizontal underground excavation which is used to transport mined material.
Igneous	Primary crystalline rock formed by the solidification of magma.
Level	Horizontal tunnel with the primary purpose to transport personnel and materials.
Lithological	Geological description pertaining to different rock types.
LoM Plans	Life of mine plans.
Material Properties	Mining properties.
Metamorphism	Process by which consolidated rock is altered in composition, texture, or internal structure by conditions and forces of heat and pressure.
Milling	A general term used to describe the process in which the ore is crushed, ground and subjected to physical or chemical treatment to extract the valuable metals to a concentrate or finished product.
Mineral/Mining Lease	A lease area for which mineral rights are held.
Mining Asset	Material Properties and Significant Exploration Properties.
Ongoing Capital	Capital estimates of a routine nature, which is necessary for sustaining operations.
Ore Reserve	See Mineral Reserve.
RoM	Run of Mine.
Sedimentary	Pertaining to rocks formed by the accumulation of sediments, formed by the erosion of other rocks.
Shaft	An opening cut downwards from the surface for transporting personnel, equipment, supplies, ore and waste.
Smelting	A high temperature pyrometallurgical operation conducted in a furnace, in which the valuable metal is collected to a molten matte or doré phase and separated from gangue components that accumulate in a less dense molten slag phase.
Stope	Underground void created by mining.
Stratigraphy	The study of stratified rocks in terms of time and space.
Strike	Direction of line formed by the intersection of strata surfaces with the horizontal plane, always perpendicular to the dip direction.
Sulphide	A sulphur bearing mineral.
Tailings	Finely ground waste rock from which valuable minerals or metals have been extracted.
Thickening	The process of concentrating solid particles in suspension.
Total Expenditure	All expenditures including those of an operation and capital nature.

### **3.0 RELIANCE ON OTHER EXPERTS**

The authors have sourced the information for this report from an amalgamation of several reports listed in Item 27 (References). These references include government geological reports, press releases, company annual reports, assessment reports filed with the Ministry of Northern Development and Mines, previously filed SEDAR NI 43-101 reports, and reports both public and confidential provided by LSG.

Except for the purposes legislated under provincial securities laws any use of this report by any third party is at that party's sole risk.

The authors have relied on internal experts within the organization for input to certain sections of this report. The authors have reviewed and endorsed the contributions of these experts.

Van Ramsey, Business Consultant, Lake Shore Gold Corp. contributed to Item 19.

Keith Green, Director of Exploration, Lake Shore Gold Corp. contributed to Items 11 and 12.

Marcel Cardinal, Sr. Environmental Coordinator, Lake Shore Gold Corp. contributed to Items 4 and 20.

Dave Felsher, Chief Mineral Processing Engineer, Lake Shore Gold Corp., and Marc Talbot, Mill Manager, Lake Shore Gold Corp., contributed to Items 13 and 17.

The authors have also relied on external experts for input to certain sections of this report. The authors have reviewed and endorsed the contributions of these experts.

Mickey Murphy, P. Eng. of Stantec Consulting (Mine Engineering Consultant) contributed to Items 15, 16, 18, 21, 22, 24, 25, and 26.

Kathy Kalenchuk, Ph.D. of Mine Design Engineering (Geotechnical Consultant) contributed to Item 16.

## **4.0 PROPERTY DESCRIPTION AND LOCATION**

### **4.1 PROPERTY DESCRIPTION**

The Bell Creek Mine Property comprises the mining claims historically referred to as the Bell Creek Property and the adjacent Schumacher property.

The Bell Creek Mine property comprises 12 patent claims and two patents covering a total area of approximately 320 hectares (ha). All claims are either patented or leased mineral claims or patented veteran lots (Vet Lots) and remain valid in perpetuity as long as the annual taxes remain paid in full. The Schumacher property is a Boer War Vet Lot with an area of approximately 64 ha. It is bounded to the west by Bell Creek and to the east by the Vogel property.

Bell Creek Mine was operated by Canamax Resources Inc. (Canamax) between 1989 and 1991. Falconbridge Gold Inc. (Falconbridge Gold) operated the mine between 1991 and 1992, followed by Kinross Gold Corporation (Kinross) in 1993 and 1994 when mining operations ceased. The mine was kept on care and maintenance until 2001, when a decision was made to allow the underground workings to flood. In 2002, the Porcupine Joint Venture (PJV), a joint venture between Placer Dome Canada Ltd. (Placer Dome) and Kinross, was formed and in 2005 the property was reactivated. Goldcorp Inc. acquired Placer Dome's interest later that year and became the operator of the PJV (Butler, 2008). Acquisition of the property by LSG was finalized on December 18, 2007.

Within the property limits are the Bell Creek Deposit as well as mine infrastructure including shaft, ramp, Bell Creek Mill, tailing facilities as well as office, warehouse, and dry facilities.

### **4.2 LOCATION**

The Bell Creek Mine is located in the Porcupine Mining District's Hoyle Township, approximately 20 km, by road, northeast of Timmins, Ontario (Figure 4.1). Access to the property is gained via Florence Street, a 6.7 km long all-weather asphalt and gravel road north of Ontario Provincial Highway 101. The project is situated approximately 564 km north-northwest of Toronto, Ontario. The mine infrastructure is located within National Topography Series Map reference 42-A-11 southeast, at longitude 81° 10' 41" west and latitude 48° 33' 45" north. Universal Transverse Mercator (UTM) coordinates for the project centre utilizing projection North American Datum (NAD) 83, Zone 17 are approximately 486,860.5 m east, 5,377,802 m north.

**LAKE SHORE GOLD  
BELL CREEK MINE**

**City of Timmins**

**LAKE SHORE GOLD  
TIMMINS MINE**

**Bell Creek Project to Toronto is 560 km**

**Projection**  
NAD 83 Zone 17 N

**LAKE SHORE  
GOLD CORP.**

**Bell Creek Mine  
Location Map**

Date: March 2013 Name: AF

File: bc-complex-location-43-101-March2013.mxd

### **4.3 RECENT OWNERSHIP HISTORY AND UNDERLYING AGREEMENTS**

On January 31, 2007, Lake Shore Gold entered into a binding letter of agreement with Goldcorp Canada Ltd. (Goldcorp), to acquire the Bell Creek Mine. In March 2007, the two companies agreed to amend their binding letter of agreement to extend the due diligence period and the acquisition was finalized on December 18, 2007. Consideration for the acquisition consisted of \$7.5 million cash, \$2.5 million worth of LSG shares at a price of \$1.51 per share (1,655,629 shares), and 2 million warrants exercisable for a period of two years at \$2.41 per share.

The agreement is subject to a 2% Net Smelter Return (NSR) royalty payable to the PJV comprised of Goldcorp and Kinross. Kinross has subsequently assigned its rights under the agreement to Goldcorp. Underlying royalty agreements affect some of the Bell Creek claims including two agreements with net profit interests that can be purchased outright for relatively small amounts.

In November 2005, LSG signed a 20-year lease agreement for a leasehold interest in the surface and mining rights on the Schumacher property. The lease is renewable for another 20-year term. The property is a Boer War Vet Lot and, as such, is a freehold patent with both surface and mining rights (granted by the Crown before May 6, 1913). There is no requirement to file assessment reports with the Ministry of Northern Development and Mines (MNDM). As the property is a Vet Lot in a surveyed township, its boundaries are fixed for an area of approximately 64 ha. It is bounded to the west by Bell Creek and to the east by the Vogel property.

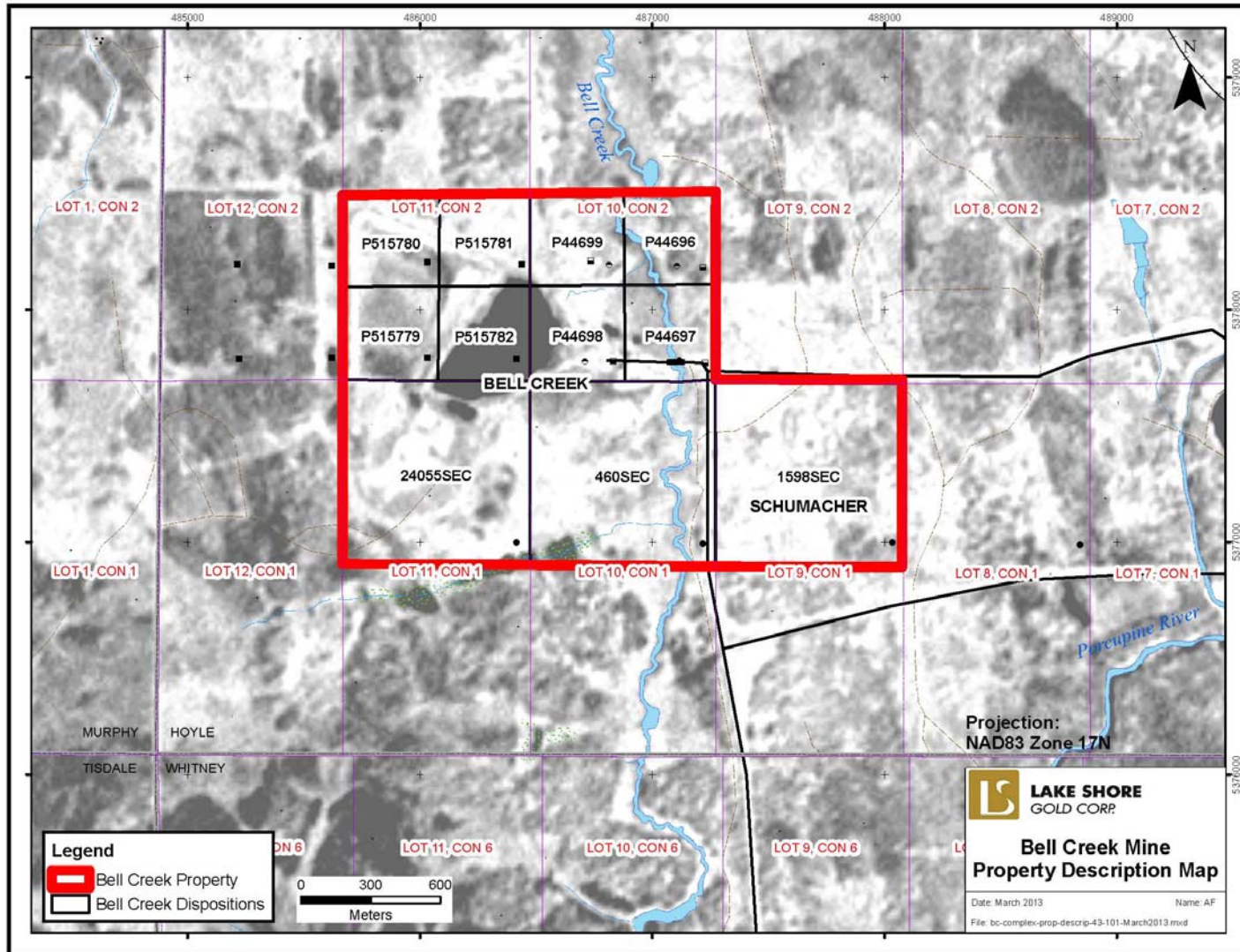
LSG is required to make an annual advanced payment of \$25,000 in years four to six of the lease and \$50,000 in years seven to nine of the lease and to pay a 2% NSR (Butler, 2008).

A summary of the land tenure is provided in Table 4.1 and Figure 4.2.

**Table 4.1: Land Tenure Summary**

Property	Claim No.	Responsible	Owner	Rights	Lease No.	Parcel #	Underlying Agreement and Royalty Payment	
BELL CREEK	P515779	Lake Shore Gold Corp.	Lake Shore Gold Corp.	MRO & SRO	Mining Lease Number 107727	1338 SEC LC	Allerston; 10 % NPI	Goldcorp1; 2 % NSR
	P515780						Allerston; 10 % NPI	Goldcorp1; 2 % NSR
	P515781						Allerston; 10 % NPI	Goldcorp1; 2 % NSR
	P515782						Allerston; 10 % NPI	Goldcorp1; 2 % NSR
BELL CREEK	P44696	Lake Shore Gold Corp.	Lake Shore Gold Corp.	MRO	Mining Lease Number 107916	155 SEC LC		Goldcorp1; 2 % NSR
	P44697							Goldcorp1; 2 % NSR
	P44698							Goldcorp1; 2 % NSR
	P44699							Goldcorp1; 2 % NSR
	P44696	Lake Shore Gold Corp.	Lake Shore Gold Corp.	SRO		3559 SEC SEC		Goldcorp1; 2 % NSR
	P44697							Goldcorp1; 2 % NSR
	P44698							Goldcorp1; 2 % NSR
	P44699							Goldcorp1; 2 % NSR
BELL CREEK	N 1/2 L11, C1	Lake Shore Gold Corp.	Lake Shore Gold Corp.	MRO		24055 SEC SEC	Casselman & Fisher; 10 % NPI	Goldcorp1; 2 % NSR
	N 1/2 L11, C1			SRO		15504 SEC SEC	Casselman & Fisher; 10 % NPI	Goldcorp1; 2 % NSR
	N 1/2 L10, C1			MRO		460 SEC SND	Prentice & McLennan; 10 % NPI	Goldcorp1; 2 % NSR
	N 1/2 L10, C1			SRP		1755 SEC SEC		Goldcorp1; 2 % NSR
SCHUMACHER	P1502	Lake Shore Gold Corp.	Lake Shore Gold Corp.	MRO & SRO		1598 SEC SEC	Schumacher; 2% NSR	

Figure 4.2: Claim Map



#### 4.4 PAST MINING ACTIVITY, ENVIRONMENTAL LIABILITIES AND PERMITTING

Gold mineralization was first discovered on the Bell Creek Mine property through a joint venture between Rosario and Dupont Canada Exploration between 1980 and 1982. Between 1986 and 1991 Canamax Resources Inc. explored and developed the Bell Creek Mine. Access to mineralization was through a 290 metre deep three compartment shaft with an 8-foot diameter double drum hoist, and includes a 30 metre high headframe with a 300 tonne coarse ore bin to a loadout facility. Mine levels were developed to the ore zones, and a ramp was developed from the 240 metre level to access ore below shaft bottom to a vertical depth of 300 metres. A 300 tonne per day (tpd) mill was commissioned in 1987.

From 1991 to 1992 Falconbridge Gold operated Bell Creek Mine followed by Kinross until the mine's closure in 1994. The mine was kept on care and maintenance until 2001 when it was allowed to flood.

Bell Creek produced at a rate of 380 tpd and was reported to have produced 576,000 short tons of ore at a grade of 0.197 oz/ton (5.57 g/t) Au using vertical sublevel retreat, longhole, and shrinkage mining methods. This includes some ore from Marlhill.

On January 1, 2012 LSG announced the Bell Creek Mine to be in commercial production.

The tailings treatment facilities are managed by LSG staff with regularly scheduled inspections by Golder Associates.

Since the accepted closure plan was filed, additional construction activities have occurred at Bell Creek which include:

- Construction of a ventilation raise.
- Construction of a Carbon-In-Leach tank (CIL) and secondary containment for the tank.
- Construction of a polishing pond for the storage and clarification of mine water and the infrastructure associated with it.
- Construction of some minor buildings and infrastructure.

A Closure Plan Amendment was submitted in July of 2012 and is expected to be filed by the end of the second quarter of 2013. The purpose of the amendment is to declare commercial production, and combine the existing filed closure plans of the mill and mine into a single plan.

From the Ministry of Natural Resources' Species at Risk in Ontario ("SARO") list, the species that may range within the Bell Creek Mine area are summarized in Table 4.2.

**Table 4.2: Species at Risk**

Common Name	Scientific Name	OMNR Status
Blanding's Turtle	<i>Emydoidea blandingii</i>	threatened
Canada Warbler	<i>Wilsonia Canadensis</i>	special concern
Common Nighthawk	<i>Chordeiles minor</i>	special concern
Eastern Wolf	<i>Canis lupus lycaon</i>	special concern
Eastern Cougar	<i>Puma concolor</i>	endangered
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	special concern
Olive-sided Flycatcher	<i>Contopus cooperi</i>	special concern
Rusty Blackbird	<i>Euphagus carolinus</i>	special concern

The required permits and approvals for operations at the Bell Creek Mine have been acquired. These include Provincial Permits and Federal Permits:

- Ministry of Northern Development and Mines (MNDM);
- Ministry of the Environment (MOE);
- Ministry of Natural Resources (MNR);
- Ministry of Transportation (MTO);
- Technical Standards and Safety Authority (TSSA);
- Ministry of Labour (MOL);
- Occupational Health and Safety;
- Explosives;
- Notification of Commencement of Construction and Operation.
- Department of Fisheries and Oceans Canada (DFO)
- Natural Resources Canada (NR CAN) – Explosives Regulatory Division (ERD)
- Environment Canada (EC)

To the best of the author's knowledge there is no significant factor or risk that may affect access, title, or the right or ability to perform work on the property.

#### **4.5 CONSULTATION**

Consultation has been undertaken with regulatory agencies, the general public, the Métis Nation of Ontario, and the Wabun Tribal Council representing the First Nation communities of Flying Post First Nation and Mattagami First Nation. Consultation provides an opportunity to identify/address the concerns of external stakeholders and expedite the authorization process.

The consultations have been held in order to comply with LSG corporate policy and the provincial requirements of Ontario Regulation 240/00 and the Environmental Bill of Rights.

An Impact and Benefits Agreement (IBA) is currently being negotiated with Mattagami, Mattachewan, Wagoshig and Flying Post First Nations. The IBA outlines how LSG and the First Nations communities will work together in the following areas: education and training of First Nation community members, employment, business and contracting opportunities, financial considerations and environmental provisions.

## 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

### 5.1 ACCESSIBILITY

Year round access to the Bell Creek Mine is gained via Florence Street, a 6.7 km long all-weather asphalt and gravel road, north of Ontario Provincial Highway 101, approximately 20 km northeast of Timmins, Ontario. Access to the Bell Creek property is illustrated in Figure 4.1.

### 5.2 CLIMATE

The Bell Creek Mine area, and the City of Timmins experience a Continental Climate with an average mean temperature range of -17.5°C (January) to +17.4° (July) and approximately 831 mm annual precipitation. Table 5.1 summarizes the average temperature and precipitation values recorded at the Timmins Airport for the period between 1971 and 2000.

**Table 5.1: Average Temperature, Precipitation and Snowfall Depths for the Timmins Area**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
<b>Temperature</b>													
Daily Average (°C)	-17.5	-14.4	-7.7	1.2	9.6	14.7	17.4	15.7	10.3	4.2	-4	-13.2	1.3
Daily Maximum (°C)	-11	-7.5	-0.9	7.6	16.6	21.7	24.2	22.3	16.1	8.9	0.1	-7.8	7.5
Daily Minimum (°C)	-23.9	-21.3	-14.5	-5.2	2.5	7.5	10.5	9.1	4.4	-0.6	-8.1	-18.7	-4.9
<b>Precipitation</b>													
Rainfall (mm)	2.9	1.6	14.7	26.6	62.7	89.1	91.5	82	86.7	64	29.5	7	558.1
Snowfall (cm)	61.7	40.6	49.9	27.5	6.7	0.4	0	0	1.6	14	45.7	65.4	313.4
Precipitation (mm)	53.9	36.6	59.4	52.8	69.2	89.4	91.5	82	88.3	76.8	69.6	61.9	831.3
Average Snow Depth (cm)	58	66	58	25	1	0	0	0	0	0	7	29	20

Typically, local lakes will begin to freeze by mid-November, and ice breakup will take place in early to mid-May. Work can be carried out at Bell Creek Mine year round.

### 5.3 LOCAL RESOURCES AND INFRASTRUCTURE

The City of Timmins has an area of 3,210 square kilometres and a population of 42,455 (2006 Census). The economic base is dominated by the mining and logging industries and an experienced mining labour pool is accessible in the area. Mining supplies and contractors are locally obtainable and general labour is readily available.

The area is serviced from Toronto via Highways 400 and 69 to Sudbury; and Highway 144 to Timmins; or Highway 11 from Barrie to Matheson and 101 westward to Timmins. The Timmins Victor M. Power Airport has scheduled service provided by Air Canada Jazz, Bearskin Airlines, and Air Creebec. Porter Airways provide air service between Timmins and Toronto Island airport. The Timmins District Hospital is a major referral health care centre for northeastern Ontario.

All-weather road access and electrical power transmission lines are established and operational to Bell Creek Mine.

At the effective date the surface and underground infrastructure at the Bell Creek Mine included the following:

- A conventional mill which includes crushing and grinding circuits, a gravity concentration circuit and cyanide leaching and CIP gold absorption process. The throughput capacity of the mill has recently been upgraded to approximately 3,000 tpd by LSG.
- A coarse ore bin.
- A permitted tailings facility including polishing pond and associated infrastructure.
- An administrative building and dry facility with office space, including a conference room, an infirmary, a main garage, a millwright shop, and an electrical shop.
- An assay laboratory.
- A warehouse for reagents and lubricants.
- A diamond drill core shack.
- Water treatment and supply facilities.
- A cyanide destruction plant.
- A hoist room, a headframe, and a 290 metre deep shaft.
- A portal, ramp, ventilation raises and a series of ramp-connected underground sublevels.
- A fleet of underground mobile mine equipment.
- Site power supply provided by a 115 kV power line from the City of Timmins.

The Authors believe that the property has sufficient surface rights to carry out mining operations; however, it appears possible that the capacity of the tailings storage facility will need to be increased to accommodate future production.

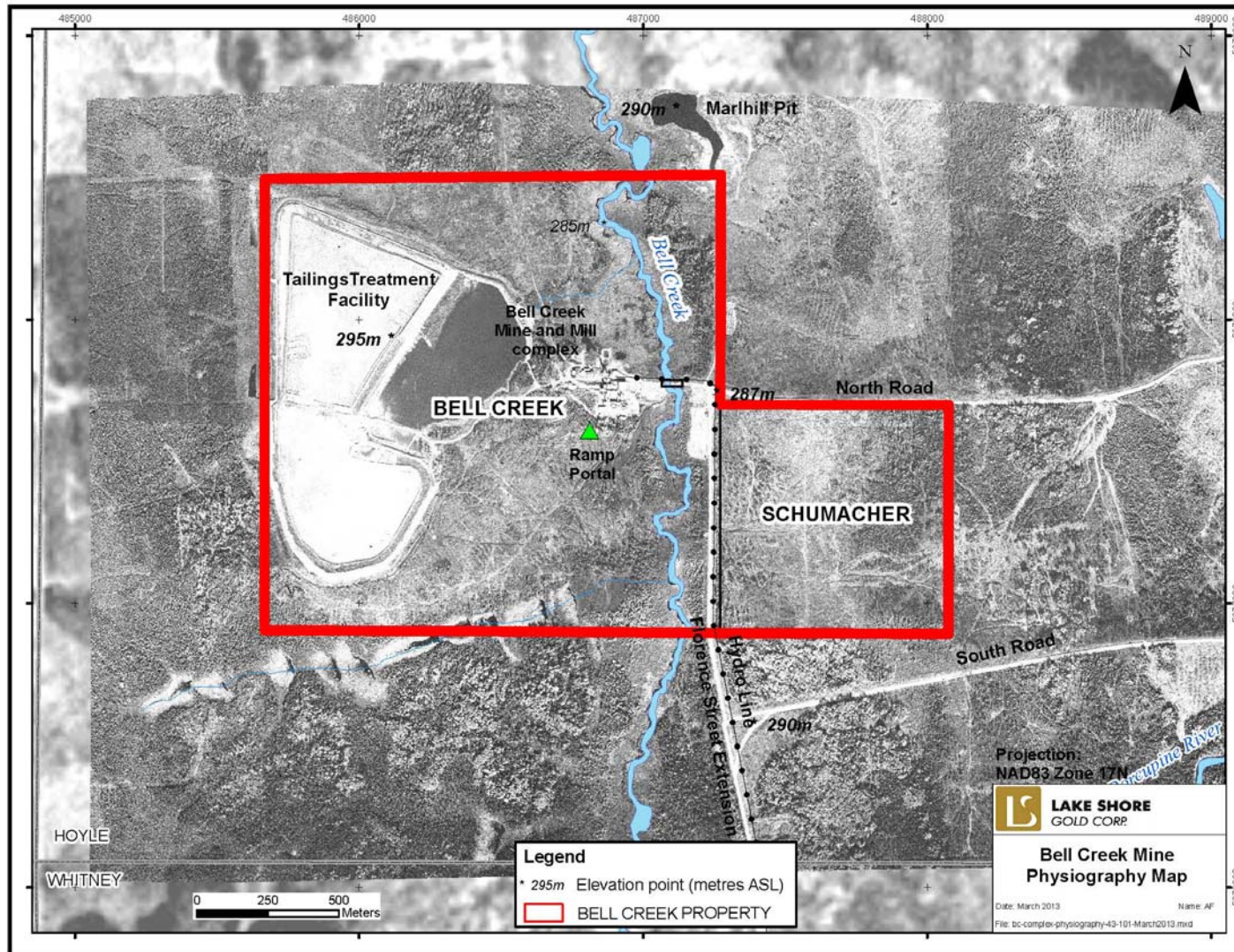
## **5.4 PHYSIOGRAPHY**

Bell Creek exhibits low to moderate topographic relief, with the property elevation ranging from 285 to 298 metres above sea level. Drainage is characterized by slow, meandering creeks and rivers that flow into the Arctic watershed as shown in Figure 5.1. Bell Creek, which lends its name to the deposit, flows across the property and into the Porcupine River in a north-northwest direction. Outcrop exposure is less than 3 percent.

The Timmins area is situated in plant hardiness zone 2a, which supports boreal forest tree species and an active timber, pulp, and paper industry. Local trees species include: American Mountain-Ash, Balsam Fir, Black Spruce, Eastern White Cedar, Eastern White Pine, Jack Pine, Pin Cherry, Red, Tamarack, Trembling Aspen, White Birch, White Spruce, and Speckled Alder.

Timber was harvested from the Schumacher property in 1997. A small stand of trees was removed from west of the Bell Creek headframe in 2009.

Figure 5.1: Physiography



## 6.0 HISTORY

### 6.1 PRIOR OWNERSHIP

Acquisition of the Bell Creek property by LSG from the previous owner, PJV, was finalized on December 18, 2007.

In November 2005, Lake Shore Gold signed a 20-year lease agreement securing a leasehold interest in the surface and mining rights on the Schumacher property. The lease is renewable for an additional 20-year term.

Underlying royalties are applicable to these acquisitions and have been summarized in Section 4.3.

### 6.2 GENERAL HISTORY

The discovery of gold occurrences in the Timmins area began to appear in the historic record in the early part of the twentieth century. The extension of the railway lines from Cobalt, Ontario, in the early 1900s allowed for new access to the gold discoveries found near Porcupine and Nighthawk Lakes. With increased access to the region, numerous gold discoveries were reported that initiated the rush to the Porcupine Gold Camp. World class gold deposits were found in the area, with 1909 being of particular note with the discovery of the Vipond, Dome, and Hollinger mines.

Few bedrock outcrops in the Bell Creek area and the clay-rich nature of the surface cover restricted prospectors' ability to find alluvial gold trains in creek bottoms and trace them back to the source material (the main exploration method employed at the time). With the advent of airborne geophysics in the 1960s, the first discoveries were made below the clay-rich belt that surrounds Timmins. Prior to that, gold was found either in outcrop directly or along the strike of outcrops. Gold mineralization found below this "clay-belt" occurred in what is now southern Hoyle Township (Butler, 2008).

Prior to the 1960s, little geological work is found in the public domain for the Bell Creek area. Work completed by the Ontario Geological Survey (OGS) and Ontario Department of Mines for the Hoyle Township area is summarized in Table 6.1.

**Table 6.1: Previous Work in the Hoyle Township Area by the Government of Ontario**

Year	Author	Work Done
1924	Rose	Preparation of the first geological map of Hoyle Township (Map: ARM33d)
1941	Berry	Mapped Hoyle and southern part of Gowan Township as part of Bigwater Lake Area (Map ARM48N)
1964	Ginn et al.	Compiled the first small scale map covering Hoyle and Gowan Townships (1:253,440 scale. Map revised in 1973.)
1980	Hunt, D.S., Maharaj, D.	Timmins Data Series, preliminary map P2088m
1983	Richard, J.A.	Quaternary geology, Pamour Area, Cochrane District, preliminary map P2680
1988	Geoterrex Limited	Airborne electromagnetic survey, Total intensity magnetic survey. Survey date: 1987, Map 81072

Year	Author	Work Done
1991	Berger, B.R.	Geology of Hoyle and Gowan Townships, District of Cochrane, Open file map, OFM0175
1992	Berger, B.R.	Geology of Hoyle and Gowan Townships, District of Cochrane, Open report, OFR58335
1998	Berger, B.R.	PreCambrian Geology, Hoyle Township
1999	Pressacco, R.	Special Project: Timmins Ore Deposit Description, Open file report, OFR5985
2001	Richard, J.A.	Quaternary Geology, Pamour Area, Map M2655
2005	Bateman, R., Ayer, H.A., Dubé, B., Hamilton, M.A.	The Timmins-Porcupine Gold Camp, Northern Ontario, the Anatomy of an Archean Greenstone Belt and Its Gold Mineralization: Discover Abitibi Initiative, Open file report OFR6258
2005	Bateman, R.	Precambrian Geology, Parts of Whitney and Hoyle Townships, Preliminary map, P3547-REV

Gold mineralization was first discovered on the Bell Creek property through a joint venture between Rosario and Dupont Canada Exploration between 1980 and 1982. Between 1986 and 1991 Canamax Resources Inc. explored and developed the Bell Creek Mine. Access to mineralization was through a 290 metre deep, three compartment shaft with an 8-foot diameter double drum hoist, and includes a 30-metre high headframe with a 300 tonne coarse ore bin to a loadout facility. Mine levels were developed to the ore zones, and a ramp was developed from the 240 metre level to access ore below shaft bottom to a vertical depth of 300 metres. A 300 tpd mill was commissioned in 1987.

From 1991 to 1992 Falconbridge Gold operated Bell Creek Mine followed by Kinross until the mine's closure in 1994. The mine was kept on care and maintenance until 2001 when it was allowed to flood.

Bell Creek produced at a rate of 380 tpd and was reported to have produced 576,000 short tons of ore at a grade of 0.197 oz/ton (5.57 g/t) Au using vertical sublevel retreat, longhole, and shrinkage mining methods. This includes some ore from Marlhill. The bulk of the production was derived from the North A Zone where mining occurred on multiple levels (Butler, 2008).

Canamax held an option to the Schumacher property in 1984 to 1985 and conducted a three hole drill program (core diameter unknown) that encountered minor low grade gold-bearing veins that did not exceed 0.31 g/t Au over 1.0 metre.

In the period 1986 to 1990, Falconbridge Gold completed geophysical surveys and drilled 24 diamond drill holes (diameter unknown) that encountered sporadic alteration and mineralization. Small, anomalous intersections of 25.5 g/t Au over 0.5 metres and 13.34 g/t Au over 0.25 metres were reported.

In 1995, Pentland Firth Ventures (PFV) entered into a mining lease agreement, established an exploration grid, and conducted an undisclosed amount of ground geophysical surveys. In 1996, PFV cored 25 drill holes (diameter unknown) encountering 4.40 g/t Au over 5.1 metres (including 34.19 g/t Au over 0.4 metres) and 3.28 g/t Au over 7.3 metres. In 1997, PFV drilled an additional five holes that were used in a property valuation report prepared by RPA. At the time, the property was valued at \$2.3 million.

Exploration work completed by operators prior to LSG is summarized in Table 6.2.

**Table 6.2: Historic Exploration Activity**

Year	Company	Activity	Comment
1923	unknown	Trenching	observed by B. Rose, Ontario Department of Mines, exact date of work unknown
1958	Broulan Reef Mines Ltd	Claims staked	
		Trenching - partial results available	
		Surface diamond drilling - 6 holes (2014 ft)	
1963	Broulan Reef Mines Ltd	Surface diamond drilling - 1 hole (537 ft)	
1978 to 1981	Rosario Resources Canada Ltd	IP Survey	R.S. Middleton (1978)
		Magnetometer Survey	R.S. Middleton (1979)
		Overburden drilling	metres and location uncertain
		Surface diamond drilling - 90 holes (12,6370 m)	
1982	Amax Minerals Exploration Ltd	Airborne Magnetic and Electromagnetic Survey	Aerodat Ltd (1982)
		Surface diamond drilling - 36 holes (5,643.2 m)	
1982 to 1992	Canamax Resources Inc	Detailed surface mapping (Marlhill 1982)	
		Trenching (Marlhill 1985)	
		IP Survey	A. Watts & A. Philipps (1993)
		Ground Magnetometer and EM Survey	Services Exploration Ltd. (1993)
		Max Min EM ground survey	A. Watts (1985)
		Surface diamond drilling - 247 holes (47,611.9 m)	
		Feasibility study for <b>Bell Creek Mine</b>	Canadian Mine Services Ltd
		Underground development - <b>Bell Creek Mine</b> - 280 metre shaft, levels at 30, 60, 90, 120, 180, and 240 metre level. Ramp driven from shaft bottom to 300 metre level.	
		Underground diamond drilling - <b>Bell Creek Mine</b> - 227 holes (13022.2 m)	
		Commercial Production - Bell Creek Mine – 576,017 tons @ 0.196 oz/ton for 112,739 recovered ounces	Total Production from 1987 to 1994.

Year	Company	Activity	Comment
		Underground development - <b>Marlhill Mine</b> - ramp to 150 metre vertical depth, levels at 25, 50, 92, 100, 125, and 150 metre level	1989 to 1991
		Underground diamond drilling - <b>Marlhill Mine</b> - 117 holes (6302.3 metres)	1989 to 1991
		Commercial Production – Marl Hill Mine – 30,924 total recovered ounces	1989 to 1991, allowed to flood November 1991.
1992 to 1994	Falconbridge Gold Corporation Ltd	Underground diamond drilling - <b>Bell Creek Mine</b> - 64 holes (6155.5 m)	
		Commercial Production - Bell Creek Mine – 576,017 tons @ 0.196 oz/ton for 112,739 recovered ounces	Total Production from 1987 to 1994. Closed 1994 under care and maintenance, allowed to flood in 2001
1995	Pentland Firth Ventures Ltd	Surface diamond drilling - 32 holes (5623 m)	
1995 to 1997	Pentland Firth Ventures Ltd	Surface diamond drilling - <b>Marlhill Mine</b> - 105 holes (29,730.8 m)	
		Dewatering of <b>Marlhill Mine</b>	1996 to 1997, no production
		Underground diamond drilling - <b>Marlhill Mine</b> - 10 holes (3566 m)	
2002	Kinross Gold Corporation	Surface diamond drilling to test crown pillar of Marlhill Mine - 9 holes (411 m)	
2003 to 2004	Porcupine Joint Venture	Commercial Production - recovery of Marlhill Crown Pillar through open pit mining - 7,500 oz gold recovered	
2005	Porcupine Joint Venture	Surface diamond drilling to test down plunge extension of Bell Creek Mine North A zone - 36 holes (11,469 m).	

## 6.3 HISTORICAL RESOURCE ESTIMATES

### 6.3.1 Historically Significant Non-Compliant NI 43-101 Resource Estimates

The following mineralization estimates are not compliant with NI 43-101 but are considered historically significant in keeping exploration interest active at the Bell Creek Mine. These estimates have not been validated, are not considered to be current, and are quoted from the documents referenced.

In 1996, Pentland Firth Ventures commissioned an independent consultant, Unto Jarvi, to produce a resource estimate based on available drill information.

In 1997, Crick reported a “drill-indicated” resource based on the additional drilling done by PFV. This resource, with approximately half of the mineralization occurring above the 125L hosted in stacked flat vein sets, also predates NI 43-101 and is quoted for historic purposes only (Butler, 2008).

**Table 6.3: Historic Resource Estimate for the Bell Creek Deposit**

Year	Classification	Tonnes	Grade Au (g/t)
1996 <sup>1</sup>	Undefined	156,117	5.99
1997 <sup>2</sup>	“Drill-indicated”	673,425	2.89

Notes:

1. Employed a cut-off grade of 3 g/t Au, a 200 g/t Au top cut.
2. Employed a cut-off grade of 3 g/t Au, a 34.29 g/t Au top cut, a minimum 1.5 metre width, and allowing for a 15 metre crown pillar.

A Mineral Resource estimate was completed by the PJV in 2004 using a polygonal model and a gold price of US\$425 per ounce. This model was updated in 2005 to a computer generated block model that yielded similar grades but was reclassified by PJV as a “Mineral Inventory”. The 2004 estimate is derived from Butler (2008) and summarized in Table 6.4.

**Table 6.4: 2004 Resource Estimate (Not NI 43-101 Compliant)**

Classification	Tonnes	Grade Au (g/t)
Measured	0	0
Indicated	190,922	8.25
Inferred	346,936	7.70

### 6.3.2 NI 43-101 Compliant Resource Estimates

The most recent NI 43-101 compliant Mineral Resource estimate was completed by Scott Wilson RPA utilizing inverse distance squared as an estimation method, a long term gold price of US\$1,125 per ounce, exchange rate of US\$/CDN\$ of 0.95 and a resource cut-off grade of 2.2 g/t. Effective date for this estimate was October 25 2010.

**Table 6.5: 2010 NI 43-101 Compliant Resource Estimate**

Category	Tonnes	Capped Grade (g/t Au)	Oz Au
Measured	410,000	4.51	59,300
Indicated	1,380,000	4.32	191,800
<b>Measured &amp; Indicated</b>	<b>1,790,000</b>	<b>4.36</b>	<b>251,200</b>
Inferred	8,427,000	4.40	1,192,900

Notes:

1. CIM definitions were followed for classification of Mineral Resources.
2. Mineral Resources are estimated at a cut-off grade of 2.2 g/t Au.
3. Mineral Resources are estimated using an average long-term gold price of US\$1,125 per ounce, and a US\$/CDN\$ exchange rate of 0.95.
4. A minimum mining width of approximately two metres was used.
5. Capped gold grades are used in estimating the Mineral Resource average grade.
6. Sums may not add due to rounding.
7. Mr. Reno Pressacco, M.Sc.(A), P. Geo., was the Qualified Person for this resource estimate.

## 6.4 HISTORIC PRODUCTION

Gold mineralization was first discovered on the property through a joint venture between Rosario and Dupont Canada Exploration between 1980 and 1982. Between 1986 and 1991 Canamax Resources Inc. explored and developed the Bell Creek Mine. Access to mineralization was through a 290 metre deep three compartment shaft with an 8-foot diameter double drum hoist, and includes a 30-metre high headframe with a 300 tonne coarse ore bin to a loadout facility. Mine levels were developed to the ore zones, and a ramp was developed from the 240 metre level to access ore below shaft bottom to a vertical depth of 300 metres. Falconbridge Gold operated Bell Creek from 1991 to 1992, followed by Kinross until closure in 1994. The mine was kept on care and maintenance until 2001 when it was allowed to flood.

Bell Creek produced at a rate of 380 tpd and was reported to have produced 576,000 short tons of ore at a grade of 0.197 oz/ton (6.13 g/t) Au using vertical sublevel retreat, longhole, and shrinkage mining methods. This includes some ore from Marlhill. The bulk of the production was derived from the North A Zone where mining occurred on multiple levels (Butler, 2008). Table 6.6, from Pressacco (1999), summarizes historical ore production from Bell Creek.

**Table 6.6: Bell Creek Historical Production**

Year	Short Tons Produced	Grade (opt Au)	Recovered Ounces Au	Remarks
1987	55,180	0.173	9,558	Mill commissioned in July
1988	135,324	0.195	24,648	93.4% mill recovery
1989	146,727	0.203	29,786	94% mill recovery, includes Marlhill ore
1990	66,666	0.206	13,728	Excludes 82,200 tons of Marlhill ore
1992	138,171	0.195	26,880	Includes co-mingled Marlhill ore
1992	5,030	0.223	1,112	
1993	Limited	-	-	
1994	33,899	0.207	7,017	
<b>Total</b>	<b>576,017</b>	<b>0.197</b>	<b>112,739</b>	

## **7.0 GEOLOGICAL SETTING AND MINERALIZATION**

### **7.1 REGIONAL GEOLOGY AND STRUCTURE**

The Bell Creek deposit is located in the western part of the Archean aged Southern Abitibi Greenstone Belt, a supracrustal complex of moderately to highly deformed, usually greenschist facies, volcanic-dominated oceanic assemblages that are approximately 2.7 million years in age. Supracrustal rocks in the Timmins region are assigned as members of seven volcanic and two sedimentary assemblages within the Western Abitibi Subprovince of the Superior Province. Intrusions were emplaced during the Archean and Proterozoic eons.

Keewatin Series greenstone volcanics are found in spatially discrete groupings and contain tholeiitic volcanic lineages as well as other volcanic assemblages that were tectonically combined with spatially discrete komatiite-rich assemblages, banded iron formations, and turbidite-bearing sedimentary basins. Unconformably overlying the Keewatin Series are younger sub-aqueous to sub-aerial volcanic-sedimentary rocks of the Timiskaming Series. These rocks occur along the margins of late regional tectonic deformation zones that are near strike-parallel shears and/or faults which commonly show high strain and tight, vertically verging folding.

Batholiths and stocks found in the Southern Abitibi are approximately sequential from tonalite-monzonite-granodiorite through massive granodiorite, granite, feldspar  $\pm$  quartz porphyry to syenite.

Approximately one century of geological study has occurred in the Timmins area. A brief, and by no means exhaustive, summary of milestones over that period is presented below and is mostly taken from Powers, 2009.

In 1896, Burwash assigned Precambrian volcanic and sedimentary rocks in the Porcupine camp to the Huronian period of the Paleo-Proterozoic era.

Between 1911 and 1925, Burrows produced the first geological map and developed a nomenclature consistent with the relationships observed by earlier workers in the Lake Timiskaming area. He made key observations regarding the spatial and temporal relationships between the Timiskaming metasediments and Keewatin Series volcanic rocks, identified the intrusive phases as post-Timiskaming in age (2.7 Ma to 2.5 Ma), and defined the relationship between the Keweenawan diabase dykes and the Matachewan quartz diabase dykes.

In 1933, Graton et al. proposed the subdivision of Keewatin volcanics in Tisdale Township. From oldest to youngest, the rocks were subdivided into the Northern, McIntyre, Central, Vipond, and Gold Centre series. The term “99 Flow” was applied to the massive flow at the base of the Vipond.

In work done in 1936 and 1939, Hurst notes that metasedimentary rocks in the Timmins area both overlie and underlie an angular unconformity. He assigned the rocks above the unconformity to the Timiskaming Series and those below the unconformity to the Keewatin Series. He interpreted the porphyries as subvolcanic stocks, emplaced into volcanic vents, and the source of the felsic volcanoclastic extrusives. Later, in 1944, Holmes interpreted the porphyries to post-date Keewatin volcanics and Timiskaming metasediments.

In 1948, Jones presented a more detailed classification scheme modeled after Graton et al. (1933) and based on his work at the Hollinger Mine. Jones introduced alphanumeric classification (e.g., V8E), gave formation status to the Northern, Central, and Vipond Series, assigned the McIntyre Series to the base of the Central Series, and renamed it the 95 Flow. That same year, Dunbar defined two groups of Keewatin volcanic rocks and named them Deloro Group and Tisdale Group. Dunbar also discriminated the Krist Formation from the underlying Tisdale Group and placed it in the Hoyle Series. Also in 1948, Buffam, adapted Jones' Hollinger Mine terminology to the Moneta Mine, added the term "Krist Fragmental", and described the unconformity at the base of the Krist Formation that separates it from the underlying Tisdale Group mafic volcanic flows.

In 1954, Moore included the Krist Formation with the Timiskaming Group. Following the original interpretation by Burrows in 1911, Moore placed the unconformity between Keewatin and Timiskaming rocks at the base of the Krist Formation. Also in 1954, Fuse applied Jones' Tisdale Group nomenclature to rocks exposed at the McIntyre Mine. This was followed, in 1960, by Griffis establishing a more detailed subdivision of Tisdale Group rocks at the same deposit.

Ferguson et al. attempted to correlate the Timmins area stratigraphy in 1968, assigning Krist Fragmental to the uppermost formation in the Tisdale Group.

In 1974, using Jensen Cation Plots, Pyke subdivides the Deloro and Tisdale Groups into six formations based upon major oxide geochemical classification. The Deloro Group (Formations I through III) is a predominantly calc-alkaline sequence approximately 4,500 metres to 5,000 metres in thickness comprised mainly of andesite and basaltic flows at its base, dacitic flows and rhyolitic pyroclastics above, and, commonly, iron formation at or near the top. Most of the Deloro Group is confined to a large, centrally located domal structure. The beginning of the 4,000 metres thick Tisdale Group (Formations IV through VI) is marked by a major change in volcanism. At its base, the Tisdale Group is predominantly composed of ultramafic rocks and basaltic komatiites that are overlain by a thick sequence of tholeiitic basalt flows. The uppermost formation is composed largely of calc-alkaline dacitic volcanoclastics (Pyke, 1974).

In 1975, Lorsong subdivided the Porcupine Group into Whitney, Beatty, Dome, and Three Nations formations.

Pyke, in 1976, renamed the six formations from youngest, Donut Lake, Redstone, Boomerang, Goose Lake, Schumacher, and Krist and assigned all metasedimentary rocks to Formation VI as the sole unit of the Porcupine Group. Pyke considered the Porcupine Group to be a time-equivalent of the Upper Deloro and the entire Tisdale Groups. Later, in 1978, he renamed the Tisdale and Deloro Groups the Upper and Lower subgroups respectively. He also raised Formations I through VI to Group status but, according to Brisbin (1997), this reorganization did not meet with universal acceptance.

Intrusive rocks and selected volcanic rocks of the Timmins area were dated using U-Pb zircon methods by Frarey and Krough (1986), Mortensen (1989), and Corfu et al. (1989).

In 1988, Mason et al. suggest that the emplacement of the porphyry intrusive rocks prepared the host rock for subsequent hydrothermal fluid migration and gold mineralization. Fracturing and brittle faulting generated prior to intrusion of the porphyries during a period, or periods, of magmatic tumescence resulted in highly fractured centres that were subsequently exploited by hydrothermal mineralizing systems. The eruption of the Krist Formation pyroclastic rocks and

Keewatin folding and faulting may have also initiated ground preparation and localized magmatic and hydrothermal activity.

In 1991, Jackson and Fyon defined a lithostratigraphic association of rock units in the Western Abitibi Subprovince within the boundaries of 55 tectonic assemblages. An assemblage is defined as stratified volcanic and/or sedimentary rock units built during a discrete interval of time in a common depositional or volcanic setting. Jackson and Fyon (1991) suggest a four stage evolutionary model for the Southern Abitibi Greenstone Belt:

- Formation of submarine oceanic assemblages in regional-scale, complex micro-plate interactions perhaps caught between two larger converging plates located north and south of the micro-plate region;
- Termination of submarine volcanism by collision of a large continental mass to the south at ~2700 Ma. The collision may have been oblique, involving the 2800 to 3000 Ma Minnesota River Valley gneiss terrane.
- Tectonic thickening during collision led to emergent sediment source area(s) for post ~2700 Ma turbidite deposits, including both local deposits and a massive sedimentary accretionary wedge. As collision continued, previously formed volcanic and turbidite deposits, including the Pontiac Subprovince, were deformed;
- Terminal subduction, possibly involving complex plate interactions at 2685 to 2675 Ma, generated alkalic volcanic rocks and alluvial-fluvial sediments in proximity to crustal-scale shear zones.

In 1992, Melnik-Proud interpreted the gold-bearing quartz-carbonate-albite veins to not only be spatially, but temporally and genetically associated with albite dykes found in the Hollinger-McIntyre complex.

Brisbin defined the Krist as a formation within the Hoyle Group in 1997. He proposed and assigned a new lithostratigraphic unit termed the Hersey Lake Formation. This unit is composed of intercalated ultramafic and mafic flows that compose the base of the Tisdale Group in the core of the North Tisdale Anticline. Correlative flows are exposed in the south, on the Delnite, Aunor, and Buffalo Ankerite mine properties. The upper contact of the Hersey Lake Formation is defined as the upper contact of the highest ultramafic flow in the Tisdale Group (Brisbin, 1997).

In 1999, Pressacco is published in Ontario Geological Survey Special Project: Timmins Ore Deposits Descriptions.

Ayer et al. (2000), with the aid of additional remapping and geochronological data, proposed a reinterpretation of the Jackson-Fyon Tectonic Assemblages, reducing the number from 55 to nine including seven volcanic and two metasedimentary assemblages. Presently, the assemblages are interpreted as autochthonous, not allochthonous. Geochemistry of the volcanic units indicates an interaction between plume and subduction zone melts. The Porcupine assemblage is interpreted to be the result of submarine turbidite fans which are coeval with batholith emplacement, regional folding, and collision with the Opatika Subprovince. The Timiskaming assemblage is believed to be the result of subaerial alluvial fan-fluvial sedimentation associated with continental arc magmatism.

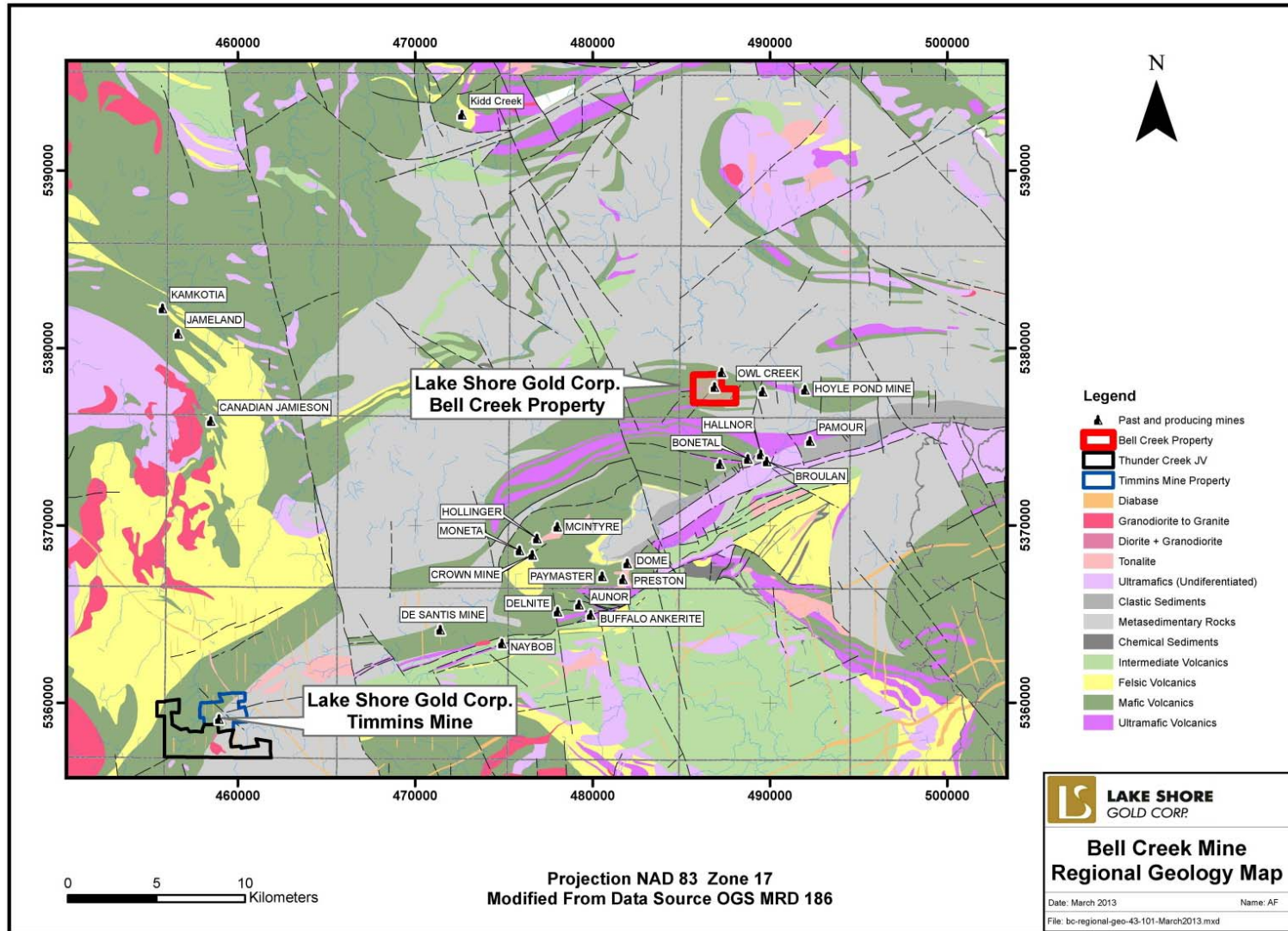
The Discover Abitibi Initiative (DAI) started in 2002 with a mission to coordinate and direct an integrated geoscientific investigation of the Abitibi Greenstone Belt (Discover Abitibi, 2010). Still active, the DAI brings together the talents of geologists, prospectors, mining industry leaders, the OGS, and the Geological Survey of Canada (GSC) to the Timmins - Kirkland Lake Gold Camps

to assess the fundamental architecture and processes which were responsible for the gold and base metal endowment.

Recent structural studies by Dave Rhys (Panterra Geoservices Inc.) have led to great advancements in recognizing and understanding the structural evolution and controls on mineralization in the Timmins camp and in the vicinity of the Bell Creek Mine. The region is affected by a long lived deformation history which is constrained in timing by the presence of unconformities within the sequence (Rhys 2010). Earliest deformation events include D1, a pre-Porcupine Assemblage phase of folding which is indicated by the local truncation of folds in the Tisdale Assemblage against the unconformity at the base of the Porcupine Assemblage. D1 was followed by a major phase of thin-skinned thrust imbrication and folding that lacks associated foliation, D2, which includes folds and thrust surfaces that are truncated against the Timiskaming unconformity, such as is seen in the Porcupine Syncline, and in the Pamour area. These events are followed by faulting along the Destor-Porcupine faults system, probably coincident with deposition of the Tisdale Assemblages, and then by at least two pulses of syn-tectonic deformation, D3 and D4, which are associated with post-Timiskaming foliation development (S3, S4 foliations). The pre-metamorphic D2 lithologic architecture and faults in the local area likely aided in the localization of later D3 high strain and shear zones, which may have preferentially formed along areas of high rheological contrast, in weaker units such as ultramafic and carbonaceous sedimentary horizons, and along the older D2 thrust surfaces where they are favourably oriented. Field relationships suggest that the mineralization in the district overlapped mainly with the D3 event, and overprints both Timiskaming sediments and older D2 structures (Rhys 2012).

Tectonic assemblages of the Abitibi Subprovince east of the Kapuskasing Structural Zone are shown in Figure 7.1 and summarized in Table 7.1.

Figure 7.1: Regional Geology



**Table 7.1: Summary of Porcupine Camp Tectonic Assemblages**

<b>Assemblage</b>	<b>Description</b>
Timiskaming	<p>Unconformably deposited from 2680 - 2670 Ma (10 Ma)</p> <p>Conglomerate, sandstone, and alkalic volcanics</p> <p>Coeval Au mineralization occurs near regional fault zones (DPFZ &amp; Cadillac Larder Lake Fault)</p> <p>Two end member types:</p> <ul style="list-style-type: none"> <li>• Quartz veins (Timmins &amp; Val d'Or)</li> <li>• Sulphide rich Stockworks (Holloway Twp., Kirkland Lake, Matachewan)</li> </ul>
Porcupine	<p>Age of 2690 - 2680 Ma (10 Ma)</p> <p>Turbidites with minor conglomerates &amp; iron formation locally</p> <p>Krist Formation is coeval with calc-alkalic felsic porphyries 2691±3 to 2688±2 Ma</p> <p>Alkali Intrusive Complex (Thunder Creek) 2687+/-3 Ma (Barrie, 1992)</p>
Blake River	<p>Age of 2701 - 2697 Ma (4 Ma)</p> <p>Tholeiitic &amp; calc-alkaline mafic to felsic volcanics</p> <p>VMS deposits associated with F3 felsic volcanics at Noranda</p> <p>Syngenetic Au &amp; base metals (Horne, Thompson, Bousquet)</p>
Kinojevis	<p>Age of 2702 - 2701 Ma (1 Ma)</p> <p>Tholeiitic mafic flows</p> <p>Interflow Turbidites</p> <p>F3 Felsic Volcanics</p>
Tisdale	<p>Age of 2710 - 2703 Ma (7 Ma)</p> <p>Tholeiitic to komatiite suite</p> <p>Calc-alkaline suite</p> <p>VMS Deposit: Kamiskotia – tholeiitic volcanics, gabbros &amp; F3 felsics</p> <ul style="list-style-type: none"> <li>• Val d'Or – calc-alkaline volcanics &amp; F2 felsics</li> <li>• Sheraton Township area – intermediate-felsic calc-alkaline volcanics</li> </ul> <p>Ni-Cu-PGE: Shaw Dome, Texmont, Bannockburn</p>
Kidd-Munroe	<p>Age of 2719 - 2711 Ma (8 Ma)</p> <p>Tholeiitic to komatiitic</p> <p>Calc-alkaline suite</p> <p>Ni-Cu-PGE (Alexo)</p> <p>VMS deposit:</p> <ul style="list-style-type: none"> <li>• F3 felsic volcanics &amp; komatiites (Kidd Creek)</li> <li>• Tholeiitic-komatiitic volcanism (Potter)</li> </ul>
Stoughton-Roquemaure	<p>Age of about 2723 - 2720 Ma (3 Ma)</p> <p>Mg- and Fe-rich tholeiitic basalts</p> <p>Localized komatiites and felsic volcanics</p> <p>PGE mineralization in mafic-ultramafic intrusions and komatiites (Mann and Boston Townships)</p>

Assemblage	Description
Deloro	Age of about 2730 - 2724 Ma (6 Ma) Mafic to felsic calc-alkaline volcanics Commonly capped by regionally extensive chemical sediments Two different types of VMS deposits: <ul style="list-style-type: none"> <li>F2 felsic volcanics and synvolcanic intrusion (Normetal)</li> <li>Localized sulphide-rich facies in regional oxide facies iron formations (Shunsby)</li> </ul>
Picaud	Age of 2750 – 2735 Ma (15 Ma) Mg- and Fe-rich tholeiitic basalt Localized komatiites and felsic volcanics

**Table 7.2: Sequence of Geological Events for the Timmins Camp (Simplified)**

Event	Age (Ma)	Reference
<b>Faulting</b>		
<b>Diabase (Matachewan) Dyke Intrusion</b>		
· Hearst Dyke – Diabase	2461 ± 2	Heaman, 1988
<b>Penetrative Deformation/Greenschist Facies Metamorphism</b>	~2633	
<b>Timiskaming Sedimentation</b>		
<b>Unconformity/Folding</b>		
<b>Copper Gold Mineralization and Related Hydrothermal Alteration</b>		
<b>Albitite Dyke Intrusion (Algoman) (and Related Hydrothermal Alteration?)</b>		
· Albitite Dyke	2673 ± 3	Mortensen, 1987
· Watabeag Batholith	2676 ± 2	Frarey and Krough, 1986*
· Winnie Lake Stock (monzonite)	2677 ± 2	Frarey and Krough, 1986*
· Garrison Stock (monzonite)	2678 ± 2	Corfu et al., 1989
· Garrison Stock (monzonite)	2679 ± 4	Frarey and Krough, 1986*
· Otto Stock (syenite)	2680 ± 1	Corfu et al., 1989
· Watabeag Batholith	2681 ± 3	Frarey and Krough, 1986*
· Lake Abitibi Batholith (granodiorite)	2689 ± 3	Mortensen, 1987
<b>Porphyry intrusion (Algoman), emplacement of heterolithic breccias, and related hydrothermal alteration</b>		
· Crown Porphyry	2688 ± 2	Corfu et al., 1989
· Pearl Lake Porphyry	2689 ± 1	Corfu et al., 1989
· Preston Porphyry	2690 ± 2	Corfu et al., 1989
· Paymaster Porphyry	2690 ± 2	Corfu et al., 1989
· Millerton Porphyry	2691 ± 3	Corfu et al., 1989
<b>Beatty Sedimentation</b>		
<b>Krist (Keewatin) Calc-alkaline Volcanism and Sedimentation</b>	2691 ± 3 to 2688 ± 2 (revised)	
<b>Unconformity</b>		
<b>Tilting/Folding?</b>		
<b>Watabeag Batholith (Diorite)</b>	2699 ± 2	Frarey and Krogh, 1986*

Event	Age (Ma)	Reference
<b>Tisdale Group (Keewatin) Komatiite-Tholeiitic-Calc-alkaline Volcanism</b>		
· 99 Flow	2707 ± 3	Ayre, OGS*
· Aquarius Diorite	2705 ± 10	Corfu et al., 1989
· Flavrian Stock (trondhjemite)	2701 ± 1.5	Mortensen, 1987
<b>Deloro Group (Keewatin) Komatiite-Tholeiitic-Calc-alkaline Volcanism</b>		
· Dunite	2707 ± 3	Corfu et al., 1989

\* cited in Powers, 2009

## 7.2 PROPERTY GEOLOGY

The Bell Creek properties are underlain by carbonate altered, greenschist facies Archean-aged, metavolcanic and clastic metasedimentary rock units belonging to the Tisdale and Porcupine assemblages. The metavolcanic portion of the stratigraphy represents the lower portion of the Tisdale Group, with the ultramafic metavolcanic rocks belonging to the Hershey Lake Formation (Brisbin, 1997) or Pyke's (1982) lowermost unit, Formation IV. The mafic metavolcanic variolitic and iron tholeiitic flow units are interpreted as being characteristic of Pyke's (1982) middle unit, Formation V. The Krist Formation, Pyke's upper unit, is absent from Hoyle Township (Berger, 1998). The lithologies generally strike east-west, to west-northwest, and are steeply dipping.

The ultramafic metavolcanic rocks are comprised of massive, spinifex, and polysutured textured flows and derived schists. Ultramafic schist is characterized by a fissile habit, abundant talc, and Mg-rich chlorite and carbonate (Berger, 1998). Limited whole rock analyses completed on the lithologies in Hoyle Township indicates the lower ultramafic metavolcanic rock unit to be basaltic komatiite (Berger, 1998; Pressacco, 1999). Kent (1990) describes the ultramafic rock sequence at Bell Creek as a lens-shaped unit that forms pods 100 metres to 200 metres thick, which locally exhibits intense ankerite-fuchsite alteration.

The mafic metavolcanic rocks exhibit massive, pillowed and breccia flow textures. Berger (1998) observed that stratigraphic tops of the pillows consistently faced to the south or the west in the Tisdale assemblage within Hoyle Township. Based upon the west facing pillow, Berger believed there was no evidence that the mafic metavolcanic rocks of the Tisdale assemblage were folded. Several thin interflow sedimentary horizons present within the mafic sequence (Kent 1990), can be seen underground to locally change in strike from east-west to more northerly trends and are now interpreted (Rhys 2012) to be associated with asymmetric D3 and D4 folds of an overall northwest trending stratigraphy. Flow units occur with a flow top breccia which exhibits a gradational contact into a pillowed base. Variolitic flows are common within the mafic volcanic sequence. A correlation of the variolitic flows of the Bell Creek deposit area with the variolitic flow of the Tisdale Group, especially the V10 (Vipond Formation) flow unit is implied, but has not been verified by detailed mapping and geochemical testing. The mafic schists occur as a fine grained fissile unit that weathers a dark green to orange brown colour. Common to Pyke's Middle Formation of the Tisdale assemblage are leucoxene bearing Fe-rich tholeiitic basalts. The presence of abundant leucoxene has been used to distinguish between the lower formation Mg-rich basalts (leucoxene absent) and the Fe-rich tholeiitic basalts. Whole rock analysis results returned from six of Berger's (1992, 1994) samples plotted as Fe-tholeiites (three samples), calc-alkaline basalts (two samples), and tholeiitic andesite (one sample) (Pressacco, 1999).

The metasedimentary rock units are composed of wacke, siltstone, mudstone, graphite, and pyritic mudstone and are correlated with the Hoyle assemblage (Jackson and Fyon, 1991;

Berger, 1998). The Hoyle assemblage has been redefined as a formation and is an extensive part of the Porcupine assemblage, which includes the Beatty Formation of metasedimentary rocks located in the core of the Porcupine Syncline (Bateman et al., 2005). Wacke beds vary from 5 mm to over 1 metre thick and display grain gradation. Chlorite and sericite are the most common alteration minerals in the matrix, whereas biotite is absent in most metasediments in Hoyle Township. Siltstone is rare in the Hoyle assemblage, occurring as thin layers overlying wacke beds. Green, grey, and dark grey mudstone occurs throughout the Hoyle assemblage overlying wacke. Graphite and amorphous carbon are the major opaque minerals and comprise less than 5% of the rock. Graphitic and pyritic mudstone is a distinctive rock type that generally occurs along, or within, 400 metres of the contacts with mafic metavolcanic rocks. Pyrite comprises from 1% to 30% of the graphitic mudstone and occurs in two forms, as nodular pyrite balls that are 1 mm to 2 cm in diameter, and as disseminated to massive laminated or bedded layers 1 mm and 10 mm thick (Berger, 1998).

Intruding the Archean rock units is a north-south trending swarm of diabase dykes which has been correlated with the Paleo-Proterozoic age Matachewan swarm. This mafic intrusive unit contains up to 15% magnetite and weathers an orange-brown colour. Berger (1998) describes a Cretaceous regolith that was intersected in several reverse circulation overburden drill holes in Hoyle Township. He describes the unit as being a green to gold coloured, gritty clay that is commonly indurated and locally forms a hardpan layer. This unit indicates that Archean rocks were subjected to intense laterite-like weathering.

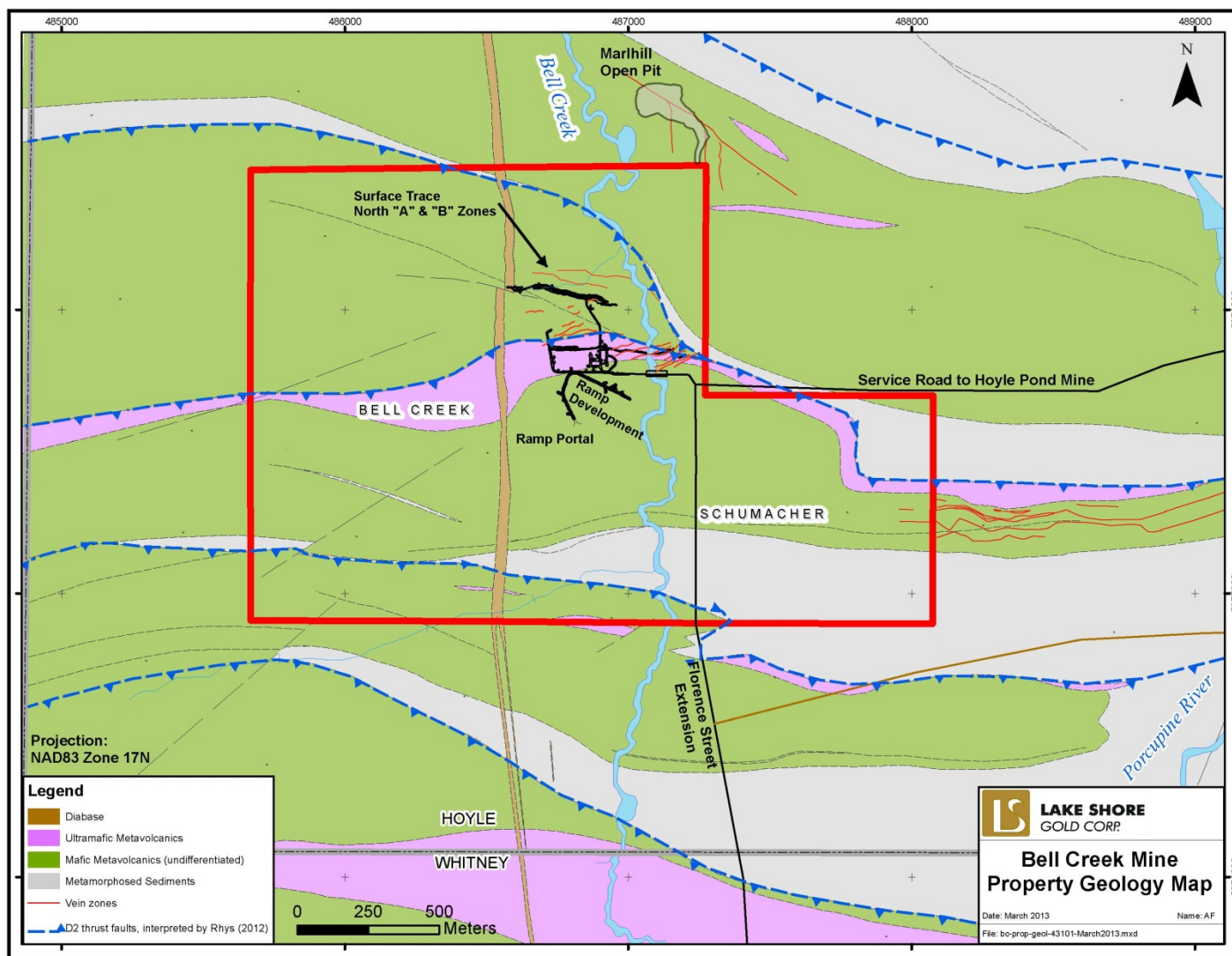
Overlying the Archean bedrock is the Quaternary geology unit of the Barlow-Ojibway Formation. This is a sequence of glacio-lacustrine deep water varved silts and clays overlain by gravel and clay till of the Matheson till sheet. Recent organic deposits, of black mud and peat, overlie the Quaternary geology.

The structural setting of the Bell Creek property is complex. The deposit is said to be situated north of the North Tisdale Anticline, within an Archean-aged metavolcanic and metasedimentary rock synclinal fold/fault sequence, and is positioned between two D2 reverse faults (Powers 2009). Bateman et al. (2005) interpret the thrusting as the formation of the North Tisdale Anticline D2 and F2 events. The strike is parallel to the surface traces of the thrust plane and anticlinal axis. Stratigraphic tops point to the south and, near surface, the rock units dip steeply south. At depth, the dip undulates to vertical and changes to steep north dipping. Bateman et al. (2005) illustrate an F4 northeast-southwest synclinal axis at Hoyle Pond Mine. Rhys (2004) illustrates the Hoyle Syncline, north of the North Tisdale Anticline as D1b fold event and that Bateman's F4 synclinal axis parallel to the 1060 Zone at Hoyle Pond Mine is a D2 synclinal fold event. Since then, more recent work by Rhys provided some modifications to the structural history, with the addition of at least one early folding event preceding the Temiskaming Assemblage. This proposed structural history is compatible with that presented in Bateman et al (2005), apart from the post-metamorphic interpretation of the relative timing of the S3 deformation with respect to the Temiskaming Assemblage (Rhys 2010). "The overall setting of the Bell Creek deposit occurs in an area of lithologic complexity and rheological contrasts. The sequence of mafic and ultramafic volcanic rocks of the Tisdale Assemblage form a series of interleaved, easterly thinning wedges which alternate with eastward thickening bands of younger turbiditic sediments of the Porcupine Assemblage. Mapping and compilation of facing indicators from drill core (graded bedding, etc.) at the Hoyle Pond, Owl Creek, and Pamour deposits and the Wetmore prospect indicate that the lithologic sequence is dominantly south facing. This suggests that the alternating volcanics and sedimentary bands represent interleaved thrust panels related to D2, pre-metamorphic and pre-Temiskaming deformation event in the area, rather than a series of alternating anticlines and synclines as has previously

been interpreted across which bedding facing directions should change. Like the Porcupine Syncline in the central Timmins district (Tisdale Township), major thrust panels, and carbonaceous thrust faults which lie along the south side of the mafic belt, are truncated against the Timiskaming unconformity in the Pamour-Hallnor area to the southeast of Figure 7.2” (Rhys 2012). The dominant syn-metamorphic foliations, S3 and S4 related to post-Temiskaming D3 and D4 events, regionally obliquely cross, and are superimposed on the series of thrust panels (Rhys, unpublished data).

Figure 7.2 illustrates the generalized property geology relative to the property survey lines, cultural, and topographical features.

Figure 7.2: Property Geology



## **7.3 MINERALIZATION**

### **7.3.1 Overview**

In the Porcupine Camp, gold bearing structures most commonly form in relatively competent volcanics intruded by felsic porphyry stocks and dykes prior to the deposition of the Timiskaming assemblages. Porphyries dating from  $2691 \pm 3$  Ma to  $2688 \pm 2$  Ma intruded the already folded and faulted greenstone sequences and initiated the mesothermal systems with the formation of associated albitites. Observations of pyrrhotite and gold-mineralized clasts at both Pamour and Dome mines within Timiskaming conglomerates suggest a prolonged gold deposition event from the creation of the steep south dipping DPFZ up to the latest episode of crustal stabilization (Butler, 2008).

Fracture intensity and alteration increase toward mineralized zones. Alteration consists of bulk and fracture-controlled sericite, Fe-dolomite to ankerite, quartz, and dark green to black chlorite. Microfractures contain late chlorite and carbonate veinlets. Distal carbonatization, resulting in grey carbonate zones, is quite common (Butler, 2008).

Berger (1998) describes the gold mineralization in the Bell Creek area as occurring along selvages of quartz veins and wall rocks, in stylolitic fractures in quartz veins, in fine grained pyrite, and in association with amorphous carbon. High grade gold mineralization occurs within quartz veins contained in alteration zones. The alteration zones are characterized by carbonate, graphitic and amorphous carbon, fine grained pyrite, sericite, and/or paragonite and are enriched in Au, As, Bi, and W. This style of alteration is referred to by mine geologists as “grey zones” and is an exploration target in Hoyle Township.

Kinross and Pentland Firth Ventures (PFV) first coined the term “New Mines Trend” to describe areas of the Hoyle “antiform and synform” that host the current and past producing Hoyle Pond, Owl Creek, Marlhill, and Bell Creek mines and the Schumacher and Vogel advanced exploration projects. More recently, structural work by Rhys (2003, 2012) suggests that the alternating volcanic and sedimentary bands in the area represent interleaved thrust panels, where wedges of mafic volcanic, sedimentary, and deformed ultramafic rocks converge in the vicinity of the deposit. The occurrence of variably oriented lithologies of various deformational (rheological) strength and thickness in the lithologic sequence likely contributed to local complex strain patterns during regional syn-metamorphic deformation. Carbonaceous units (i.e. interflow sediments) may have had important controls on the position and orientation of mineralized shear zones which locally exploit them (Rhys 2012).

### **7.3.2 Bell Creek Mine**

The Bell Creek mineralization differs in style from many deposits in the Porcupine Mining camp in being composed largely of disseminated pyrite-pyrrhotite-related mineralization; slightly younger gold-bearing quartz veins may be present but are not predominant. This style of mineralization occurs in the deeper parts of the Dome Mine and in the Rusk Zone at the Timmins West mine, but is more common to the east, in the Holloway-Holt McDermott area and at the Larder Lake, where pyritic mineralization is often termed “flow ore” (Rhys 2012).

The most significant gold mineralization at the Bell Creek Mine occurs in two lithostructural settings: a) near or along an ultramafic-to-mafic contact zones (the Bell Creek and West Zone), and b) within the mafic volcanics sequence (North Zones).

The Bell Creek and West Zones were discovered in 1980 while drill testing electromagnetic conductors and IP anomalies. Kent (1990) describes the Bell Creek West Zone mineralization as occurring on or near the contact of the ultramafic metavolcanic and mafic fragmental metavolcanic rock units, with the latter as the preferred host. Mineralization consists of 2% to 10% pyrite, with accessory arsenopyrite, pyrrhotite, chalcopyrite, and minor quartz veins and veinlets. Approximately 90% of the gold is associated with the disseminated sulphides that occur in association with altered quartz-carbonate-sericite-sulphide zones that range from 0.5 metres to 7 metres in width. Lenses that are approximately 100 metres in length and 200 metres in vertical extent strike west-east and plunge steeply to the east. Multiple mineralized zones are identified along a one kilometre strike length of the mafic/ultramafic metavolcanic contact, which runs across the southern part of the mine. Active carbon occurs in some of the mineralized pods in the form of sheared graphitic interflow sediments. The presence of the active carbon has a deleterious effect on gold recovery; consequently mining was not planned where this was encountered (Kent, 1990), and only a small portion of the zones were mined in the upper levels of the mine prior to 1992. Potential for better grades and recoveries further along strike and at depth still need to be assessed.

The **North Zone** at Bell Creek was intersected in 1981 while targeting IP anomalies. The vein system consists of two main sub-parallel horizons, roughly 40 to 60 metres apart, historically referred to as the North A and North B zones. They occur within mafic volcanic rocks, approximately 200 metres north of an ultramafic contact and north of the Bell Creek headframe. Mineralization within the zones trends east west to west-northwest and dips steeply to the south or southwest. The mineralization is locally deflected as it intersects and exploits a 0.5 to 10 metre wide band of carbonaceous interflow(?) sediments. Mineralization forms vein-replacement networks along probable minor shear zones which are approximately parallel to the S3 foliation, although S3 locally trends slightly more northeasterly than the zone, especially where the zone rotates to the northwest trends (Rhys 2012). Collectively, the North Zones have an overall plunge which is steep to the east and has been traced continuously by drilling below 1,680 metres vertical depth, and remain open at depth. Overall plunge of the system is approximately parallel to L4 lineation, and is similar to the steep easterly plunge of the 1060 Zone at the Hoyle Pond mine. Internally, steeper plunges to the west of thicker, high grade segments of the zone are apparent, forming more local, stope scale oreshoot plunges at bends in the structures (Rhys 2012).

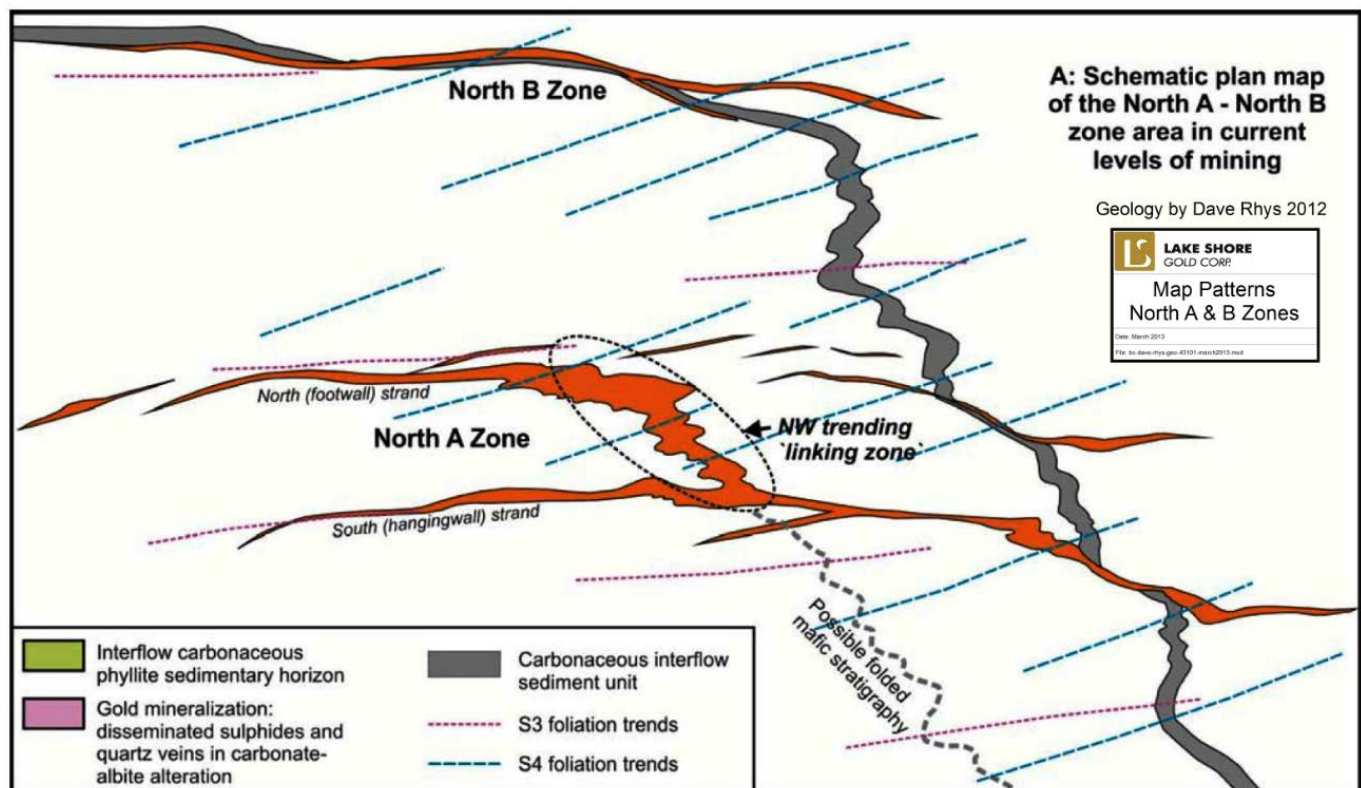
The **North A Zone** outcrops approximately 200 metres north of the Bell Creek headframe and consists of a marker quartz vein that varies from 0.1 metres to 2 metres in width with an associated alteration halo. Approximately 0.5 metres in average width, the vein parallels the regional schistosity and cross-cuts lithology. Bright green hydromuscovite occurs as fractures and slip coatings in the vein, with visible gold occurring with the mica. Brown tourmaline (dravite) is ubiquitous. The North A Zone can typically average 6 g/t Au to 10 g/t Au over 2 metre to 10 metre widths. Adjacent to the quartz marker vein is a pale grey to buff coloured altered zone (carbonate-albite+/-sericite – Hicks 1986) which contains 5% to 15% pyrite and pyrrhotite, with accessory chalcopyrite and arsenopyrite. Trace amounts of pentlandite, arsenopyrite and cobaltite have also been reported (Miller 2011). Up to 30% of the gold in the North A Zone occurs within the alteration halo, in discrete sulphide zones and in vein-brecciated wall rock zones that extend up to 5 metres from the margin of the core vein.

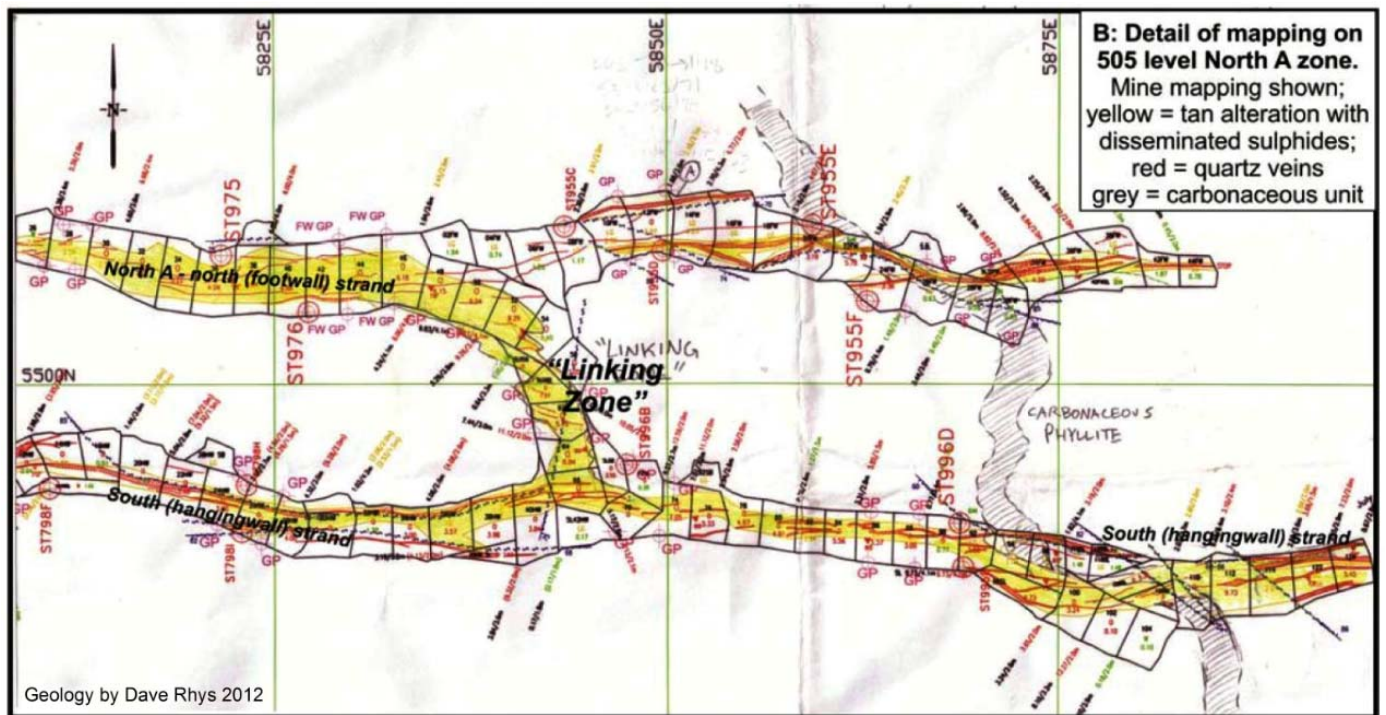
The North B zone occurs 40 to 60 metres further north, and runs essentially sub-parallel to the North A zone. In this case, the zone is predominantly hosted by the same interflow carbonaceous sediment which is locally transected by the North A Zone. Brittle faulting exploits the carbonaceous unit, forming east-west to west-northwest trending fault surfaces with thin

seams of black carbonaceous gouge that run parallel to the zone (Rhys 2012). Historically, portions of the wall rocks were thought to contain active carbon, which was determined to be detrimental to gold recovery (Kent, 1990). Overall, mineralization is narrower, quartz vein abundance is higher, and grades are lower than in the North A Zone.

To date, the North A and North B Zones extend up to 500 metres along strike, and remain open at depth, 1,680 metres below surface. The zones locally branch or break into strands which define at least nine principal domains of gold mineralization, three (3) of which contain 80% of the total resource (refer to Item 14).

**Figure 7.3: Map patterns in the North A and North B zones in the current areas of mining.** Schematic plan map (A) and mine geology map (B) showing patterns observed during this study which comprise eastern parts of the North zones of mineralization. Both the North A and North B zones cross the carbonaceous unit, bending and running parallel to it as they intersect it. Note the "linking zone", a bend to southeast-northwest trends of the northern (footwall) strand of the North A Zone which links it to a second strand (the south, hangingwall strand) to the southeast. Highest grades and thickest parts of the North A Zone occur close to and within this "linking zone". Note in A the trends of S3 and S4, and the dashed line illustrating potential for the "linking zone" to be developed in parallel to, or along a stratigraphic horizon in the mafic sequence.





## 8.0 DEPOSIT TYPES

The Porcupine area is well known for hosting two mineral deposit types: 1) Xstrata's Kidd Creek mine, which is a volcanogenic massive sulphide deposit; and 2) several mesothermal Archean shear-hosted gold deposits. Gold production to the end of 2006, from some 50 operational sites is reported to be 2,028,140 kilograms of gold (65,206,222 ounces of gold). Table 8.1 highlights the 21 locations that exceeded production of 3,110 kilograms of gold (100,000 ounces of gold). The gold deposits of Whitney Township were not examined here but are described by Aitken (1990) and by Brisbin (1997).

**Table 8.1: Operations of Greater Than 100,000 Ounces of Gold Production in the Porcupine Gold Camp**

Mine	Kilograms Gold Produced	Ounces Gold Produced
Hollinger	601,158	19,327,691
Dome	487,558	15,675,367
McIntyre Pamour Schumacher	334,423	10,751,941
Pamour # 1 (pits 3, 4, 7, Hoyle)	131,393	4,224,377
Aunor Pamour (#3)	77,828	2,502,214
Hoyle Pond	72,046	2,316,346
Hallnor (Pamour #2)	52,582	1,690,560
Preston	47,879	1,539,355
Paymaster	37,082	1,192,206
Coniarum/Carium	34,512	1,109,574
Buffalo Ankerite	29,775	957,292
Delnite (open pit)	28,740	924,006
Pamour (other sources)	21,046	676,645
Broulan Reef Mine	15,519	498,932
Broulan Porcupine	7,485	240,660
Owl Creek	7,368	236,880
Hollinger Pamour Timmins	5,663	182,058
Nighthawk	5,468	175,803
Moneta	4,642	149,250
Crown	4,303	138,330
Bell Creek	3,507	112,739
<b>21 site Totals</b>	<b>2,009,976</b>	<b>64,622,226</b>
<b>The Porcupine Camp Total (50 sites)</b>	<b>2,028,140</b>	<b>65,206,222</b>

(source: <http://www.mndm.gov.on.ca/mines/ogs/resgeol/office>)

Approximately 15% of the gold mined to date in the Porcupine Camp has come from bulk tonnage, sheeted vein and stockwork deposits, and, to a lesser extent, from narrow veins hosted in Timiskaming-aged sedimentary rocks. These deposits have been mined at the Dome Mine in Tisdale Township, and at the Pamour, Falconbridge Hoyle, Broulan, Hallnor, and Bonetal mines in Whitney Township.

Mesothermal gold deposits comprise high Fe or high ratio Fe/(Fe + Mg) greenstone type rocks that induce sulphidization reactions and gold precipitation and are thought to have formed during the final orogenic phases of Archean tectonism. Regionally, deposits occur in the vicinity of large deformation zones associated with secondary or tertiary deformation. Cox (2000) describes the development of most mesothermal gold systems along active and permeable low displacement faults and shear zones adjacent to large crustal scale deformation zones. Clusters of large deposits commonly occur in greenschist-facies, and, to a lesser extent, amphibolite-facies, country rocks (Butler, 2008).

## 9.0 EXPLORATION

Lake Shore Gold has been actively exploring in the Bell Creek area since acquisition in 2005. This work has been completed with reference to the historic Bell Creek coordinate system which has been extended to cover the property extents. The property boundaries have been located and referenced with respect to this control grid.

The bulk of this work has been focused on extending and further defining mineralization in the North A and North B zones previously identified or exploited underground. Initially, exploration activity has been focused on surface diamond drilling although a geophysical magnetometer survey was completed to assist in defining stratigraphy. An advanced exploration ramp was collared at UTM, NAD 83, Zone 17 coordinate 486,814 East, 5,377,603 North on June 6<sup>th</sup>, 2009. The 5.0 metre high by 5.0 metre wide ramp provides access to the North A Zone, as well as providing diamond drill platforms to further define mineralization.

This work led to the preparation of NI 43-101 compliant Mineral Resource estimate in 2010. Effective date for this update was October 25<sup>th</sup>, 2010.

Diamond drilling from surface and underground, as well as underground development remains ongoing. A summary of exploration work completed by LSG to the effective date of this report, November 1, 2012, is summarized in Table 9.1.

**Table 9.1: LSG Exploration – Bell Creek Deposit**

**January 2005 to Nov 1, 2012<sup>1</sup>**

Activity	# of Drill Holes	Metres	Notes
Surface drilling - Bell Creek	226	109,972	
Surface drilling - Schumacher	47	26,821	Collared on Schumacher claim targeting Bell Creek
Underground drilling – Bell Creek <sup>2</sup>	536	67,025	
Ramp development		6,401	Excludes re-mucks, safety bays, drill cut-outs, etc.
Sill Development		5,836	
Production	tonnes 376,102	Grade (g/t) 4.68	Un-reconciled tonnage - grade

Notes:

(1) All completed LSG drilling at Bell Creek mine excluding holes in progress on November 1, 2012.

(2) Includes six grout holes for fresh air raise and three holes drilled towards Marhill

After the acquisition of the Schumacher property, drilling was conducted to test the flat veins located in the eastern portion of the property. These vein sets are not considered part of the Bell Creek Resource. In 2006, three stratigraphic holes totaling 3,307 metres in aggregate length were followed by three shorter holes (totaling 546 metres) along the margins of the gold-bearing zone. Later, in Q3 of 2006, Lake Shore Gold drilled an additional 912 metres in three holes in an attempt to determine a shallow bedrock location for a potential ramp portal entrance. In addition to the standard core logging procedures, these holes were logged for Rock Quality Designation (RQD) (Butler, 2008).

Recent drilling collared on the Schumacher property has been completed to test the down dip and down plunge extensions of the Bell Creek North A and North B mineralization. These drill holes are included in the preceding chart.

## 10.0 DRILLING

Diamond drilling in the general vicinity of the Bell Creek deposit has been conducted by several entities with the first recorded drill hole in assessment files being completed in 1940 (Alton C.B. Township 1, Concession 9). Early drilling records lack assay results or identifiable collar locations. For this reason, the description of diamond drill programs begins with the Rosario Resources Canada Ltd. drilling completed in 1978. Drilling completed prior to the acquisition of the previously described claim group by LSG is described as historic drilling, and consists of 73,294 metres in 546 holes.

### 10.1 HISTORICAL DRILLING

A summary of drill programs completed prior to LSG interests in Bell Creek is summarized in Table 10.1.

**Table 10.1: Historical Diamond Drilling**

Company/Group	Year	Hole Sequence		Location	Bell Creek Area	
		from	to		# holes	metres
Rosario Resources Canada Ltd	1978	MH78-1	MH78-7	surface	7	868.98
	1979	MH79-01	MH79-5	surface	5	655.35
	1980	MH80-01	MH80-19	surface	15	2523.69
	1981	MH81-01	MH81-46	surface	38	5793.92
Amax Minerals Exploration Ltd *	1982	1202-01-101	1202-01-136	surface	34	5520.2
Canamax Resources Inc *	1982	045-01-137	045-01-152	surface	16	2854.5
	1983	045-01-153	045-01-200	surface	41	8711.4
	1985	045-01-214	045-01-255	surface	14	1634.8
	1986	045-01-256	045-01-301	surface	5	1446
	1988	045-01-302	045-01-314	surface	10	3126
	1989	045-01-315	045-01-333	surface	15	5345.26
	1990	045-01-334	045-01-379	surface	12	2360.19
	1988 to 1991	UG 1-01	UG 1-07	underground	7	284.6
Canamax Resources Inc		UG 2-01	UG 2-07	underground	7	248.72
		UG 3-01	UG 3-08	underground	8	344.7
		UG 4-01	UG 4-09	underground	9	2557.71
		BC-88-01	BC_88-10	underground	10	271.45
		88-240-01	88-240-15	underground	15	141.42
		UG 2c-01-88	UG 2c-02-88	underground	2	63.1
		UG 3b -01-01-88	UG 3b -01-05-88	underground	5	171
		180-01A-88	180-05-88	underground	6	120.41
		120-01-88	120-02-88	underground	2	106.38
		180-89-01	180-89-04	underground	4	228.9
		240-89-01	240-89-04	underground	4	210.61
		89-11	89-18	underground	8	357.39
		9001	9080	underground	66	3412.15
		9101	9183	underground	74	4503.68
	1992 to 1994	9201	9229	underground	25	2401
		9401	9460	underground	39	3754.47
Pentland Firth Ventures Ltd	1995	KB380	KB411	surface	7	1807
Porcupine Joint Venture	2005	BC05-01	BC05-41	surface	36	11469

\* drill holes are identified as C"hole number" in digital database

The Rosario Resources Canada Ltd. drilling (1978 to 1981) consists primarily of North to South oriented drill holes (360 degree azimuth). Drilling in 1978 and 1979 was in the general area with no drill holes collared within 1,000 metres of future mine workings.

The North A and North B veins were first intersected in 1980. Strike of veining is at 100 degrees dipping 70 degrees south yielding intersections approximately normal to vein strike (10 degree variance).

Amax Minerals Exploration Ltd. and Canamax Resource Inc. surface drilling between 1982 and 1990 was completed at 30 metre centres on a north south oriented grid presently referred to as the Bell Creek Mine grid. Collar orientation for most drill holes was 360 azimuth yielding intersections approximately normal to the strike of the vein (10 degree variance).

Underground diamond drilling by Canamax Resources Inc. (1988 through 1991) and Falconbridge Gold Corporation (1991 through 1994) was completed from diamond drill cut-outs with various collar azimuths and dips to provide coverage. Intersection angles vary considerably.

Subsequent surface drilling by PFV and PJV was oriented using the Bell Creek Mine grid, predominantly with 360 degree azimuth drill collars.

Drill holes BC05-31 to BC05-36 completed by PJV were collared east of mine workings and oriented at 330 degrees, presumably to compensate for down-hole deviation.

Significant diamond drill intersections from historic drilling are listed in Appendix A.

## **10.2 LAKE SHORE GOLD DRILLING**

A total of 280 surface holes and wedge-holes were completed by LSG since the acquisition of the property, for a total of 137,594 metres drilled. Most of the drill holes were NQ-size, except where it was necessary to reduce to BQ-size when technical difficulties were encountered. Drilling was mostly focused on infilling and expanding the North Zones, with a minor portion directed towards exploration of new mineralization zones. Depending on drill contracts and drill rigs availability, the program was carried-out by drilling contractor Bradley Bros. Ltd. of Timmins, Orbit Garant of Val-d'Or, and by Norex Diamond Drilling Ltd. of Porcupine, Ontario.

All work performed on the Bell Creek Complex is referenced to the Bell Creek mine grid which has been extended eastward through the Schumacher and Vogel properties. Proposed diamond drill hole collar locations are pegged in reference to this grid.

On a regular basis or as required, the collars were surveyed by, L. Labelle Surveys of Timmins, and a final collar location is provided in reference to the mine grid and UTM, NAD 83, Zone 17 coordinates.

During drilling, changes in azimuth and inclination are monitored at 30 to 50 metre intervals using an EZ-shot Reflex instrument. If the drill-hole trajectory needed adjustment, steel wedges were used. When required, Navi drilling was provided using directional mud motors operated by technicians from International Directional Services (IDS), based out of Capreol, Ontario. Upon completion of a drill-hole the normal practice is to have the holes resurveyed using a north-seeking gyro by Halliburton/Sperry Drilling Services of North Bay, Ontario. The holes were then plugged and cemented below the casing, and the casing was left in place, capped, and labeled for future reference.

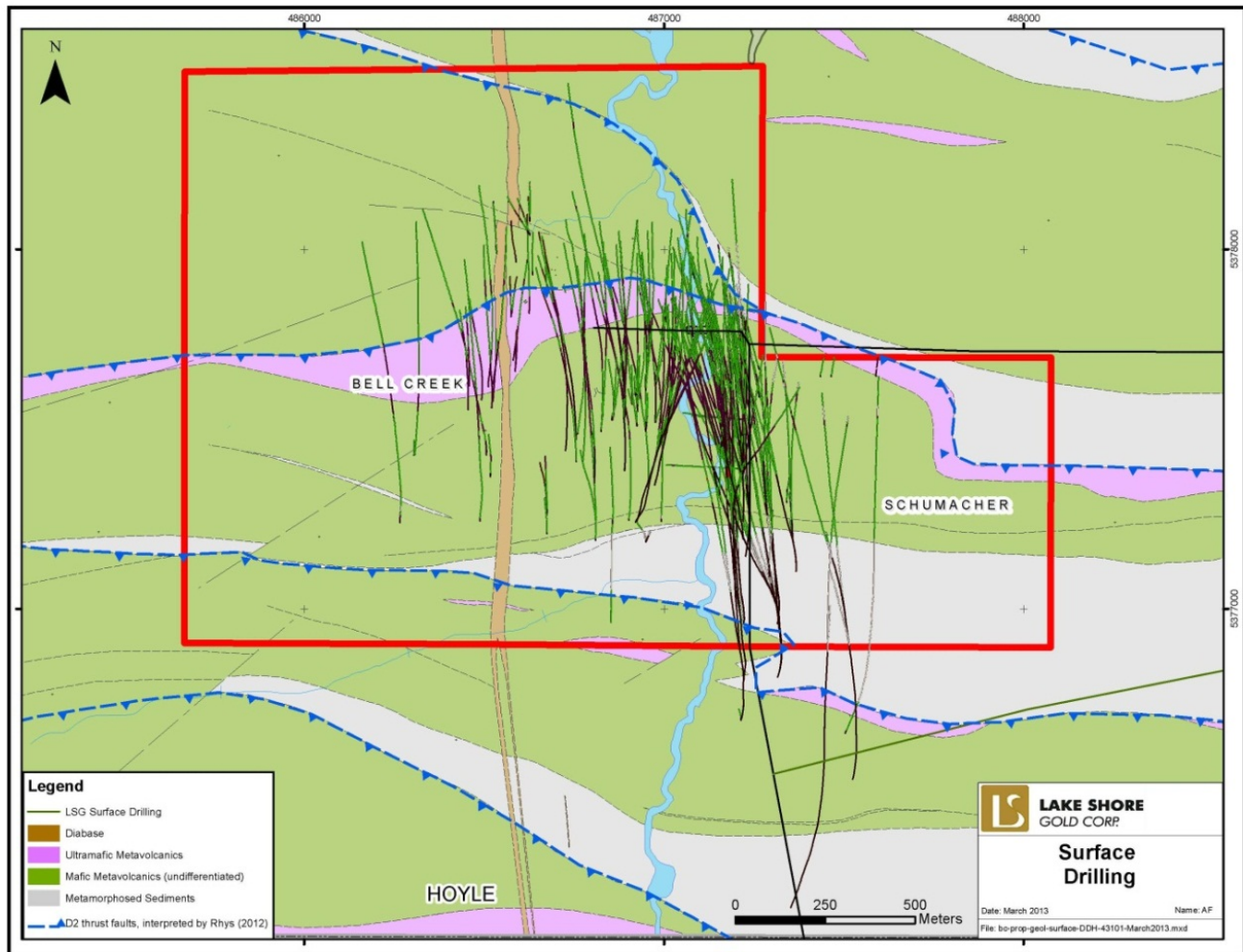
Flattening of longer surface diamond drill holes (typically greater than 800 metres depth) results in intersections approaching true thickness.

Details on core handling and sampling protocols are reported in Item 11.

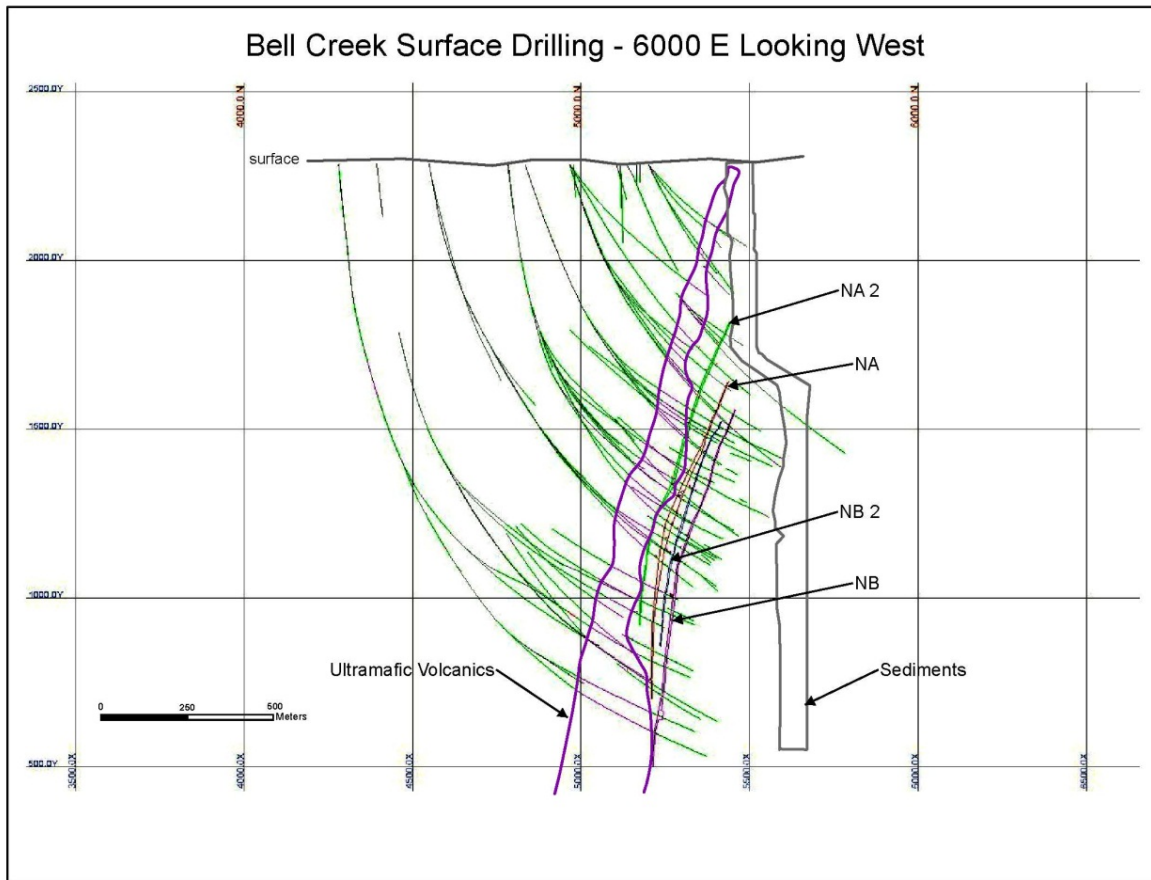
The drill-hole database for the Bell Creek Properties was locked down on November 1<sup>st</sup>, 2012. At the time, drilling, core logging and sampling of all surface drill holes was completed, and no assay data were pending.

Figure 10.1 shows all surface drilling completed by LSG for the Bell Creek Mine while Figure 10.2 shows a typical cross-section of the surface drilling.

**Figure 10.1: Bell Creek Surface Drilling Location**



**Figure 10.2: Bell Creek Surface Drilling (Section 6000 E Looking West)**



A total of 536 underground holes were completed by LSG since the acquisition of the property, for a total of 67,025 metres drilled. The program was carried-out by drilling contractor Boart Longyear, out of their North Bay office (headquartered in Salt Lake City, Utah).

Drill holes completed from underground are referenced to the Bell Creek mine grid and are monitored down hole in 50 metre intervals using an EZ-shot Reflex instrument. Drilling is a mix of short term drill holes used to guide underground development, definition or infill drilling, and exploration drilling.

The short term drill holes are flat holes drilled north and south from within development heading to test thickness of mineralization beyond the drift walls. Holes are typically less than 40 metres in length.

Drilling is conducted from prepared diamond drill cut-outs with drill holes fanned to provide coverage. Intersection angles vary considerably.

Figure 10.3 shows the location of all underground drilling completed by LSG at the Bell Creek Mine while Figure 10.4 shows a typical mine section.

Figure 10.3: Underground Diamond Drill Holes

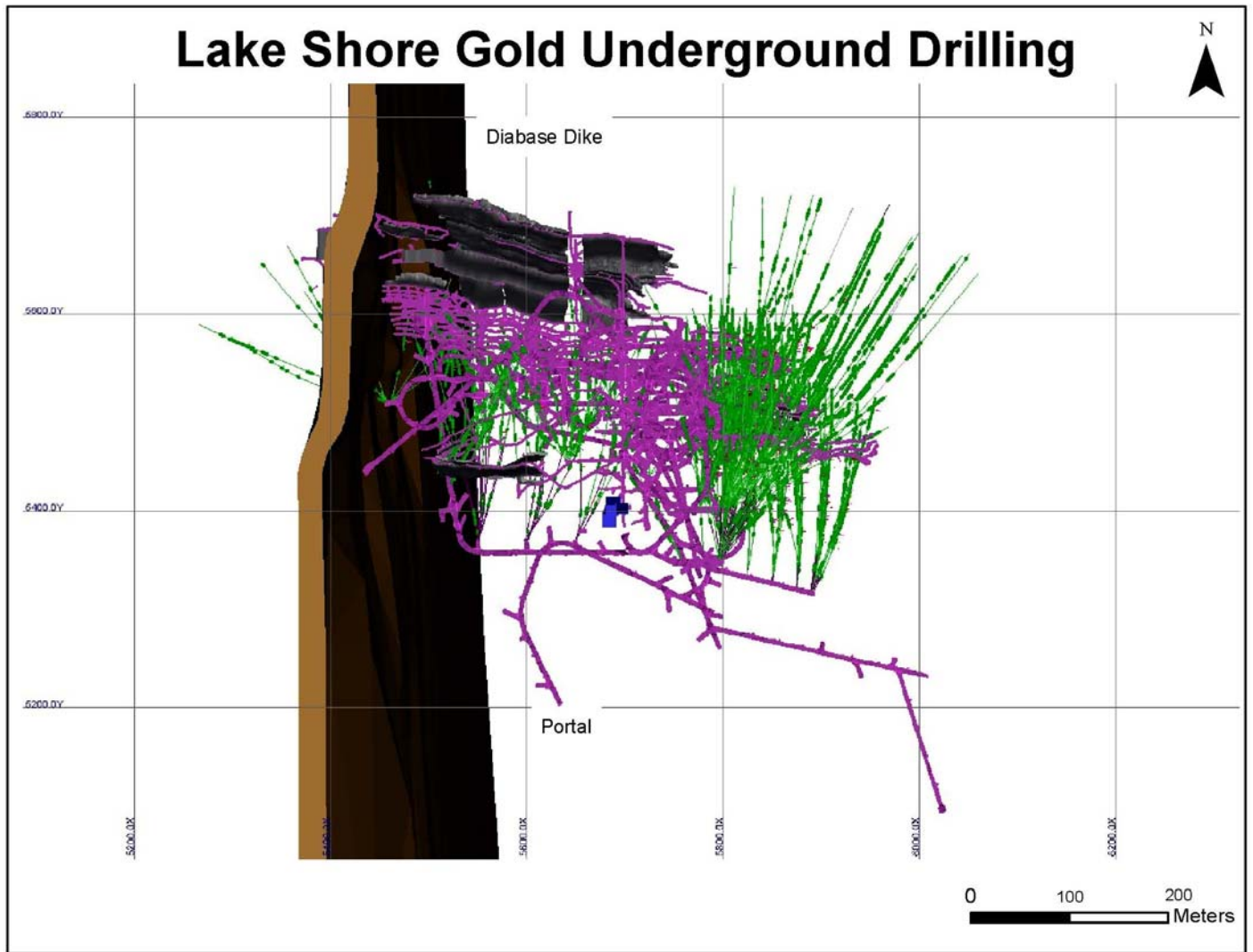
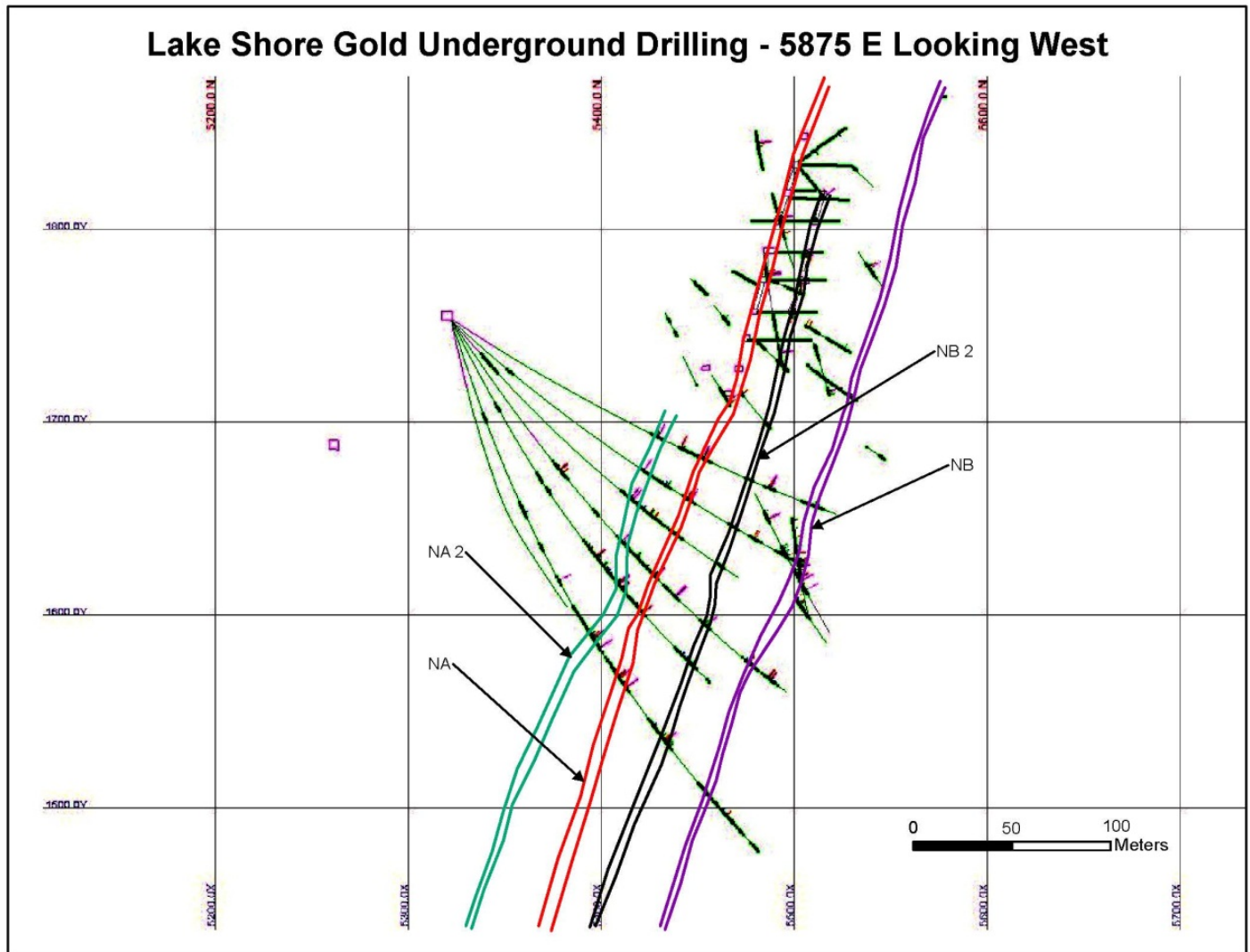


Figure 10.4: Underground Diamond Drilling – 5875 E looking west



### 10.3 LAKE SHORE GOLD DRILL RESULTS

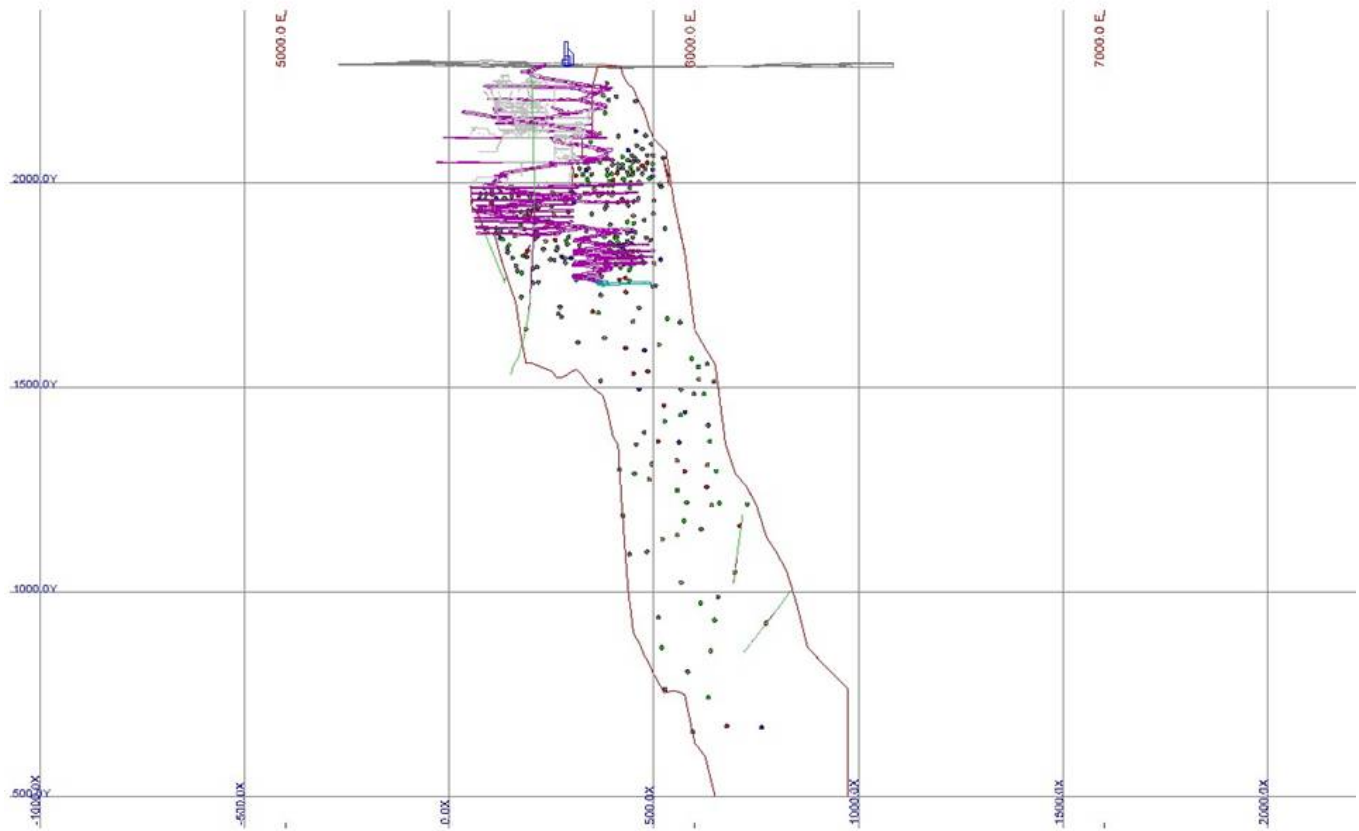
Diamond drilling has identified nine North A and North B style veins extending from surface to a vertical depth of approximately 1,700 metres. Mineralization remains open down plunge and to the east at depth.

For reference, diamond drill pierce points for the North A domain are presented in Figure 10.5.

All Significant diamond drill intersections from LSG surface and underground drilling are listed in Appendix A.

**Figure 10.5: Workings Showing North A ddh Pierce Points**

Bell Creek Mine Workings showing North A ddh pierce points



## **11.0 SAMPLING PREPARATION, ANALYSIS, AND SECURITY**

### **11.1 HISTORIC**

In the opinion of the author, the procedures and practices employed by the various operators at Bell Creek prior to Lake Shore Gold's involvement conform to industry standards that predate the adoption of NI 43-101, and that this information is suitable for use in resource estimation. Details are summarized in the following sections.

#### **11.1.1 Sample Preparation and Analysis**

Descriptions of sampling methods or approaches have not been located for drilling completed by Rosario. A review of drill logs indicates that samples were taken from the collar to the toe of the hole in increments adjusted to the nearest foot or half-foot, based on mineralogy and lithology.

Details of sample preparation and assay procedures for samples processed for Rosario are not known. It should be noted that only one diamond drill hole from this period falls within the resource volume.

No diamond drill core exists from Amex or Canamax surface drilling or Canamax underground drilling. Review of the drill logs for the surface-based drill holes indicates that selective sampling of the drill core was done with a nominal sample length of 1.0 metre. Sample lengths greater or less than 1.0 metre were adjusted to correspond to mineralogical or geological boundaries such as veining, variation in accessory mineralization and changes in lithology. All surface-based drill core was systematically split for sampling.

Review of drill logs for the Canamax and Falconbridge Gold underground drilling indicates that selective sampling of drill core was done based on geologic boundaries such as veining, variation in accessory mineralization or lithology. It is not known if the drill core was split or whole core sampled.

All core drilled for PFV is stored at the Bell Creek core farm. Review of the drill logs and drill core indicates that selective sampling was done based on geologic boundaries such as veining, variation in accessory mineralization or lithology. The drill core was split with the exception of those samples containing visible gold. These samples were whole core sampled without being split or sawn in half (identified in log as "whole cored").

A review of drill logs for the PJV surface drilling indicates that selective sampling of drill core was done based on geologic boundaries such as veining, variation in accessory mineralization or lithology. According to a PJV report on the 2005 Exploration Program at the Bell Creek Mine, "all holes were sampled by whole core sampling, except for the high-grade sample in BC05-02 which was sawn for display."

Assay certificates are not available for most of the historical diamond drilling completed before Lake Shore Gold's acquisitions of the properties (Powers, 2009).

It is not known which lab completed gold assays for Rosario resources. All samples assayed for Amax, Canamax surface drilling, and PFV were processed at Swastika Laboratories Ltd. (Swastika Labs) in Swastika, Ontario.

Swastika Labs is an independent lab and has a Certificate of Laboratory Proficiency, CCRMP ISO 9001:2000, and PTP-MAL for specific mineral analysis parameters (Au, Pt, Pd, Ag, Cu, Pb, Ni, Co). PTP-MAL uses criteria for laboratory proficiency established by the Task Accreditation Sub-Committee Working Group for Mineral Analysis Laboratories of the Standards Council of Canada. All samples were processed utilizing a 0.5 assay ton fire assay process with AA finish.

(To lower detection limits for geochemical work or, where required, the Au particle or doré bead is dissolved and determined by Atomic Absorption Spectrophotometry).

All samples obtained through drilling from underground mine workings were processed at the Bell Creek Mine assay laboratory. This includes the drilling completed by Canamax (1988 to 1991) and Falconbridge Gold (1992 to 1994). The Bell Creek Mine assay laboratory conducts in-house analysis of mill, underground, and drill core samples and is not an ISO 9001-2000 registered laboratory.

All samples assayed for the PJV Bell Creek drill program in 2005 were assayed by SGS Geochemical Laboratories (SGS) in Rouyn-Noranda, Quebec. The SGS laboratory in Rouyn-Noranda is an ISO 17025 certified facility. Samples were assayed using a 1 AT aliquot with an AAS finish.

#### **11.1.2 Security**

Records could not be found regarding security practices employed prior to 1982, by Rosario. It should be noted that only one diamond drill hole from this period falls within the resource volume.

Surface drilling for Canamax and Amax was completed by St Lambert Drilling Ltd., with frequent unscheduled site visits by the supervising geologist to ensure safety, good working practices, and drill core security. Drill core was delivered by the drill foreman to an on-site logging facility and was logged by graduate geologists who oversaw the sampling of the core. Samples were packed in cardboard boxes sealed with packing tape and shipped via ONR Bus service to Swastika Labs. Pulps and rejects were returned from the laboratory but are no longer available (pers. comm. Ken Tylee, P. Geo. 2009).

Drill core from underground drilling for Canamax was brought to the surface logging facilities by the drill foreman. Samples were brought directly to the Bell Creek assay laboratory by Canamax personnel (pers. comm. Ken Tylee, P. Geo. 2009).

Security practices employed by Falconbridge Gold for underground drilling at Bell Creek are not known.

Surface drilling for PFV (1995) was completed by Norex, with frequent unscheduled site visits by the supervising geologist to ensure safety, good working practices, and drill core security. Drill core was delivered by the drill foreman to an on-site logging facility and was logged by graduate geologists who oversaw sampling. Samples were packed in cardboard boxes sealed with packing tape and were picked up by Swastika Labs personnel or brought direct to Swastika Labs by PFV personnel. Pulps and rejects were returned from the laboratory but are no longer available (pers. comm. Ken Tylee, P. Geo. 2009).

Drilling was completed for PJV in 2005 by Bradley Brothers. Drill core was delivered to the Owl Creek core shack by the drill foreman and was logged by PJV personnel. Samples were packaged

in fibre bags, sealed with security tags, and shipped via Manitoulin transport to the SGS lab in Rouyn-Noranda, Quebec, for analysis (pers. comm. Ken Tylee, P. Geo. 2009).

### **11.1.3 QA / QC**

It is not known whether Certified Reference Material (CRM) or blank samples were used by Rosario. It should be noted that only one diamond drill hole from this period falls within the resource volume.

Duplicate CRM samples were processed with drill core samples forwarded by Amax, Canamax, and PFV as part of Swastika Labs' in house quality assurance/quality control (QA/QC) program. CRM standards in use at the time were Canmet MA-1 and Amax's Au 7 and Au 9. Results of duplicate analyses were returned and are recorded on drill logs. Check analyses were not completed by an independent assay laboratory.

Check analyses were not completed on underground diamond drill core assayed at the Bell Creek assay laboratory.

Sampling and assaying carried out for the PJV followed the standard PJV QA/QC procedure which included the insertion of one CRM, one blank, and one duplicate for each 20 samples assayed. According to the PJV report on the 2005 Exploration Program at the Bell Creek Mine, "no major issues were identified as a result of this QA/QC program" (Powers, 2009).

## **11.2 LAKE SHORE GOLD**

In the opinion of the author, the procedures and practices employed by Lake Shore Gold conform to or exceed industry standards and that this information is suitable for use in resource estimation. Details are summarized in the following sections.

### **11.2.1 Core Handling, Logging Protocols, Sample Preparation and Analysis**

Drill core obtained from surface diamond drill programs is delivered daily to the core logging facility originally located at Lake Shore Gold's exploration office at 1515 Government Road, Timmins, Ontario and currently located at 216 Jaguar Drive, Timmins Ontario.

Under the direct supervision of the Senior Project Geologist Stephen Conquer, P. Geo., Lake Shore Gold personnel open the boxes; check the metre markers for accuracy and errors; label the boxes with the hole number, box number and footage; prepare a quick log of the contained major geological, alteration and mineralization features. Drill core is then photographed prior to logging or sampling.

A detailed log of the diamond drill hole is completed by a graduate geologist or geological technician and entered directly into a computer database using the GEMCOM GEMS custom drill logger software. The logs document lithology, alteration, mineralization, veining, etc., and outline sample intervals to be taken. Samples are marked directly on the drill core with china marker and a sample tag inserted. Sample intervals range from 0.3 metres to 2.0 metres in length, with an average sample length of 0.8 metres. The core sample length is determined by the geologist based upon lithology, alteration, percent sulphides, the presence of visible gold, and geological contacts. Duplicate, blank, and standard samples are inserted at this point.

After geological logging is complete, the core is given to a trained and supervised core technician. Core to be sent for analysis is cut in half longitudinally using a diamond blade core

saw. One half of the core is placed in a plastic sample bag along with a uniquely numbered sample tag. The remainder of the sawn core is returned to the core box for reference, with the other half of the sample tag stapled into the core box.

All diamond drill core is archived in core racks or cross-piled in a secure systematic indexed core farm at the Lake Shore Gold office compound, or securely cross-piled at the enclosed security patrolled Bell Creek Mine site. The sawn core half not sent for assay is available for reference, metallurgical testing and check-assaying.

All samples are analyzed for gold at various independent laboratories using fire assay with an atomic absorption finish, except for samples sent to SGS Labs, which provided an ICP finish. For samples that return a value greater than 3.0 g/t Au (changed to greater than 10 g/t Au on March 15<sup>th</sup>, 2011), another aliquot from the same pulp is taken and Fire Assayed (FA) with a gravimetric finish. Occasionally, samples which may include visible gold are requested to be completed using pulp metallic methods. In reporting assay results, the protocol utilized by Lake Shore Gold stipulates that Metallic Assay results override FA with a gravimetric finish, which in turn overrides FA with an atomic absorption or ICP finish.

Drill core obtained from underground drill programs is subjected to the same procedures as the surface drill core with some minor exceptions.

- Drill core is logged at the on-site Bell Creek core logging facilities under the supervision of the Chief Mine Geologist (formerly Ralph Koch, P. Geo., Currently Ivan Langlois, P. Geo.).
- A small number of drill holes required to make short term production decisions are whole core sampled and processed at the Bell Creek Assay lab.

A summary of assaying facilities used by Lake Shore Gold are summarized below:

**Table 11.1: Assay Labs Used**

Assay Lab		2008	2009	2010	2011	2012	Comments
Surface drilling (exploration group)							
Swastika Labs	FA - AA finish						
SGS Canada Inc.	FA - AA finish						
ALS Canada Ltd.	FA - AA finish						current lab of choice
Underground drilling (mine geology group)							
SGS Canada Inc.	FA - ICP finish						
SPJ Assay Labs	FA						
Accurassay Laboratories	FA - AA finish						current lab of choice
Bell Creek Lab	FA - AA finish						rush samples only

Swastika Laboratory is an independent facility which at the time of use held a Certificate of Laboratory Proficiency, CCRMP ISO 9001:2000 and PTP-MAL for specific mineral analysis parameters (gold, platinum, palladium, silver, copper, lead, nickel, cobalt). PTP-MAL uses criteria for laboratory proficiency established by the Task Accreditation Sub-Committee Working Group for Mineral Analysis Laboratories of the Standards Council of Canada.”

ALS Minerals Ltd. is an independent organization forming a part of the ALS Group which is, in turn, a subsidiary of Campbell Brothers Limited. Sample preparation is completed at the ALS Minerals preparation facility in Timmins, and pulps are subsequently forwarded to the ALS

Minerals Ltd. assay laboratory in Val d'Or, Quebec or in Vancouver, B.C. for analysis. These facilities are all registered ISO 9001:2008. The Val d'Or assay laboratory is SCC ISO/IEC 17025:2005 Accredited (#689) and the North Vancouver, BC assay laboratory is also SCC ISO/IEC 17025:2005 Accredited (#579)

SGS Canada Inc. is an independent facility. Sample preparation was performed at the Garson, Ontario facility with pulps being forwarded to the SGS Minerals Services Toronto Laboratory at 1885 Leslie Street for fire assay. The SGS Minerals Services labs are ISO 17025 certified.

The LSG – Bell Creek lab conducts in-house analysis of mill, underground and drill core samples and is not an ISO 9001-2000 registered laboratory.

SPJ Labs is an independent ISO 9001:2008 certified facility located at 1150 Kelly Lake Road, Unit 4, Sudbury, Ontario.

Accurassay Laboratories Ltd. is an independent ISO 17025 certified facility with a Corporate Office located at 126-4026 Meadowbrook Drive, London, Ontario. Sample preparation is completed at the Accurassay Laboratories Ltd. Sample Preparation Facilities located at 150A Jaguar Drive, Timmins Ontario. Pulps are forwarded to the Accurassay Laboratories Ltd. Main Laboratory Facility located at 1046 Gorham Street in Thunder Bay, Ontario for analysis.

After processing, all reject and pulp material is returned to Lake Shore Gold and is stored at the Bell Creek Core Farm where it is available for future evaluation.

Factors have not been identified which may have resulted in a sample bias.

#### **11.2.2 Security**

For both surface and underground drill set-ups the diamond drill contractor secures the drill core at the drill site. The drill foreman brings the drill core to the designated logging facility daily. Both surface and underground core logging facilities are considered secure. The exploration facilities have limited access and are locked and alarmed overnight. Mine site facilities have limited day time access, are locked overnight and are located within the gated mine site.

Samples to be sent for analyses are placed in shipping bags that are sealed with a numbered security seal by Lake Shore Gold personnel. These bags are picked up directly by the assay lab where this service is available otherwise samples are shipped to the assay facility utilizing a bonded courier or LSG personnel.

Lake Shore Gold reports that its personnel are not involved in any aspect of sample preparation after core specimens are delivered to the assay laboratory.

#### **11.2.3 QA / QC**

Lake Shore Gold has implemented a quality-control program to ensure best practice in the sampling and analysis of the drill core.

One blank sample and one CRM standard are inserted in the sample stream for every 20 to 25 samples submitted for analysis. Drill core from a local, barren diabase dyke is used as a blank sample medium.

Prior to May 2010, ALS had been instructed to take one reject duplicate after every 25 samples processed. The sample number was tracked through the analytical process with the suffix “dup”. The method of selecting reject duplicates was further modified starting May 2010 in order to make a blind duplicate sample, where the sample would receive its own sample number sequential to the sample stream.

CRM standards for gold, individually wrapped in 60 g sealed envelopes, were prepared by Ore Research and Exploration Pty. Ltd. of 6-8 Gatwick Road, Bayswater North, Victoria, Australia (OREA) and provided by Analytical Solutions Ltd. of Toronto, Ontario. Several CRM standards are used in order to vary the expected value and depending on availability.

**Table 11.2: OREAS Standards Used by Lake Shore Gold Corp.**

<b>OREAS STANDARDS USED BY LAKE SHORE GOLD</b>								
<b>Standard</b>	<b>Mean Au (g/t)</b>	<b>Std. Dev</b>	<b>1 Std. Dev</b>		<b>2 Std. Dev</b>		<b>3 Std. Dev</b>	
			<b>Min</b>	<b>Max</b>	<b>Min</b>	<b>Max</b>	<b>Min</b>	<b>Max</b>
<b>O-2Pd</b>	<b>0.885</b>		0.855	0.914	0.826	0.943	<b>0.797</b>	<b>0.973</b>
<b>O-10c</b>	<b>6.660</b>				6.270	6.920	<b>6.110</b>	<b>7.080</b>
<b>O-10Pb</b>	<b>7.150</b>	0.190	6.960	7.340	6.770	7.530	<b>6.570</b>	<b>7.730</b>
<b>O-15d</b>	<b>1.559</b>	0.042	1.517	1.601	1.475	1.642	<b>1.433</b>	<b>1.685</b>
<b>O-15h</b>	<b>1.019</b>						<b>0.945</b>	<b>1.093</b>
<b>O-15Pb</b>	<b>1.060</b>		1.030	1.090	1.000	1.120	<b>0.970</b>	<b>1.140</b>
<b>O-15Pc</b>	<b>1.610</b>	0.039	1.571	1.649	1.532	1.688	<b>1.493</b>	<b>1.727</b>
<b>O-16b</b>	<b>2.21</b>	0.070					<b>1.990</b>	<b>2.430</b>
<b>O-18c</b>	<b>3.520</b>				3.310	3.730	<b>3.200</b>	<b>3.840</b>
<b>O-18Pb</b>	<b>3.630</b>	0.070	3.560	3.700	3.490	3.770	<b>3.420</b>	<b>3.840</b>
<b>O-54Pa</b>	<b>2.900</b>		2.790	3.010	2.680	3.120	<b>2.570</b>	<b>3.230</b>
<b>O-60b</b>	<b>2.570</b>		2.460	2.680	2.350	2.780	<b>2.250</b>	<b>2.890</b>
<b>O-61d</b>	<b>4.760</b>	0.140			4.470	5.040	<b>4.330</b>	<b>5.190</b>
<b>O-67a</b>	<b>2.238</b>	0.096			2.046	2.430	<b>1.950</b>	<b>2.526</b>
<b>O-68a</b>	<b>3.890</b>	0.150			3.600	4.180	<b>3.450</b>	<b>4.330</b>
<b>O-6Pc</b>	<b>1.520</b>		1.460	1.590	1.390	1.660	<b>1.320</b>	<b>1.720</b>

*(For the period since the last 43-101 dated October 2010, to the effective date of the present report, November 1, 2012).*

Lake Shore Gold retains a full time Database Administrator to review all assay data. Copies of assay certificates are either downloaded from the external lab LIMS system and/or are received via e-mail by the LSG Database Administrator and by the project’s Qualified Person. The digital assay data, in the form of “csv” files, is validated by a Lab Logger Version 2.0 program created by Gemcom for all samples sent to ALS. For all other analytical labs, the analytical data is placed through an Excel based filter where failure criteria for standards and blanks are entered and failures are highlighted. The use of both of these software program methods ensures that the results from the QA/QC samples fall within the approved limits set for the control samples. Failures are defined as assay determinations outside of three standard deviations (3SD) from the recommended value (RV) or an assay of greater than 0.1 g/t for blank samples. A failure triggers a re-assay of all samples between the preceding and following CRM or blank using the sample pulps. Provided no repeat failures are encountered, the results of the re-assay are stored in the project database. A CRM of the same type that experiences two failures is sent to the laboratory for assaying.

The QA/QC results are reviewed by one of the QPs who have the discretion to override the re-assay protocol if there is sufficient evidence to warrant.

Reasons for a geological override include:

- If a standard or a blank fails by less than 0.05 grams per tonne as this is very close to the cut-off for a pass.
- If a standard or a blank fails by more than 0.05 grams per tonne and there are no ore grade samples, and no ore grade sample was anticipated within the area of the QC failure the sample is overridden as it is believed that no significant assay is affected.
- Occasionally a failure is due to the wrong standard being recorded as sent or two QC samples being switched at some point in the shipping process. If this occurs and the error can be absolutely proven but corrections cannot be made the failure is overridden.
- In the situation of a standard or blank failing but the drill hole is in an area that is actively being mined or developed before a re-assay can be returned the failure is overridden.
- Any time there is a failure of a blank ore standard that does not fall into one of the criteria it can still be overridden if the qualified person believes the error is forgivable. In this case a comment stating the override is added to the database. An example of this is the QP noting that one standard was consistently failing by the same extent of an error. The error was overridden and the standard replaced in future sample shipments.

The internal QA/QC program on drill core for both surface and underground drill programs was followed by Lake Shore Gold for the period from the last 43-101 resource report (October 25, 2010) to November 1, 2012. Refer to Appendix B for an internal Lake Shore Gold memo discussing statistics for the QA/QC on new drilling added since the last 43-101 report. In addition, Lake Shore Gold maintains a policy of re-assaying 5% of the pulp samples returned at a third party assaying facility as a check. Results of the check assay program are also located in Appendix B.

For the surface drill programs, ALS Canada was the principal lab used for drill core analysis. Issues were not identified through a review of the analytical data for the standards and blanks used in the QA/QC program. Results from the course duplicate data show good repeatability. Check assays on the surface drilling were completed by SGS Canada with good correlation against original assays from ALS Canada.

For the underground drill programs, SGS Canada Inc. was the principal lab used for drill core analysis until the end of the 1<sup>st</sup> Quarter of 2011 when a change was made to SPJ Assay Labs and then Accurassay Laboratories due to assaying costs. Some issues were observed with standards processed by SPJ. The 14 drill holes completed during this period were of an exploratory nature and do not have a noticeable impact on the resource estimate. Significant issues were not identified through a review of the analytical data for the standards and blanks used in the QA/QC program for SGS and SPJ. Results from the course duplicate data show good repeatability. Check assays on the SGS and Accurassay results were completed by ALS Canada Ltd. with good correlation.

The author is satisfied that the procedures followed are adequate to ensure a representative determination of the metal contents of any sampled intervals in the drill core and that the results are acceptable for use in preparation of this Mineral Resource estimate.

## 12.0 DATA VERIFICATION

### 12.1 HISTORIC DATA

Historical diamond drill data was acquired by Lake Shore Gold in the form of electronic data bases (varying software format) with the accompanying hand written and/or typed diamond drill log from a range of previous claim holders. For the most part, original lab certificates and surveying records are not available. It cannot be confirmed to what extent double entry of log entries was utilized to check for typographical errors at the time of entry.

Lake Shore Gold has not directly conducted a check on the electronic database however, as part of the initial Mineral Resource Estimate, Scott Wilson RPA has reviewed this data set and considers it appropriate for use in the preparation of Mineral Resource estimates. The Scott Wilson review is reproduced below:

*As part of data verification, Scott Wilson RPA conducted spot checking of the drill hole database. Approximately 10% of the drill holes that intersected the mineralized domain models at Bell Creek were selected for validation on a semi-random basis. In all, a total of 23 drill holes were selected for examination, with drill logs located for 19 of these holes. The original drill logs for four of the historical drill holes could not be easily located and are believed to be stored in the archived data from previous owners. The information contained in the drill logs for the 19 holes was compared against the information contained in the digital database.*

*The drill hole database supplied to Scott Wilson RPA is the end result of the amalgamation of older drill hole databases prepared by previous owners of the property and new drill hole information recently obtained by Lake Shore Gold. Given this historical context of data entry over a period spanning several decades, Scott Wilson RPA understands that the database format, coordinate system, lithologic codes, and data entry protocols for the older, vintage drill holes may not be consistent with those currently employed by Lake Shore Gold for the entry of new drill hole information.*

*The findings of the database audit, along with recommendations, are presented in Table 12.1. Many of the observations stated below are viewed by Scott Wilson RPA as housekeeping items to be addressed during the normal course of operations.*

**Table 12.1: Results of the Scott Wilson RPA Database Spot Check Audit**

<b>Drill Hole</b>	<b>Comments</b>
BC05-12 (PJV drill hole)	<i>Collar coordinates in drill log are in UTM grid while the database uses the Bell Creek coordinate system. <u>Recommend that the Bell Creek coordinates be added to the logs of all PJV-vintage drill holes.</u></i>
C141 (Canamax Drill hole)	<i>Lithologic coding in database is not an accurate reflection of the descriptions in the drill log – will result in difficulties when creating lithologic models in support of Mineral Resource estimates. <u>Recommend review/editing of litho codes for Canamax-vintage drill holes.</u></i> <i>Zeros have been inserted into the digital database for unsampled intervals – can result in misleading understanding of the sampling coverage. <u>Recommend review/editing of assay entries for Canamax-vintage drill holes.</u></i> <i>Miscoded assay at 171.0-172.0 m. Was entered as 2.60 g/t Au in database instead of correct value of 4.60 g/t Au in drill log.</i>

<b>Drill Hole</b>	<b>Comments</b>
C125 (Canamax Drill hole)	<p>Lithologic coding in database is not an accurate reflection of the descriptions in the drill log – will result in difficulties when creating lithologic models in support of Mineral Resource estimates. <u>Recommend review/editing of litho codes for Canamax-vintage drill holes.</u></p> <p>Zeros have been inserted into the digital database for unsampled intervals – can result in misleading understanding of the sampling coverage. <u>Recommend review/editing of assay entries for Canamax-vintage drill holes.</u></p> <p>Missing record in Table Assay for the 158.0 m - 159.0 m interval (0.03 g/t Au, does not form part of the Mineral Resource estimate).</p>
9167	Limited information in original drill log (including no collar location information). Collar coordinates located on survey pick-up report.
4-9 (Canamax Drill hole)	<p>Elevation in database is 4 m lower than listed in drill log (2,046 m vs. 2,050 m)</p> <p>Lithologic coding in database is not an accurate reflection of the descriptions in the drill log – will result in difficulties when creating lithologic models in support of Mineral Resource estimates. <u>Recommend review/editing of litho codes for Canamax-vintage drill holes.</u></p> <p>Typographic error noted in Table Assay for the 31.70 m - 33.15 m interval. Assay in database is 102.60 g/t Au vs. 0.17 g/t Au in drill log. This assay is not included in the Mineral Resource estimate. <u>Recommend that the database be edited to enter the correct assay value.</u></p> <p>Typographic error noted in the Depth To for the 138.45 m -138.75 m interval. Depth To should be 139.75 m as in drill log.</p>
240-12 (Canamax Drill Hole)	<p>Lithologic coding in database is not an accurate reflection of the descriptions in the drill log – will result in difficulties when creating lithologic models in support of Mineral Resource estimates. <u>Recommend review/editing of litho codes for Canamax-vintage drill holes.</u></p> <p>Zeros have been inserted into the digital database for unsampled intervals – can result in misleading understanding of the sampling coverage. <u>Recommend review/editing of assay entries for Canamax-vintage drill holes.</u></p>
General Comment	Software/data bug appears to be present in Lake Shore Gold drill log printing routine. Some assays in the database are not being printed out on the drill logs.
General Comment	Current Lake Shore Gold (?) assay procedures includes re-running samples using a Fire Assay-Gravimetric finish procedure for high-grade samples. When more than one FA-Gravimetric assay is conducted, only the first assay is included in the database. <u>Recommend that the average value of all FA-Gravimetric assays be entered into the database.</u>
General Comment	<u>Recommend that a minimum of three cuts on pulps of “high grade” samples be analyzed by FA-Gravimetric assay methods, rather than relying on only one value.</u> Assay for the sample will be the average of the three cuts.

*In response to the discovery of the typographical error of the assay value in drill hole 4-9, at Scott Wilson RPA's request, Lake Shore Gold carried out a program of assay validation for all samples in the drill hole database with gold values greater than 6 g/t Au. The purpose of this exercise was to conduct a high-level review of the accuracy of the higher grade assay values in the database and to conduct a search for any other typographical errors of this kind, although the identified sample is not included in the current Mineral Resource estimate. A total of 105 assay values greater than 6 g/t Au contained within assays carried out by previous owners were validated. Of these, the original assay*

*records for only one sample could not be located. A difference of greater than 1 g/t Au (both higher and lower) between the value entered into the database and the original assay values was discovered for only two other samples.*

*As a result of its data validation efforts, Scott Wilson RPA believes that the drill hole data representing the mineralization intersected by drilling at the Bell Creek deposit is appropriate for use in the preparation of Mineral Resource estimates.*

## **12.2 LAKE SHORE GOLD DATA**

All drill results are checked using the Validate Drill Data tool in GEMS v 6.3. Tests are run on collar co-ordinates, downhole surveys, lithology, and assay data. Specific errors tested for are listed below:

- Entries greater than hole length
- Negative Length Intervals (from and to errors)
- Zero Length Intervals
- Out of order intervals
- Missing Intervals (Lithology)

All errors are corrected prior to use.

All surface holes drilled by LSG between 2008 and 2012 were individually validated in a check program completed between October 2011 and March 2012. Drill logs were printed out from the database and individually edited for header, downhole surveys, geology and assays with identified errors corrected.

Diamond drill holes completed from underground were subjected to a random 5% check which included plotting of drill holes in plan to check for location errors, and a check of down-hole survey entries and assays against the original survey and assay certificates. Only minor discrepancies were noted and corrected prior to the estimation of the resources. As a result of these data validation efforts, the author believes that the drill hole data is appropriate for use in the preparation of Mineral Resource estimates.

## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

### 13.1 HISTORICAL TEST WORK

Prior to 2011, metallurgical testing on Bell Creek mineralization had not been completed by Lake Shore Gold. Reliance had been placed on historical test work conducted prior to the construction of the Bell Creek Mill and on historical milling experience.

Metallurgical testing on Bell Creek mineralization was first completed for Amax in 1983 by Lakefield Research of Canada Ltd. (Lakefield).

Test work was conducted on four samples and included mineral characterization (head assays, emission specifics, specific gravity (SG) determination, gold occurrence test), trial grinds, flotation tests, and cyanidation of the ore. A fifth sample was used for settling and filtration tests. A representative fraction was removed from each sample and the results are presented in Table 13.1.

**Table 13.1: Summary of Results for mineral Characterization Testing Conducted by Amax on Bell Creek Mineralization (1983)**

Head Analysis Element	Units	Samples				
		MG-G	LG-A	LG-G	AG-B	HG-A
Au	g/t	3.10	4.70	3.38	6.72	6.94
Ag	g/t	<1.00	<1.00	<1.00	<1.00	2.20
S	%	1.33	1.34	1.30	1.34	2.09
As	%	0.02	0.02	0.02	0.02	0.02
Fe (Total)	%	6.94	7.11	7.11	7.30	6.79
Fe (Sulphide)	%	1.63	1.31	1.13	1.28	-
SG		2.85	2.85	2.84	2.85	2.84

The following description of results is derived from Lakefield (1983).

“The occurrence of gold in each sample was determined by a sequential amalgamation, leaching procedure. The samples were ground to approximately 65% -200 mesh and amalgamated. The amalgamation tailing was leached in a cyanide solution to determine the exposed gold. The cyanidation residue was leached in hot HCl followed by a cyanide leach establishing the gold associated with carbonates and pyrrhotite. Finally the residue was leached with aqua regia determining the gold associated with other sulphides. The remaining gold was associated with silicates.

Lakefield concluded that at least one-half of the gold present in each sample was in the form of free gold and that gold extractions of 96% to 98% were achieved by direct cyanidation.

Direct cyanidation tests were conducted on all composites, except Sample LG-B, to investigate the effect of fineness of grind, retention time, pre-aeration and  $\text{Pb}(\text{NO}_3)_2$  addition. All tests were performed in bottles on rolls at 33% solids. The cyanide and  $\text{Ca}(\text{OH})_2$  concentrations were maintained at 0.5 g/L.

The fineness of grind was increased from 75% to 95% -200 mesh to examine its effect on gold extraction and reagent consumption. A six hour aeration stage preceded each cyanide leach. In

the range investigated, Lakefield found that the fineness of grind had no pronounced effect on gold extraction.

An additional series of tests were performed to investigate the effect of retention time on gold recovery. Contact times of 12 hours to 48 hours were examined. All tests included a six hour aeration period prior to cyanidation. Increasing the retention time from 12 hours to 48 hours did not affect the recovery of gold from Sample MG-G. The cyanide consumption increased from 0.09 kg/t to 0.34 kg/t NaCN. With only 12 hours contact time the gold extraction from Sample AG-B dropped from 95% to 90 percent. Gold recovery from sample HG-A did not improve when the retention time was increased from 24 to 48 hours. Lakefield concluded that increasing the time beyond 24 hours resulted in no improvement in recovery.

Due to the presence of pyrrhotite in the samples, a six hour pre-aeration stage was added to most cyanidation tests. The effect of extending the pre-aeration to 24 hours was examined. Lakefield observed that with the exception of Sample AG-B, increasing the pre-aeration time reduced the cyanide consumption. The extraction of gold was not affected in any of the composites.

The effect of lead nitrate addition on Au extraction was investigated. All tests were conducted with a six hour pre-aeration stage and a 48 hour cyanide leach. Lakefield note that the addition of 500 g/t  $\text{Pb}(\text{NO}_3)_2$  had no significant effect on gold extraction or reagent consumption.

A procedure for flotation followed by cyanidation of the concentrate was investigated and involved grinding to 70% -200 mesh with a xanthate mixture, Aerofloat 208 and Aerofloat 25, further addition of xanthate in the rougher circuit and a water cleaning stage of the rougher concentrate. The cleaner concentrate was reground to -200 mesh, pre-aerated in lime water for 20 hours followed by a 48 hour cyanide leach maintaining 0.5 g/L NaCN and 0.5 g/L  $\text{Ca}(\text{OH})_2$ . Tests were also conducted involving a coarser grind,  $\text{Na}_2\text{SiO}_3$  addition, reagent simplification and addition of a second cleaning stage. Lakefield found that although the sulphide recovery varied by 10% over this series of tests, the Au recovery remained relatively stable with 91% to 93% in the cleaner concentrate at a grind of 70% -200 mesh.

The recovery of Au in a gravity concentrate from Samples MG-B and AG-B was investigated. The samples were ground to approximately 60% -200 mesh and passed over a laboratory Wilfley table. The table concentrate was amalgamated to determine the amount of free gold. The gold recovery in the gravity concentrates was only 64% and 74% from Samples MG-B and AG-B respectively.

Settling tests were completed on samples before and after cyanidation in which the samples were ground to approx. 85% -200 mesh. Initial and final percent solids varied between 32% to 33% and 62% to 66% respectively.

Filtration characteristics of two samples were investigated in which the pulp was thickened to 53% solids and standard pour-on tests were performed using a polypropylene cloth and a 250 ml pulp sample. A cake thickness of 12 mm to 15 mm was produced with moisture between 17% and 22% and filtrate rates between 400 Lph/m<sup>2</sup> and 1,367 Lph/m<sup>2</sup>.

The Bond Work Index of each sample was estimated by comparing the size distribution for a specific grinding time with that of an ore of known work index. The estimated Bond Work Indices varied between 7.7 and 7.9.

Complete results of the test work are documented in a report by Lakefield titled “An Investigation of the Recovery of Gold from Samples Submitted by Amax Incorporated, Progress Report No 1. Project No. LR 2686, October 5, 1983”.

Additional test work was completed by Lakefield for Amax on two composite samples in 1985. A greater emphasis was placed on specific requests such as the effect of using creek water in the milling process versus tap water and post processing of effluent. Specifically, cyanide destruction test work included alkaline chlorination and SO<sub>2</sub> aeration. Results of this test work are documented in a report by Lakefield titled “An Investigation of the Recovery of Gold from Samples Submitted by Amax Incorporated, Progress Report No 2. Project No. LR 2686, April 17, 1985”.

### **13.2 RECENT TEST WORK**

The Bell Creek Mill Phase 1 expansion was completed in October 2010. Planning for Phase 2 of the mill expansion (increasing throughput capacity to 3,000 tonnes per day) was started in the first quarter of 2011 and construction is expected to be completed during the second quarter of 2013. Prior to launching the Phase 2 expansion project more comprehensive test work was completed. The following companies were involved with this test work.

- G&T Metallurgical Services LTD. Kamloops, BC (G&T)
- Starkey & Associates Inc., Oakville, Ontario
- Xstrata Process Support, Falconbridge, Ontario (XPS)
- Outotec Canada Inc.
- FLSmidth Knelson, Langley, BC (Knelson)
- Joe Zhou Mineralogy
- SGS Minerals

G&T Metallurgical completed bond work index testing on ore from the Bell Creek Mine. The bond ball mill work index for this ore was 13.3 kWh/tonne. Sag mill (SMC) tests were also completed on these samples with the test data indicating that the A\*b value was 29.9 which is classified as hard ore, but is only ranked in the 13<sup>th</sup> percentile for all ores in their database.

The objective of Starkey and Associates’ test work was to size a sag mill that would enable the throughput to be increased to 3,000 tonnes per day using the two existing mills. Starkey also verified that a mill (which was available on the market at the time) was suitable for 3,000 tonnes per day and also had the capability to process up to 6,000 tonnes per day. All the possible Lake Shore ore types were used for the test work, including Bell Creek ore.

XPS used Starkey and Associates’ data and ran JKSImMet simulations of the sag circuit with tonnage set at 250 tonnes per hour and using the hardest of the four materials. These results were used to establish the best operating conditions and obtain circulating load, pulp density, cyclone feed, and cyclone overflow data which were used to help suppliers in the sizing of the cyclones.

Outotec tested the material types for settling characteristics to size a new high efficiency thickener rated for 6,000 tonnes per day.

Knelson tested the Bell Creek material to establish data points for gravity recoverable gold (GRG). Bell Creek ore GRG was 38.9% which classifies the gold grains as moderate size. This information is being used as the basis for increasing the efficiency of the gravity circuit.

Joe Zhou Mineralogy was contracted to do some diagnostic leaching tests on two samples of mill tailings to determine the speciation of the tails gold. It showed that 94% of the gold was locked in other minerals.

SGS Minerals was contacted to determine the influence of grind on recovery. Preliminary data suggests there are measurable reductions in recovery by grinding coarser than the mill currently does (the test results final report was in-progress at the date of issue of this technical report).

Overall, the combination of Lake Shore's operating history and the extensive amount of test work conducted provides confidence that the process design and equipment selection will result in achieving the targeted recovery and throughput levels.

## 14.0 MINERAL RESOURCE ESTIMATES

### 14.1 SUMMARY

Lake Shore Gold has prepared an updated Resource Estimate for the Bell Creek Mine with an effective date of November 1, 2012. The report updates the Bell Creek Mine Resources as reported in the National Instrument 43-101 Technical Report, Technical Report on the Initial Mineral Resource Estimate for the Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada, dated January 14, 2011.

The estimate is based on both historical diamond drilling and drilling completed by LSG. A total of 625 drill holes were used in the estimate including 131 historic surface and underground holes, and 494 surface and underground drill holes completed by LSG.

The Mineral Resource for the Bell Creek Mine occur within nine mineralized domains of which three, the North A, North A2, and North B, account for 80% of the total ounce content. The bulk of this mineralization is centered about section 5950 E between 975 metre elevation and 1375 metre elevation.

The resource totals 4.68 Mt at 4.72 g/t Au amounting to 710,300 ounces of gold in the Measured and Indicated category and 6.08 Mt at 4.62 g/t Au amounting to 903,700 ounces of gold in the Inferred category. The resource was estimated using Inverse Distance to the power 2 ( $ID^2$ ) interpolation method with all gold assays capped to 44 g/t for the North A including the hanging and footwall splay veins, and 34 g/t for all other domains. The base case estimate assumes a cut-off grade of 2.2 g/t Au with no allowance for dilution.

**Table 14.1: Total Resources – Bell Creek Mine**

Category	Tonnes	Capped Grade (g/t Au)	Capped Ounces Au
Measured	268,000	4.34	37,400
Indicated	4,417,000	4.74	672,900
Measured and Indicated	4,685,000	4.72	710,300
Inferred	6,080,000	4.62	903,700

#### Notes

1. CIM definitions were followed for classification of Mineral Resources.
2. Mineral Resources are estimated at a cut-off grade of 2.2 g/t Au.
3. Mineral Resources are estimated using an average long-term gold price of US\$1,200 per ounce and a US\$/CDN\$ exchange rate of 0.93.
4. A minimum mining width of two metres was used.
5. Capped gold grades are used in estimating the Mineral Resource average grade.
6. Sums may not add due to rounding.
7. Mr. Ralph Koch, B.Sc. P. Geo., is the Qualified Persons for this resource estimate.

## **14.2 CONSTRAINTS AND ASSUMPTIONS**

The following general constraints and assumptions were used in creating the block model Mineral Resource estimate for the Bell Creek Mine:

- Effective date for the inclusion of diamond drill or development data is November 1, 2012.
- All work associated with the estimate, database compilation and verification, geologic modeling, and grade interpolation is completed using Gemcom GEMS v 6.3 geological modeling software.
- Geological interpretation and definition of mineralized domains is defined using diamond drill results in conjunction with underground mapping and sampling.
- It is assumed the general orientations or relationships of mineralized domains delineated through underground development do not fundamentally change at depth.
- Only diamond drill assay information is used in grade interpolation, (chip and muck sample results are not used).

## **14.3 DATABASE**

The database used for the current resource estimate is a Gemcom GEMS (Microsoft SQL) database comprising historic drill data (drilling prior to Lake Shore Gold acquisition of the Bell Creek Property) as well as drilling completed by Lake Shore Gold both from surface and underground. The GEMS database consists of tables including header, survey, lithology, and assay data with pertinent fields summarized in Table 14.2. Additional fields within the above tables are currently being utilized by Lake Shore Gold for logging of the drill core or final resource estimation.

The following validation steps were taken to ensure the integrity of the database:

1. Plotting of plans and sections to check for location, elevation, and down-hole survey errors.
2. Test for missing intervals, overlaps and out of sequence intervals within survey, assay, and lithology tables using the GEMS validation tools.
3. Thorough review of all historical data available to ensure assay and survey (collar and down hole) information are properly presented in the database.
4. Random validation of 5% of the assay and lithology data against drill logs and assay certificates. (This was completed for drilling since the last resource update only as data from earlier drilling has already been subjected to this check).

Only minor discrepancies were noted and corrected prior to the estimation of the resources. None of the errors detected would have a significant impact on the Mineral Resource estimate. The database, in the writer's opinion, is appropriate for the estimation of resources.

**Table 14.2: Summary of Gems SQL Drill Hole Database**

Table Name	Table Description	Fields
Header	Drill hole collar location data in local grid co-ordinates	Hole-ID Location X Location Y Location Z Length Collar_Az Collar_Dip
Survey	Down hole survey data of direction measurements at down hole distances	Hole-ID Distance Azimuth Dip
Assays	Sample interval assay data with Au units grams per tonne	Hole-ID From To Sample_NO Au_GPT_FIN Au_GPT_AA Au_GPT_GRA Au_GPT PM
Lithomaj	Major logged rock type intervals down hole	Hole-ID From To Rocktype
Lithomin	Minor logged rock type intervals down hole	Hole-ID From To Rocktype

#### 14.4 DOMAIN MODELS

Mineralized domains were established through the projection down plunge of mineralization historically exploited at the Bell Creek Mine or exposed in recent level development by Lake Shore Gold in conjunction with diamond drill results.

A total of nine mineralized domains are recognized of which five are exposed in recent or historical mine workings and three have been economically exploited. Three zones are defined by diamond drill results alone.

On strike and down plunge extent of the nine domains varies. The North A and North B are the most continuous with strike lengths of 500 metres and down plunge length of 1,720 metres, (1680 metre vertical). Both veins remain open down plunge. The western limit of the domain models has been set as the eastern contact of a north-south striking diabase dike. Additional gold mineralization is known to be present west of the dike, however the focus of exploration to date has been east of this dike. A summary of the domains is provided in Table 14.3.

**Table 14.3: Mineralized Domains**

Domain	Abbreviation	Solid Name	Rock Code	Strike	Dip	Description
North A	NA	BC_NA	301	100	70 S	primary domain - prior production
North A Footwall	NAFW	BC_NAFW	333	100	70 S	foot wall splay off NA
North A Hangingwall	NAHW	BC_NAHW	331	100	70 S	hanging wall splay off NA
North A2	NA2	BC_NA2	303	100	70 S	parallel and south of NA
North A3	NA3	BC_NA3	305	100	70 S	parallel and south of NA
North A4	NA4	BC_NA4	307	100	70S	parallel and south of NA
North A X	NAX	BC_NAX	309	100	70 S	fault offset of NA - prior production
North B	NB	BC_NB	311	100	70 S	parallel and north of NA
North B2	NB2	BC_NB2	313	100	70 S	between NA and NB

Criteria and process used to create these mineralized domains are outlined below:

- Interpretation completed on North-South sections at 12.5 metre spacing. Section spacing was increased east of 5900E to 25 metre centres due to the paucity of drill information. Section spacing between 5800E and 5900E was reduced to 6.25 metre centres due to increased drill information in this area.
- Underground development including mapping was used to aid interpretation.
- Mineralized domains are based on a combination of grade, alteration (albite/ankerite), sulphide content and quartz content. Where low gold grades were observed a minimum inclusion grade of 2.2 gpt was applied.
- Minimum horizontal width of 2 metres.
- Mineralized domains were restricted to the mafic volcanic units only. (The ultramafic-mafic contact in the vicinity of the NA2 vein is difficult to establish due to alteration).
- Domain solids were created from the tied polylines and checked for errors and overlaps with nearby domains. Each is stored in GEMS in BT2 format.
- Points on each polyline are snapped to the exact drill hole location in three dimensions.

Longitudinal and oblique views of the mineralized domains are presented in Figure 14.1 and Figure 14.2, respectively.

Figure 14.1: Longitudinal View (Looking North) of the Mineralized Domain Models

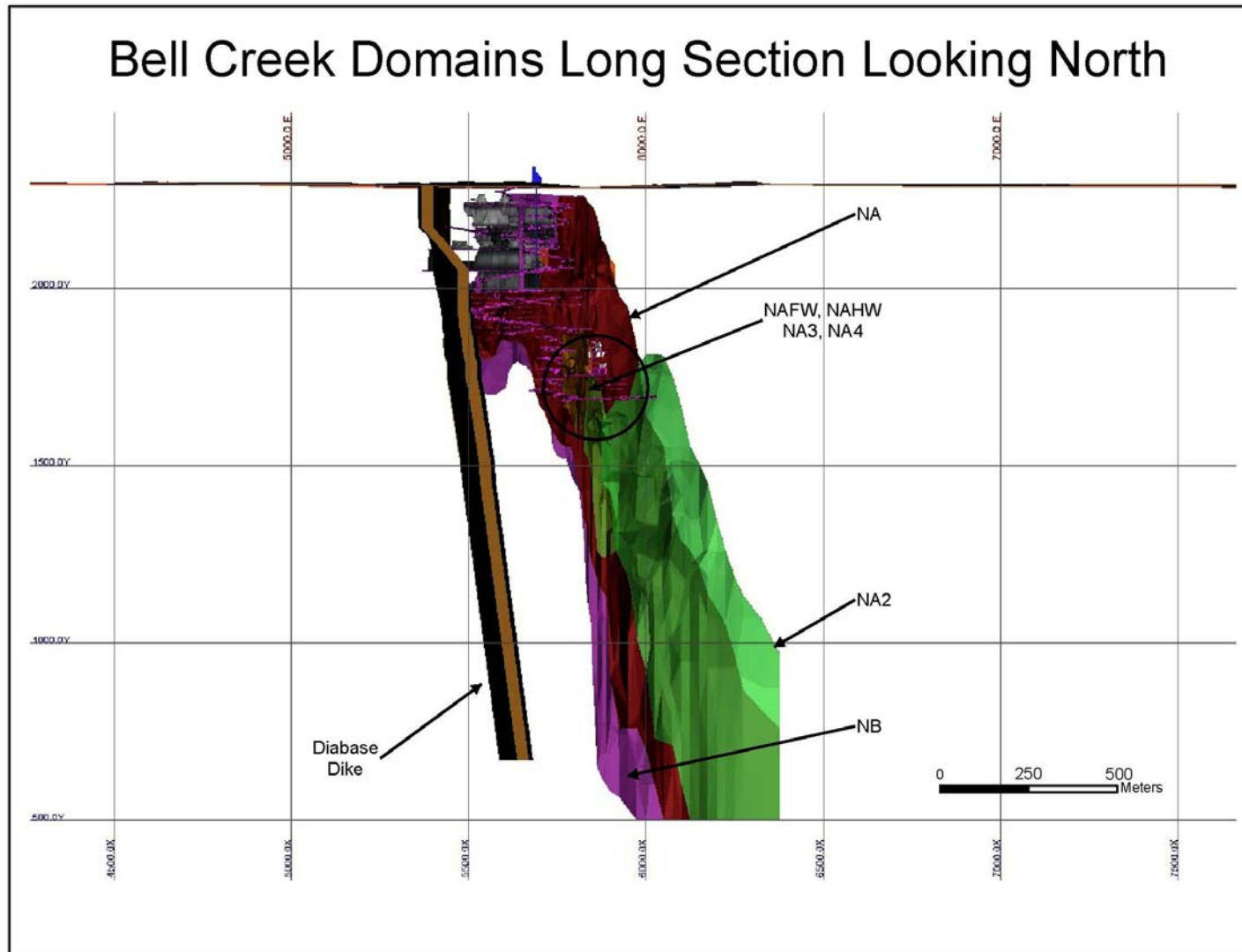
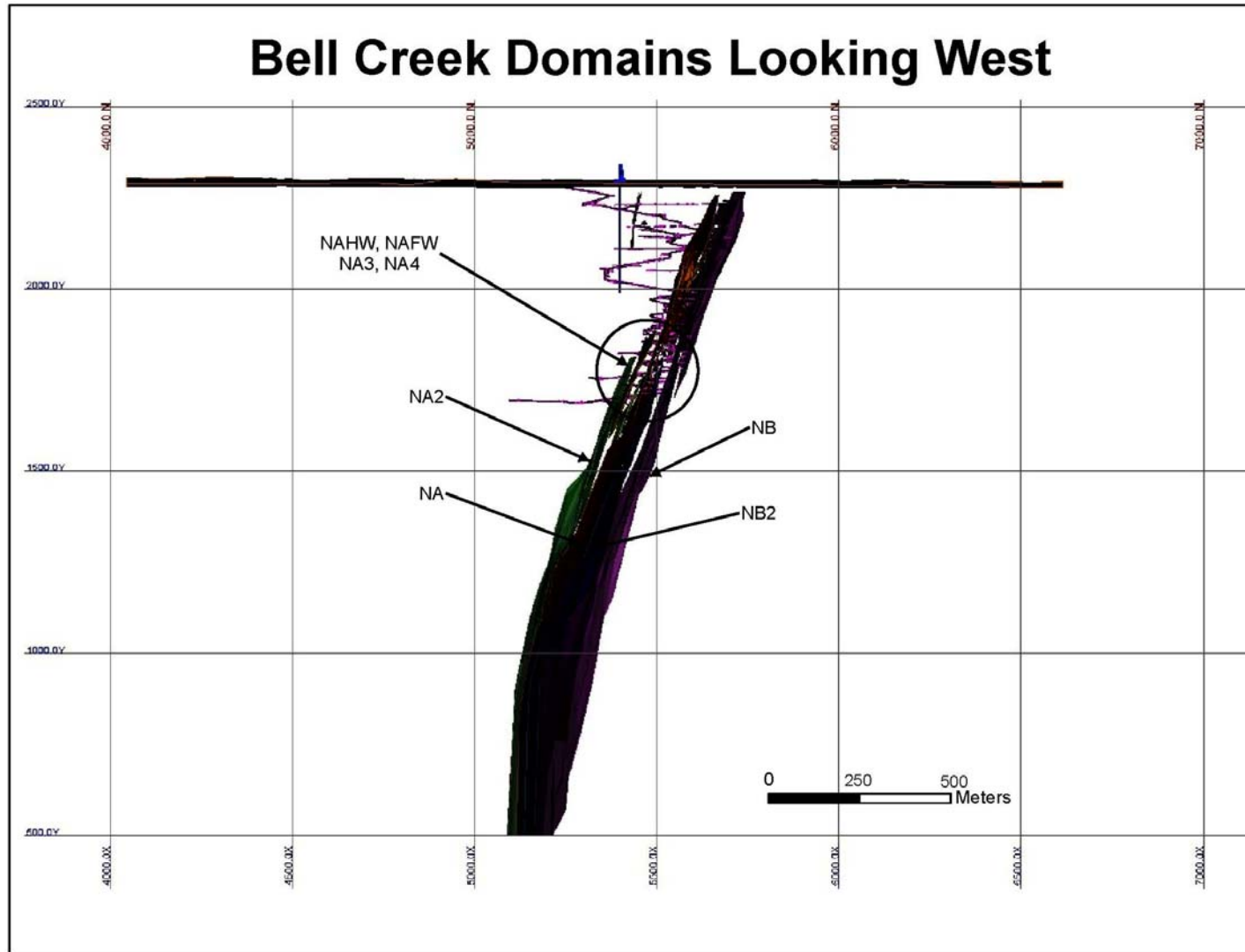


Figure 14.2: Mineralized Domain Models looking West



## 14.5 SPECIFIC GRAVITY

Specific gravity ("SG") was determined on 236 samples of mineralization selected from surface diamond drill holes targeting the Bell Creek North A and North B zones. Specific gravity measurements were completed at the Lake Shore exploration office utilizing the conventional water displacement approach. At the time of sample selection it was not possible to assign mineralization to a specific mineralized domain.

An average SG of 2.82 has been selected as representative of all mineralized domains and has been used for resource estimation.

**Table 14.4: Specific Gravity by Zone**

Material	Historical Specific Gravity	Number of Readings	Average of Readings	Final Specific Gravity
Mineralized	2.82	236	2.83	2.82
Mafic Volcanics	-	244	2.80	2.82
Ultramafic Volcanics	-	28	2.82	2.82
Sediments	-	29	2.76	2.82*

\* No mineralization hosted in sediments.

## 14.6 GRADE CAPPING

An evaluation of assay grade distribution was completed for each mineralized domain and a grade capping value determined. Assay grades exceeding the grade capping value were reset to this limit.

All samples contained within the nine domain solids were uniquely coded in the diamond drill database and extracted for analysis. The descriptive statistics of the extracted sample data sets are presented in Table 14.5.

**Table 14.5: Basic Statistics of Raw Au Assays by Domain**

Zone	Total # Samples	Minimum (gpt Au)	Maximum (gpt Au)	Mean (gpt Au)	99 <sup>th</sup> Percentile	Coefficient of Variation
NA	3520	0.001	84.07	4.46	26.94	1.34
NAFW	668	0.002	357.33	4.58	36.05	3.47
NAHW	514	0.003	36.47	3.80	23.37	1.28
North A & splay	4702	0.001	357.33	4.41	29.94	1.84
NA2	494	0.003	67.3	3.58	29.2	1.69
NA3	329	0.003	37.35	3.42	23.16	1.52
NA4	218	0.003	34.20	5.55	31.60	1.23
NAX	128	0.001	171.93	6.54	153.6	3.16
Other North A	1169	0.001	171.93	4.23	32.11	2.11
NB	1452	0.002	81.84	2.91	20.40	1.60
NB2	875	0.003	66.57	3.25	21.40	1.49
All North B	2327	0.002	81.84	3.04	21.00	1.57

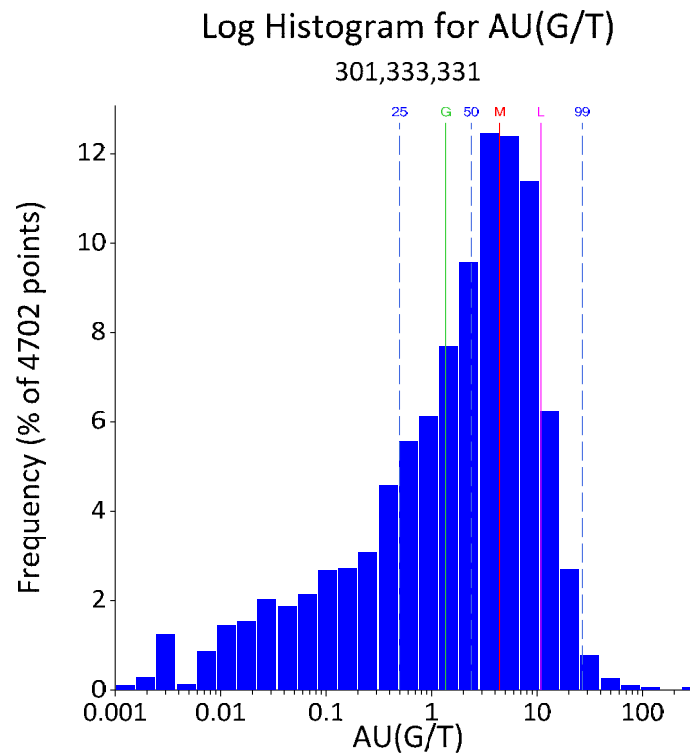
Normal, Log-Normal histograms and probability plots were generated for each domain. Grade caps were selected at break points in the slope of the probability plots. An evaluation was also completed grouping the North A Footwall and North A Hangingwall domains which exist as splay off of the North A with the larger domain. Domains with few data points were evaluated grouped with domains which exhibit similar mineralization and orientations.

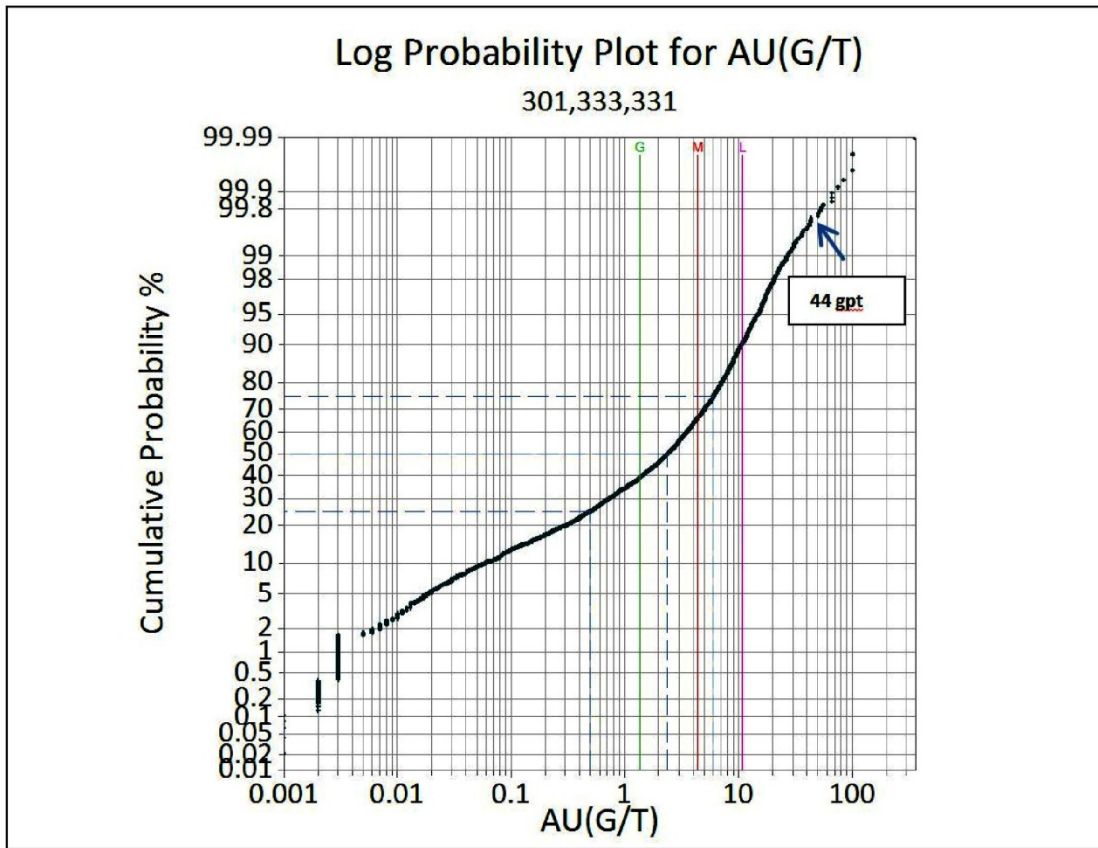
Final capping limits for grouped domains were applied to the raw assay grade and were set as follows:

- North A including HW and FW splays 44 g/t
- All other North A domains 34 g/t
- All North B domains 34 g/t

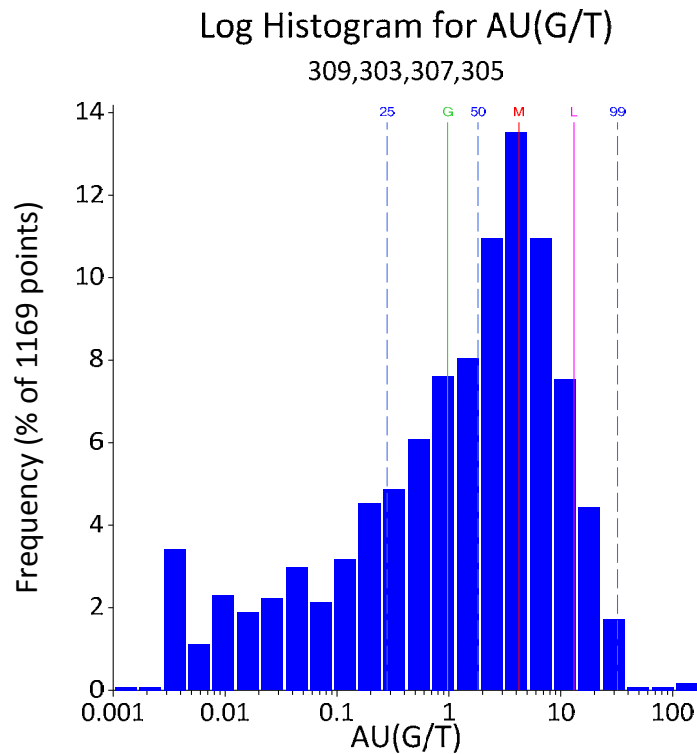
The log normal populations and probability plots for these domain groups are provided in Figure 14.3 through Figure 14.5.

**Figure 14.3: North A Domain – Log Histogram and Log Probability Plot**





**Figure 14.4: All Other North A Type Domains – Log Histogram and Log Probability Plot**



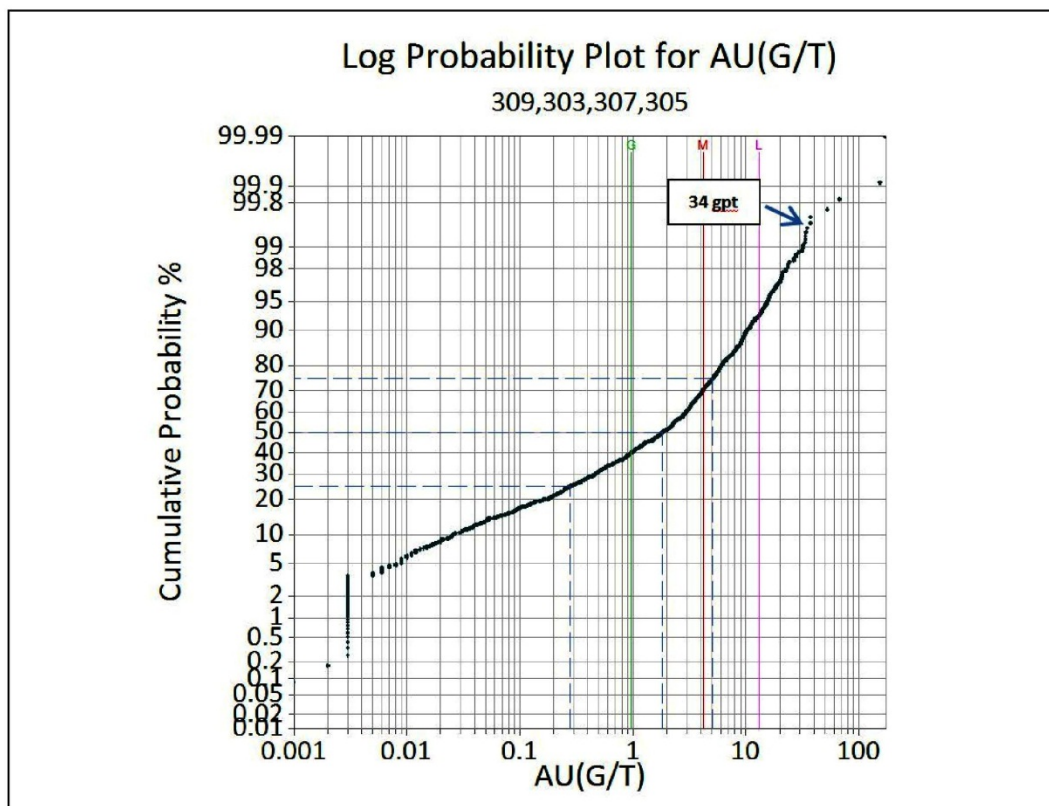
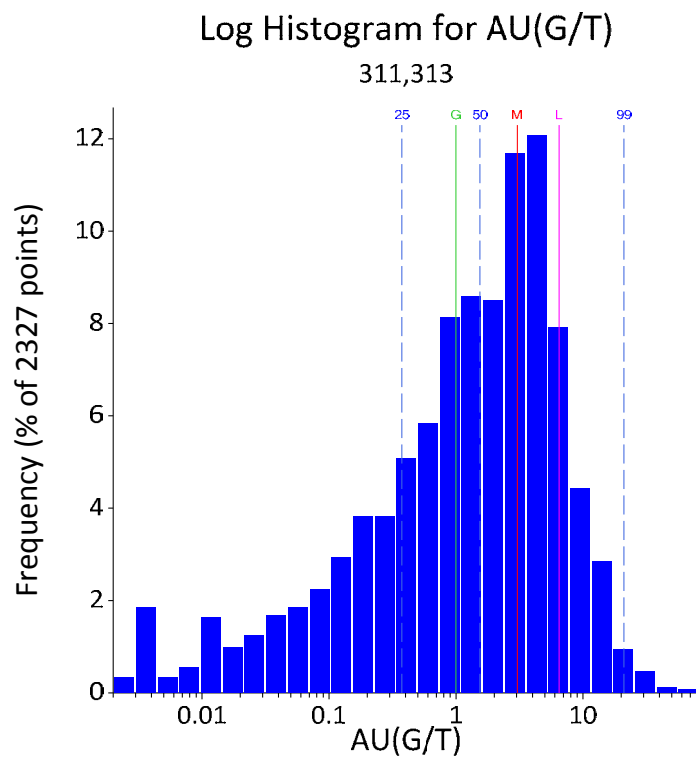
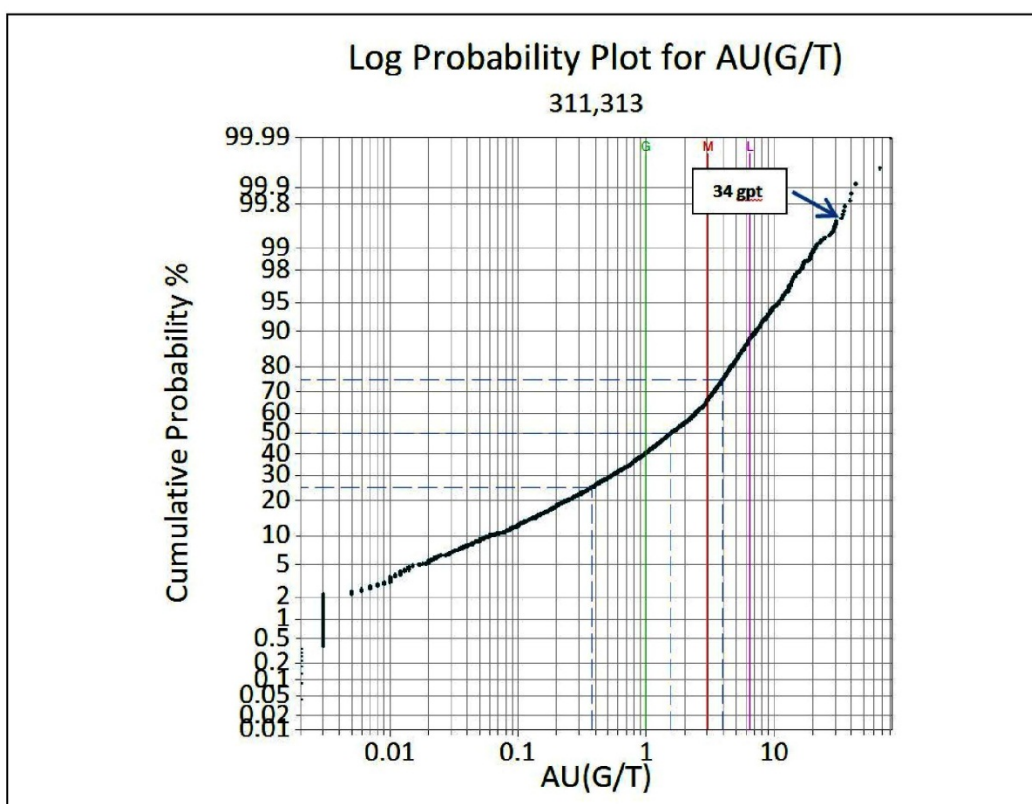


Figure 14.5: North B Domain – Log Histogram and Log Probability Plot





The effect of capping grades on raw assay data is summarized in Table 14.6.

**Table 14.6: Effect of Grade Capping Sorted by Domain**

Zone	Total # Samples	Mean (gpt Au)	Coefficient of Variation	Capping Limit	# Samples Capped	Capped Mean (gpt Au)	Coefficient of Variation
NA	3,520	4.46	1.34	44	7	4.43	1.28
NAFW	668	4.58	3.47	44	6	3.85	1.56
NAHW	514	3.80	1.28	44	-	-	-
North A & splay	4,702	4.41	1.84	44	13	4.28	1.32
NA2	494	3.58	1.69	34	3	3.47	1.49
NA3	329	3.42	1.52	34	1	3.41	1.50
NA4	218	5.55	1.23	34	1	5.55	1.23
NAX	128	6.54	3.16	34	3	4.52	1.53
Other North A	1,169	4.23	2.11	34	8	3.95	1.46
NB	1,452	2.91	1.60	34	6	2.86	1.44
NB2	875	3.25	1.49	34	2	3.21	1.39
All North B	2,327	3.04	1.57	34	8	2.99	1.42

## 14.7 ASSAY COMPOSITING

Samples within the nine domains were composited by fixed-length using an option within GEMS 6.3 that adjusts composite length to make all composite intervals in a given drill hole equal. By comparison, the traditional method of applying a constant composite length along the length of the drill hole results in the last composite of an intersection being shorter in length. This method has not been used due to the possibility of introducing a grade bias should footwall grades vary from grade across the drill hole intersection.

Only samples from within a mineralized domain were used to create composites for the domain and each composite was flagged with the unique numeric code for said domain. Average sample length prior to compositing is 0.59 metres with 86% of samples being less than 1 metre in length. Nominal composite length prior to adjusting for short length composites is 1 metre.

**Table 14.7: Basic Statistics of Au Composites by Domain**

Zone	Total # Samples	Minimum (gpt Au)	Maximum (gpt Au)	Mean (gpt Au)	99 <sup>th</sup> Percentile	Coefficient of Variation
NA	1866	0.001	43.49	4.11	20.72	1.05
NAFW	306	0.001	38.19	3.55	20.53	1.29
NAHW	254	0.001	22.83	3.63	16.31	1.01
North A & splay	2426	0.001	43.49	3.99	20.44	1.08
NA2	294	0.001	34.00	3.40	22.78	1.30
NA3	189	0.001	19.00	2.71	14.33	1.20
NA4	132	0.001	21.54	4.64	19.44	1.03
NAX	60	0.003	15.43	3.26	15.43	1.10
Other North A	675	0.001	34.00	3.44	19.44	1.22
NB	782	0.001	21.41	2.55	14.03	1.09
NB2	443	0.001	29.48	3.14	16.19	1.12
All North B	1225	0.001	29.48	2.77	29.48	1.11

## 14.8 VARIOGRAPHY

### 14.8.1 Trend Analysis

Initial evaluation of grade trends was conducted through the examination of the dimensions of historical mine workings and drilling. Prior mining activity has primarily been centered on the North A and is evident as a continuous series of shrinkage or longhole stopes between the 60L and 370L. The portions of the North A consistently exhibiting grades in excess of 3 g/t average 200 metre in strike and 350 metres down dip yielding a dip to strike ratio of 1.75.

To verify grade trends outside the mined out areas a grade trend model was constructed. For this exercise, a data file was prepared that contained the average gold grade across the entire width of the mineralized zone for each drill hole that pierced each of the eight domain models. Gold grades were then interpolated using a spherical search of 80 metre radius. Results were then viewed as vertical longitudinal projections.

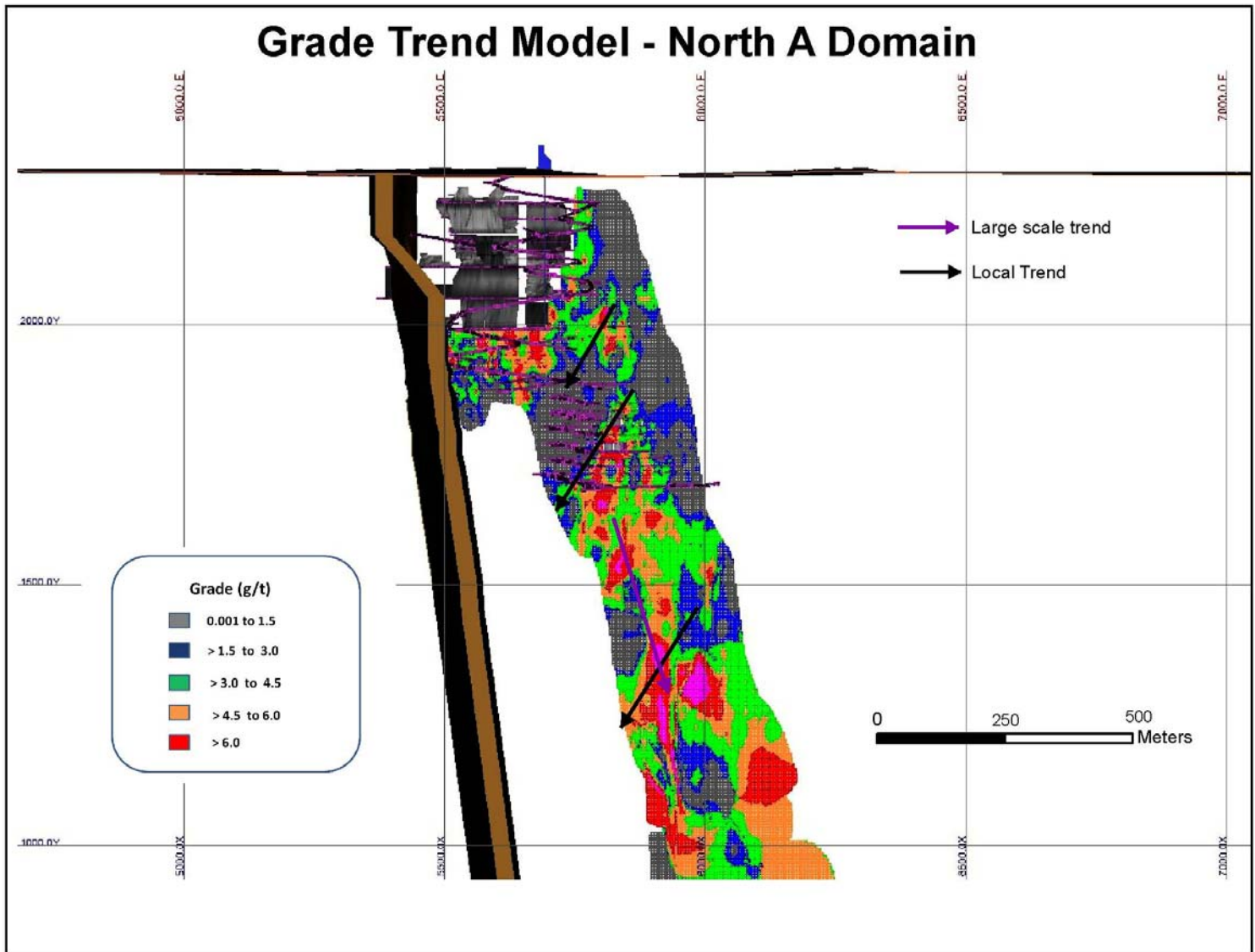
Gold mineralization for the North A, North A2, North B, and North B2 domains plunge steeply (70 degrees) to the east within the steeply north dipping veins. Within this larger trend sub-zones of higher grades are suggested in areas with higher drill hole density. These sub-zones

plunge 60 to 70 degrees to the west, and may represent the intersection lineation of two mineralizing structures, dilation flexures, or the influence of a yet unrecognized structural control on the gold distribution. This geometry matches the present understanding of mineralization trends based upon underground development.

This evaluation was intended to assist in the construction of variograms only. No evaluation or reporting of the grade and tonnages interpolated was undertaken.

An example of results for the North A are presented below.

**Figure 14.6: Grade Trend Model – North A Domain**



## 14.8.2 Variograms

Downhole and omnidirectional variograms were constructed using the capped, equal length composited sample data for domains having larger drill hole data sets. Efforts to identify the anisotropies associated with the smaller domains (North A2, North A3, North A4, North AX, North B2) were not successful due to the limited number of data pairs.

The evaluation of anisotropies that may be present in the data resulted in successful variograms for the down-plunge direction for the North A and North B domains in line with the observed large scale trend. Maximum ranges of approximately 45 metres were observed.

A summary of the variographic parameters derived for the North A and North B domains is presented in Table 14.8, and the variograms are presented in Appendix C.

**Table 14.8: Summary of Variography Results**

Item	North A Domain	North B Domain
<b><u>Down Hole Variogram</u></b>		
Nugget	0.17	0.12
<b><u>Omnidirectional</u></b>	Spherical model	Spherical model
Direction	<b><u>Down Plunge</u></b>	<b><u>Down Plunge</u></b>
Orientation	+70 355 Az	+70 355 Az
Sill (C1)	0.46	0.03
Range (m)	23	11
Sill (C2)	0.37	0.85
Range (m)	45	37
Direction	<b><u>Across Plunge</u></b>	<b><u>Across Plunge</u></b>
Orientation	0 085 Az	0 085 Az
Sill (C1)	0.46	0.03
Range (m)	10	25
Sill (C2)	0.37	0.85
Range (m)	31	30
Direction	<b><u>Across Dip</u></b>	<b><u>Across Dip</u></b>
Orientation	-20 355 Az	-20 355 Az
Sill (C1)	0.46	0.03
Range (m)	7	2
Sill (C2)	0.37	0.85
Range (m)	9	7

## 14.9 BLOCK MODEL

### 14.9.1 Block Parameters

An upright, non-rotated, partial percentage block model was constructed using the GEMS v.6.3 software package. [i.e. The long axis of the blocks is oriented along an azimuth of 090° and dips vertically (i.e. -90°)]. The percentage of any block that is contained within the domain model is used to weight the volume and tonnage of each block.]. The selected block sizes are 2 metres x 3 metres x 3 metres (width, length, height). Block model limits are summarized in Table 14.9.

**Table 14.9: Summary of Block Model Limits**

Type	Y	X	Z
Origin	5050	5400	2300
Maximum Coordinates	5770	6270	2300
Minimum Coordinates	5050	5400	494
Rotation	0.000	0.000	0.000
	rows	columns	level
Block Size	2	3	3
Number of blocks	360	340	602

Several attributes were created to store information such as metal grades, the number of informing samples, average distances, domain codes, resource classification codes, and claim owners. These attributes are summarized in Table 14.10.

**Table 14.10: Summary of Block Model Attributes**

Attribute Name	Type	Decimals	Default Value	Description
Rock Type	Integer	-	0	Domain
Density	Real	3	2.82	Density
Percent	Real	3	0	Percentage of block within domain
AU_UNCUT	Real	3	0	ID <sup>2</sup> uncut gold grade (g/t)
AU_CUT *	Real	3	0	ID <sup>2</sup> cut gold grade (g/t)
AU_NN	Real	3	0	Nearest Neighbor cut gold grade (g/t)
CAT	Integer	-	0	Resource Category 1=Meas, 2=Ind 3=Inf
AVG_DIST	Real	3	0	Average distance to samples used
NSAMP_USED	Integer	-	0	Number of samples used to estimate
DIST	Real	3	0	Distance to nearest sample
NHOLE	Integer	-	0	Number of drill holes used to estimate
WIDTH	Real	3	0	Width based on drill intersection length
ESTIMATED	Integer	-	0	Flag for estimated, 1 = estimated in 1 <sup>st</sup> pass, 2 = second pass, 3 = third pass
MINED_OUT	Integer	-	0	Flag for mined out, 1 = mined out
CLAIM	Integer	-	0	Flag for Claim, Goldcorp1= 1, Goldcorp2 = 2, Enermark = 3, Schumacher = 4

*\*Only the AU\_CUT grades have been used to define resources. AU\_UNCUT and AU\_NN were generated for comparison only. All attributes related to estimation (AVG\_DIST, NSAMP\_USED, etc) are derived from the AU\_CUT interpolation.*

Sub-blocking is not available in GEMS software. Domain solids are used to flag individual blocks as to rock type (domain), and percentage of the block that is within the domain. Volumes of the individual domain solids were compared to volumes of each domain within the block model to ensure proper coding of the solid. No issues were identified.

#### 14.9.2 Grade Interpolation

Gold grades were interpolated into the individual blocks for the mineralized domains using inverse distance squared (ID<sup>2</sup>). A three pass approach was used with the search ellipse oriented along the dominant mineralization trends for each domain.

“Hard” domain boundaries were used along the contacts of each mineralized domain. Only drill hole composites contained within the respective domain were allowed to be used to estimate the grades of the blocks within the domain. Only blocks within the domain limits were allowed to receive grade estimates.

Uncapped grade as well as a capped nearest neighbor interpolations were generated for comparison purposes. Only the estimate based on capped, composited grades (AU\_CUT) has been used to outline resources.

**Table 14.11: Interpolation Parameters**

Pass 1	Search Ellipse Orientation (ZXZ)			Search Ellipse Range			Number of Samples		
Domain	z	x	z	x	y	z	min	max	Max/hole
NA	185	-70	90	45	25	15	9	18	6
NAFW	185	-70	90	45	25	15	9	18	6
NAHW	185	-70	90	45	25	15	9	18	6
NA2	185	-70	90	45	25	15	9	18	6
NA3	185	-70	90	45	25	15	9	18	6
NA4	185	-70	90	45	25	15	9	18	6
NAX	185	-70	90	45	25	15	9	18	6
NB	185	-70	90	45	25	15	9	18	6
NB2	185	-70	90	45	25	15	9	18	6

Pass 2	Search Ellipse Orientation (ZXZ)			Search Ellipse Range			Number of Samples		
Domain	z	x	z	x	y	z	min	max	Max/hole
NA	185	-70	90	90	50	30	9	18	6
NAFW	185	-70	90	90	50	30	9	18	6
NAHW	185	-70	90	90	50	30	9	18	6
NA2	185	-70	90	90	50	30	9	18	6
NA3	185	-70	90	90	50	30	9	18	6
NA4	185	-70	90	90	50	30	9	18	6
NAX	185	-70	90	90	50	30	9	18	6
NB	185	-70	90	90	50	30	9	18	6
NB2	185	-70	90	90	50	30	9	18	6

Pass 3	Search Ellipse Orientation (ZXZ)			Search Ellipse Range			Number of Samples		
Domain	z	x	z	x	y	z	min	max	Max/hole
NA	185	-70	90	90	75	55	1	18	6
NAFW	185	-70	90	90	75	55	1	18	6
NAHW	185	-70	90	90	75	55	1	18	6
NA2	185	-70	90	90	75	55	1	18	6
NA3	185	-70	90	90	75	55	1	18	6
NA4	185	-70	90	90	75	55	1	18	6
NAX	185	-70	90	90	75	55	1	18	6
NB	185	-70	90	90	75	55	1	18	6
NB2	185	-70	90	90	75	55	1	18	6

### 14.9.3 Validation

Plans and sections were cut through the block model and resource solids to visually compare the block grades to the original diamond drill data. The grade and distribution of the block grade is consistent with drill hole assay data and the understanding of grade distribution trends. A typical section through the Bell Creek block model showing grade blocks and original drill data is illustrated in Figure 14.7. A typical plan view is shown in Figure 14.8.

**Figure 14.7: Bell Creek Drilling – Block Model Approximately 5950E**

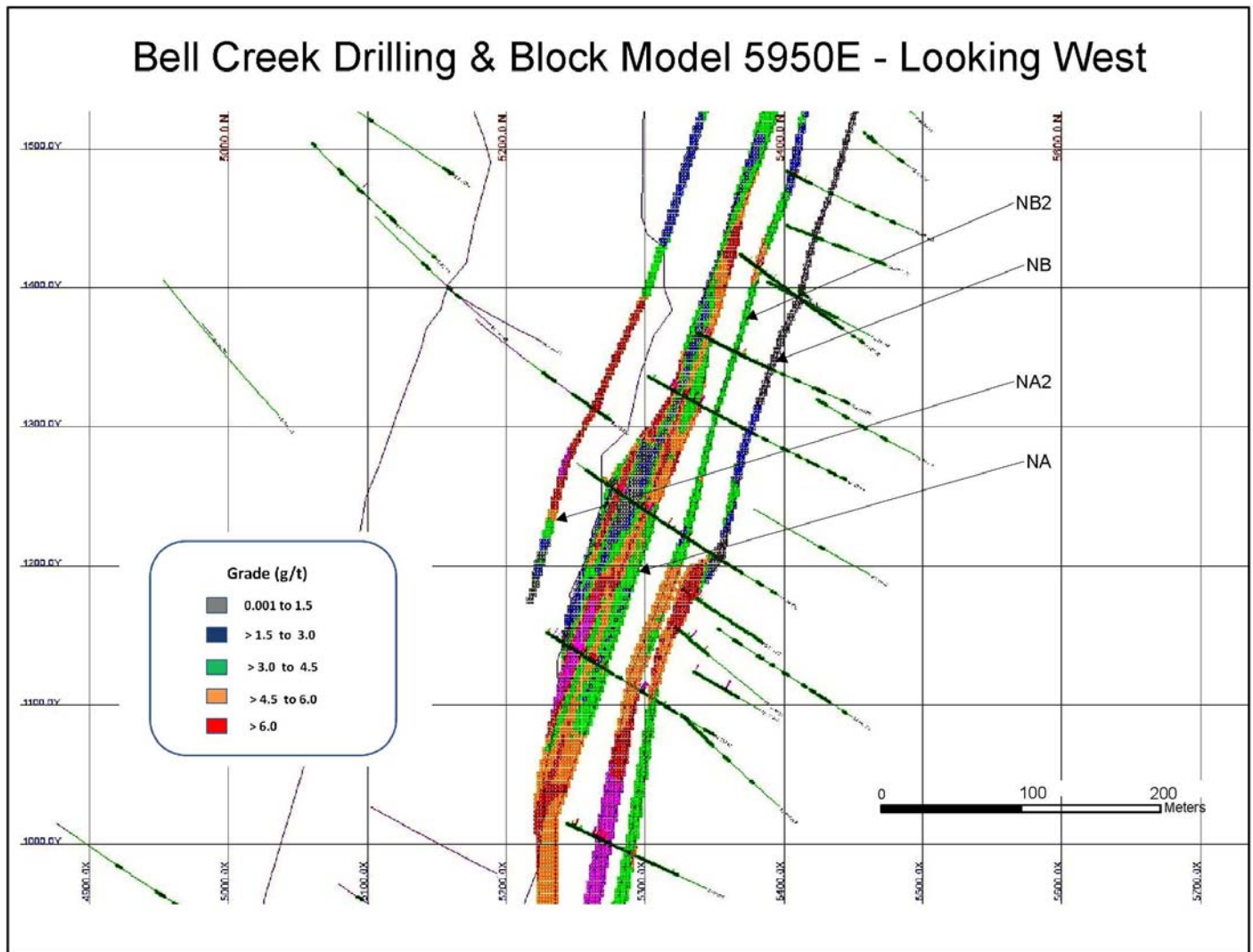
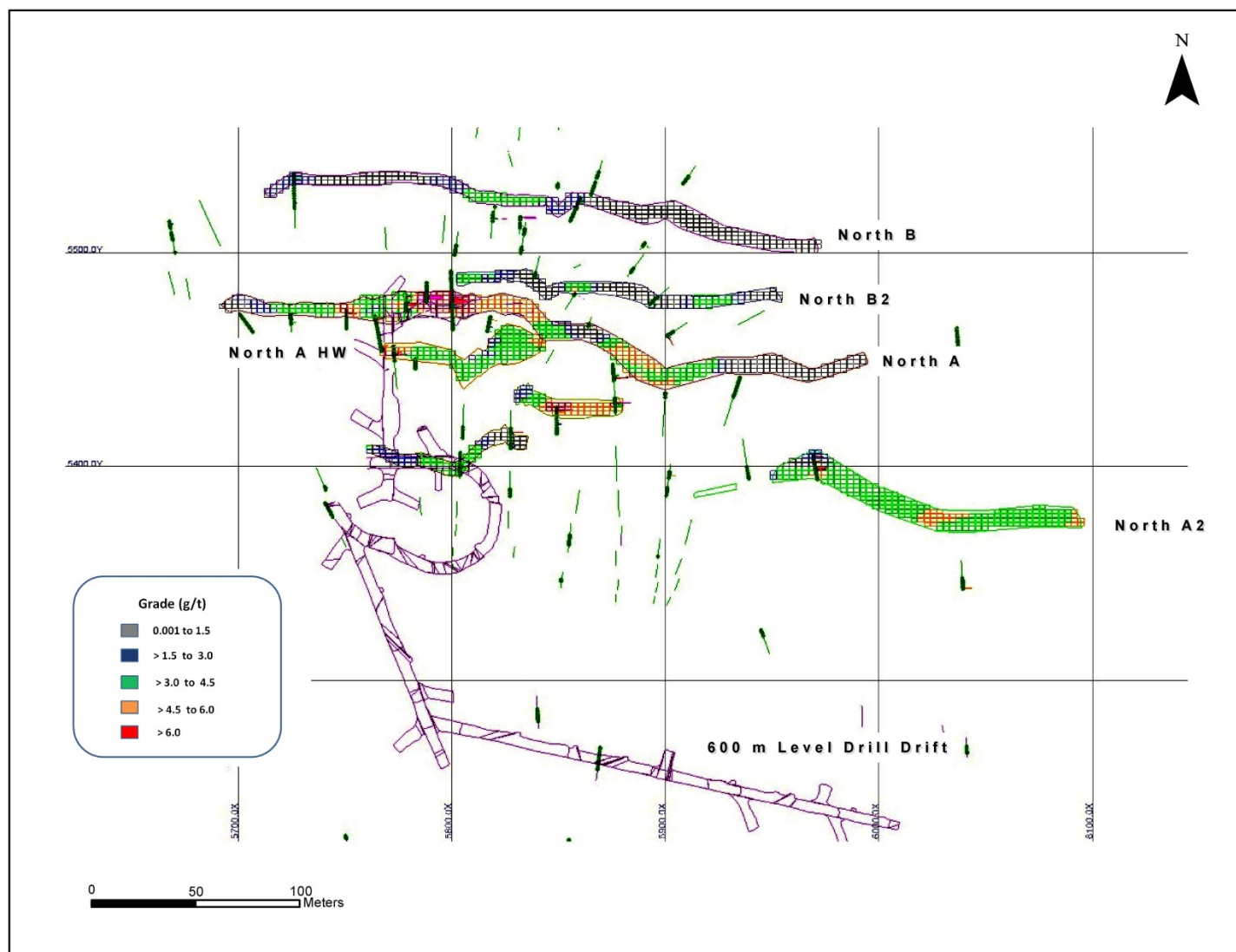


Figure 14.8: Plan View – Bell Creek 600 metre Level



A nearest neighbor interpolation of the block model using the same search ellipse as the ID<sup>2</sup> interpolation was completed and compared. Results showed local variations in the ounce totals but no significant differences between the two methods for the measured and indicated blocks and slight underestimation of grade for the Inferred blocks.

Table 14.12: Comparison of ID<sup>2</sup> and Nearest Neighbour Interpolations for all Blocks (Cut-Off Not Applied)

Interpolation Method	Resource Category	Tonnage* (t)	Grade (g/t Au)	Ounces** (oz Au)
NN	Measured	562,000	3.16	57,000
ID <sup>2</sup>	Measured	567,000	3.21	58,500
	<i>Relative difference</i>	1%	2%	3%
Interpolation Method	Resource Category	Tonnage* (t)	Grade (g/t Au)	Ounces** (oz Au)
NN	Indicated	6,555,000	3.89	820,000
ID <sup>2</sup>	Indicated	6,608,000	3.71	787,000
	<i>Relative difference</i>	1%	-5%	-4%

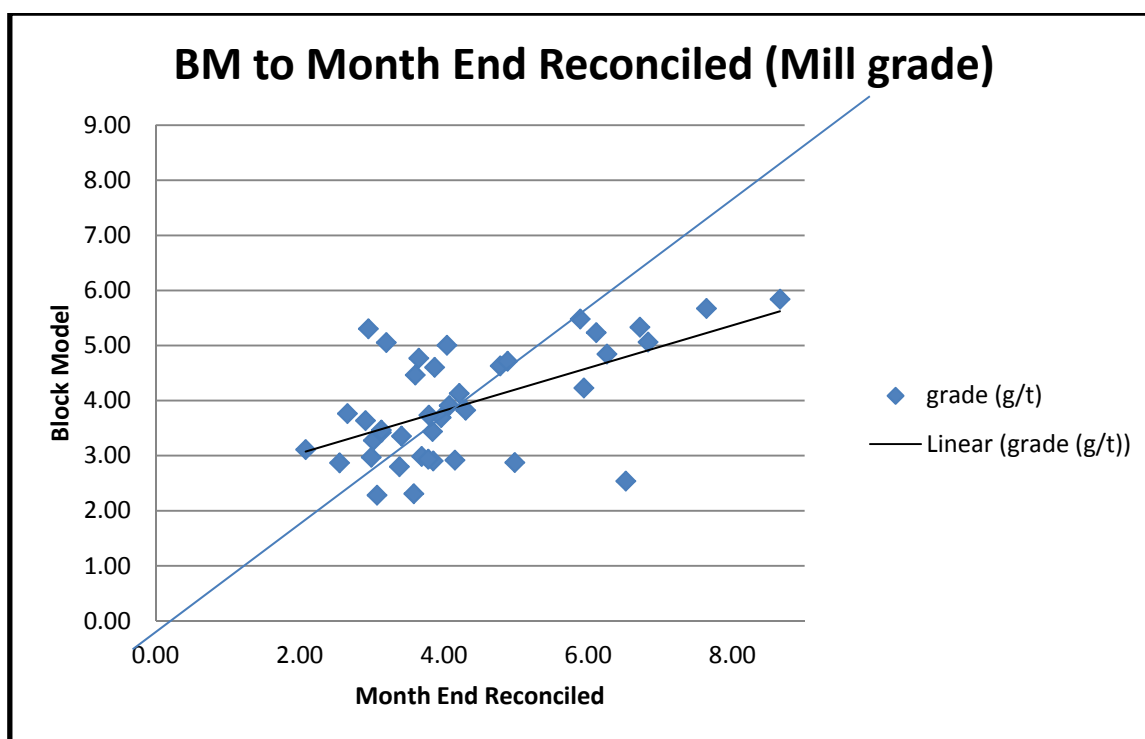
Interpolation Method	Resource Category	Tonnage* (t)	Grade (g/t Au)	Ounces** (oz Au)
NN	Inferred	9,977,000	3.83	1,229,000
ID <sup>2</sup>	Inferred	10,050,000	3.42	1,104,000
	<i>Relative difference</i>	1%	-11%	-10%
Interpolation Method	Resource Category	Tonnage* (t)	Grade (g/t Au)	Ounces** (oz Au)
NN	Uncategorized	17,095,000	3.83	2,106,000
ID <sup>2</sup>	Uncategorized	17,226,000	3.52	1,950,000
	<i>Relative difference</i>	1%	-8%	-7%

\*Rounded to nearest thousand

\*\*Rounded to nearest hundred

A comparison of Block Model Grade to Mill Reconciled stope production has been completed. A total of 193,181 tonnes at an average grade of 5.03 g/t has been extracted from long hole stopes by Lake Shore Gold (stopes completed prior to November 1, 2012, active stopes, level development and pillar recovery not included) and is fully represented in this comparison. Grade correlation is seen to be reasonable at grades below 5 g/t with a tendency to underestimate higher grade. This is illustrated in Figure 14.9

**Figure 14.9: Block Model to Month End Reconciled**



## 14.10 MINERAL RESOURCE

### 14.10.1 Summary

Mineral Resources for the Bell Creek Mine totals 4.68 million tonnes at 4.74 g/t Au amounting to 710,300 ounces of gold in the measured and indicated category and 6.08 million tonnes at 4.62 g/t Au amounting to 903,700 ounces in the inferred category (Table 14.13). The effective date of this estimate is November 1, 2012.

**Table 14.13: Total Resources**

Category	Tonnes	Capped Grade (g/t Au)	Capped Ounces Au
Measured	268,000	4.34	37,400
Indicated	4,417,000	4.74	672,900
Measured and Indicated	4,685,000	4.72	710,300
Inferred	6,080,000	4.62	903,700

**Notes**

1. CIM definitions were followed for classification of Mineral Resources.
2. Mineral Resources are estimated at a cut-off grade of 2.2 g/t Au.
3. Mineral Resources are estimated using an average long-term gold price of US\$1,200 per ounce and a US\$/CDN\$ exchange rate of 0.93.
4. A minimum mining width of two metres was used.
5. Capped gold grades are used in estimating the Mineral Resource average grade.
6. Sums may not add due to rounding.
7. Mr. Ralph Koch, B.Sc. P. Geo., is the Qualified Persons for this resource estimate.

These totals are based on contiguous blocks above a 2.2 g/t cut-off and have been adjusted for development and stoping carried out prior to the effective date.

The Bell Creek Mineral Resources are subject to four separate royalty agreements (Enermark, Gold Corp 1, Gold Corp 2 and Schumacher). A tabulation of the Mineral Resources by royalty holder is presented in Table 14.14 and the spatial distribution of the resources relative to the royalty claims is displayed in Figure 14.10. It can be seen that a very small amount of tonnes are located on the Gold Corp 2 royalty claim, which historically has been recognized as forming part of the Marlhill property. Given the relatively minor quantity of tonnage located on this royalty claim, this portion of the Mineral Resource is considered as forming part of the Bell Creek deposit for the purposes of this Technical Report.

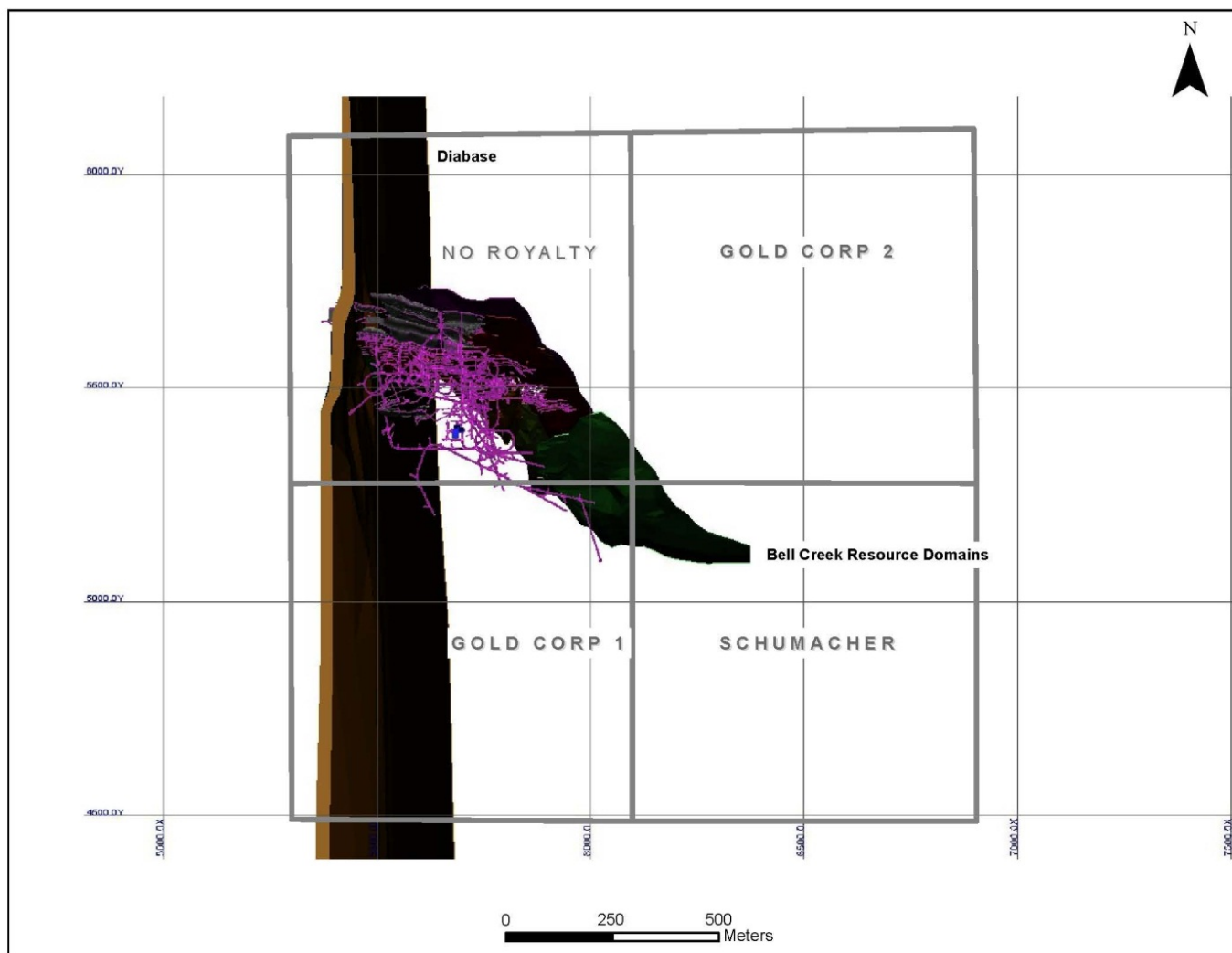
**Table 14.14: Mineral Resources by Royalty Holder**

Claim Group	Measured			Indicated			Inferred		
	tonnes (t)	capped grade (g/t)	content (ounces)	tonnes (t)	capped grade (g/t)	content (ounces)	tonnes (t)	capped grade (g/t)	content (ounces)
<b>No Royalty Payable</b>	268,000	4.34	37,400	3,343,000	4.60	494,300	2,200,000	4.20	297,000
<b>Gold Corp 1</b>				1,037,000	5.19	173,250	2,950,000	5.03	477,300
<b>Gold Corp 2</b>							46,000	3.86	5,700
<b>Schumacher</b>							841,000	4.34	117,300

**Notes**

1. CIM definitions were followed for classification of Mineral Resources.
2. Mineral Resources are estimated at a cut-off grade of 2.2 g/t Au.
3. Mineral Resources are estimated using an average long-term gold price of US\$1,200 per ounce and a US\$/CDN\$ exchange rate of 0.93.
4. A minimum mining width of two metres was used.
5. Capped gold grades are used in estimating the Mineral Resource average grade.
6. Sums may not add due to rounding.
7. Mr. Ralph Koch, B.Sc. P. Geo., is the Qualified Persons for this resource estimate.

**Figure 14.10: Mine Workings and Mineralized Domains Relative to Claim Boundaries**



#### **14.10.2 Procedure**

Resources at the Bell Creek Deposit have been defined by contouring contiguous un-mined blocks above a 2.2 g/t cut-off. This process was selected in order to exclude isolated blocks that do not have a reasonable expectation to be economically exploited.

Three dimensional solids of all mine workings were created and blocks located within these were flagged as mined out using the MINED variable in the block model. Grades and density for these blocks were reset to zero. Remaining blocks above cut-off grade were displayed over top of drill hole composites in order to identify areas where grades above cut-off may stem from a single high grade drill intersection. Outlines enclosing the contiguous blocks were digitized and used to clip this volume from the vein solid. A total of 25 resource solids were created in this manner. Resources are presented as the tonnage and grade of blocks (full and partial) enclosed by these resource solids.

The cut-off grade of 2.2 g/t was selected at the time the Bell Creek project was initiated and represents the anticipated break even grade given existing infrastructure, anticipated costs, historical metallurgic recovery and assumed metal prices and exchange rates. These parameters

are not intended for use in mine planning and scheduling, or the preparation of cash flow models. This cut-off grade may be subject to change given fluctuating metal price, exchange rates, or changes in infrastructure or costs.

**Table 14.15: Summary of Cut-Off Grade Input Parameters**

Item	Parameter Value
Operating Costs	CDN\$76.20/tonne
Metallurgical Recoveries	93% (Historical Bell Creek)
Gold Price	CDN\$1,184/oz (38.08/g)
Exchange Rate (\$CDN:\$US)	1.00 : 0.95

### 14.10.3 Classification

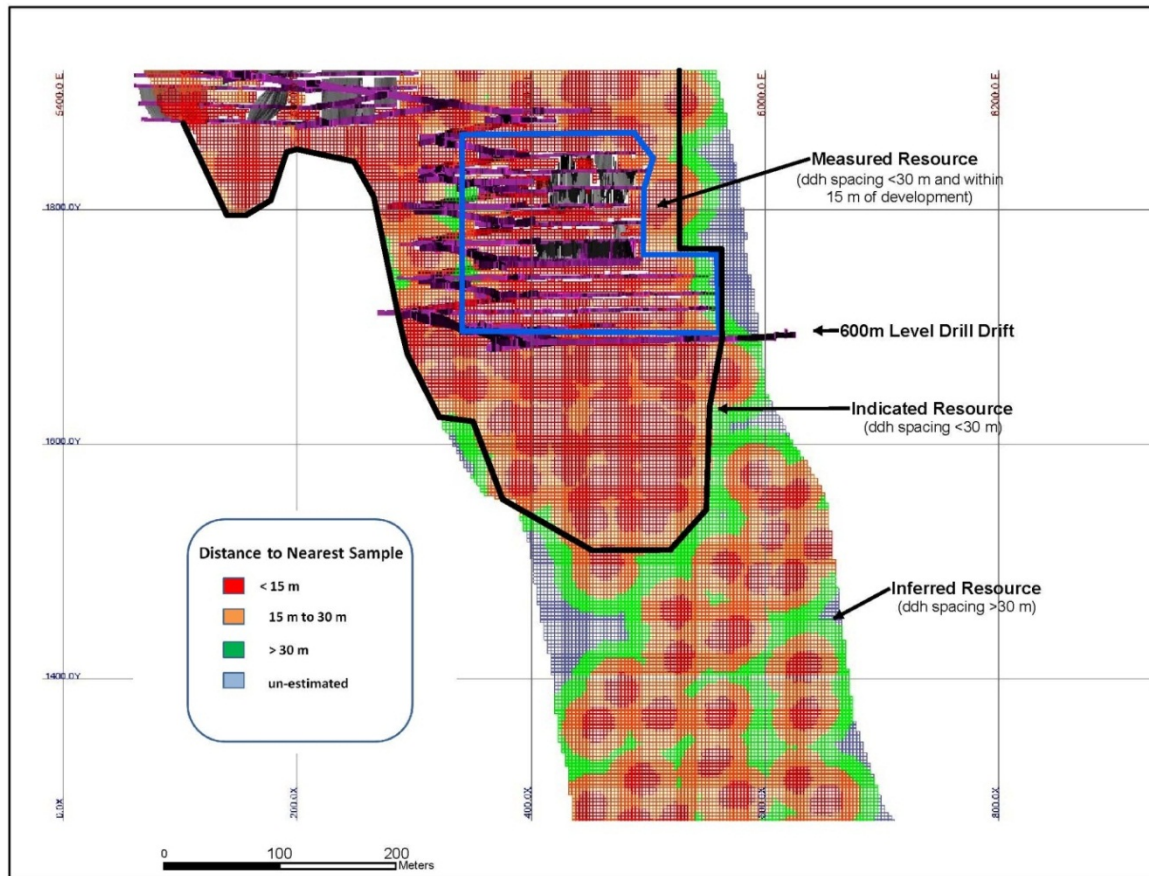
Resources classification is based on a combination of diamond drill hole density and proximity to underground development. In this process outlines enclosing blocks meeting the minimum requirement were digitized and used to clip this volume from the domain solids. The resulting resource category solid was then used to flag blocks within the solid as measured, indicated, or inferred.

Criteria used were as follows:

- Measured – maximum radius to nearest drill intersection of 30 metres and located 15 metres above or below existing development on mineralization.
- Indicated – maximum radius to nearest drill intersection of 30 metres
- Inferred – all other estimated blocks

Figure 14.11 illustrates the resource categorization for the North A vein.

Figure 14.11: Resource Categorization



A detailed breakdown of resources by Resource Category and Mineralized Domain is provided in Table 14.16.

Table 14.16: Resource Above 2.2 g/t

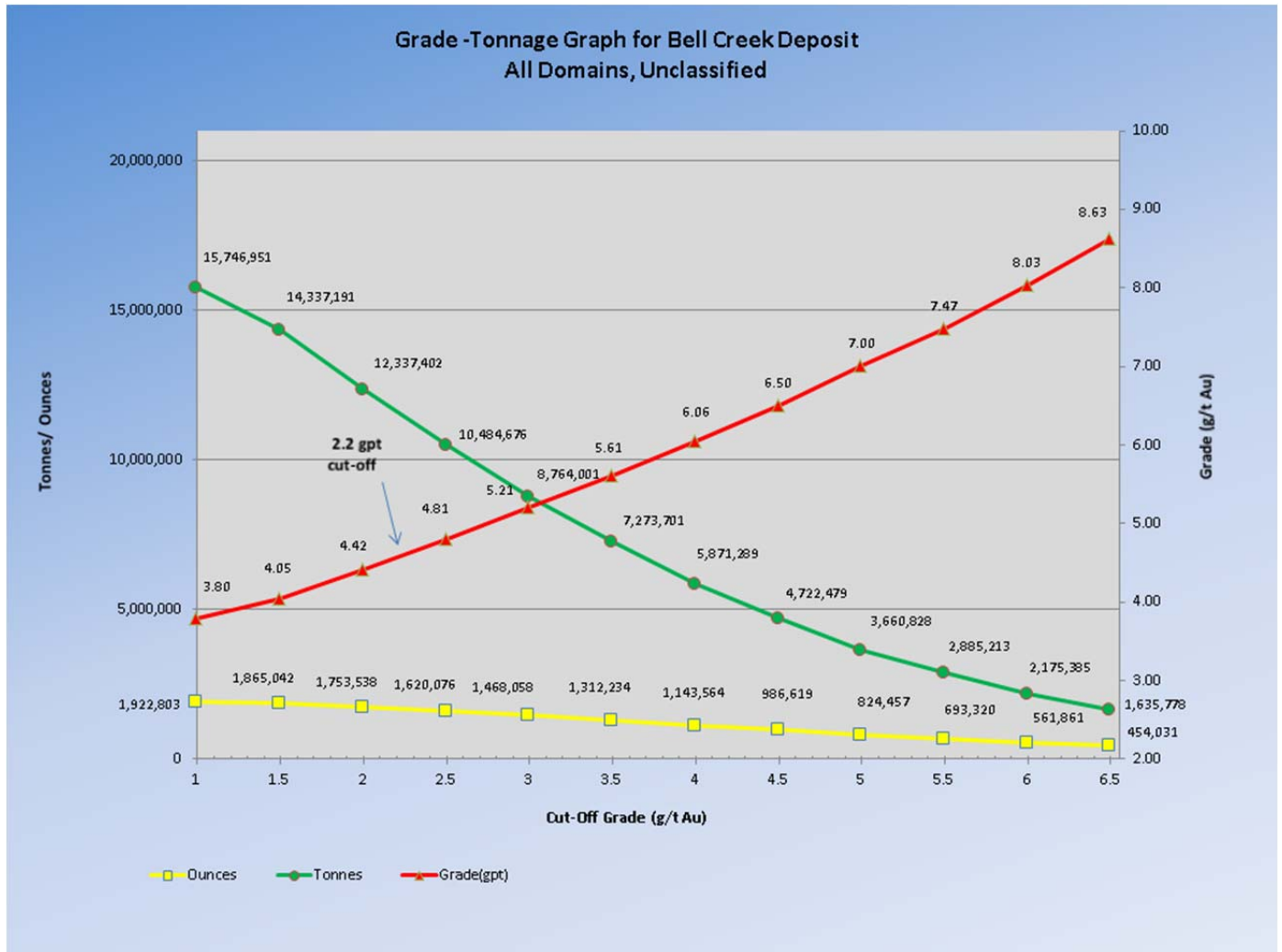
<i>Resource Summary by Domain and Category</i>				
Domain	Category	Tonnage	Grade	Content
		Tonnes	g/t	oz
BC_NA	Measured	195,023	4.47	28,031
	Indicated	2,454,782	4.70	371,003
	Inferred	2,113,644	4.72	320,886
	<b>Total</b>	<b>4,763,449</b>	<b>4.70</b>	<b>719,921</b>
BC_NAFW	Measured	5,585	6.03	1,083
	Indicated	43,443	4.73	6,603
	<b>Total</b>	<b>49,028</b>	<b>4.88</b>	<b>7,866</b>
BC_NAHW	Measured	40,926	3.58	4,717
	Indicated	54,081	5.74	9,979
	<b>Total</b>	<b>95,007</b>	<b>4.81</b>	<b>14,696</b>
BC_NA2	Indicated	598,345	5.72	110,098
	Inferred	1,643,968	4.39	232,174
	<b>Total</b>	<b>2,242,312</b>	<b>4.75</b>	<b>342,245</b>
BC_NA3	Indicated	77,666	3.94	9,825
	<b>Total</b>	<b>77,666</b>	<b>3.94</b>	<b>9,825</b>

<i>Resource Summary by Domain and Category</i>				
Domain	Category	Tonnage	Grade	Content
BC_NA4	Indicated	152,345	4.90	24,005
	Inferred	127,965	5.94	24,447
	<b>Total</b>	<b>280,310</b>	<b>5.38</b>	<b>48,452</b>
BC_NAX	Indicated	4,990	6.06	972
	Inferred	16,893	5.81	3,156
	<b>Total</b>	<b>21,883</b>	<b>5.87</b>	<b>4,128</b>
BC_NB	Measured	8,636	4.50	1,250
	Indicated	538,320	3.88	67,229
	Inferred	1,561,837	4.20	210,631
	<b>Total</b>	<b>2,108,793</b>	<b>4.12</b>	<b>279,111</b>
BC_NB2	Measured	13,226	3.27	1,389
	Indicated	474,101	4.62	70,407
	Inferred	632,279	5.69	115,627
	<b>Total</b>	<b>1,119,607</b>	<b>5.21</b>	<b>187,423</b>
<b>SUMMARY</b>	Measured	<b>268,386</b>	<b>4.34</b>	<b>37,442</b>
	Indicated	<b>4,409,976</b>	<b>4.74</b>	<b>672,305</b>
	Meas & Ind	<b>4,678,362</b>	<b>4.72</b>	<b>709,748</b>
	Inferred	<b>6,079,693</b>	<b>4.62</b>	<b>903,738</b>

#### 14.10.4 Sensitivity

Sensitivities to cut-off were run at 0.5 g/t Au increments from 1.0 g/t Au to 6.0g/t Au for unclassified resources and are summarized in Figure 14.12.

Figure 14.12: Grade Tonnage Graph



#### 14.11 ADDITIONAL INFORMATION

Subsequent to the closing of the database on November 1st, 2012, additional assays were received for 51 holes drilled from underground on the Bell Creek Property and one hole drilled from surface. Assays from four underground drill holes remain pending (effective date of this disclosure is February 28, 2013).

The newly received drill results confirm the geologic interpretation and grade trends evident in the block model and would not materially affect this estimate. A summary of drill results is provided in Table 14.17.

**Table 14.17: Results Received Post Database Closure**

Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)	Target	From (m)	To (m)	Width(m) (m)	Grade (gpt uncut)
<b>Exploration Drill Holes</b>											
S-11-15	6433.8	4810.4	2292.3	360.0	-65.0	861.0	east of mine			no intersection	
BC240-717	5601.4	5370.3	2031.7	54.0	-89.0	591.0	west of mine	510.5	513.0	2.5	3.76
BC535-676	5760.0	5342.9	1750.8	334.0	-64.0	324.0	down plunge - NA	210.0	218.6	8.6	2.91
							down plunge - new zone	231.0	234.0	4.0	4.51
BC535-679	5760.2	5342.1	1750.8	335.0	-74.0	426.0	down plunge - NA	240.8	244.0	3.2	2.76
BC595-701	5756.7	5401.4	1698.7	331.0	-85.0	186.0	down plunge			no intersection	
BC580-735	5911.2	5454.3	1714.4	180.0	0.0	24.0	extension of NA_4			no intersection	
BC595-750	5829.3	5462.2	1699.0	180.0	0.0	27.0	extension of NA_4			no intersection	
<b>Infill Drill Holes</b>											
BC420-727	5822.1	5477.3	1884.9	343.0	17.0	141.0	NA	68.7	71.0	2.3	3.45
							NA FW	73.5	75.5	2.0	0.67
							NB	126.9	130.5	3.6	2.99
BC420-728	5822.2	5477.3	1885.6	341.0	35.0	111.0	NA	84.5	86.7	2.2	0.85
							NA FW	90.2	92.8	2.6	5.97
BC420-729	5822.8	5477.3	1884.8	340.0	20.0	135.0	NA	65.4	67.6	2.2	0.80
							NA FW	78.6	81.2	2.6	0.09
							NB	119.1	121.1	2.0	0.99
BC420-730	5822.8	5477.3	1885.6	351.0	35.0	177.0	NA	83.3	85.6	2.3	5.23
							NA FW	92.7	95.4	2.7	0.61
							NB	141.7	143.8	2.1	23.88
BC445-457	5825.0	5527.3	1847.5	360.0	-27.0	60.0	NB	39.6	41.6	2.0	0.62
BC445-613A	5830.9	5523.5	1847.3	191.0	0.0	15.0	NA HW	10.7	13.1	2.4	6.69
BC445-617	5806.4	5527.0	1846.0	360.0	0.0	6.0	test drift wall			no intersection	
BC475-611A	5802.8	5402.1	1822.2	45.0	-36.0	57.0	HOLE ABANDONED			no intersection	
BC535-685	5825.0	5334.9	1750.5	10.0	-75.0	342.0	NA	239.0	243.6	4.6	2.31
BC535-698	5760.1	5342.6	1750.8	5.0	-53.0	261.0	NA	166.9	171.9	5.0	3.49
							NB	243.0	245.9	2.9	0.30
BC535-703	5780.0	5347.2	1751.0	356.0	-46.0	228.0	NA_3	77.9	81.9	2.0	1.05
							NA HW	146.2	148.2	2.0	9.51
							NA	159.2	164.4	5.2	5.44
							NB_2	181.4	183.8	2.4	3.65
							NB	210.5	215.6	5.1	0.87
BC535-704	5780.0	5347.2	1750.8	358.0	-54.0	243.0	NA_3	85.1	87.4	2.3	1.27
							NA HW	134.5	137.0	2.5	2.13
							NA	145.8	151.5	5.7	6.34
							NB_2	190.5	192.9	2.4	10.57
							NB HW	219.8	221.8	2.0	2.14
BC535-705	5780.2	5346.8	1750.8	358.0	-68.0	285.0	NA_3	98.0	100.1	2.1	2.77
							NA	178.8	183.8	5.0	10.21
							NB	259.2	261.8	2.6	0.56
BC535-706	5780.5	5346.5	1750.8	360.0	-77.0	360.0	NA	229.4	233.0	3.6	2.08
BC535-707	5780.6	5346.6	1750.8	2.0	-73.0	342.0	NA_3	102.6	104.7	2.1	2.59
							NA HW	188.2	190.2	2.0	2.77
							NA	194.9	197.3	2.4	5.93
BC535-708	5849.8	5328.9	1750.8	3.0	-52.0	285.0	NA_4	118.8	121.0	2.2	5.55
							NA HW	148.0	153.0	5.0	3.99
							NA	162.7	170.2	7.5	9.61
							NB_2	182.4	185.0	2.6	3.34
							NB	233.3	235.9	2.6	1.48
BC535-709	5888.8	5319.1	1753.4	9.0	-50.0	285.0	NA	148.8	151.1	2.3	3.11
							NB_2	187.1	197.0	9.9	3.14
							NB	219.2	222.0	2.8	3.95
BC565-710	5826.1	5474.5	1727.0	173.0	0.0	6.1	NA HW	0.0	6.1	6.1	2.51
BC565-711	5831.5	5475.6	1727.0	170.0	0.0	6.9	NA HW	0.0	6.9	6.9	8.00
BC565-712	5837.7	5475.9	1727.0	169.0	0.0	6.9	NA HW	0.0	6.9	6.9	4.02
BC565-713	5882.7	5464.8	1727.3	180.0	0.0	17.0	NA_4	7.9	15.1	7.2	3.75
BC565-714	5882.7	5464.8	1727.3	180.0	-25.0	24.0	NA	10.8	14.0	3.2	5.01
BC565-715	5882.7	5464.8	1727.7	155.0	0.0	21.0	NA_4	7.0	9.9	2.9	11.28
BC565-716	5882.7	5464.8	1726.7	155.0	-25.0	29.0	NA	7.0	9.8	2.8	1.60
BC580-718	5782.9	5482.4	1711.4	180.0	0.0	24.0	NA HW	17.4	19.5	2.1	1.50
BC580-719	5794.5	5483.0	1711.5	180.0	0.0	24.0	NA HW	15.0	17.0	2.0	2.73
BC580-720	5807.1	5481.9	1711.7	180.0	0.0	32.0	NA HW	15.7	18.4	2.7	6.48
BC580-721	5819.6	5481.9	1712.7	180.0	0.0	27.0	NA	0.0	2.0	2.0	3.25
							NA HW	11.3	20.3	9.0	2.95
BC580-722	5832.8	5479.9	1712.4	180.0	0.0	21.0	NA HW	5.0	17.0	12.0	6.09
BC580-723	5882.3	5460.3	1714.4	180.0	0.0	24.0	NA_4	9.8	14.6	4.8	5.31
BC580-724	5882.3	5460.3	1714.4	153.0	0.0	32.0	NA_4	9.5	12.0	2.5	5.82
BC580-725	5858.1	5471.3	1714.5	360.0	0.0	30.0	NB_2	18.0	20.0	2.0	0.83
BC580-726	5809.2	5487.1	1711.9	360.0	0.0	21.0	NA	0.0	5.0	5.0	1.32
BC580-736	5926.9	5454.7	1715.8	180.0	0.0	24.0	NA	8.5	10.8	2.3	1.14
BC580-737	5943.1	5451.1	1716.3	180.0	0.0	30.0	NA	0.0	5.6	5.6	13.03
BC595-699	5757.6	5401.4	1698.7	354.0	-72.0	261.0	NA	96.4	99.4	3.0	3.42
							NEW ZONE	134.8	137.1	2.3	4.15
BC595-700	5757.3	5401.5	1698.7	338.0	-79.0	160.0	NA	118.9	126.5	7.6	3.31
BC595-746	5812.9	5461.6	1698.8	2.0	0.0	17.0	NA HW	0.8	2.8	2.0	3.34
BC595-747	5824.8	5462.7	1698.9	4.0	0.0	15.7	NA HW	0.0	7.7	7.7	2.36
							NA	11.8	15.7	3.9	3.49
BC595-748	5829.3	5462.2	1699.0	21.0	0.0	16.7	NA HW	0.0	5.2	5.2	7.38
							NA	14.4	16.7	2.3	7.20
BC595-749	5829.3	5462.2	1699.0	57.0	0.0	14.9	NA HW	0.0	14.9	14.9	6.14
BC595-751	5824.9	5459.1	1698.8	180.0	0.0	27.0	NA HW	0.0	6.3	6.3	3.93
BC610-738	5902.3	5266.4	1686.5	5.1	-69.9	360.0	NA_2	163.6	165.6	2.0	0.17
							NA_4	205.3	207.7	2.4	0.75
							NA	237.8	241.7	3.9	5.62
							NB_2	261.3	263.9	2.6	7.08
							NB	320.7	323.8	3.1	0.82
BC610-739	5902.3	5266.4	1686.5	7.0	-66.0	258.0	NA_2	149.4	151.5	2.1	0.21
							NA	217.0	222.6	5.6	3.87
							NB_2	250.2	253.5	3.2	3.81
BC610-740	5902.3	5266.4	1686.2	6.0	-77.0	393.0	NA_2	182.3	184.7	2.4	0.81
							NA_4	211.1	213.1	2.0	0.03
							NA	255.6	263.3	7.7	3.31
							NB_2	287.0	289.0	2.0	2.00
							NB	333.8	336.6	2.8	3.70

The Bell Creek Resource is situated on Patented Mining claims and is fully permitted. Mining activity has been ongoing within the region (Porcupine Gold Camp and within the municipal jurisdiction of the city of Timmins) in excess of 100 years and has received the favorable support of the population base and governmental institutions. The risk of negative impact stemming from permitting, environmental, political, taxation, or socio-economic issues is considered minimal. The resource is subject to royalty payments as outlined in Section 4.3. These payments have been considered when determining cut-off grades.

It should be noted that the resource would be negatively impacted by the effects of falling metal prices, or rising costs due to increased labour rates, cost of fuel, or electricity, etc.

## 15.0 MINERAL RESERVE ESTIMATES

The probable reserves estimated for the Bell Creek Mine have been based on the indicated resource material included in the November 2012 Resource Block Model. The block model was prepared by Lake Shore Gold. The estimated in-situ indicated resource between the 300L and 775L reported from the block model at a 3.0 gram per tonne (g/t) cut-off grade is summarized in Table 15.1.

**Table 15.1: Bell Creek Mine In-Situ Indicated Resource at 3.0 g/t Cut-Off Grade**

Deposit	Tonnes	Grade (g/t)	Ounces
Bell Creek Mine (300L to 775L)	1,383,874	4.8	214,128

A mine design was completed to reflect the most likely mining and production scenario for mining the indicated resource between 300L and 775L. The mine design considers existing surface and underground infrastructure, and includes all additional development and construction required to access the indicated resources. The mine design includes the equipment, labour, and services required to extract the ore using a combination of development and Longhole Stoping (described in Item 16). The Longhole Stoping mining method is currently used successfully at Bell Creek Mine, and the operation has the experienced personnel and suitable equipment to continue with this method.

The Bell Creek Mine is currently operating and has existing surface and underground infrastructure in place. Sustaining capital and maintenance costs have been included to ensure the infrastructure remains in good condition for the life-of-mine. The existing management, staff, and hourly personnel will continue to operate the mine with minimal annual adjustments to staffing levels (as certain activities increase or decrease). The mine has all required permits in place.

Ore will be processed at the existing Bell Creek Mill, located on site. The mill currently processes Bell Creek ore and milling does not pose a risk to the reserves.

### 15.1 RESERVE ESTIMATE

Based on the in-situ indicated resource included in the Bell Creek block model, the following methodology was used to estimate the probable reserves.

1. The block model was reviewed in plan and in section to identify indicated resource between 300L and 775L that is above a 3 g/t cut-off grade, and to confirm the applicability of the longitudinal longhole mining method. Some of the indicated resource material lies in sill pillars left in previous mining areas (requiring sill pillar recovery), while the majority of indicated material lies in recently developed and currently undeveloped areas.
2. Sublevels were designed at 15 metre vertical intervals, and vertical sections were cut through the model at five metre intervals along strike. On each vertical section, mining shapes were designed for each zone for each 15 metre sublevel interval. Each shape had an influence of 2.5 metres east and 2.5 metres west of the section. The mining shapes were joined with adjacent sections to generate stope wireframes. A 2.4 metre minimum mining width was considered in the stope design. Note that there are some +3g/t "blocks" that are in the block model, but are not included in stope wireframes.

- These are generally random blocks that are distant from planned mining areas and cannot be economically mined.
3. The in-situ tonnes and grade within each stope wireframe was extracted from the block model. The in-situ tonnes and grade includes the planned dilution.
  4. The unplanned dilution was estimated for each stope based on the stope size and geometry.
  5. A 90% Mining Recovery factor was applied to the diluted resource for each stope.
  6. The resulting diluted and recovered resource for each stope was reviewed. Diluted and recovered stopes above 3 g/t were included in the mine plan. Stopes below 3 g/t were re-designed to optimize the wireframe by reducing the stope size, or including a portion of the stope with the adjacent stope. Any stopes remaining below 3 g/t were excluded from the mine plan.

The diluted and recovered resource was estimated for each stope and the calculations are included in Appendix G. The conversion from indicated resource to estimated probable reserves that have been included in the Bell Creek Mine plan are summarized in Table 15.2.

**Table 15.2: Bell Creek Mine Estimated Reserves**

Item	Tonnes	Grade (g/t Au)	Ounces
In-situ Indicated Resource above 3.0 g/t (300L to 775L)	1,383,874	4.8 g/t	214,128
In-situ Resource outside of Stope Wireframes*	-278,961	4.7 g/t	-42,561
In-situ Resource in Stope Wireframe above 3 g/t not mined**	-159,516	3.5 g/t	-17,683
Total Dilution Mined	213,630	0.2 g/t	1,324
Left in permanent Sill and Rib Pillars	-90,534	4.3 g/t	-11,845
Mining Recovery Factor	-79,583	4.1 g/t	-10,963
Stopes not mined at the end of the mine life***	-28,858	3.3 g/t	-3,082
<b>Total Reserves Mined to Surface</b>	<b>960,052</b>	<b>4.2 g/t</b>	<b>129,318</b>

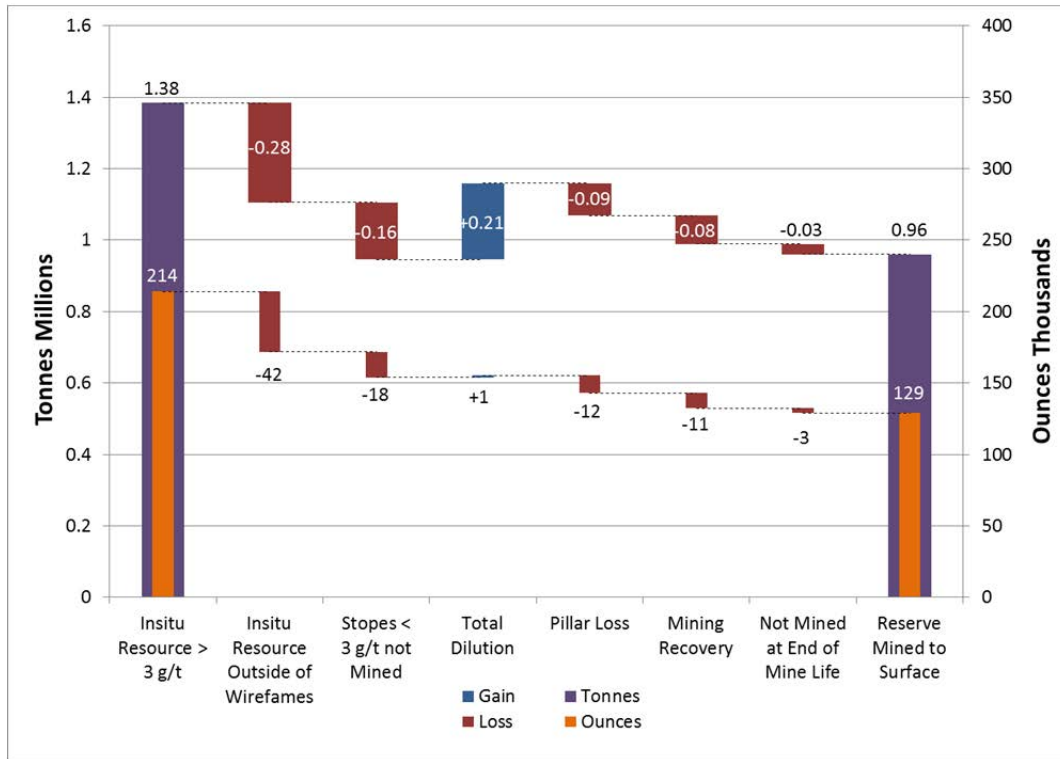
*\*These are Block Model "blocks" above 3 g/t that are randomly dispersed throughout the resource away from the mining areas and did not get included in Stope Wireframes.*

*\*\*These are Block Model "blocks" above 3 g/t that are included in stope wireframes, but the stopes (once diluted) are below 3 g/t and will not be mined.*

*\*\*\*These stopes are near the ramp and can only be mined at the end of the mine life and at low production rates. At this late stage of mining, the stopes do not support the operating costs.*

The resource conversion to reserve is shown graphically in Figure 15.1.

**Figure 15.1: Resource to Reserve Conversion**



A detailed development schedule, production profile, and mine design was completed to estimate the capital and operating costs required to access, develop, and extract the reserves. The costs estimates and cash flow analysis are included in Sections 21 and 22.

## 16.0 MINING METHODS

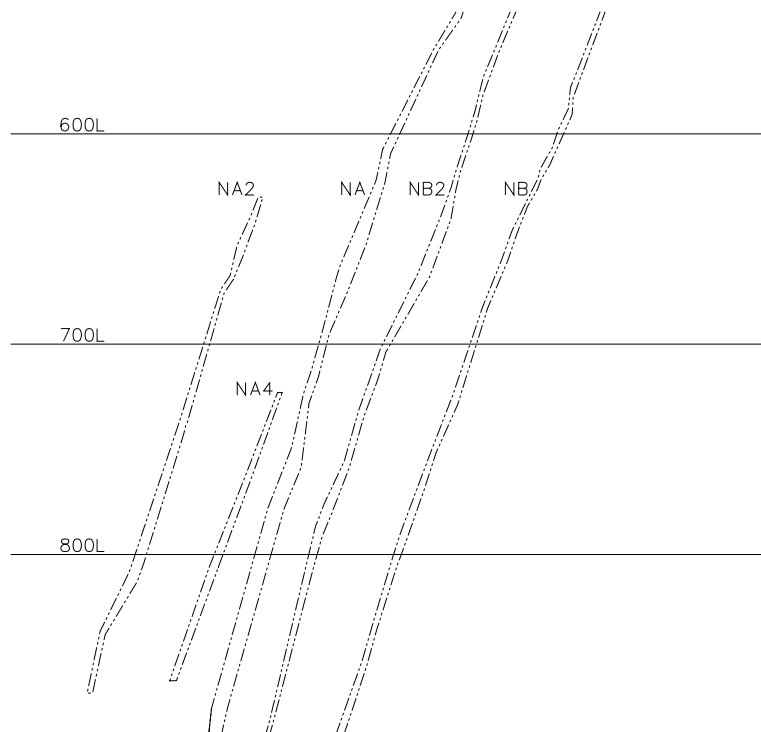
### Overview

The Bell Creek Mine design has been based on the November 2012 Bell Creek Resource Block Model prepared by Lake Shore Gold geology staff. The mine design considers resource in the indicated category between the 300 Level (300L) and 775L. Engineering and cost assessment work has been completed on this indicated resource material to a prefeasibility study level (PFS) of detail. The designs and cost estimates consider existing surface and underground infrastructure, mining methods, and operating experience at the Bell Creek Mine to support the declaration of reserves for the property.

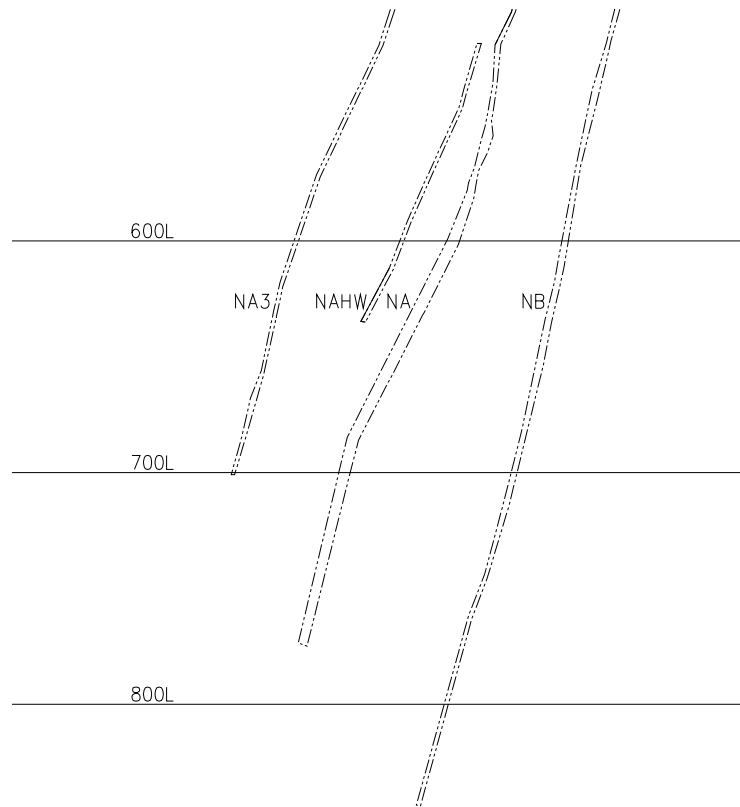
The naming convention for underground sublevels at the Bell Creek Mine is expressed in metres below the existing mine shaft collar (i.e. 775L is nominally 775 metres below surface).

The indicated mineralized resource between 300L and 775L consists of nine steeply dipping zones with widths averaging 3.6 metres. The zones strike nominally east-west with strike lengths varying from approximately 70 to 290 metres. The geometry of the zones is shown in section in Figure 16.1 and Figure 16.2 and in plan at 700L in Figure 16.3.

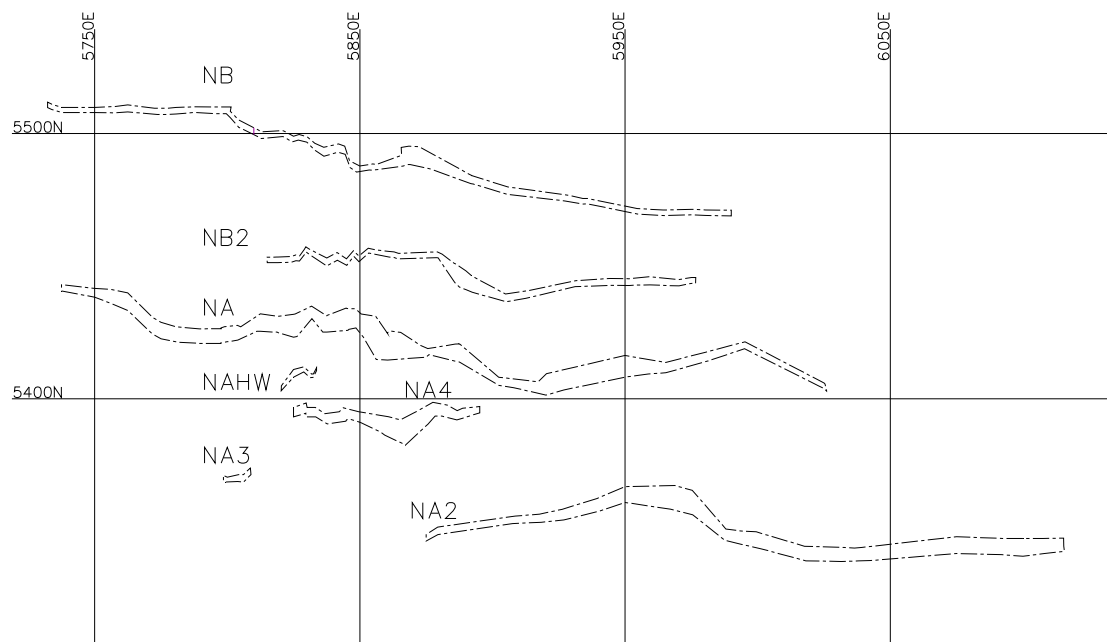
**Figure 16.1: Mineralized Zones, Section at 5800 Easting (Mine Coordinate System)**



**Figure 16.2: Mineralized Zones, Section at 5900 Easting (Mine Coordinate System)**



**Figure 16.3: Mineralized Zones, Plan at 700L**



The estimated in-situ indicated resource reported from the block model between 300L and 775L at 3 grams per tonne (g/t) cut-off grade is summarized in Table 16.1.

**Table 16.1: Bell Creek Mine In-Situ Indicated Resource at 3.0 g/t Cut-Off Grade**

Deposit	Tonnes	Grade (g/t)	Ounces
Bell Creek Mine (300L to 775L)	1,383,874	4.8	214,128

Historic (previous mine operators) and recent Lake Shore mining experience at Bell Creek Mine has demonstrated narrow vein longitudinal longhole as a suitable (and preferred) mining method. The existing mine operations personnel, and local supply/support industry are experienced with this mining method and the existing equipment fleet will be appropriate for continued production. The mine has existing surface and underground infrastructure in place to continue to support development and production levels that were achieved by Lake Shore in 2011 and 2012.

The existing surface infrastructure at the Bell Creek Mine is shown in Figure 16.4 and includes:

- Access roads and site grading.
- Security gate house.
- Shaft headframe, collar house, and hoisting plant (currently not in operation).
- Compressed air plant.
- Process water supply.
- Portal and main ramp to underground.
- Electrical services infrastructure and distribution.
- Main fresh air ventilation fans and mine air heaters.
- Administration, mine dry, and training facilities.
- Warehouse and maintenance facilities.
- Water treatment facilities and discharge water settling ponds.
- The Bell Creek Mill facility.

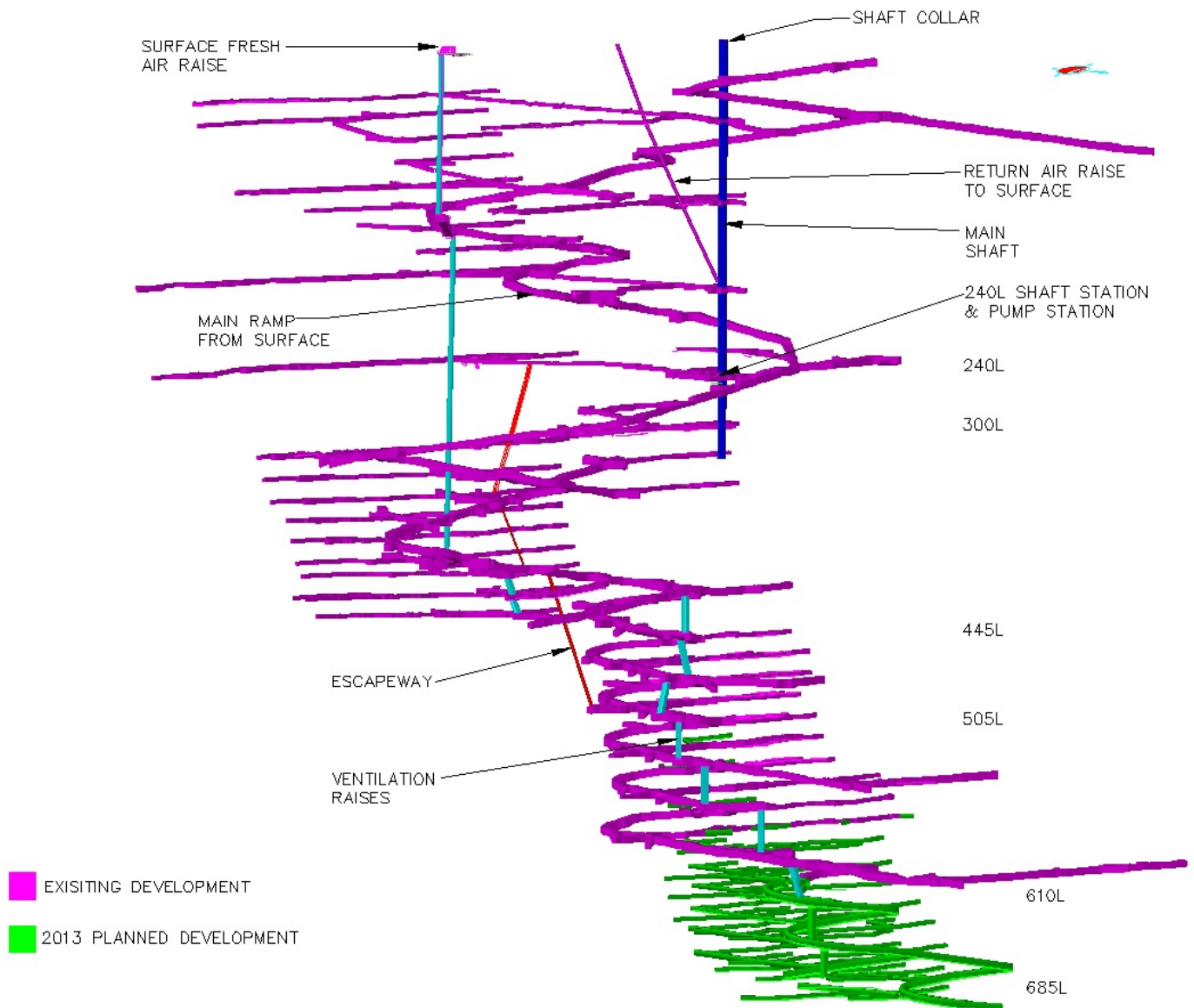
**Figure 16.4: Bell Creek Mine Surface Infrastructure**



The existing underground infrastructure at the Bell Creek Mine is shown in Figure 16.5 and includes:

- The 6.3 metre by 2.6 metre rectangular timbered shaft to the 290L. The shaft is not in operation and is used as a ventilation exhaust opening and the manway serves as the second egress from the mine.
- A shaft station at 240L.
- Ventilation raises to surface and internal ventilation raises underground.
- The main ramp from surface to approximately 610L.
- Mine dewatering facilities.
- Electrical distribution and communications.
- Compressed air and service water distribution.

**Figure 16.5: Bell Creek Mine Existing Underground Infrastructure**



## **16.1 PRIMARY / SECONDARY ACCESS**

The primary access to the mine will continue to be via the existing portal and main ramp from surface. The main ramp is 5 metres wide by 5 metres high and currently extends to the 610L. All active production levels in the mine will be accessed via the ramp (i.e. no captive levels) and personnel, materials, and ore and waste rock will be transferred via the ramp.

Secondary access/egress to/from the underground to surface will be via the existing manway in the shaft. Below the existing access to the shaft at the 240L station, the main ramp and internal raises equipped with escapeways will provide two access routes to the 240L.

## **16.2 SHAFT AND HOISTING FACILITIES**

The existing shaft is a 6.3 metre by 2.6 metre rectangular, three-compartment timbered shaft. The shaft collar is at 2,288 metre elevation and the shaft bottom at 1,998 metre elevation (290 metres deep). A main shaft station exists at the 240L. The headframe and hoisting facilities remain in place but are currently not being used. There are no plans to recondition/refurbish or deepen the shaft for production use in this study. Regular shaft manway inspections will continue to maintain second egress. There are existing compressed air (152 mm) and dewatering piping (203 mm) and electrical cables in the shaft that feed the 120L and 240L Pump Stations.

## **16.3 STOPING METHODS**

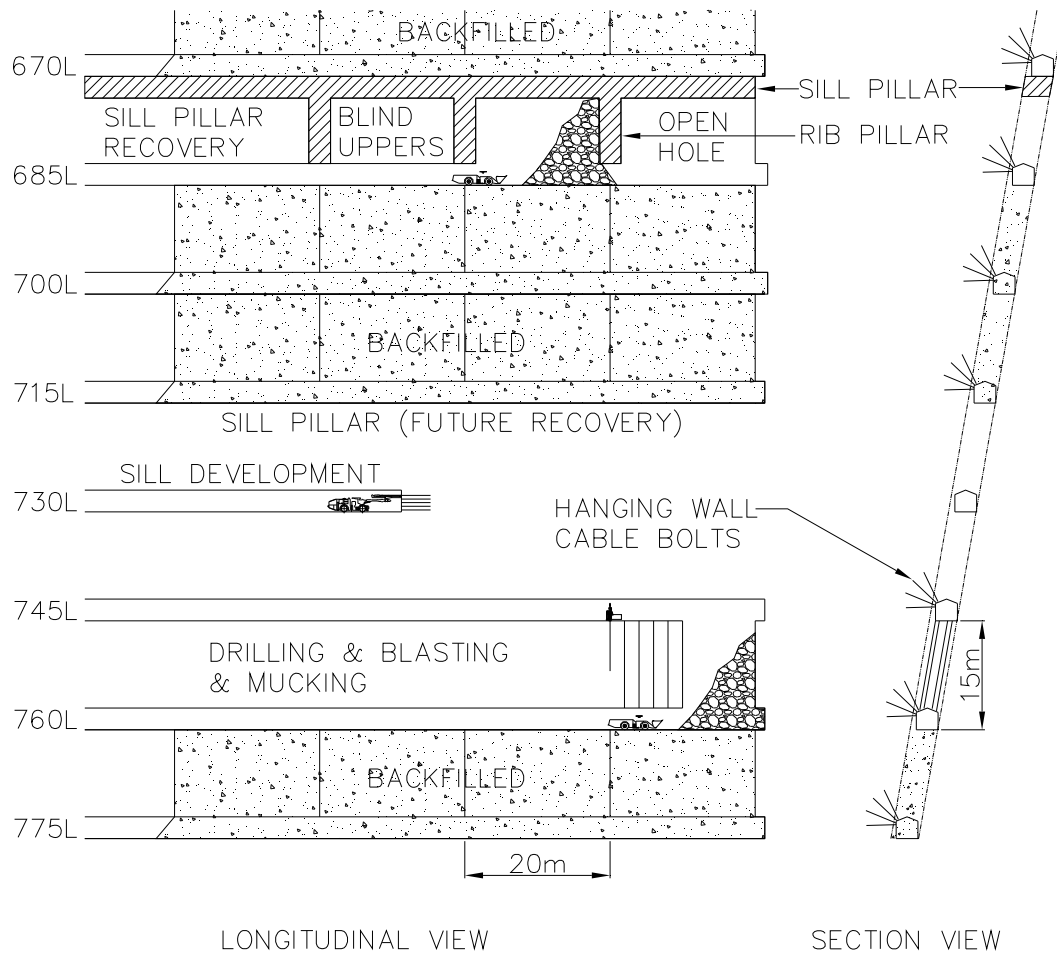
Narrow Vein Longitudinal Longhole with delayed unconsolidated rockfill (Longhole) stoping has been the primary mining method used to date at the Bell Creek Mine. Longhole is a widely used and proven mining method that involves common industry equipment and labour skill sets.

In current active mining areas (to 610L), sublevels have been established at 15 metre vertical intervals (floor to floor) and this sublevel spacing will be maintained for remaining sublevels to the 775L. On each sublevel, the resource will generally be accessed near the centre (along strike) and stope undercut and overcut sills developed to the east and west extents. Stope lengths will generally be 20 metres along strike however stopes abutting waste or low grade material may be marginally longer or shorter to optimize recovery. Longitudinal mining will retreat from the furthest stope from the access, toward the initial access point.

The resource will be mined “top down” in blocks as ramp development advances to 775L. To maintain steady production rates, a mining front will be established at every third sublevel (i.e. 45 metre high blocks). Where a stope will be mined up to a previously mined stope in the block above, sill pillar recovery will be required. Sill pillar recovery will require working on top of backfill and mining uppers stopes, leaving a permanent sill pillar (1:1 pillar width to pillar height ratio) in place below the stope above to contain the unconsolidated rockfill. The uppers stopes will not be backfilled, and 3 metre thick rib pillars will be left to support the hangingwall (and footwall) between stopes.

The mining method is shown in the longitudinal and section view sketches in Figure 16.6.

**Figure 16.6: Longitudinal Longhole Mining Method**



### 16.3.1 Stope Undercut and Overcut Development

Ore sills (stope overcuts and undercuts) will be developed along the strike of each zone under geological control (i.e. under the direction of mine geologists). Ore widths will generally average 3.6 metres and the entire sill from the hangingwall to footwall contacts will be developed. Where ore widths exceed 8 metres, the hangingwall contact will be followed, with crosscuts developed at preset intervals to expose the footwall contact.

### 16.3.2 Secondary Ground Support

Cable bolts will be installed to help reduce dilution in areas where the stope undercut sill has "notched" the hangingwall, causing potential instability. Preliminary cable bolt design considers rings of four 6 metre long cables fanned from the stope undercut sill. Cable bolt ring spacing will be 2 metres. An allowance for five cable bolt rings per stope has been included in the cost estimate.

A pneumatic powered top hammer longhole drill will be used to drill the cable bolt holes. Cable bolts will be installed manually and grouted with a portable grout pump. A drilling contractor currently completes all cable bolt drilling and installation at Bell Creek Mine and this practice will continue for the life-of-mine.

### **16.3.3 Production Drilling**

Longholes will be 63.5 mm (2.5 inch) diameter and drilled with a pneumatically powered top hammer drill. Longholes will be drilled down from the overcut sill with some holes breaking through into the undercut, and others fanned as required to contour the stope limits. The drill pattern will include a 1.2 metre ring burden with 1.5 metre spacing between ring holes. A drop raise will be drilled and blasted to create the initial void for production blasting (for a series of stopes along strike). The estimated production drilling factor (excluding drop raises) will be 3 tonnes per metre of longhole. A drilling contractor currently completes all production drilling and blasting work at the Bell Creek Mine and this strategy will continue for the life-of-mine. Blind uppers (i.e. non-breakthrough) drilling will be used to recover the sill pillars, with inverse drop raises used to establish the initial void for blasting.

The average production drilling performance per shift at Bell Creek Mine was 82 metres in 2012. To estimate the stope cycle time and productivity, a production drilling rate of 70 metres per shift has been used to account for shifts lost due to delays such as workplaces not ready (and the drill is therefore idle). Stopes will average 1,200 metres drilled (including drop raises and contingency for re-drilling) requiring approximately ten drilling days (including moving in and out of the workplace).

### **16.3.4 Production Blasting**

Longholes will be loaded with emulsion explosives. The emulsion will be detonated with non-electric blasting caps and boosters. The powder factor will be approximately 1.2 kilograms of explosives per tonne of ore. Emulsion storage bins and the portable pump unit will be moved to and from workplaces using a service LHD equipped with forks. Including the drop raise, stope loading and blasting will require approximately three days and will be completed by the drilling contractor.

### **16.3.5 Stope Mucking**

Broken ore will be extracted from stopes using 2.0 cubic yard (2yd) class LHDs. When the stope drawpoint brow is closed with muck, the LHD will be operated manually (i.e. with the operator in the seat). When the drawpoint brow is open, the LHD will be operated via remote control with the operator located a safe distance from the stope and away from the moving LHD. The LHD will tram to a remuck near the level access. Ore dumped into a remuck will subsequently be remucked by a 6yd class LHD and loaded into a 42 tonne class haul truck and hauled to the surface ore pad.

The production LHD will muck for 12 hours per day (including operator delays, 85% mechanical availability, and 85% drawpoint availability) and will average approximately 390 tonnes per day during the mucking cycle, requiring eight days to muck a stope.

### **16.3.6 Ore Rehandling and Underground Truck Haul**

Broken ore will be rehandled from a remuck with a 6yd LHD and loaded into Atlas Copco MT42 trucks for hauling to surface. Due to the relatively low specific gravity of broken ore, the truck payload will be approximately 35 tonnes.

The estimated daily productivity for a truck hauling ore from each level to a dump pad near the portal is summarized in Table 16.2.

**Table 16.2: Underground Truck Haulage**

<b>Level</b>	<b>One-Way Haul Distance (metres)</b>	<b>Estimated Cycle Time (minutes)</b>	<b>Productivity per Truck (tonnes per day)</b>
300L	2,200	47.0	600
430L	3,100	63.1	447
445L	3,200	65.0	434
460L	3,300	66.8	422
475L	3,400	68.7	411
490L	3,600	70.5	400
505L	3,700	72.4	390
520L	3,800	74.3	380
535L	3,900	76.1	371
550L	4,000	78.0	362
565L	4,100	79.8	354
580L	4,200	81.7	345
559L	4,300	83.5	338
610L	4,400	85.4	330
625L	4,500	87.3	323
640L	4,600	89.3	316
655L	4,700	91.4	309
670L	4,800	93.4	302
685L	5,000	95.5	296
700L	5,100	97.5	289
715L	5,200	99.6	283
730L	5,300	101.6	278
745L	5,400	103.7	272
760L	5,500	105.7	267
775L	5,600	107.8	262

**16.3.7 Backfill**

Stopes will be backfilled with unconsolidated waste rock. The current backfilling practice at Bell Creek Mine includes backfilling stopes until full, then extracting sufficient fill to open the brow to create the initial void (slot) for blasting the adjacent (next) stope along strike. Waste rock generated from development activities will be the primary source of backfill. Waste rock from development and raising activities will be loaded into trucks and hauled to the backfilling sublevel, and dumped into a remuck. A 2yd LHD will remuck the waste rock from the remuck to the stope.

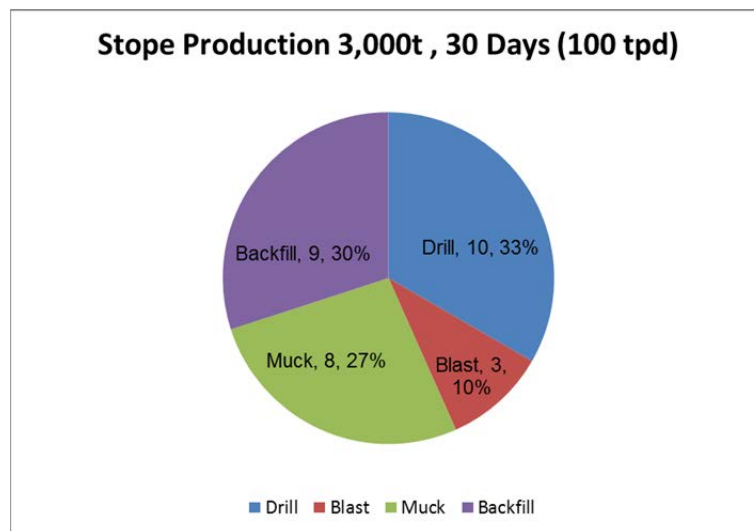
There will not be sufficient waste rock generated from development activities to meet all backfilling requirements. Beginning in 2015, stockpiled waste rock from nearby mining operations will be trucked to the Bell Creek Mine and backhauled underground in the 42 tonne haul trucks. The requirements for backfill from off-site are summarized in Table 16.3.

**Table 16.3: Surface Off-Site Waste Rock Requirements**

Item	2013 (tonnes)	2014 (tonnes)	2015 (tonnes)	2016 (tonnes)	2017 (tonnes)	2018 (tonnes)	Total (tonnes)
Backfill Requirements	131,214	128,606	141,024	100,452	33,357	11,479	546,132
Waste Rock from Development	139,760	144,329	54,108	0	0	0	338,197
<b>Waste Rock from Off-Site</b>	<b>0</b>	<b>0</b>	<b>62,647</b>	<b>100,452</b>	<b>33,357</b>	<b>11,479</b>	<b>207,935</b>

### 16.3.8 Stope Production Cycle

The production rate for longhole stopes has been based on an average stope tonnage of 3,000 tonnes, with an estimated 30 day mining cycle (drill-blast-muck-backfill). The resulting production from individual stopes will average 100 tonnes per day (tpd).



Mining longitudinally will minimize waste development; however, the number of available stopes and sequencing flexibility will be limited. On most levels, three to four zones will be available for mining. Daily production will be from three to six active stopes, with ore sill development contributing an additional 100 to 300 tonnes per day.

## 16.4 DEVELOPMENT

There will be three development crews in 2013 to 2015. A ramp crew will complete the ramp development to 775L and establish the initial infrastructure on each sublevel (generally the larger development headings). Two sill development crews will complete the accesses to the zones and ore and waste sill development along strike. The estimated development quantities are summarized in Table 16.4 (metres) and Table 16.5 (tonnes).

**Table 16.4: Estimated Development Metres**

Item	2013 (metres)	2014 (metres)	2015 (metres)	2016 (metres)	2017 (metres)	2018 (metres)	Total (metres)
Ramp	836	762	0	0	0	0	1,598
Capital Infrastructure Waste	1,109	1,256	221	0	0	0	2,586
Operating Sill Waste	507	1,535	1,835	0	0	0	3,877
<b>Subtotal Waste Development</b>	<b>2,452</b>	<b>3,553</b>	<b>2,056</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8,061</b>
Operating Sill Ore	2,735	2,044	1,432	0	0	0	6,211
<b>Subtotal Ore Development</b>	<b>2,735</b>	<b>2,044</b>	<b>1,432</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6,211</b>
<b>Total Development</b>	<b>5,187</b>	<b>5,597</b>	<b>3,488</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14,272</b>

**Table 16.5: Estimated Development Tonnes**

Item	2013 (tonnes)	2014 (tonnes)	2015 (tonnes)	2016 (tonnes)	2017 (tonnes)	2018 (tonnes)	Total (tonnes)
Capital Waste Development	122,053	105,656	7,857	0	0	0	235,566
Operating Waste Development	17,707	38,673	46,251	0	0	0	102,631
<b>Subtotal Waste Development</b>	<b>139,760</b>	<b>144,329</b>	<b>54,108</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>338,197</b>
<b>Operating Ore Development</b>	<b>71,474</b>	<b>51,509</b>	<b>36,086</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>159,069</b>
<b>Total Development</b>	<b>211,234</b>	<b>195,838</b>	<b>90,194</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>497,266</b>

#### 16.4.1 Ramp and Infrastructure Development

The ramp will be developed 5 metres wide by 5 metres high at a maximum gradient of 15 percent. The ramp development crew will prioritize the ramp face, with development to establish initial infrastructure on the previous sublevel as a secondary heading. The ramp development crew advance rate will be 4.8 metres per day when including remucks, establishing initial infrastructure on sublevels, safety bays, etc. The ramp floor will include a layer of ballast material and the roadway will be maintained by a grader to help reduce equipment maintenance requirements.

The main access to sublevels will be developed 5 metres wide by 5 metres high to accommodate haul trucks. Ancillary development such as electrical substations will be developed off the level access and will have dimensions to suit the purpose or to accommodate the size of the development gear. The infrastructure on sublevels will generally include:

- Sublevel access drift.
- Sump.
- Electrical cut-out (load centres, starters, communications, etc.).
- Remucks and truck turning/loading areas.
- Material storage bays (on some levels).
- Ore sill accesses.
- Fresh air raise access drives.
- Escapeway access drives (on some levels).
- Refuge Stations (on some levels).

There will be one ramp and infrastructure development crew per shift. The crew will consist of a lead miner and two development miners. The equipment used by the ramp crew will include a 2-boom jumbo, 6yd LHD, and a scissor lift. The development crew will drill and blast, muck to a remuck, and install ground support using stopers/jacklegs from the scissor lift deck. The crew

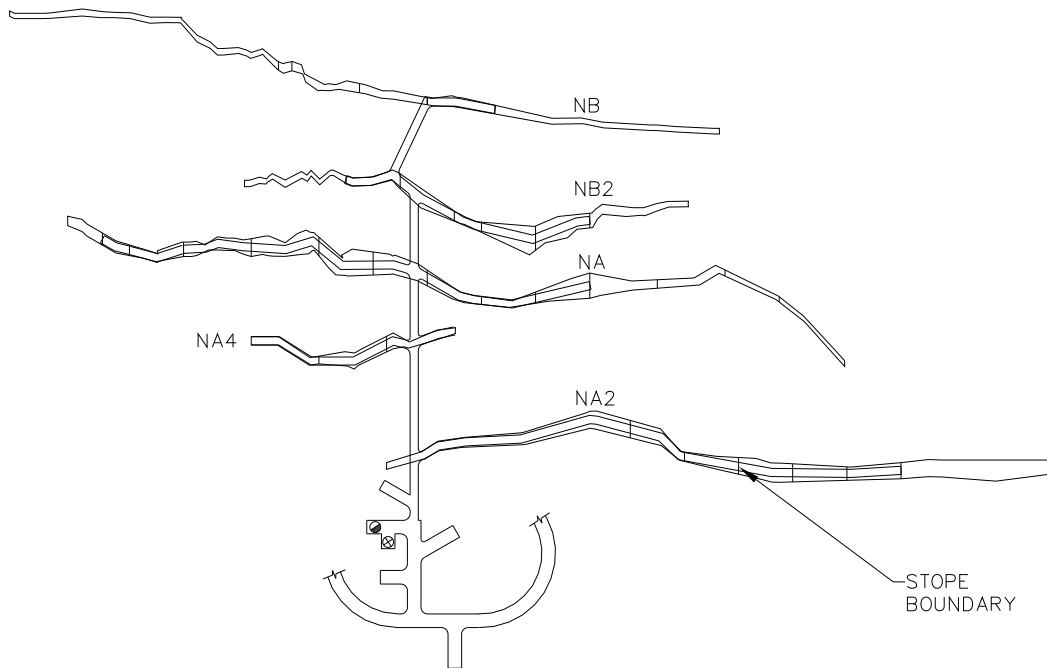
will install ventilation and piping services and will remuck waste into a 36 tonne haul truck. A fourth worker (haul truck operator) will haul the waste rock to another sublevel and dump into a remuck for use as backfill.

#### 16.4.2 Sill Development

There will be two sill development crews per shift. Each crew will consist of a lead miner and two development miners. The equipment used by the sill crews will include a 1-boom jumbo and 2yd LHD. The development crew will drill and blast, muck to a remuck, and install ground support from a leveled muckpile. The crew will remuck ore/waste into a 36 tonne (or 42 tonne) haul truck and a fourth worker (haul truck operator) will haul ore to surface and waste to another sublevel for use as backfill.

Typical sublevel development (730L) is shown in Figure 16.7. Level plans for all required development are included in Appendix D.

**Figure 16.7: 730L Development (Plan)**



#### 16.4.3 Primary Ground Support

Primary ground support will be installed in all underground excavations and will remain consistent with current practices. Standard primary ground support in development headings will include 1.8 metre resin rebar (1.2 metre by 1.2 metre pattern) and welded wiremesh screen installed in the back and shoulders, and 1.2 Split Set bolts in the walls (also on a 1.2 metre by 1.2 metre pattern). Additional/alternate ground support measures may be required to accommodate local adverse ground conditions and may include shotcrete and/or cable bolts. The existing ground control quality control program will continue to be implemented.

## **16.5 RESOURCE ANALYSIS (DILUTION AND RECOVERY)**

### **16.5.1 Mining Dilution**

Two sources of dilution have been considered in establishing the Bell Creek Mine probable reserves.

Planned dilution includes low grade material and/or waste rock that will be mined and will not be segregated from the ore. Sources of planned dilution include:

- Waste rock or low grade material that is drilled and blasted within the drift profile of ore sills and the overall grade of the “muck” justifies delivery to the mill.
- Waste rock or low grade material within the confines of the stope limits. This includes internal waste pockets and footwall and/or hanging wall rock that has been drilled and blasted to maximize ore recovery and/or maintain favourable wall geometry for stability.

Wireframes have been designed for each stope in the mine plan. Planned dilution is directly reported from block model data within stope wireframes.

Unplanned dilution includes low grade resource, waste rock, and/or backfill from outside the planned drift profile or stope limits that overbreaks or sloughs and is mucked with the ore and delivered to the mill. Unplanned dilution has been calculated for each stope based on the local stope dimensions and geometry.

### **16.5.2 Mining Recovery**

Two recovery factors have been considered in establishing the probable reserves.

Planned recovery includes the in-situ block model resource that will be accessed, developed, and mined. Any indicated resource not included in the mining shapes (i.e. stopes) has not been included in the reserves. Reasons that some block model in-situ resource will not be recovered include:

- A small volume that is separate from the main mining area and does not support the cost to develop and mine.
- The resource terminates between sublevels and would require mining excess dilution to recover.
- Random blocks within the block model that cannot be mined as part of an economic stope.
- Resource left in pillars (sill pillars and rib pillars) adjacent to previously mined stopes that have been backfilled with unconsolidated waste rock.

A mining recovery factor (unplanned recovery) has been applied to account for material that is planned to be mined within the confines of the stope wireframes, but will not be recovered due to factors such as:

- Poor ground.
- Blasting difficulties (ground does not break properly and cannot be recovered).
- Ore geometry.
- Broken ore that cannot be extracted (i.e. resting on the footwall, or around corners).
- Unplanned ore pillars left in place.

A 90% unplanned mining recovery has been considered in estimating the probable reserves mined to surface.

### 16.5.3 Block Model Cut-Off Grade

A 3 gram per tonne block model cut-off grade was used as an initial starting point to identify mining areas that require evaluation for potential mining. The following assumptions were made to establish the initial cut-off grade:

- Mine Operating Cost \$90 per tonne
- Mill Operating Cost \$25 per tonne
- Sustaining Capital Cost \$50 per tonne
- Total Cost \$165 per tonne (\$CDN)
- Assumed Gold Price \$1,650 (\$CDN) per ounce (\$53 per gram)

### 16.5.4 Probable Reserve Estimate

Based on the in-situ indicated resource included in the Bell Creek block model, the following methodology was used to estimate the probable reserves.

1. The block model was reviewed in plan and in section to identify indicated resource above the 3 g/t cut-off grade, and to confirm the applicability of the longitudinal longhole mining method. Some of the indicated resource material remains in sill pillars left in previous mining areas, while the majority of indicated material lies in recently developed and currently undeveloped areas.
2. Sublevels were designed at 15 metre vertical intervals, and vertical sections were cut through the model at five metre intervals along strike. On each vertical section, mining shapes were designed for each zone for each 15 metre sublevel interval. Each shape had an influence of 2.5 metres east and 2.5 metres west of the section. The mining shapes were joined with adjacent sections to generate stope wireframes. A 2.4 metre minimum mining width was considered in the stope design. Note that there are some +3 g/t “blocks” that are in the block model, but are not included in stope wireframes. These are generally random blocks that are distant from planned mining areas and cannot be economically mined.
3. The in-situ tonnes and grade within each stope wireframe was extracted from the block model indicated resource data. The in-situ tonnes and grade includes the planned dilution.
4. The unplanned dilution was estimated for each stope based on the stope size and geometry.
  - The total stope volume was determined from the stope wireframe.
  - The stope hangingwall and footwall area was calculated from the stope dimensions.
  - The unplanned dilution from the hangingwall and footwall was estimated based on the dip of the stope using the criteria in Table 16.6. Unplanned dilution was assigned zero grade (i.e. 0 grams per tonne).

**Table 16.6: Hangingwall and Footwall Dilution Criteria**

Item	Dip 50-60°	Dip 60-70°	Dip 70-80°	Dip 80-90°
Hangingwall Dilution	0.7m	0.6m	0.5m	0.4m
Footwall Dilution	0.2m	0.3m	0.4m	0.4m

- Backfill dilution from the floor (0.5 metres) and the adjacent stope endwall (0.3 to 0.4 metres) was estimated based on the floor and endwall dimensions.
- 5. A 90% Mining Recovery factor was applied to the diluted resource for each stope.
- 6. The resulting diluted and recovered resource for each stope was reviewed. Diluted and recovered stopes above 3 g/t were included in the mine plan. Stopes below 3 g/t were re-designed to optimize the wireframe by reducing the stope size, or including a portion of the stope from the adjacent stope. Any stopes still below 3 g/t were excluded from the mine plan.
- 7. The sill development was removed from the stope resource and the development tonnes and grade distributed based on the development schedule.

The diluted and recovered resource was estimated for each stope. The calculations for each stope are included in Appendix G. The estimated probable reserves that have been included in the Bell Creek Mine plan are summarized by sublevel in Table 16.7.

**Table 16.7: Bell Creek Mine Estimated Probable Reserves**

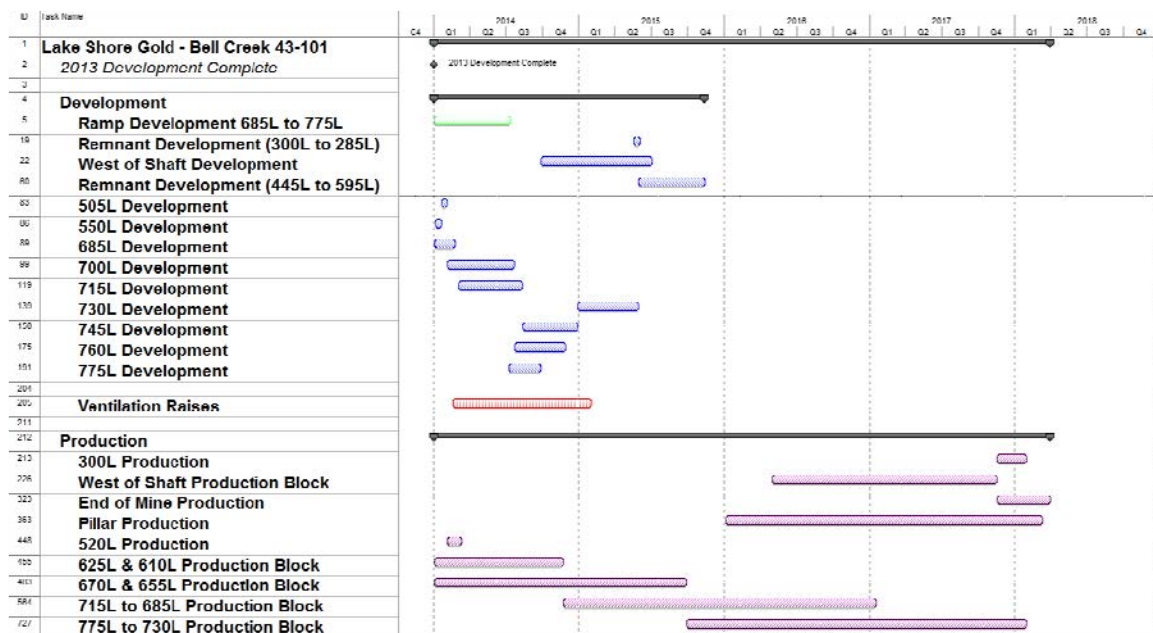
<b>Sublevel</b>	<b>Diluted/Recovered Tonnes</b>	<b>Grade</b>	<b>Ounces Mined To Surface</b>
Ore Development	159,068	3.9	20,106
300L	9,201	4.4	1,311
430L	4,763	4.7	713
445L	10,320	4.6	1,517
460L	8,156	4.0	1,058
475L	7,936	4.1	1,053
490L	10,516	3.9	1,328
505L	16,540	4.2	2,222
520L	22,255	4.5	3,219
535L	16,031	4.0	2,081
550L	10,071	3.9	1,251
565L	20,659	4.5	3,010
580L	11,322	4.4	1,587
595L	12,572	3.7	1,507
610L	49,474	4.1	6,592
625L	53,301	4.2	7,263
640L	40,098	4.2	5,476
655L	50,908	4.6	7,496
670L	60,460	4.4	8,613
685L	46,327	4.3	6,423
700L	63,586	4.2	8,554
715L	78,258	4.1	10,366
730L	59,756	3.9	7,525
745L	46,203	4.3	6,322
760L	47,263	4.2	6,456
775L	45,008	4.3	6,269
<b>Total</b>	<b>960,052</b>	<b>4.2</b>	<b>129,318</b>

A development schedule, production profile, and mine design has been completed to estimate the capital and operating costs required to access, develop, and extract the Bell Creek Mine probable reserves. A life-of-mine cash flow analysis has been completed to demonstrate that the probable reserves support the operating costs and sustaining capital expenditures. The cost estimates and cash flow analysis are discussed in Sections 21 and 22.

## 16.6 DEVELOPMENT SCHEDULE

Development and stoping activity schedules have been completed for the Bell Creek Mine. The schedule starts January 1, 2013 and is based on the development and production activities planned in the 2013 Budget prepared by Lake Shore. The schedule is summarized in Figure 16.8. Additional development schedule details are included in Gantt charts in Appendix E.

**Figure 16.8: Bell Creek Mine Schedule Summary**



## 16.7 PRODUCTION PROFILE

The Bell Creek mine will operate two shifts per day, seven days per week. Underground crews and maintenance workers will work 10.5 hour shifts. Management, administration, and technical services staff will work eight-hour days from Monday to Friday, with appropriate coverage as required during weekends. Annual production has been based on operating 363 days per year.

Production will remain steady in 2013 and 2014 averaging approximately 500 tonnes per day while capital and operating development activities continue down to the 775L. New mining blocks developed in 2013 and 2014 will contain more tonnes than previously mined blocks, providing an opportunity to bring multiple blocks in production simultaneously. In 2015 and 2016, development activities will reduce and development personnel and equipment will transition to support production activities. During these two years, production will increase and average approximately 595 tonnes per day. The production drilling contractor will supply the additional drilling equipment and resources.

All production activities have been scheduled in Microsoft Project and are shown in the Gantt chart in Appendix E.

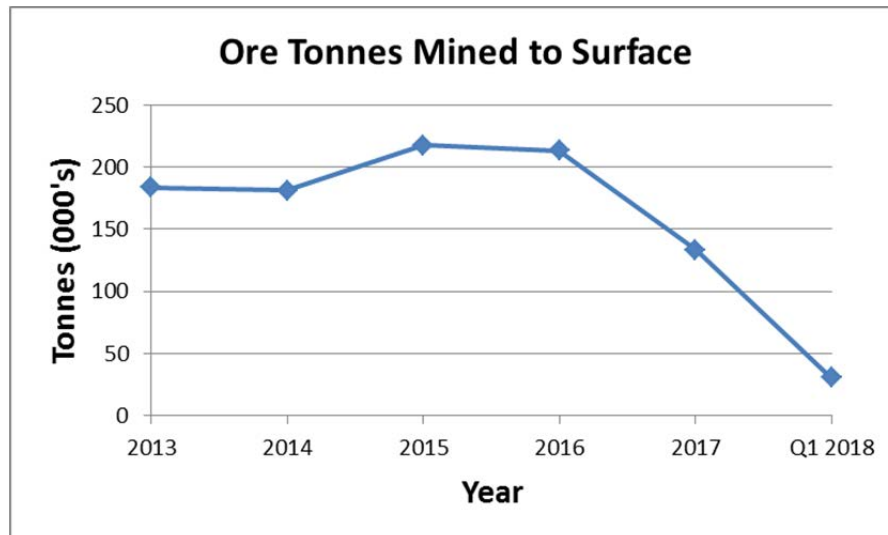
### 16.7.1 Production Summary

The life of mine production profile (based on the probable reserves) is summarized in Table 16.8, and shown graphically in Figure 16.9 and Figure 16.10. Additional production details (by stope) are included in Appendix E.

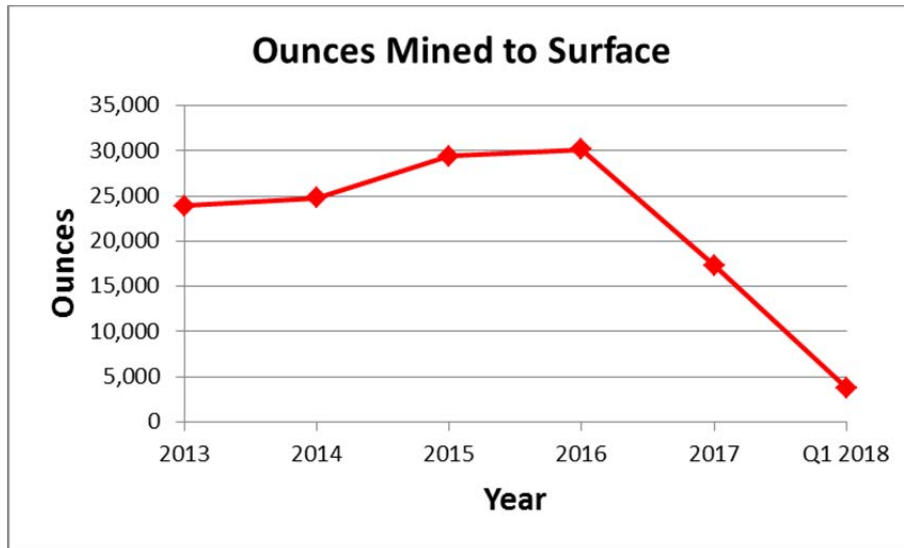
**Table 16.8: Production Summary**

Item	Total	2013	2014	2015	2016	2017	Q1 2018
<b>Tonnes</b>	960,052	183,661	181,193	217,528	213,581	133,527	30,562
<b>Grade</b>	4.2	4.1	4.3	4.2	4.4	4.0	3.8
<b>Ounces</b>	129,318	23,918	24,770	29,379	30,174	17,326	3,751
<b>TPD</b>		506	499	599	588	368	340

**Figure 16.9: Production Summary (Tonnes)**



**Figure 16.10: Production Summary (Ounces)**



## 16.8 PRODUCTION EQUIPMENT

The existing development, production, and auxiliary underground equipment fleet will continue to be used. The mobile equipment fleet is summarized in Table 16.9.

**Table 16.9: Underground Mobile Equipment Fleet**

Equipment Type	Purpose	Model	Operating Units	Spare Units	Total
2-Boom Jumbo	Dev	AC Boomer 282	1	1	2
1-Boom Jumbo	Dev	AC Boomer 104	2	0	2
LHD – 8 yd	Prod	AC ST14	1	0	1
LHD – 6 yd	Prod/Dev	AC ST1030	2	1	3
LHD – 2 yd and 2.5 yd	Prod/Dev	AC ST2G	5	0	5
LHD – 1.5 yd	Services	Sandvik LH202	1	0	1
36 Tonne UG Haul Truck	Dev	AC 436B	1	0	1
42 Tonne UG Haul Truck	Prod	AC MT42	2	1	3
Scissor Lift	Services		2	0	2
Flat Deck Boom Truck	Services		1	0	1
Grader	Services		1	0	1
Minecat	Services		4	0	4
Kubota RTV / Mine Mule	Services		5	0	5
Toyota Mancarrier	Services		3	0	3
<b>Total</b>			<b>31</b>	<b>3</b>	<b>34</b>

## 16.9 VENTILATION

Ventilation requirements have been estimated based on providing 0.06 cubic metres per second (cms) of fresh air per kilowatt (kW) of mobile equipment diesel power (including factors for engine utilization), for the equipment anticipated to be operating. The equipment list and estimated ventilation requirements are shown in Table 16.10 and Figure 16.11.

**Table 16.10: Ventilation Requirements**

<b>Equipment Type</b>	<b>Operating Units</b>	<b>Engine kW</b>	<b>Utilization</b>	<b>CMS (0.06 CMS/kW)</b>
2-Boom Jumbo	1	58	40%	1.4
1-Boom Jumbo	2	40	40%	1.9
LHD – 8 yd	1	250	80%	12.0
LHD – 6 yd	2	187	80%	17.9
LHD – 2 yd and 2.5 yd	5	86	80%	20.6
LHD – 1.5 yd	1	51	40%	1.2
36 Tonne UG Haul Truck	1	298	80%	14.3
42 Tonne UG Haul Truck	2	392	80%	37.6
Scissor Lift	2	86	40%	4.1
Flat Deck Boom Truck	1	130	40%	3.1
Grader	1	82	25%	1.2
Minecat	4	74	40%	7.1
Kubota RTV / Mine Mule	5	16	40%	2.0
Toyota Mancarrier	3	100	40%	7.2
<b>Total</b>	<b>31</b>			<b>131.6</b>
Contingency 15%				19.7
<b>Total CMS</b>				<b>151.3</b>
<b>Cubic Feet per Minute (cfm)</b>				<b>320,500</b>

### 16.9.1 Fresh Air Supply

Based on the anticipated diesel equipment fleet, an estimated 151 cubic metres per second (cms) of fresh ventilation air will be required (currently 154.5 cms is being delivered underground).

Fresh ventilation air will continue to be provided via the existing 4 metre diameter fresh air raise (FAR) from surface. To overcome increased ventilation pressures (as mining progresses deeper), a second surface 447kW (600hp) fan is planned to be installed on the FAR in 2013 (this fan is currently in storage). Fresh air is currently transferred via internal fresh air raises to the 610L. The internal fresh air raise system will be extended in increments (4 metre x 4 metre drop raises) as ramp development progresses to 775L. At each ventilation raise access, a ventilation wall will be constructed and booster fans will direct fresh air to the workplace via flexible ventilation ducting.

### 16.9.2 Exhaust Air Return

Used ventilation air will continue to exhaust from the mine via the ramp, shaft, and 240L-Surface return air raise (RAR). There will be no exhaust fans.

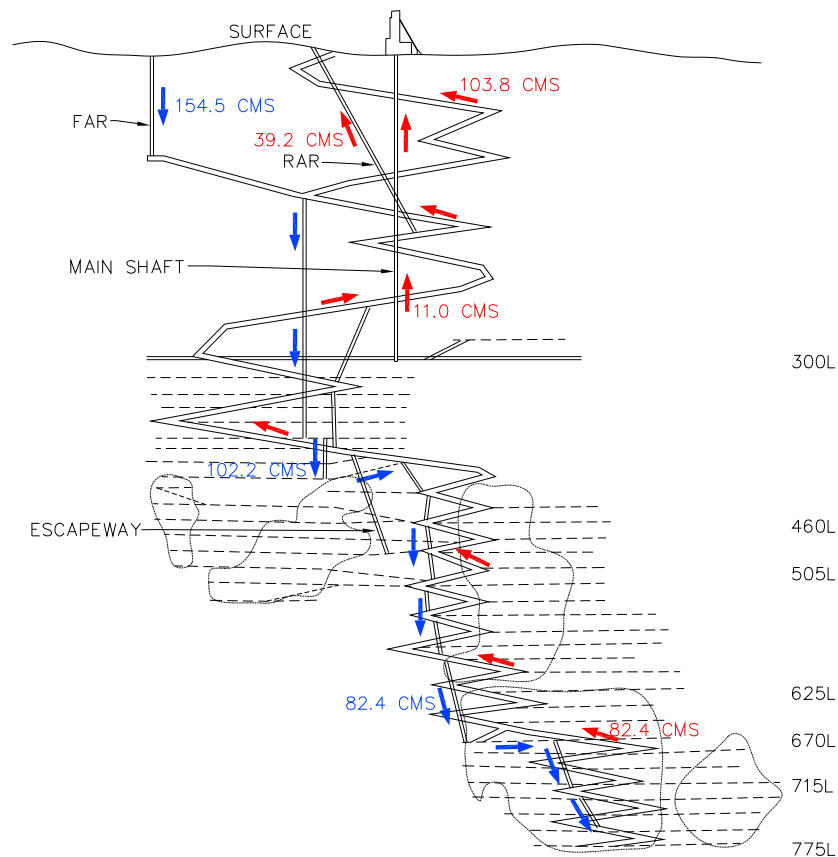
### 16.9.3 Secondary Egress

The main ramp from surface will be the primary access to and from the mine.

Secondary access/egress to/from the underground to surface will be via the existing manway in the shaft. Below the existing access to the shaft at the 240L station, the main ramp and internal raises equipped with escapeways will provide two access routes to the 240L.

A simplified longsection view schematic of the ventilation and escapeway system is shown in Figure 16.11.

**Figure 16.11: Ventilation System and Second Egress**



#### 16.9.4 Mine Air Heating and Cooling

The existing surface fresh air ventilation plant includes an ACI-Canefco Inc., MAH 250 mine air heater (22 MBTU). The heater will continue to be used for the life-of-mine.

The mine design extends to 1,540 metres below surface. Mine air cooling requirements are not anticipated for mining at this depth.

#### 16.10 PERSONNEL

An existing group of management, environmental, technical services (engineering/geology), administration, maintenance, supervisory, and production personnel will continue to operate the site. Additional mobile maintenance personnel have been added (to budgeted 2013 labour) to support an anticipated increase in mobile equipment maintenance as the fleet ages.

The estimated annual personnel required on payroll are summarized in Table 16.11.

**Table 16.11: Personnel on Payroll**

<b>Classification</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017 / Q1 2018</b>
<b>Site Management</b>					
Mine Superintendent	1	1	1	1	1
Mine General Foreman	1	1	1	1	1
<b>Administration Staff</b>					
HR Administrator	1	1	1	1	1
Reception/Office Administrator	1	1	1	1	1
Purchasing	1	1	1	1	1
Warehouse Worker	1	1	1	1	1
Students	3	3	3	3	3
<b>Engineering Staff</b>					
Chief Mine Engineer	1	1	1	1	1
Senior Mine Engineer	1	1	1	1	0
Mine Planner / Mine Tech	2	2	2	2	2
Surveyor	1	1	1	1	1
Engineer in Training	1	1	1	1	0
<b>Geology Staff</b>					
Chief Geologist	1	1	1	1	1
Senior Geologist	1	1	1	1	0
Mine Geologist	2	2	2	2	2
Resource Geologist*	1	1	1	1	0
Geology Technician	4	3	3	3	2
Core Shack Technician	1	1	1	1	0
<b>Health and Safety</b>					
Safety Coordinator*	1	1	1	1	1
Trainer*	1	1	1	1	1
OH&S Nurse*	1	1	1	1	1
<b>Environmental</b>					
Environmental Coordinator*	1	1	1	1	1
Environmental Technician*	1	1	1	1	1
<b>Mine Operations Staff</b>					
UG Shift Supervisor	4	4	4	4	4
Electrical Superintendent*	1	1	1	1	1
Electrical Foreman*	1	1	1	1	0
Maintenance Foreman	1	1	1	1	1
Maintenance Planner	1	1	1	1	0
<b>Subtotal Staff</b>	<b>38</b>	<b>37</b>	<b>37</b>	<b>37</b>	<b>29</b>
<b>Construction/Services – Hourly Indirect</b>					
Construction /Rehab Miner	1	1	1	3	3
Underground Labourer	4	4	4	4	2
Surface Labourer	0	0	1	2	1
<b>Maintenance – Hourly Indirect</b>					
Lead Mechanic	0	2	2	2	2
Mechanic	8	8	8	8	8

Classification	2013	2014	2015	2016	2017 / Q1 2018
Welder / Millwright	1	1	1	1	1
Electrician	6	6	6	5	4
<b>Subtotal Hourly Indirect</b>	<b>20</b>	<b>22</b>	<b>23</b>	<b>25</b>	<b>21</b>
<b>Mine Direct Hourly Direct</b>					
Lead Development Miner	12	12	8	0	0
Development Miner 1	24	24	16	0	0
LHD Operator	12	12	16	16	10
Haul Truck Operator	12	12	16	16	10
<b>Subtotal Hourly Direct</b>	<b>60</b>	<b>60</b>	<b>56</b>	<b>32</b>	<b>20</b>
<b>Total Lake Shore Personnel</b>	<b>118</b>	<b>119</b>	<b>116</b>	<b>94</b>	<b>70</b>

*\*Shared with the Bell Creek Mill and/or Timmins West Complex*

## 16.11 UNDERGROUND MINE SERVICES

The underground mine services include electrical power distribution and communications, compressed air, service water, and dewatering.

### 16.11.1 Electrical Distribution and Communication

The main trunk of the electrical and communications distribution systems are already in place and will expand as the mine develops into new production areas.

Power will continue to be delivered underground via electrical cables installed in the existing ramp, ventilation raise, and in the shaft. The underground power distribution system includes:

- A 2MVA, 27.6kV/4,160V transformer/substation located near the portal distributes 4,160V via the ramp to 370L then through boreholes to 490L. Feeds substations at 60L (750kVa), 120L (750kVa), 300L (750kVa), 365L (750kVa), 460L (1,000kVa), and 490L (1,000kVa).
- A 5MVA, 27.6kV/13.8kV transformer/substation located near the headframe distributes 13.8kV through the ventilation raise to a 120L 2MVA, 13.8kV/4,160V transformer /substation at the 120L. The 120L substation distributes power through a series of boreholes and raises to the 610L.
- A 3,750kVa Transformer located near the hoistroom distributes power down the shaft to 60L, 120L, and 240L. This supplies the power for the main pumping station at 240L.

As the mine expands from 610L to 775L, electrical substations (mine load centres) will be located in electrical cut-outs on sublevels.

The existing “leaky feeder” communications system main trunk line is located in the main ramp and will be expanded to the new working ramps.

A fibre optic cable is used for phone and network communications and runs from surface, down the ventilation raise, to the 120L electrical cut-out. From the 120L fibre optic is distributed through a series of boreholes and raises to operating sublevels in the mine.

### 16.11.2 Compressed Air

The site currently has three 1,600 cfm, 300hp Sullair air compressors (two operating and one spare) supplying underground pneumatic powered equipment.

Compressed air is delivered underground via piping in the ramp (152 mm dia) and via the shaft (152 mm dia). The underground compressed air distribution system consists of steel piping installed in the ramps and sublevels. Underground compressed air usage includes:

- Jackleg and stoper use for ground support installation and construction.
- Pneumatic Anfo loaders.
- Blasthole/bootleg cleaning for development rounds.
- Pneumatic longhole drills.
- Longhole cleaning.
- Refuge station ventilation (pressurizing).
- Pneumatic cylinders for door controls.
- Pneumatic pumps for local dewatering.

The estimated compressed air requirements are summarized in Table 16.12.

**Table 16.12: Estimated Compressed Air Requirements**

Average Consumption (cfm)	Peak Demand (cfm)
2,100	4,600

### 16.11.3 Service Water

All service water required for underground drilling operations, dust suppression, and washing work places is supplied from a sump at 60L that collects clean, natural water inflow from the surrounding rockmass. Water from the collection sump is pumped into a containment tank. A submersible pump in the tank feeds a 102 mm diameter steel pipe in the ramp system that gravity feeds all sublevels in the mine.

### 16.11.4 Mine Dewatering

Water inflow from the rockmass and service water used for drilling activities and dust suppression is currently collected in local sumps and directed to main sumps/pump stations at the 120L and 240L through a network of drain holes, pumps (19hp Flygt and 30hp Tsurumi), and dewatering lines in the ramp (including a shaft bottom pump). The 120L pump station includes 2 x 140hp Flygt pumps and the 240L pump station includes 2 x 250hp Technojet MH125-150a multistage pumps. Both pump stations feed a 152 mm diameter steel pipe in the shaft. At surface, the mine water is directed to the polishing pond and/or mill clear water pond.

As the mine expands into new production areas, additional sumps and pumps will be constructed and will feed into the existing dewatering system. The pump stations will transfer water to the main sump at 240L.

### 16.11.5 Roadbed Material

The maintenance of roadways will be essential in reducing the mobile equipment operating and maintenance costs and achieving high haulage truck availability.

Crushed/screened rock will be prepared for use underground and will be delivered underground and distributed via production equipment and spread using the existing grader.

## **16.12 MATERIALS SUPPLY**

The Bell Creek Mine is well positioned in the established Timmins mining district. Consumable materials and external services required to support the mining operation will continue to be sourced from local businesses or from other nearby mining centres (such as Sudbury, Kirkland Lake, North Bay, and Rouyn-Noranda). A number of contracts have been established to support current site activities and these will be amended as required to meet production demands.

## **16.13 MAINTENANCE**

There are existing maintenance facilities on surface to support maintenance of surface equipment and equipment brought to surface from underground. Mobile equipment will be brought to the shop for servicing, preventive maintenance, and repairs. A mechanic will be available (each shift) to service certain mobile equipment (such as longhole drills and jumbos) underground and tend to minor breakdowns in the field.

## **16.14 SAFETY**

The site has existing health and safety programs in place as required by the Ontario Occupational Health and Safety Act and Regulations for Mines and Mining Plants. There is an existing Joint Health and Safety Committee and Mine Rescue Team and training facilities.

There is currently a full time Safety Coordinator on site (shared with the mill) and this position will remain filled for life of mine operations. The Safety Coordinator will maintain site safety programs and initiatives. There will be a trainer on staff.

## **16.15 GEOTECHNICAL**

From August 2011 through November 2011 Mine Design Engineering (MDEng) was contracted to complete geomechanical study work for the Bell Creek Mine. The study scope included:

- A review of existing rock mechanics documentation.
- A site visit for geotechnical mapping, diamond drill core inspection, inspection of historical failures, and discussions with geologists.
- Rock mass classification; including RMR, Q', and a description of jointing and any major structural features.
- Review of current rock mechanics data collection practices.

### **16.15.1 Geotechnical Mapping**

Geotechnical mapping was completed on ore sill development on the 300L, 370L, 400L, 420L, and in the ramp below 420L down to 445L.

Three joint sets were identified during the mapping program:

- Set A is associated with the prevalent foliation of the host rock;
- Set B is sub-horizontal; and
- Set C dips steeply to the east-southeast but was not present in all areas mapped.

The average dip and dip direction for the joint sets are summarized in Table 16.13.

**Table 16.13: Average Dip and Dip Direction for Joint Sets**

Joint Set ID	Dip	Dip Direction
A	75°	171°
B	1°	10°
C	75°	101°

The geotechnical mapping results are summarized below.

### **300L Geotechnical Mapping**

- Jointing on 300L was observed to be primarily dry with occasional dampness.
- Joint Set A has been identified as A and A' due to localized foliation folding. The foliation jointing is dominantly planar and smooth (with occasional slickenside surfaces). Joints are typically tight and clean with some localized mineral coatings. Joint spacing is commonly 10 cm or less, with trace lengths of 1 to 3 metres.
- The sub-horizontal Joint Set B is commonly in-filled with quartz. Joint spacing is typically 20 to 50 cm and trace lengths vary from 0.5 to 1.5 metres.
- Joint Set C was not observed on 300L.
- Rock Quality Designation (RQD) values on 300L range from 70 to 100 parallel to foliation and 30 to 70 perpendicular to the foliation.

### **370L Geotechnical Mapping**

- Jointing on 370L was observed to be dry.
- Joint Set A foliation jointing is dominantly planar and smooth (with occasional slickenside surfaces). Joint spacing is variable and the rock mass has a slabby appearance where wider spacing (10 to 20 cm) occurs. Joint trace length is 1 to 3 metres.
- Joint Set B is poorly defined on 370L due to the orientation relative to the drift. The set is typically clean with some quartz infilling and rough to smooth undulating surfaces. Joint spacing is 0.5 to 1.5 metres, with 1 to 3 metres trace lengths.
- Joint Set C is weakly defined on 370L, and may be considered a random set. The joints are clean with typically smooth and planar surfaces. Spacing is typically 1.5 metres or greater with trace lengths from 2 to 3 metres.
- RQD values on 370L range from 60 to 80 parallel to foliation and 0 to 55 perpendicular to the foliation.

### **400L Geotechnical Mapping**

- Joint surfaces of Joint Set A are mostly clean with occasional quartz infilling and localized calcite infilling. Joint are smooth to rough and planar. Joint spacing is tight at 2 to 10 cm and trace lengths vary from 0.3 to 2.5 metres.
- Quartz veining is typically associated with Joint Set B in this area and calcite infilling was also observed. Surfaces are rough and undulating with 2.5 metre spacing. The trace length is less than 1 metre.
- Joint Set C was observed to have 0.5 to 1 metre spacing with 0.6 to 2 metre trace lengths.
- RQD values on 400L range from 50 to 100 parallel to foliation and 20 to 90 perpendicular to the foliation.

#### 420L and Down Ramp to 430/445L Geotechnical Mapping

- All joints in this area were observed to be dry.
- Set A joints are clean and tight, smooth and planar, with 5 to 10 cm spacing and 2 to 4.5 metre trace lengths.
- The frequency of Joint Set B appears to decrease with depth. The spacing varies from 0.2 to 0.5 metres and persistence is low with trace lengths less than 1 metre. The joints are clean and mostly rough and undulating surfaces.
- Joint Set C is weakly defined with clean and smooth to rough and undulating surfaces. The spacing is 10 to 20 cm and trace lengths range from 1.5 to 2.5 metres.
- RQD values on range from 70 to 100 parallel to foliation and 40 to 80 perpendicular to the foliation.

The rock mass quality descriptors for each area mapped are summarized in Table 16.14. Rock mass quality at Bell Creek is typically good, however does vary due to the well-developed foliation. Rock mass quality appears to improve slightly with depth.

**Table 16.14: Rock Mass Characterization Summary**

Level	Ja Range (typical)	Jr Range (typical)	Jn	RQD	Q'	RMR
300	0.75 to 2 (1)	1 to 1.5 (1)	4	57° to 73°	14 to 18	47 to 63
370	0.75 to 1 (1)	1 to 4 (1)	6 to 9	22° to 73°	2 to 12	43 to 66
400	0.75 to 1 (1)	1 to 3 (1)	6 to 9	60° to 76°	7 to 13	54 to 82
420 – 445 Ramp	0.75 to 1 (1)	1 to 3 (1)	6 to 9	69° to 89°	8 to 15	53 to 78

There are no routine geotechnical data collection practices at the Bell Creek Mine. MDEng recommended establishing a program to complete routine geotechnical mapping on all new development. The program should also include geotechnical logging of diamond drill core. A geotechnical database will facilitate rock mass classification over the life of mine and will assist with early recognition of any changes in ground conditions. The database will also be important for the calibration of any future geotechnical models for predicting anticipated rock mass response to mining. MDEng has been contracted to complete a follow-up geotechnical study in Q2 2013.

## **17.0 RECOVERY METHODS**

Ore from the Bell Creek Mine is milled exclusively at the Bell Creek Mill located approximately 6.5 kilometres north of Highway 101 in South Porcupine, Ontario. The current 2,500 tonne per day processing plant consists of a crushing circuit, a two-stage grinding circuit with gravity recovery, followed by pre-oxidation and cyanidation of the slurry and CIL and CIP recovery. Ore from the Timmins West Mine is also trucked to the Bell Creek Milling facility for processing.

### **17.1 HISTORY**

The Bell Creek Mill was established as a conventional gold processing plant utilizing cyanidation with gravity and CIP recovery. Between 1987 and 1994 the mill processed 576,017 short tonnes of Bell Creek ore grading 0.196 ounce per short tonne Au (112,739 recovered ounces). The historical gold recovery was approximately 93 percent. Additional tonnage from the Marlhill Mine, Owl Creek open pit, and Hoyle Pond Mine was processed prior to the mill being placed on care and maintenance in 2002. During this period several improvements and additions were implemented to increase tonnage throughput from the original 350 tonnes per day to 1,500 tonnes per day. Lake Shore purchased the mill in 2008 and re-commissioned the mill for operation in 2009 at 1,000 tonnes per day. The mill was expanded to 2,000 tonnes per day in the fourth quarter of 2010 and has been further expanded to 2,500 tonnes per day. Planning for Phase 2 of the mill expansion (increasing throughput capacity to 3,000 tonnes per day) was started in the first quarter of 2011 and construction is expected to be completed during the second quarter of 2013.

### **17.2 BELL CREEK MILL PROCESS DESCRIPTION**

Ore from the Bell Creek Mine is stored in an outside stockpile until processed. The ore is dumped by a front-end loader onto a grizzly and a rockbreaker is used to reduce and oversized material. The ore is fed with a track feeder to a 76 cm x 101 cm (30 inch x 40 inch) Nordberg jaw crusher (C100B). The discharge from the crusher is conveyed to the sizing screen. Undersize (-3/8 inch) material reports to the fine ore bin (FOB). The oversize material reports to the coarse ore bin (COB) which feeds an HP300 Nordberg cone crusher. The crushed material will circulate until it passes through the 3/8 inch screen and reports to the fine ore bin.

The grinding circuit consists of two ball mills in series. The primary mill is 3.7 metres x 4.9 metres and the secondary mill is 3.8 metres x 4.4 metres. The primary mill is fed from the FOB and is open circuit. The primary cyclone overflow reports to the thickener feed box and the underflow reports to the secondary mill. The secondary overflow reports to the thickener feed box with the underflow reporting back to the secondary mill (there is a 20 inch Knelson concentrator that takes a bleed from this material for gravity gold collection). The gravity gold reports to the gravity gold hopper while the Knelson discharge reports to the feed of the secondary mill. Both primary and secondary cyclone packs are made up of high efficiency 250mm Cavex cyclones, where 70% -200 mesh is being achieved. Lime is added to this circuit to maintain a pH of 11.2 to create a stable alkaline environment for the addition of sodium cyanide.

Flocculent is added to the combined cyclone overflow from both circuits and this slurry is pumped to the 20 metre diameter thickener. The slurry from the cyclones is 30-40% solids by weight with the thickener underflow at approximately 54% solids by weight. The excess water is recovered and used in the process. The thickened slurry is pumped to the leach circuit. The leach circuit consists of five agitated tanks in series with a total volume of 1,940 cubic metres.

Pure oxygen is sparged into the leach tanks which maintain a high dissolved oxygen level, which is required for efficient gold dissolution in cyanide. Cyanide is then added to leach tank #3, 4, or 5.

There are three carbon-in-leach (CIL) tanks having a total volume of approximately 7,000 cubic metres. One CIL tank contains 10 grams of carbon per litre of slurry. The circuit will reach equilibrium for loading of the carbon with the grade of the loaded carbon in the range of 2,500 to 4,500 grams per tonne. Loaded carbon is pumped from #1, 2, or 5 CIL tank, screened, washed, and then transferred to the loaded carbon tank. A portion of carbon from #1 CIP tank is advanced forward. The strip vessel is located in the CIP circuit.

The slurry from the CIL tank reports to the carbon-in-pulp (CIP) circuit which consists of six tanks with approximately 4 tonnes of activated carbon in each tank. Recovery of the gold from the carbon is a batch process with carbon being stripped at a rate of 4 tonnes per batch. The turnaround time between batches is 24 hours. Carbon can be cleaned with acid, reactivated with the kiln and reused in the circuit.

The loaded solution from the strip circuit is passed through two electro-winning cells in the refinery. The gold collects on the cathodes in a sludge form. The cells are washed weekly and the sludge is collected in filter bags and dried. The dried sludge is then mixed with reagents and melted in the induction furnace. Gold bullion bars are poured when the melt is completed.

The gravity gold material collected from the Knelson concentrator is transferred to the refinery and a gravity table is used to increase the gold content. The concentrate is then dried, reagents are added and the material is melted in the induction furnace. The gravity concentrate and the CIP gold sludge are melted separately due to the differing amounts of reagents used in each.

As discussed, the Bell Creek Mill currently processes 2,500 tonnes per day. The next phase of expansion will involve the commissioning of the new SAG mill. This phase will increase the mill throughput capacity to 3,000 tonnes per day. The “front end” of the mill has been designed and built to a capacity of 5,500 tonnes per day, matching the capacity of the new SAG mill. As part of this next phase of expansion, trucks will offload directly onto a grizzly. A remote controlled rockbreaker will be used to handle any oversized material. Material will be fed to an 80 tonne capacity hopper and apron feeder which will subsequently feed a conveyor belt leading to the crusher house.

Once in the crusher house, ore will dump onto a vibrating grizzly for sizing. Any plus (+) 6 inch material will go through the jaw crusher (44” x 34”) and then will combine with the minus (-) 6 inch material that bypassed the crusher. The sized ore material will be conveyed from this location to the ore storage dome.

Ore will be pulled from the 6,000 tonne “live” capacity ore storage dome by three apron feeders and a conveyor belt located in a tunnel under the storage dome. The ore will flow from the storage dome to the SAG mill. The SAG mill is 6.7 metres in length x 11.1 metres in diameter and is powered by twin 6,250 hp (4,600 kW) motors. The slurry, at approximately 65% solids, will be discharged from the SAG mill and pumped to the primary cyclones. Cyclone overflow will report to the regrind circuit with underflow reporting back to the SAG mill. The existing 3.8 metre x 4.4 metre ball mill will be used for secondary grinding. Thickener underflow will report to the leach circuit. Leach tanks No. 1 to No. 3 will be used for pre-oxidation of the slurry before the addition of lime and cyanide for leaching. Cyanide slurry will report to two new 15.7 metre x 15.7 metre CIL tanks and then to the original CIL tank. The adsorption of the gold onto the

carbon will begin in the CIL circuit. Finally, the slurry will flow by gravity to the original CIP circuit, then to tailings.

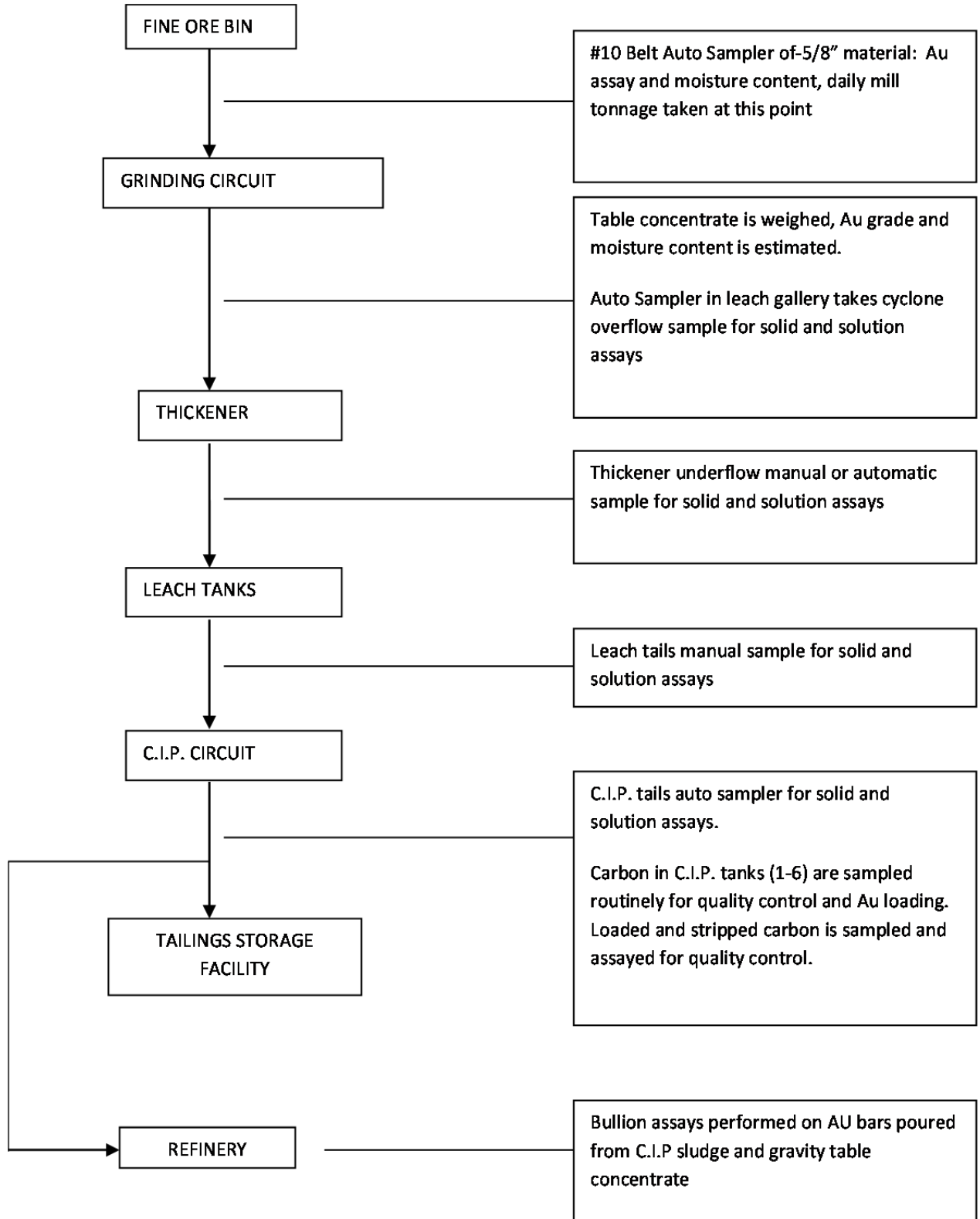
### **17.3 METALLURGICAL BALANCE**

A metallurgical balance is conducted daily based on the tonnage from the double toggle belt weightometer. The total tonnage, corrected for moisture, and assays from the daily sample campaign are used to produce the balance. All samples are assayed in accordance with typical assay standards and a QA/QC program is in place to ensure the integrity of the assay lab processes. The main components used to calculate the daily balance are the thickener underflow solids and solution, the weight of gravity gold collected, the estimated grade, and the tailings sample solids and solution. The daily metallurgical balance is a best estimate of daily production which must then be reconciled with the circuit inventory and bullion poured (this reconciliation is performed on a monthly basis). All areas of the circuit are sampled and percent solids are recorded for each slurry tank. Levels are recorded for all carbon bins and pregnant and barren tanks. As the carbon contains the majority of the gold in inventory, strict care is taken to ensure sampling is performed correctly.

The final clean out of the electro-winning cell is completed by the refiner or his designate, under security control. All sludge is collected and dried. The washed, dry cathodes from the cell are weighed and the weights are recorded to determine whether any plating buildup is occurring. The dried cell sludge and the gravity concentrate collected over the same period are smelted and bullion bars are poured. The bars are stamped and their weights are recorded and verified. Bullion samples are taken and are assayed at the Bell Creek Lab. These sample results are used in the metallurgical balance.

The simplified milling process and the sampling points are shown in Figure 17.1.

**Figure 17.1: Simplified Milling Process and Sampling Points**



## 17.4 ACTUAL MINERAL PROCESSING RESULTS OF BELL CREEK MATERIAL

The actual processing results of Bell Creek Mine material are shown in Table 17.1 below.

**Table 17.1: Bell Creek Mine Material Processed in 2012**

Ore Type	Tonnes Processed	Grade (grams Au/tonne)	Recovery
Bell Creek	182,313	3.88	95.1%

Gold recovery from all Bell Creek Mine material has met expectations established by test work completed prior to plant start-up. All material yields a consistent high recovery and consistent grade. The average grind size to achieve these recoveries is a P80 of 75 micron. All reagent consumptions remained at expected levels for the different materials processed. Gravity recovery averaged 25% to 30% through this operational period.

## **18.0 PROJECT INFRASTRUCTURE**

The project infrastructure has been described in Item 16 (Mining Methods) and in Item 13 (Mineral Processing and Metallurgical Testing).

## **19.0 MARKET STUDIES AND CONTRACTS**

Markets for the gold produced by the Company are readily available. These are mature, global markets with reputable smelters and refiners located throughout the world. Markets for doré are readily available. Demand for gold continues to be strong and is expected to remain brisk amid global risks. Total gold demand in 2012 was 4,405 tonnes, approximately 15% higher than the average for the previous five years. The 36-month average London PM gold price fix through February 2013 was US \$1,517/oz.

The Company sells its gold bullion through several brokers and there is no economic dependence on any of them. The Company does not have any long term sales contracts.

## **20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

### **20.1 REGULATORY AND FRAMEWORK**

This section provides an overview of the environment related authorizations that are required for the operation of Bell Creek Complex (i.e. the Bell Creek Mine and Bell Creek Mill). Legislation related to routine operational monitoring, reporting, and notifications is not discussed herein.

#### **20.1.1 Provincial Environmental Assessments**

Mining projects, normally being private projects, are generally not subject to the Environmental Assessment Act unless designated. If a project becomes designated, then the project must complete an Individual Environmental Assessment (EA) prior to any permits being issued.

The provincial environmental assessment process is often triggered by specific components of a project rather than the entire project itself.

A Class EA process may apply to the project as a result of approvals under the Ministry of Natural Resources (MNR). Typically, Class EAs are required for work on roads and dikes, roads and water crossings, stream bank rehabilitation work, and related construction including dredging and filling activities. The Class EA must be completed prior to the issuance of the Land Use Permit or Work Permit under the Public Lands Act and the Lakes and Rivers Improvement Act, respectively.

Class EAs may also be triggered for approvals issued by the Ministry of Transportation (MTO) as a result of construction or re-alignment of a provincial highway during the development of a mining project. Some transmission lines and transformer station projects are also subject to review under the Class EA for minor transmission facilities.

#### **20.1.2 Federal Permits**

The Canadian Environmental Assessment Act (CEAA) applies to mining projects for which the federal government exercises authority on some aspect of the Project. For mining projects, the CEAA process is usually triggered when activities listed in “*Regulations Designated Physical Activities*” are matched and/or exceeded. Once this is determined the project is measured with Section 5 of the regulation (CEAA 2012).

Once the possibility exists of an activity potentially requiring an authority, a Project Description must be submitted to the agency, the Federal permitting process is timed for 365 days not including any additional requests required by the agency.

#### **20.1.3 Provincial Permits**

##### **Ministry of Northern Development and Mines**

Provincially, the Ministry of Northern Development and Mines (MNDM) is the lead agency for mining projects in Ontario. Mine production triggers requirements under Part VII of the Mining Act. These requirements include notifications, public and First Nations consultation, closure plans and financial assurance. Approval of a closure plan provides rights for the company to proceed under the Mining Act. Mine production is not allowed on unpatented mining claims and public notice is mandatory for mine production.

This process was brought to the forefront in July of 2012 and negotiations with MNM are ongoing to complete and submit a filed closure plan.

### **Ministry of the Environment**

The Ministry of the Environment (MOE) issues permits to take water (both surface and groundwater), emit noise and dust, and discharge into the atmosphere. The MOE will administer the following permits for the Bell Creek Complex:

- Wastewater treatment and effluent discharge from the mine process water, including construct and operate tailings impoundment – Ontario Water Resources Act (OWRA).
- Water taking permits – OWRA.
- Industrial Sewage Works Permit – OWRA.
- Solid waste management (waste generator registration) – Ontario Environmental Protection Act (EPA).
- Noise/air emissions – EPA.
- Currently, the Bell Creek Complex operates under the following permits issued by the Ontario Ministry of the Environment:
  - Permit to Take Water # 6153-84WPMB issued April 28, 2010.
  - Certificate of Approval # 0941-899RXQ issued November 10, 2010.
  - Comprehensive Air ECA in approvals, permit submitted July 2011. Waste Generator # ON7562685.

### **Ministry of Natural Resources**

The Ministry of Natural Resources (MNR) issues land use permits and work permits under the Public Lands Act and the Lakes and Rivers Improvement Act, respectively. The MNR will administer the following permits for the Bell Creek Complex:

- Forest Resource Licenses which are issued for the cutting of crown owned timber.
- Land use permits for such things as effluent ditches/pipelines, access roads, camps, etc., where the acquisition of crown lands is required – Public Lands Act (PLA).
- Work permits for such things as creek crossings or impoundment structures (dams) - Lakes and Rivers Improvement Act (LRIA).

## **20.2 ENVIRONMENTAL IMPACTS**

Water management and protection of the natural environment surrounding the Bell Creek Complex were recognized from the onset of the project as primary environmental concerns.

All construction and works conducted at Bell Creek passes through extensive screening by both LSG staff and a third party consultant to minimize impact to Bell Creek and best manage water and air releases as per LSG's operating permits. Detailed engineering reports assist staff in managing the above mentioned concerns from the site.

The development of the mine will create a disturbance footprint on the terrestrial environment. Baseline work did not identify the possibility of provincially or federally listed fauna species on the site that will trigger concern. The Closure Plan will reduce this disturbance area at closure and disturbed areas will be rehabilitated with the intent of returning the site to a productive use (i.e. forestry) resulting in limited long-term impact to the area. An overview of the Bell Creek Complex water management plan has been summarized in Figure 20.1.

**Figure 20.1: Bell Creek Complex Water Management Plan**



### **20.3 ENVIRONMENTAL MONITORING PROGRAM**

Environmental monitoring will be conducted in accordance with regulatory requirements. The monitoring program will be compiled in a database to assure compliance with all regulations. General components of the environmental monitoring program are described in the bullets below.

- Thrice weekly sampling during discharge to the Porcupine River as per the Municipal Industrial Strategy for Abatement (MISA) and Certificate of Approval (COA) # 0941-899RXQ
- Weekly sampling, during discharge to the Porcupine River, as per the Municipal Industrial Strategy for Abatement (MISA) and Certificate of Approval (COA) # 0941-899RXQ.
- Thrice weekly sampling (quality control sampling) of mine water discharge into the Polishing Pond
- Semi-annual sampling and analysis of groundwater at the monitoring wells that have been installed at the site
- Monthly water samples at reference and exposure areas on the Porcupine River as required by the COA # 0941-899RXQ and MMER.
- Quarterly water samples collected at the reference and exposure areas on Bell Creek as required by the COA # 0941-899RXQ and MMER.
- Semi-Annual Sub lethal Toxicity samples are collected from the discharge to the Porcupine River as per COA # 0941-899RXQ and MMER.

- Monthly Acute Lethality Toxicity samples are collected during discharge to the Porcupine River as per COA #0941-899RXQ and MMER.
- Annual updates to the Emissions Summary Dispersion Model for changes that are made to infrastructure at the site that discharges to air as required by the Certificate of Air.
- Annual calibrations of flow monitoring devices for effluent discharge.
- Assessment of water and sediment quality, benthic and fish communities as required through the Metal Mining Effluent Regulation and Environmental Effects Monitoring.
- Recording and reporting of daily flows associated to Permits to Take Water for the underground workings.

## **20.4 HAZARDOUS MATERIALS HANDLING**

Effluent treatment reagents (i.e. acid, flocculent, carbon dioxide) will be stored in designated areas. Currently these materials are stored within the ETP and warehouse in accordance with their respective Material Safety Data Sheets (MSDS).

Bulk containers of petroleum products are stored in designated areas within Maintenance area. Spill trays are utilized for containment.

Fuel will be stored and handled in accordance with the Liquid Fuels Handling Code. Gasoline and diesel fuel will be stored in the tank farm and in portable, double-hulled tanks that are located within containment areas to contain incidental spillage. Propane is stored in above ground tanks.

There are no PCBs at the Bell Creek Complex.

With the exception of silica dust from development rock, there will be no designated substances at the Bell Creek Complex, as defined in the Occupational Health and Safety Act.

Explosives will be brought to the Bell Creek Complex on an as-needed basis. All explosives are stored in powder magazines in the underground workings of the Bell Creek Mine.

## **20.5 SPILL AND EMERGENCY RESPONSE PLAN**

As part of the Safety and Environment Program, Lake Shore has prepared a Consolidated Spill Prevention Contingency and Response Plan (SPCR) for the Bell Creek Complex. This document provides a practical guide for preventing, controlling and responding to spills. It has been prepared using guidelines provided by the Liquid Fuels Handling Code, the Canadian Environmental Protection Act, the Ontario Environmental Protection Act, the North American Emergency Response Guidebook, as well as standardized response procedures from petroleum product suppliers. Copies of this document are available in the Safety, Health, and Orientation Manuals, which are available in the field office, in Lake Shore vehicles, and from contractor supervisors.

## **20.6 CLOSURE PLANNING**

Mine closure is the orderly, safe and environmental conversion of an operating mine to a “closed-out” state.

The development of a walk-away, no active management scenario is a primary environmental management goal for this project. The long-term environmental management issues associated with the project have been identified in the Mining Act and relate to ore hoisted to surface,

waste rock dumps, open holes to surface and overall construction of permanent structures. Other secondary issues, such as returning the site to a productive use (i.e. forestry) will be accommodated within the context of the Closure Plan.

Should Lake Shore identify and require an area to store rock which poses a metal leaching risk, this will be conducted on the waste-rock containment pad during the life of the mine. Runoff from this low permeability pad will be directed to the containment pond, preventing a release of water with potentially high concentrations of metals. Water from the containment pond will be recycled for use as process water with the excess being treated and released to the environment in accordance with regulatory requirements. However, with the extensive sampling program initiated by the Bell Creek Complex, the analytical data collected does not identify any potential acid rock drainage issues.

At the conclusion of the mine life, the closeout rehabilitation measures summarized below will be implemented.

- Removal of surface buildings and associated infrastructure.
- Removal of holding ponds by converting into naturally draining ponds
- Sloping and covering any and all waste rock with native grasses
- Securing mine opening as per O. Reg 240/00
- Ensuring water quality as per monitoring program submitted in Closure Plan

## **20.7 CONSULTATION**

Consultation is being undertaken with regulatory agencies, the general public, the Métis Nation of Ontario, Wabun Tribal Council and the First Nation communities of Flying Post First Nation, Mattagami First Nation, and Matachewan First Nation, who are represented by Wabun Tribal Council, and also Wagoshig First Nation. Consultation provides an opportunity to identify and address the impacts of Lake Shore's activities on external stakeholders and to expedite the authorization process.

The consultations have been held in order to comply with Lake Shore corporate policy and the provincial requirements of Ontario Regulation 240/00 and the Environmental Bill of Rights.

An Impact and Benefits Agreement ("IBA") is currently being negotiated. The IBA will outline how Lake Shore Gold Corp. and the First Nations communities will work together in the following areas: education/training of First Nation community members, employment, business and contracting opportunities, financial considerations and environmental provisions.

## 21.0 CAPITAL AND OPERATING COSTS

The cost estimates are in 2013 Canadian dollars and are to a level of accuracy of  $\pm 25$  percent. Escalation has not been included.

### 21.1 LAKE SHORE BUDGETED 2013 CAPITAL COSTS

The 2013 capital costs include the work planned by Lake Shore and included in the Bell Creek Mine 2013 operating plan (budget) to expand/upgrade/maintain the existing surface and underground infrastructure to sustain production. The 2013 capital costs estimated by Lake Shore are summarized in Table 21.1.

**Table 21.1: 2013 Bell Creek Mine Budgeted Capital Costs**

Item	2013 Capital Costs (millions)
<b>Surface Projects - Subtotal</b>	<b>\$0.36</b>
Engineering Studies	\$0.15
Diamond Drill Core Storage Expansion	\$0.03
Surface Air Compressor Replacement	\$0.13
Surface Warehouse Upgrade	\$0.05
<b>Ventilation Related - Subtotal</b>	<b>\$0.06</b>
Auxiliary Ventilation Fans – Purchase	\$0.06
<b>Miscellaneous Raise Development - Subtotal</b>	<b>\$0.35</b>
Ventilation Raises	\$0.13
Escapeway Raise (2 <sup>nd</sup> Egress) Equipped	\$0.22
<b>Underground Construction - Subtotal</b>	<b>\$0.41</b>
Refuge Stations	\$0.15
Ventilation Walls	\$0.08
Explosives and Detonators Storage	\$0.10
Fuel Bay	\$0.08
<b>Electrical Projects – Subtotal</b>	<b>\$1.25</b>
Surface Pole Line and Substation Relocation	\$0.16
Underground Power Distribution	\$0.67
Blasting System	\$0.03
Ventilation	\$0.06
Communications / Leaky Feeder	\$0.16
Dewatering System	\$0.13
Refuge Stations	\$0.04
<b>Critical Spares – Subtotal</b>	<b>\$0.14</b>
Electrical Transformer	\$0.14
<b>Mobile Equipment – Subtotal</b>	<b>\$0.72</b>
Underground Emergency Vehicle – Toyota	\$0.09
Surface Mini-Bus (employee shuttle)	\$0.03
Underground 42t Haul Trucks Overhauls (2 trucks)	\$0.6
<b>Capital Development – Subtotal</b>	<b>\$2.90</b>
Direct Labour	\$1.63
Consumables	\$1.27

Item	2013 Capital Costs (millions)
<b>Capital Geology and Diamond Drilling – Subtotal</b>	<b>\$2.91</b>
Geology Staff – Labour (toward capital work)	\$0.54
Diamond Drilling	\$1.89
Geology Supplies and Assaying	\$0.48
<b>Miscellaneous Indirects – Subtotal</b>	<b>\$0.12</b>
Service Holes	\$0.02
Construction Labour	\$0.10
<b>Indirect Costs Allocated to Capital – Subtotal</b>	<b>\$5.98</b>
<b>Project Group Costs – Subtotal</b>	<b>\$0.05</b>
<b>Lake Shore Budgeted Mine Capital 2013</b>	<b>\$15.25</b>

## 21.2 SUSTAINING CAPITAL COSTS

The remaining sustaining capital costs include the ramp and sublevel infrastructure development, infrastructure construction, and equipment purchases required (after 2013) to support ongoing mining and the expansion of the mine to the 775L. All capital development and construction will be completed in early 2015. The estimated sustaining capital costs have been summarized in Table 21.2. Additional capital cost details are included in Appendix F.

**Table 21.2: Estimated Sustaining Capital Costs (2014 to Q1 2018)**

Item	2014 (millions)	2015 (millions)	2016 (millions)	2017 Q1 2018 (millions)	Total (millions)
<b>Equipment Purchases</b>	<b>\$1.32</b>	<b>\$2.93</b>	<b>\$0.63</b>	<b>\$0.60</b>	<b>\$5.48</b>
Mobile Equipment Rebuilds		\$1.61			\$1.61
Underground Electrical Infrastructure	\$1.20	\$1.20	\$0.56	\$0.56	\$3.53
Auxiliary Fans Purchase	\$0.07	\$0.07	\$0.05	\$0.02	\$0.20
Dewatering Pumps Purchase	\$0.05	\$0.05	\$0.02	\$0.02	\$0.14
<b>Development</b>	<b>\$5.63</b>	<b>\$0.49</b>			<b>\$6.12</b>
Ramp	\$2.05				\$2.05
Sublevel Infrastructure	\$2.75	\$0.46			\$3.21
Raise (includes escapeway equipping)	\$0.83	\$0.03			\$0.86
<b>Underground Construction</b>	<b>\$0.37</b>	<b>\$0.04</b>	<b>\$0.02</b>	<b>\$0.02</b>	<b>\$0.46</b>
Ventilation Walls	\$0.04	\$0.01			\$0.05
Refuge Stations	\$0.13				\$0.13
Explosives and Detonators Storage	\$0.03				\$0.03
Fuel Bay	\$0.12				\$0.12
Service Holes	\$0.02	\$0.01			\$0.03
Waste Pass Drop Raise – Allowance	\$0.03	\$0.02	\$0.02	\$0.02	\$0.10

Item	2014 (millions)	2015 (millions)	2016 (millions)	2017 Q1 2018 (millions)	Total (millions)
<b>Waste Rock Haulage</b>	<b>\$0.23</b>	<b>\$0.02</b>			<b>\$0.25</b>
Ramp Development	\$0.11				\$0.11
Sublevel Infrastructure Development	\$0.11	\$0.02			\$0.13
Raise Development	\$0.01				\$0.01
<b>Indirect Costs Allocated to Capital</b>	<b>\$3.96</b>	<b>\$0.39</b>			<b>\$4.35</b>
Lake Shore Indirect Labour	\$2.04	\$0.21			\$2.25
Indirect Mobile Equipment Operating	\$0.36	\$0.03			\$0.39
Indirect Site Costs	\$1.02	\$0.10			\$1.12
Power	\$0.54	\$0.05			\$0.59
<b>Total Estimated Sustaining Capital Costs</b>	<b>\$11.51</b>	<b>\$3.87</b>	<b>\$0.66</b>	<b>\$0.62</b>	<b>\$16.66</b>

### 21.2.1 Equipment Purchases

Equipment purchases include rebuilding major production equipment (LHDs and haul trucks) and purchasing fixed plant equipment (fans and pumps) to support the expanding mine.

The estimated cost for mobile equipment rebuilds considers 60% of the capital purchase price of the unit. Two of the 42 tonne haul trucks will undergo a significant overhaul in 2013 (Lake Shore 2013 Budget). An allowance to rebuild one 6yd LHD, one 42 tonne truck, and two 2yd LHDs is included in the sustaining capital cost estimate. Once development activities reduce in 2015, the mobile equipment will be available to support production activities.

Underground electrical infrastructure includes the purchase of electrical gear (mine load centres, switch gear, cables, etc.) required to distribute power to the mine expansion to 775L. The installation of the electrical infrastructure (labour and equipment operating costs) has been included in the indirect costs.

### 21.2.2 Ramp Development

Ramp development quantities have been based on 3D mine design drawings. Each active production level in the mine will be accessed by the ramp system. The ramp development quantities include a 10% allowance for safety bays and miscellaneous slashing at intersections.

The estimated unit cost for ramp development has been developed from first principles using current Lake Shore labour rates (including wages, bonus, and overhead), estimated mobile equipment operating costs (fuel and lubricants, maintenance parts, common replacement items, tires, buckets), consumable materials quantities and costs, services materials (piping, ventilation ducting, electrical cables), and anticipated productivities. The unit costs do not include haulage of the waste rock (identified separately). The ramp development unit costs have been based on a 4.8 metre per day advance rate. This advance rate has been based on operating experience at the mine and is consistent with Stantec experience with other studies. The ramp development unit rate is summarized in Table 21.3.

**Table 21.3: Ramp Development Unit Cost**

Item	Cost Per Day	Cost Per Metre
<b>Total Ramp Development Unit Cost</b>		<b>\$2,695/m</b>
<b>Labour</b>		<b>\$955</b>
Lead Miner x 1	\$1,643	\$342
Miner x 2	\$2,940	\$613
<b>Equipment Operating Costs</b>		<b>\$596</b>
2-Boom Jumbo	\$1,170	\$244
6yd LHD	\$1,272	\$265
Scissor Lift	\$416	\$87
<b>Consumable Materials</b>		<b>\$1,144</b>
Jumbo Drilling (rods, couplings, bits etc.)		\$317
Stoper/Jackleg Drilling		\$68
Blasting (explosives, detonators, accessories)		\$237
Ground Support (bolts, screen)		\$216
Services (pipe, vent, elec.)		\$260
Roadbed		\$46

### 21.2.3 Waste Infrastructure Development

Waste infrastructure development quantities have been based on 3D mine design drawings. Waste development will include the initial sublevel access and ancillary development (sumps, electrical substations, ventilation raise access, remucks etc.), and the accesses to the mineralized zones. The waste development quantities include a 10% allowance for miscellaneous slashing (including slashing the back for truck loading), and material storage bays.

The estimated unit cost for infrastructure development has been developed from first principles using current Lake Shore labour rates (including wages, bonus, and overhead), estimated mobile equipment operating costs (fuel and lubricants, maintenance parts, common replacement items, tires, buckets), consumable materials quantities and costs, services materials (piping, ventilation ducting, electrical cables), and anticipated productivities. The unit costs do not include haulage of the waste rock (identified separately). Larger infrastructure development (sublevel access, etc.) will be completed by the ramp development crew at 4.8 metres per day, while smaller headings (mineralized zones accesses) will be developed by the sill development crew at 5.4 metres per day. These advance rates have been based on operating experience at the mine and are consistent with Stantec experience with other studies. The infrastructure development unit rate for the ramp crew is summarized in Table 21.4 and for the sill crew in Table 21.5.

**Table 21.4: Infrastructure Development Unit Cost – Ramp Crew**

Item	Cost Per Day	Cost Per Metre
<b>Total Infrastructure Development Unit Cost</b>		<b>\$2,455/m</b>
<b>Labour</b>		<b>\$955</b>
Lead Miner x 1	\$1,643	\$342
Miner x 2	\$2,940	\$613
<b>Equipment Operating Costs</b>		<b>\$596</b>
2-Boom Jumbo	\$1,170	\$244
6yd LHD	\$1,272	\$265
Scissor Lift	\$416	\$87
<b>Consumable Materials</b>		<b>\$904</b>
Jumbo Drilling (rods, couplings, bits etc.)		\$282
Stoper/Jackleg Drilling		\$53
Blasting (explosives, detonators, accessories)		\$118
Ground Support (bolts, screen)		\$175
Services (pipe, vent, elec.)		\$257
Roadbed		\$19

**Table 21.5: Infrastructure Development Unit Cost – Sill Crew**

Item	Cost Per Day	Cost Per Metre
<b>Total Infrastructure Development Unit Cost</b>		<b>\$1,900/m</b>
<b>Labour</b>		<b>\$812</b>
Lead Miner x 1	\$1,576	\$292
Miner x 2	\$2,806	\$520
<b>Equipment Operating Costs</b>		<b>\$360</b>
1-Boom Jumbo	\$743	\$138
2yd LHD	\$1,020	\$189
Scissor Lift	\$180	\$33
<b>Consumable Materials</b>		<b>\$728</b>
Jumbo Drilling (rods, couplings, bits etc.)		\$217
Stoper/Jackleg Drilling		\$43
Blasting (explosives, detonators, accessories)		\$167
Ground Support (bolts, screen)		\$95
Services (pipe, vent, elec.)		\$196
Roadbed		\$10

#### 21.2.4 Raise Development

Raise development quantities include vertical development for ventilation raises and escapeway raises. Ventilation raises will be drop raises and will be completed by the drilling contractor. The escapeway raises will be developed by Alimak and include equipping the raise with platforms and ladders.

The estimated unit cost for raise development has been developed by Stantec based on recent experience with other projects in the area. The unit cost for Alimak raises includes mobilization

and demobilization of the contractor and the contractor's indirect fees and profit. For drop raises, the Bell Creek 2012 operating data/costs for the drilling contractor were used.

#### **21.2.5 Underground Infrastructure and Construction**

Infrastructure construction includes underground installations required to support production. Infrastructure cost estimates have been based on Stantec's recent experience with similar installations, interaction with vendors, and/or developed from first principles.

For ventilation walls, refuge stations, and explosives and detonators storage, the constructions costs include materials only. The installation labour and equipment have been included in the indirect costs.

For service holes and drop raises used for backfilling, the costs have been based on the drilling contractor operating experience from 2012.

#### **21.2.6 Waste Haulage**

The cost for waste rock haulage includes the truck operator labour and truck operating cost required to haul waste from a remuck to another sublevel, and dumping into a second remuck (assumed to be four sublevels away) for later use as backfill. The cost for loading waste rock into trucks is included in the development unit cost (i.e. the development labour and LHD operating cost). The estimated unit cost for waste haulage is \$2.1 per tonne (of waste hauled).

Waste rock quantities have been estimated from the ramp, lateral, and raise development quantities.

#### **21.2.7 Indirect Costs Allocated to Capital**

Indirect costs include indirect labour, indirect mobile equipment operating, indirect site costs, and power required to operate the mine. The indirect costs are discussed in Section 21.3.8. Indirect costs have been allocated to capital based on the capital tonnes of waste rock generated in the mine as a percentage of the overall tonnage (capital plus operating tonnes). The allocation percentage is summarized in Table 21.6.

**Table 21.6: Indirect Costs Allocation to Capital**

<b>Item</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017 Q1 2018</b>
Capital tonnes	110,978	9,067	0	0
Operating tonnes	219,866	263,780	213,581	164,089
<b>Total tonnes</b>	<b>330,844</b>	<b>272,847</b>	<b>213,581</b>	<b>164,089</b>
Indirect Costs Allocation to Capital	33.5%	3.3%	0%	0%

### **21.3 OPERATING COSTS**

The life of mine operating costs will include both direct and indirect costs.

Direct operating costs include waste development to access specific stopes, ore sill development and stope production activities. All costs not directly related to mine construction, development, and production activities, have been included in the indirect operating costs.

The operating costs are summarized in Table 21.7. Additional operating cost details are included in Appendix F.

**Table 21.7: Operating Cost Summary**

Item	2013 (millions)	2014 (millions)	2015 (millions)	2016 (millions)	2017 Q1 2018 (millions)	Total (millions)
<b>Lake Shore 2013 Budget</b>	<b>\$16.90</b>					<b>\$16.90</b>
<b>Development</b>		<b>\$6.80</b>	<b>\$6.21</b>			<b>\$13.01</b>
Waste Development		\$2.92	\$3.49			\$6.41
Ore Development		\$3.88	\$2.72			\$6.60
<b>Longhole Stope Production</b>		<b>\$4.04</b>	<b>\$5.65</b>	<b>\$6.65</b>	<b>\$5.11</b>	<b>\$21.45</b>
<b>Ore and Waste Rock Haulage</b>		<b>\$2.40</b>	<b>\$2.93</b>	<b>\$2.79</b>	<b>\$1.93</b>	<b>\$10.05</b>
Waste Rock Haulage		\$0.08	\$0.10			\$0.18
Development Ore Haulage		\$0.69	\$0.40			\$1.09
Stope Ore Haulage		\$1.63	\$2.43	\$2.79	\$1.93	\$8.78
<b>Surface Backfill Supply to Site</b>			<b>\$0.47</b>	<b>\$0.75</b>	<b>\$0.34</b>	<b>\$1.56</b>
<b>Geology Supplies/Diamond Drill</b>		<b>\$0.51</b>	<b>\$0.51</b>	<b>\$0.38</b>	<b>\$0.25</b>	<b>\$1.65</b>
<b>Milling</b>	<b>\$4.67</b>	<b>\$4.53</b>	<b>\$4.89</b>	<b>\$4.81</b>	<b>\$3.69</b>	<b>\$22.59</b>
<b>Indirect Costs</b>		<b>\$8.40</b>	<b>\$11.93</b>	<b>\$12.29</b>	<b>\$12.81</b>	<b>\$45.43</b>
Indirect Labour		\$4.04	\$5.94	\$6.28	\$6.47	\$22.73
Timmins Administration		\$0.55	\$0.55	\$0.55	\$0.70	\$2.35
Mobile Equipment Operating		\$0.71	\$1.02	\$1.06	\$1.05	\$3.84
Indirect Site Costs		\$2.03	\$2.95	\$2.99	\$3.18	\$11.15
Power		\$1.07	\$1.47	\$1.41	\$1.41	\$5.36
<b>Total Estimated Operating Costs</b>	<b>\$21.57</b>	<b>\$26.67</b>	<b>\$32.59</b>	<b>\$27.68</b>	<b>\$24.12</b>	<b>\$132.63</b>
Tonnes Mined to Surface	183,661	181,193	217,528	213,581	164,089	960,052
<b>Operating Cost (\$/Tonne)</b>	<b>\$117/t</b>	<b>\$147/t</b>	<b>\$150/t</b>	<b>\$130/t</b>	<b>\$147/t</b>	<b>\$138/t</b>

The estimated average life-of-mine operating cost will be \$138.1 per tonne.

### 21.3.1 Lake Shore Budgeted 2013 Operating Costs

Lake Shore has prepared a 2013 budget and operating plan for the Bell Creek Mine. The operating plan includes the estimated direct and indirect operating costs to achieve production targets. The budget has been based on operating experiences gained through production in 2012.

### 21.3.2 Operating Development

Operating ore and waste rock development quantities have been based on 3D mine design drawings and includes sill development along the mineralized zones. The waste quantities include a 10% allowance for safety bays and miscellaneous slashing.

The estimated unit cost for operating development has been developed from first principles using current Lake Shore labour rates (including wages, bonus, and overhead), estimated mobile equipment operating costs (fuel and lubricants, maintenance parts, common replacement items, tires, buckets), consumable materials quantities and costs, services materials (piping, ventilation ducting, electrical cables), and anticipated productivities. The unit costs do not include haulage of the waste rock (identified separately).

The operating development will have multiple working faces (typically more than two faces) and will advance at 5.4 metres per day. These advance rates have been based on operating experience at the mine and are consistent with Stantec experience with other studies. The development unit rate for the sill crew is summarized in Table 21.8.

**Table 21.8: Ore and Waste Development Unit Cost Summary**

Item	Cost Per Day	Cost Per Metre
<b>Total Infrastructure Development Unit Cost</b>		<b>\$1,900/m</b>
<b>Labour</b>		<b>\$812</b>
Lead Miner x 1	\$1,576	\$292
Miner x 2	\$2,806	\$520
<b>Equipment Operating Costs</b>		<b>\$360</b>
1-Boom Jumbo	\$743	\$138
2yd LHD	\$1,020	\$189
Scissor Lift	\$180	\$33
<b>Consumable Materials</b>		<b>\$728</b>
Jumbo Drilling (rods, couplings, bits etc.)		\$217
Stoper/Jackleg Drilling		\$43
Blasting (explosives, detonators, accessories)		\$167
Ground Support (bolts, screen)		\$95
Services (pipe, vent, elec.)		\$196
Roadbed		\$10

### 21.3.3 Longhole Stope Production

The direct costs related to longhole stoping include the labour, consumable material, and equipment operating and maintenance associated with:

- Drilling cable bolt holes and installing cable bolts by a drilling contractor.
- Drilling, loading, and blasting longholes (including drop raises) by a drilling contractor.
- Mucking from the stope with a 2yd LHD and tramming to a remuck.
- Backfilling with unconsolidated waste rock from a remuck.

The drilling contractor will continue to supply the longhole drills and labour required to drill and install cable bolts and drill and blast production longholes. The direct costs for these activities

have been based on Bell Creek 2012 year-end results of \$18.12 per longhole stope tonne (including the miscellaneous “company time” that the drilling contractor charged Lake Shore for completing work outside of the contract scope).

The direct costs for longhole stoping are summarized in Table 21.9.

**Table 21.9: Longhole Stopping Unit Costs**

Item	Cost Per Tonne
<b>Total Longhole Stopping Unit Cost</b>	<b>\$31.14/t</b>
<b>Drilling Contractor (Cable Bolting, Production Drilling and Blasting)</b>	<b>\$18.12</b>
<b>Stope Mucking</b>	<b>\$5.87</b>
LHD Operator Labour	\$3.15
LHD Operating Cost	\$2.72
<b>Stope Backfilling (from remuck)</b>	<b>\$4.98</b>
LHD Operator Labour	\$3.15
LHD Operating Cost	\$1.83
<b>Consumables</b>	<b>\$2.16</b>
Explosives and Accessories	\$1.78
Cable Bolts and Accessories	\$0.38

#### 21.3.4 Ore and Waste Rock Haulage

The cost for waste rock haulage includes the truck operator labour and truck operating cost required to haul waste from a remuck to another sublevel, and dumping into a second remuck (assumed to be four sublevels away) for later use as backfill. The cost for loading waste rock into trucks is included in the development unit cost (i.e. the development labour and LHD operating cost). The estimated unit cost for waste haulage is \$2.10 per tonne (of waste hauled).

The unit cost for ore haulage includes the LHD operator labour and LHD operating cost to remuck ore (from the remuck) into the 42 tonne haul trucks, and the truck operator labour and truck operator costs to haul up the ramp and dump on the surface ore pad. The ore haulage unit costs vary incrementally by sublevel and are summarized in Table 21.10.

**Table 21.10: Ore Haulage Costs by Sublevel**

Level	One-Way Haul Distance (metres)	Estimated Cycle Time (minutes)	Productivity per Truck (tonnes per day)	Unit Cost \$/tonne
300L	2,200	47.0	600	\$7.77
430L	3,100	63.1	447	\$9.51
445L	3,200	65.0	434	\$9.71
460L	3,300	66.8	422	\$9.91
475L	3,400	68.7	411	\$10.11
490L	3,600	70.5	400	\$10.31
505L	3,700	72.4	390	\$10.51
520L	3,800	74.3	380	\$10.71
535L	3,900	76.1	371	\$10.91
550L	4,000	78.0	362	\$11.11
565L	4,100	79.8	354	\$11.31

Level	One-Way Haul Distance (metres)	Estimated Cycle Time (minutes)	Productivity per Truck (tonnes per day)	Unit Cost \$/tonne
580L	4,200	81.7	345	\$11.51
559L	4,300	83.5	338	\$11.71
610L	4,400	85.4	330	\$11.91
625L	4,500	87.3	323	\$12.11
640L	4,600	89.3	316	\$12.33
655L	4,700	91.4	309	\$12.55
670L	4,800	93.4	302	\$12.77
685L	5,000	95.5	296	\$12.99
700L	5,100	97.5	289	\$13.21
715L	5,200	99.6	283	\$13.43
730L	5,300	101.6	278	\$13.65
745L	5,400	103.7	272	\$13.87
760L	5,500	105.7	267	\$14.09
775L	5,600	107.8	262	\$14.32

### 21.3.5 Surface Backfill Supply to Site

Underground waste rock development will end in 2015 and there will not be sufficient waste rock available at the site for backfilling. Waste rock will be trucked to the site from stockpiles available from neighboring mines. Waste rock (for surface construction projects) was trucked to the site in 2012 at \$7.50 per tonne of waste and this cost has been used in the estimate.

### 21.3.6 Geology Supplies and Diamond Drilling

Geology supplies and diamond drilling (by a contractor) includes the materials and assaying costs. The cost estimate has been based on the Bell Creek 2013 Budget and assuming the same level of effort will be required to support definition of the resource.

### 21.3.7 Milling

Milling costs have been provided by Lake Shore. The budgeted milling costs in 2013 and 2014 will be \$25.0 per tonne. Following the expansion of the mill (increased throughput), the milling costs for 2015 to Q1 2018 are estimated to reduce to \$22.5 per tonne.

### 21.3.8 Indirect Costs

All costs not directly related to mine development, construction, or production activities have been included in the indirect costs. The indirect costs have been based on current operating experience at the site, estimated quantities/consumption (such as power), and actual labour rates provided by Lake Shore. The indirect costs include:

- Bell Creek Mine Staff including:
  - Management, administration, technical services (engineering and geology), and environmental personnel.
  - Health and safety and training personnel.
  - Mine operations and maintenance supervisory personnel.
  - Electrical, mechanical, millwright, construction, and services personnel (hourly).

- General site services including:
  - Financing costs, taxes, insurance.
  - Security and janitorial services.
  - Leases and rentals including office and dry trailers.
  - Surface maintenance (road grading, snow removal, building maintenance).
  - Health and Safety (training, supplies, awards, mine rescue, etc.).
  - First Nations consultations.
  - Environmental supplies (sampling, waste management, consultants, rentals).
  - Mine engineering (survey supplies, training, instrumentation, consultants).
  - Ventilation and dewatering (maintenance allowance for fans, pumps, mine air heaters).
  - Mine air heating (propane).
- Support equipment operating and maintenance costs such as underground tractors, boom trucks, service LHDs, scissor lifts, and the surface loader.
- Underground infrastructure maintenance (fans, pumps, etc.).
- Power (underground and mine related surface facilities).
- Lake Shore Timmins Administration Team located off-site.

## 22.0 ECONOMIC ANALYSIS

An economic analysis has been completed for the Bell Creek Mine. The economic analysis was based on the indicated resources from the November 2012 Bell Creek Mine Resource Block Model between the 300L and 775L, the mine design described in Section 16, and the estimated capital and operating costs described in Section 21. The economic analysis supports the estimated probable reserves for Bell Creek Mine.

### 22.1 GOLD PRICE AND EXCHANGE RATE

The gold price and exchange rate used for estimating revenue from gold sales was provided by Lake Shore and is shown in Table 22.1.

**Table 22.1: Gold Price and Exchange Rate**

Year	Gold Price (\$US)	Exchange Rate (\$CDN/\$US)
2013	\$1,665	1.00
2014	\$1,644	1.01
2015	\$1,627	1.02
2016	\$1,549	1.04
2017	\$1,473	1.05
2018	\$1,400	1.07

### 22.2 ROYALTIES

There is an existing royalty paid by Bell Creek Mine. The royalty is 2% of the annual total revenue from gold sales. The royalty recipient currently has a debt to Lake Shore, and the royalty will be deducted from the amount owing until the debt is repaid. The debt owing Lake Shore will not be fully paid (by Q1 2018) and there will be no royalty payments reflected in the cash flow.

### 22.3 CASH FLOW SUMMARY

The estimated cash flow is summarized in Table 22.2. The estimated combined total operating costs (\$132.6 million) and sustaining capital costs (\$31.9 million) will be \$164.5 million or \$171.3 per tonne mined.

**Table 22.2: Cash Flow Summary**

Description	Total	2013	2014	2015	2016	2017	Q1 2018
<b>Mine Production</b>							
Tonnes	960,052	183,661	181,193	217,528	213,581	133,527	30,562
Grade (g/t)	4.2	4.1	4.3	4.2	4.4	4.0	3.8
Ounces Mined to Surface	129,318	23,918	24,770	29,379	31,174	17,326	3,751
<b>Ounces Sold</b>							
Mill Recovery		95%	95%	95%	95%	95%	95%
Ounces Sold	122,853	22,722	23,532	27,910	28,665	16,460	3,564
<b>Gold Price &amp; Exchange</b>							
Gold Price (\$US per Ounce)		\$1,665	\$1,644	\$1,627	\$1,549	\$1,473	\$1,400
Exchange Rate (\$CDN/\$US)		1.00	1.01	1.02	1.04	1.05	1.07
Gold Price (\$CDN per Ounce)		\$1,665	\$1,660	\$1,660	\$1,611	\$1,547	\$1,498
<b>Total Sales (millions \$CDN)</b>	<b>\$200.20</b>	<b>\$37.83</b>	<b>\$39.07</b>	<b>\$46.32</b>	<b>\$46.18</b>	<b>\$25.46</b>	<b>\$5.34</b>
Royalties Paid	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Gross Revenue (millions \$CDN)</b>	<b>\$200.20</b>	<b>\$37.83</b>	<b>\$39.07</b>	<b>\$46.32</b>	<b>\$46.18</b>	<b>\$25.46</b>	<b>\$5.34</b>
Operating Expenses (\$millions)	-\$132.63	-\$21.57	-\$26.67	-\$32.59	-\$27.68	-\$19.45	-\$4.67
Operating Costs (\$/Tonne)		\$117/t	\$147/t	\$150/t	\$130/t	\$146/t	\$153/t
<b>Net Revenue (\$millions)</b>	<b>\$67.57</b>	<b>\$16.26</b>	<b>\$12.41</b>	<b>\$13.73</b>	<b>\$18.50</b>	<b>\$6.01</b>	<b>\$0.66</b>
Sustaining Capital Cost (\$millions)	-\$31.92	-\$15.25	-\$11.51	-\$3.88	-\$0.66	-\$0.62	-\$0.00
<b>Net Cash Flow (\$CDN millions)</b>	<b>\$35.65</b>	<b>\$1.01</b>	<b>\$0.89</b>	<b>\$9.85</b>	<b>\$17.85</b>	<b>\$5.39</b>	<b>\$0.66</b>

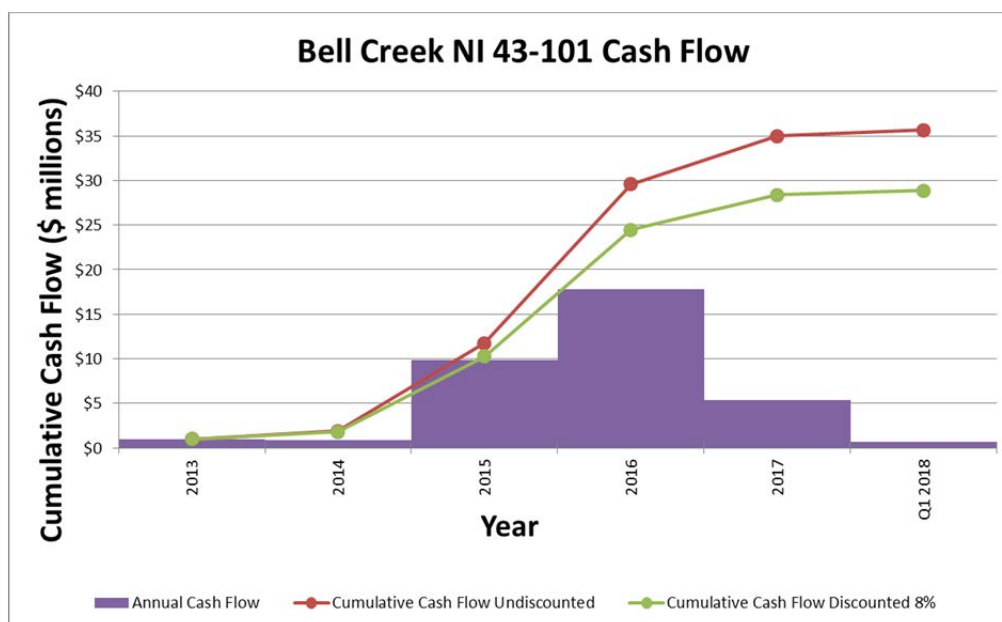
## 22.4 UNDISCOUNTED CASH FLOW AND NET PRESENT VALUE (NPV)

The undiscounted cumulative cash flow and net present value (NPV) discounted at 8% are summarized in Table 22.3 and graphically in Figure 22.1.

**Table 22.3: Undiscounted Cash Flow and NPV**

Year	2013	2014	2015	2016	2017	2018
<b>Discount Period</b>	<b>Principal</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Net Cash Flow (\$CDN millions)</b>	<b>\$1.01</b>	<b>\$0.89</b>	<b>\$9.85</b>	<b>\$17.85</b>	<b>\$5.39</b>	<b>\$0.66</b>
<b>Undiscounted Cash Flow Cumulative (\$CDN millions)</b>	<b>\$1.01</b>	<b>\$1.90</b>	<b>\$11.75</b>	<b>\$29.60</b>	<b>\$34.99</b>	<b>\$35.65</b>
<b>8% Discount Interest</b>						
Discount Factor	1.000	0.926	0.857	0.794	0.735	0.681
Discounted Cash Flow (\$CDN millions)	\$1.01	\$0.83	\$8.45	\$14.17	\$3.96	\$0.45
<b>Discounted Cash Flow Cumulative (\$CDN millions)</b>	<b>\$1.01</b>	<b>\$1.83</b>	<b>\$10.28</b>	<b>\$24.45</b>	<b>\$28.41</b>	<b>\$28.86</b>

**Figure 22.1: Undiscounted Cash Flow and NPV**



The Bell Creek Mine will be cash flow positive for the remaining LOM (to Q1 2018). During 2013 and 2014, the majority of remaining capital development and significant operating development will be completed and cash flow during these two years will be marginally positive. After 2014, capital development expenditures will be significantly reduced and the mine will be positioned to generate cash flow through to Q1 2018 (by mining in the developed areas).

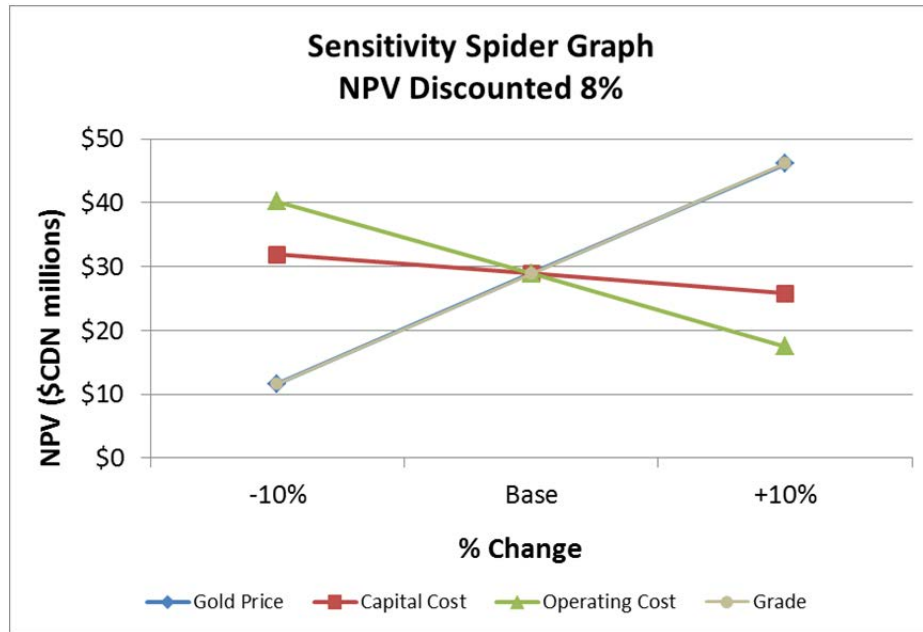
## 22.5 SENSITIVITIES

A spider graph was completed to reflect the sensitivity to gold price, resource grade, operating costs, and capital costs. The estimated NPV (discounted at 8%) for +10% and -10% variances in these items are summarized in Table 22.4 and Figure 22.2.

**Table 22.4: Sensitivities**

Item	-10% NPV (\$CDN millions)	Base NPV (\$CDN millions)	+10% NPV (\$CDN millions)
Gold Price	\$11.6	\$28.9	\$46.1
Operating Cost	\$40.2	\$28.9	\$17.5
Capital Cost	\$31.9	\$28.9	\$25.8
Resource Grade	\$11.6	\$28.9	\$46.1

Figure 22.2: Sensitivities



The cash flow and NPV will be most sensitive to variances in gold price and resource grade and least sensitive to the sustaining capital costs.

## **23.0 ADJACENT PROPERTIES**

### **23.1 GENERAL STATEMENT ABOUT ADJACENT PROPERTIES**

The Bell Creek Mine is situated on the New Mines Trend, 2.8 km west of the centre of Goldcorp's past producing Owl Creek Pit, and 5 km west of Goldcorp's operating Hoyle Pond Mine. The term New Mines Trend was coined by PFV and Kinross to promote and describe the area of the Hoyle antiform and synform which hosts significant past production and unexploited Mineral Resources and Reserves.

### **23.2 OWL CREEK PIT**

The Owl Creek Mine is located near the west end of the Neo-archean Abitibi greenstone belt, 17 km northeast of Timmins, Ontario, and 4 km north of the Destor Porcupine fault. Gold occurs in epigenetic quartz veins and their pyritic wallrocks in two zones within a package of east striking, steeply north dipping, volcanic and sedimentary rocks. At the West Zone, 1729 603 t of ore with a grade of 4.83 g/t Au (268 587 troy oz.) were produced from an open pit centered on a wedge-shaped unit of Tisdale Group basalt that occurs between two overturned, south facing units of Porcupine Group graywacke and argillite. Basalt/graywacke contacts are locally marked by graphitic-carbonaceous argillite, strike-parallel faults and massive quartz veins. Deformed quartz+ or -ankerite veins occur along the graphitic sedimentary/volcanic contacts and in gently to moderately dipping fractures in basalts, and, to a lesser extent, in graywackes. Veins also occur sub-parallel to steeply dipping 070 degrees foliation. Altered host basalts are composed of iron carbonate, sericite, quartz, carbon, chlorite and disseminated pyrite. Gold occurs as inclusions in pyrite, and less commonly as free gold in fractures and along graphite-quartz grain boundaries in quartz veins (Coad, 1998.).

The Authors have been unable to verify the information presented above, and notes that this information is not necessarily indicative of the mineralization on the property that is the subject of the technical report.

### **23.3 HOYLE POND MINE**

The Hoyle Pond and 1060 zones occur within a south-facing sequence of komatiitic and tholeiitic volcanic rocks both underlain and overlain by greywackes. The metavolcanic-metasediment sequence has been regionally drag-folded into a Z-shaped, E-plunging anticlinal form in the mine. A stacked series of gold-bearing veins follow the E-plunging antiform with both steeply dipping limb vein systems and flat vein systems across the axis of the fold. Mineralization usually comprises coarse free gold in white to grey quartz veins within a carbonate-sericite alteration envelope along with pyrite, arsenopyrite, and tourmaline. The 1060 zone is described as a steeply dipping vein set on the south limb of the antiform. Mineralization is generally similar to the vein systems adjacent, but fuchsite and sphalerite have also been noted in the 1060 zone. Gold-bearing veins range in width from 0.2 to 7 metres with a minimum mining width set at 1.5 metres, Butler (2008).

Hoyle Pond has produced in excess of 2.5M ounces of gold since production started in 1985.

The Authors have been unable to verify the information presented above, and note that this information is not necessarily indicative of the mineralization on the property that is the subject of the technical report.

## **24.0 OTHER RELEVANT DATA AND INFORMATION**

Additional information or explanation is not necessary to make this Technical Report understandable and not misleading.

## 25.0 INTERPRETATION AND CONCLUSIONS

### 25.1 MINERAL RESOURCE ESTIMATE

The Mineral Resource estimates for the Bell Creek Mine are based on 131 historic diamond drill holes and 494 diamond drill holes completed by LSG (625 total diamond drill holes).

The Bell Creek Deposit totals 4.68 Mt at 4.72 g/t Au (710,300 ounces of gold) in the Measured and Indicated categories and 6.08 Mt at 4.62 g/t Au (903,700 ounces of gold) in the Inferred category. Resources occur within nine mineralized domains, with the North A, North A2, and North B accounting for 80 % of the contained ounces.

The resources were estimated using the Inverse Distance Squared (ID<sup>2</sup>) interpolation method with gold assays capped to 44 g/t for the North A Zone (including the North A HW and North A FW) and 34 g/t for all other zones. Resources are reported above a 2.2 g/t cut-off which assumes a long-term gold price of \$US 1,200 per troy ounce.

Diamond drilling and underground development has demonstrated continuity of grade, mineralization, and geologic structure to support the definition of a reasonable prospect of economic extraction defined by CIMM standards for indicated and inferred resource classifications. The estimated Resources at Bell Creek Mine are summarized in Table 25.1.

**Table 25.1: Bell Creek Mine Resource Estimates**

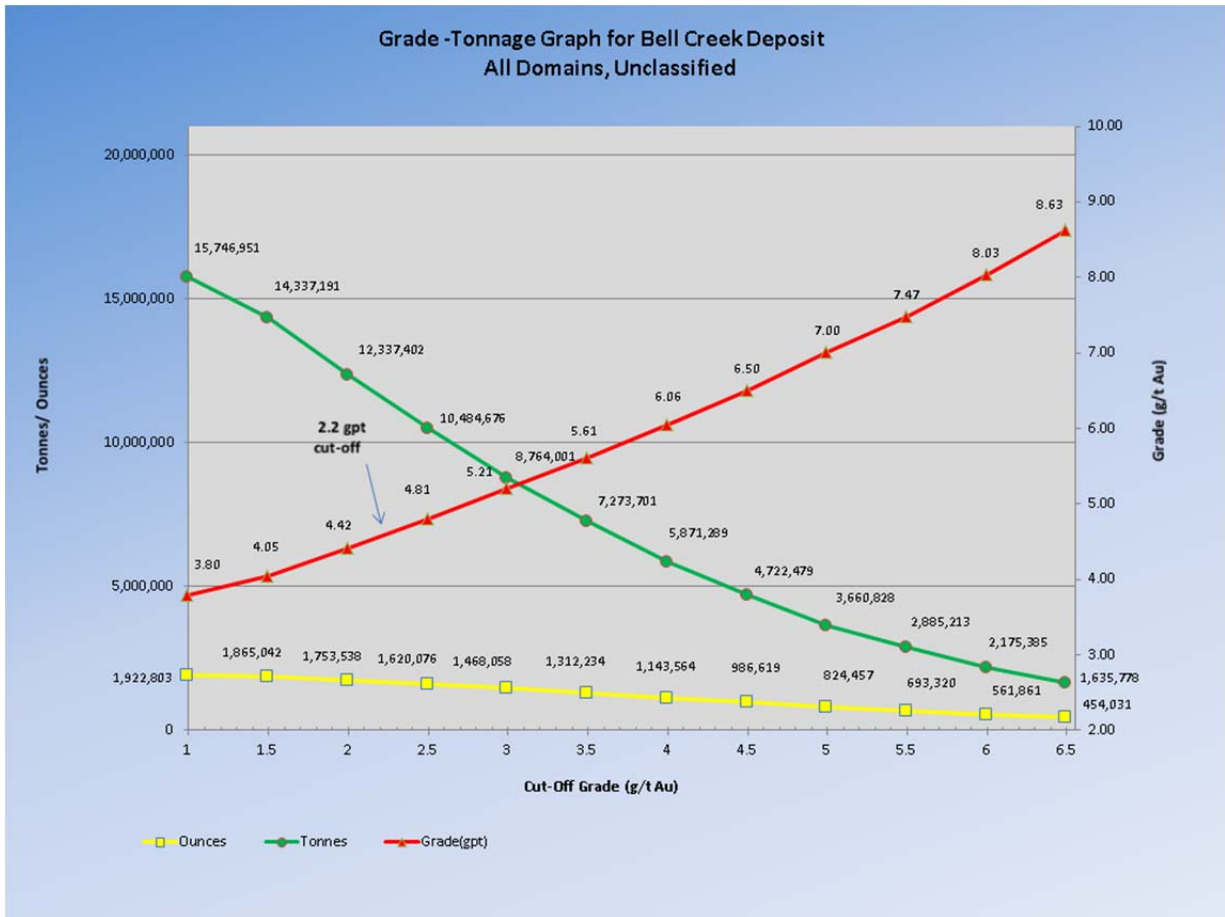
Category	Tonnes	Grade (g/t Au) (capped)	Ounces Au (capped)
Measured	268,000	4.34	37,400
Indicated	4,417,000	4.74	672,900
<b>Subtotal Measured and Indicated</b>	<b>4,685,000</b>	<b>4.72</b>	<b>710,300</b>
<b>Subtotal Inferred</b>	<b>6,080,000</b>	<b>4.62</b>	<b>903,700</b>

*Notes:*

- 1. CIM definitions were followed for classification of Mineral Resources.*
- 2. Mineral Resources are estimated at a cut-off grade of 2.2 g/t Au*
- 3. Mineral Resources are estimated using an average long-term gold price of US\$1,200 per ounce and a \$US/\$CDN exchange rate of 0.93.*
- 4. A minimum mining width of two metres was used.*
- 5. Capped gold grades are used in estimating the Mineral Resource average grade.*
- 6. Sums may not add due to rounding.*
- 7. Mr. Ralph Koch, B.Sc., P.Geo, is the Qualified Person for this Resource estimate.*

A sensitivity analysis was carried out to examine the impact on the tonnage, average grade and contained ounces by varying the cut-off grade. The results are presented graphically in Figure 25.1. By increasing the cut-off grade, the model demonstrates opportunity to optimize resources.

**Figure 25.1: Grade-Tonnage Graph (as function of cut-off grade)**



Validation of the block model was performed visually through a comparison of drill intercepts and block model results on plans and section within the domain block model. Preliminary sill development and test mining results demonstrate reasonable correlation with the 3D shapes and grades predicted by the Bell Creek block model.

The recent recognition of several splay veins raises the possibility that some miss-allocation of diamond drill intersections to the incorrect domain may occur. The results of these miss-allocations are likely to be local in nature and would not have a significant effect on the global resource.

Information on metallurgical behavior and recovery is available from past milling data and metallurgical test work completed on mineralization above the 300 metre elevation only. Metallurgical test work has not been completed for mineralization below this elevation. Visual evidence in diamond drill core does not exist to suggest that metallurgical recovery would vary at depth however this cannot be confirmed with information currently available.

## 25.2 MINERAL RESERVE ESTIMATE

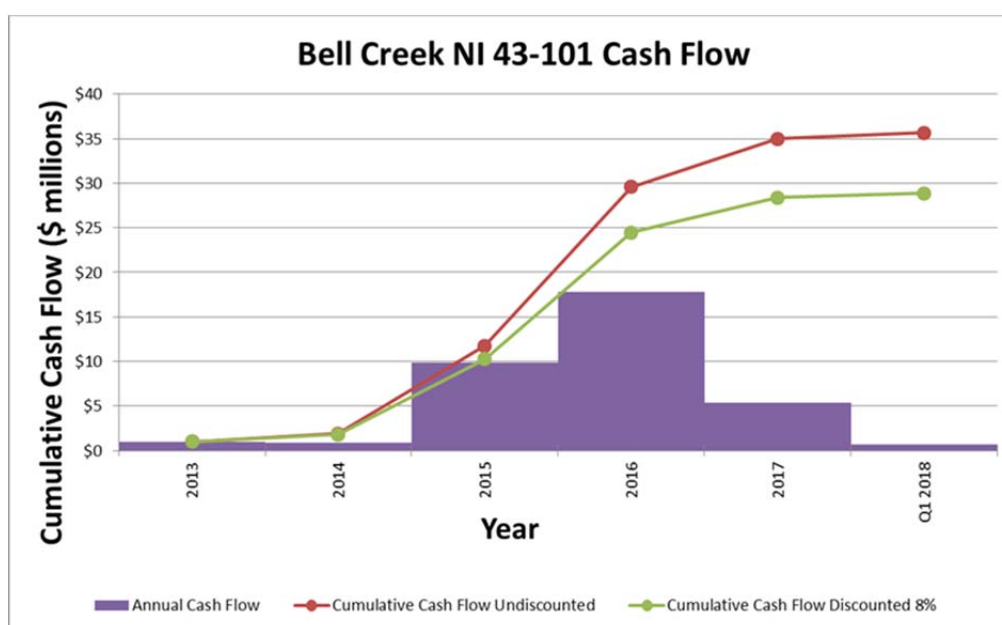
A prefeasibility study was completed to evaluate the subset of indicated resource material between the 300L and 775L to substantiate a statement of Mineral Reserves for the Bell Creek Mine. The study results show that approximately 960,000 tonnes grading 4.2 g/t Au (129,300 ounces Au) of reserves will be mined to surface over a nominal five year mine life. The life-of-mine production summary is summarized in Table 25.2.

**Table 25.2: Bell Creek Estimated Reserves (Diluted/Recovered)**

Item	Total	2013	2014	2015	2016	2017	Q1 2018
<b>Tonnes</b>	<b>960,052</b>	183,661	181,193	217,528	213,581	133,527	30,562
<b>Grade</b>	<b>4.2</b>	4.1	4.3	4.2	4.4	4.0	3.8
<b>Ounces</b>	<b>129,318</b>	23,918	24,770	29,379	30,174	17,326	3,751
<b>TPD</b>		506	499	599	588	368	340

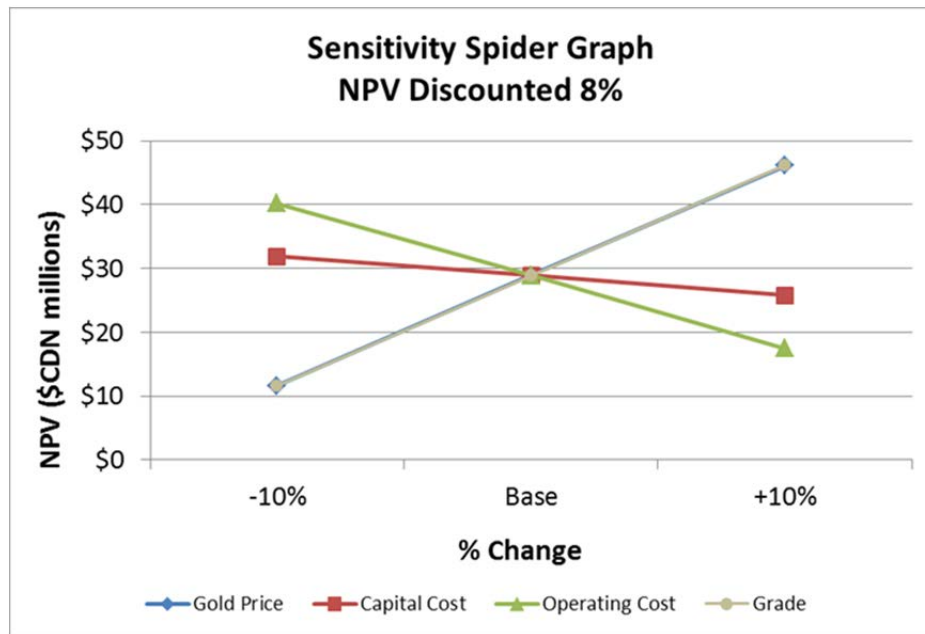
Key outcomes of a financial analysis indicate that the reserves can be extracted at an estimated average operating cost of \$138 per tonne and a total estimated sustaining capital cost of \$31.9 million. At the assumed gold prices and currency exchange rates, the reserves generate a positive cash flow with an NPV of \$28.9 million (discounted at 8%). The estimated cash flow is shown in Figure 25.2.

**Figure 25.2: Estimated Cash Flow from Reserves**



The cash flow sensitivity to gold price, resource grade, operating costs, and capital costs were evaluated. The estimated NPV (discounted at 8%) for +10% and -10% variances in these items are summarized in Figure 25.3.

Figure 25.3: Sensitivity Graph



The study results show that the existing surface and underground infrastructure, mine staff and operations personnel, equipment fleet, and mining methods at the Bell Creek Mine, combined with the Bell Creek Mill, will support generating positive cash flow from mining the mineral reserves identified between the 300L and 775L.

### 25.3 RISKS

The realized grade in any mining plan has one of the greatest impacts on financial returns. Ongoing diamond drilling and close attention to sill development mapping and efforts to minimize dilution must be continued to reduce this risk going forward.

Gold prices are subject to significant fluctuation and are affected by a number of factors which are beyond the control of LSG. Lower than predicted gold prices will reduce the projected cash flow.

Currency fluctuations are also affected by factors which are beyond the control of LSG. A stronger than predicted Canadian dollar versus the U.S. dollar will reduce the projected cash flow.

Operating and capital costs determined as the basis for this PFS have been developed based on first principles, industry benchmarks and best practice, as well as actual performance metrics of the operation in 2012. These factors are considered low risk elements and have intrinsically less impact on financial returns.

Social, political, and environmental factors are all considered to be low risk factors for the Bell Creek Mine.

## 26.0 RECOMMENDATIONS

In order to maintain current production levels of 500 plus tonnes per day, a continuous level of overlapping short and longer term definition drilling programs are required. In 2012, drilling completed from the 475L platform comprised of 33 holes (6,500 metres), and the 535L platform incorporating 60 drill holes and (16,000 metres) has covered off the multiple vein models at 25 metre centres from the 490 to 610 Levels and 610 to 775 Levels, respectively for a strike length of roughly 200 metres. This drilling provided the density of assay information and geological continuity necessary to support the Mineral Reserve estimate presented in this PFS technical report.

Short hole “Bazooka” drilling and Sill development under geological control on the primary vein structures, North A and North B, discovered numerous splay veins emanating from the footwall and hangingwall of the primary veins. It is likely that these have short strike lengths as indicated by a lack of continuity in wide spaced drilling, however, tighter spaced drilling has identified sufficient tonnage zones in the order of 5,000 to 8,000 tonnes for viable longhole stope mining. In addition, newly identified, parallel vein structures and extensions were identified including the North A2, A3, and A4 along with the North B2. As a result, sill development had only progressed to the 610 metre Level by the end of 2012, and planned longhole stoping was not attained.

It is estimated that approximately 600 metres of bazooka drilling per mine level (i.e. 15 metre sublevels) would be required to evaluate these zones based on 20 drill holes per level at 30 metres each. Total metres and cost of drilling for 2013 would be 4,200 metres at a cost of \$302,000. The Bazooka drilling is also utilized to define the so-called “Link Zone”, the best grade and tonnage oreshots intersected along the North A vein structure. These curvilinear ore shoots approach a horizontal width of 10 metres, which based on the model approach a 20 metre horizontal width at approximately the 940L and a maximum 30 metres plus horizontal width below the 1040L elevation.

At the end of 2012, an exploration drill drift was excavated 200 metres set back into the hangingwall from the North A vein, for approximately 225 metres, parallel to the vein system. A drilling campaign comprised of roughly 60 drill holes and 30,000 metres has been designed to upgrade inferred resources to indicated resources down to the 940L by achieving 25 metre density drilling along strike and down dip. This program is estimated to cost roughly \$3.5 million (\$115/metre all inclusive cost) and to be completed over an 18 month duration, carrying over into 2014.

A single cut-out set back 150 metres further into the hangingwall was excavated along the 6050 Easting and is designed to test the widest portions of the North A vein system at roughly the 1100L. A deep drilling program of 16 holes for roughly 12,000 metres is designed to increase the drilling density to approximately 50 metre spacing in the area where surface drill results returned mineralized intersections approaching a 30 metre horizontal width. The program is to be completed in 2013 for an estimated cost of \$1.5 million (i.e. \$125/metre all inclusive).

### Reconciliation

A comprehensive, ongoing, program of stope reconciliation (production data to design to original block model including mill reconciliation) should be initiated in order to better calibrate the resource estimates to realized production/mill results. Estimated time required to complete reconciliation for the past approximately 18 months development/production is one month using the service of two geologists working full time. Total cost \$ 20,000.

**Chip Data**

Chip traverse data should be brought into GEMS in order to improve resource estimation. To be evaluated is a comparison of chip data to muck production data as well as chip data to diamond drill data. The suitability of estimating measured resources through chip data or combining chip data with diamond drill data should be investigated. It should be possible to conduct this work with staff on hand at no additional costs.

**Exploration West of Dike**

Several isolated intersections exist west of the diabase dike and require additional diamond drilling to evaluate. This may be completed through a combination of surface and underground diamond drilling. Additional compilation is required to define drill targets. Estimated time and cost for one geologist to complete this compilation is one month for \$ 10,000.

**26.1 PREFEASIBILITY STUDY**

The mine design engineering, cost evaluation, and financial analysis completed at a PFS level on the indicated resource pool between 300L and 775L indicates economic value and therefore substantiates the reserves declared in this report.

The mine design presented in this study supports mining to the 775L using the ramp as the primary access to the reserves. As this mine plan is being executed, further exploration and study work focusing on the resources at depth (below 775L) should continue.

## 27.0 REFERENCES

- Aitken, S.A., 1990: The Pamour One Mine-Site Investigation, Timmins, Ontario: Unpublished M.Sc Thesis, Queen's University, Kingston, Ontario, 194 p.
- Ayer J., Trowell, N. (OGS), Amelin, Y., Kamo, S., and Kwok, Y. (ROM), 2000: PowerPoint Presentation: Deep Crustal Structures In The Abitibi Greenstone Belt And Their Prolonged Control On Distribution Of Stratigraphy And Mineral Deposits, Toronto, Ontario. January 2000.
- Barrie, C.T., 1992: Geology of the Kamiskotia Area, Ontario Geological Survey Open File Report 5829.
- Bateman, R., Ayer, J.A., Dubé, B. and Hamilton, M.A., 2005: the Timmins-Porcupine Gold Camp, Northern Ontario: The Anatomy of an Archean Greenstone Belt and its Gold Mineralization: Discovery Abitibi Initiative, Open File Report 6158, Ontario Geological Survey.
- Berger, B.R., 1998: Precambrian Geology, Hoyle and Gowan Townships, Ontario Geological Survey, Report 299, 49p.
- Brisbin, D.I., 1997: Geological Setting of Gold Deposits in the Porcupine Mining District, Timmins, Ontario; unpublished PhD Thesis, Queen's University, Kingston, Ontario, 523p.
- Butler, H.R., 2008: Technical (Geological) Report on Bell Creek Complex, Hoyle Township, Porcupine Mining Division, Ontario, Canada., Prepared for Lake Shore Gold Corp.; Unpublished Document available on the SEDAR web site at [www.SEDAR.com](http://www.SEDAR.com), 63 p.
- Coad, P.R., Brisbin D. I., Labine, R.J., and Roussain R., 1998: Geology of the Owl Creek Gold Mine, Exploration and Mining Geology; volume 7; No. 4; pp. 271-286.
- Coad, P.R., Labine, R.J., and Caron, D., 1986: Owl Creek Mine, in *Gold '86 Excursion Guidebook*, pp. 34-36.
- Corfu, F., Krogh, T.E., Kwok, Y.Y., and Jensen, L.S., 1989: U-Pb Zircon Geochronology In The Southwestern Abitibi Greenstone Belt, Superior Province. Canadian Journal of Earth Sciences, v. 26.
- Cox, S., 2000: Controls On localisation Of Mesothermal Gold Systems - Applications of Stress Transfer Modelling. Australian National University summary
- Crick, D., 1997: Schumacher (III) Property. "Drill-Indicated Resource Estimate"
- Discover Abitibi Mission Statement, 2010: Retrieved December 17, 2010 (URL: <http://www.discoverabitibi.com/mission-state>)
- Dougherty, E.Y., 1934: Mining of the Vipond Gold Mine, Porcupine District, Ontario. Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia. v. 37
- Fryer, B.J., Kerrich, R., Hutchinson, R.W., Pierce, M.G., and Rogers, D.S., 1979: Archean Precious Metal Hydrothermal Systems, Dome Mine, Abitibi Greenstone Belt. I. Patterns of Alteration and Metal Distribution. Canadian Journal of Earth Sciences, v.16.
- Griffis, A.T., 1960: Stratigraphy at McIntyre; Unpublished Report, McIntyre Mines Limited.
- Hall, R.S., and Rigg, D.M., 1986: Geology of the West Anticline Zone, Musselwhite Prospect, Opapimiskan Lake, Ontario, Canada in Macdonald, A.J., Downes, M., and Chater, A.M., eds., Proceedings of Gold '86

- Heaman, L.M. 1988: A Precise U-Pb Zircon Age for a Hearst Dyke: Geological Association of Canada Program with Abstracts, v. 13, p. A53.
- Hicks, K., 1986: Photomicrographs of the mineralogy and textures for the North A horizon ore zone of the Bell Creek deposit, Timmins, Ontario. Unpublished report, University of Ottawa, 12 pages.
- Holmes, T.C., 1968: Dome Mines Limited: *in* Geology and Ore Deposits of Tisdale Township, Edited by S.A. Ferguson et al., Ontario Department of Mines, Geological Report 58, pp. 82-98.
- Jackson, S.L., and Fyon, J.A., 1991: Geology of Ontario, Special Volume 4, Part 1, Chapter 11, the Western Abitibi Subprovince in Ontario, Ontario Geological Survey, pp. 405-482.
- Jackson, S.L., and Fyon, J.A., 1991: Geology of Ontario, Special Volume 4, Part 2, Chapter 22, The Metallogeny of Metallic Mineral Deposits in the Superior Province of Ontario, Ontario Geological Survey, p. 1149.
- Kent, G., 1990: Bell Creek and Marlhill Mine Area: *in* Field Trip Guidebook, 8th IAGOD Symposium, J. A. Fyon and A. H. Green eds., Geological Survey of Canada Open File 2161, pp. 1124–1128.
- Lake Shore Gold Corp., 2010: Annual Information Form for the Year Ending December 31, 2009. Dated as of March 10, 2010. Retrieved December 16, 2010 (URL: [lsgold-com.sitepreview.ca/SiteResources/data/MediaArchive/.../AIF2010.pdf](http://lsgold-com.sitepreview.ca/SiteResources/data/MediaArchive/.../AIF2010.pdf))
- Lakefield Research of Canada Limited, 1983: The Investigation Of The Recovery of Gold From Samples Submitted By Amax Incorporated. Progress Report No. 1. Project No. LR2686, October 5, 1983.
- Lakefield Research of Canada Limited, 1985: The Investigation Of The Recovery of Gold From Samples Submitted By Amax Incorporated. Progress Report No. 2. Project No. LR2686, April 17, 1985.
- Mason, R., and Melnik, N., 1986: The Anatomy of an Archean Gold System – The McIntyre-Hollinger Complex at Timmins, Ontario, Canada in Proceedings Volume, Gold 86; an International Symposium of the Geology of Gold Deposits, pp. 40-56.
- Mortensen, J.K., 1987: U-Pb Geochronostratigraphy of the Abitibi Greenstone Belt (abstract): Geological Association of Canada-Mineralogical Association of Canada Joint Annual Meeting, Program with Abstracts, v. 12, p. A75.
- Miller, A., 2011: Petrography, ore microscopy and scanning electron microscopy on selected samples from drill holes BC-09-24, BC-10-92B, BC-10-94C: orogenic mesothermal lode gold mineralization, Bell Creek Complex, Northern Volcanic Zone, Abitibi Subprovince, Canada, unpublished report prepared by The Rock Whisperer for Lake Shore Gold Corp., 207 pages.
- Pressacco, R., ed., 1999: Economic Geology and Mineralization of the Marlhill Mine *in* Special Project: Timmins Ore Deposits Descriptions: Ontario Geological Survey, Open File Report 5985, 189 p.
- Pressacco, R., Jan 14, 2011. Technical Report on the Initial Resource Estimate for the Bell Creek Mine, Hoyle Township, Timmins Ontario. Prepared for Lake Shore Gold Corp. by Scott Wilson Roscoe Postle Associates Inc. NI 43-101 Report available on the SEDAR web site at [www.SEDAR.com](http://www.SEDAR.com)
- Powers, D.H.R., 2009: A Technical Review and Report for The Bell Creek Complex Properties, Exploration Diamond Drill Programs, August 2005 to July 31, 2009. Prepared for Lake Shore

Gold Corp. September 30, 2009; Unpublished Document available on the SEDAR web site at [www.SEDAR.com](http://www.SEDAR.com), 225 p.

Pyke, D.R., 1982: Geology of the Timmins area, District of Cochrane; Ontario Geological Survey, Report 219, 141 p.

Rhys, D.A., 2003: Structural Mapping Study of the Surface Outcrops of the Holmer Gold Deposit, Timmins, Ontario, Internal Lake Shore Gold Corp. Report by Panterra Geoservices Inc, Surrey, British Columbia.

Rhys, D.A., 2010: Structural study of gold mineralization in portions of the Timmins Mine and Thunder Creek projects, Porcupine Mining District, Ontario. Panterra Geoservices Inc., unpublished report for Lake Shore Gold Corp., 51 pages.

Rhys, D.A., 2012: Bell Creek site visit: Lithostructural setting, mineralization style and potential structural controls on gold mineralization, Internal Lake Shore Gold Corp. Memo, December 26, 2012, 21 pages.

## **27.1 PRESS RELEASES**

2003-05-27; Innes, D.G., Lake Shore Options Timmins Area High Grade Gold Property.

2003-07-17; Innes, D.G., Lake Shore Commences Drilling Program on Timmins High-Grade Gold Project, Ontario.

2003-09-05; Innes, D.G. Lake Shore Adds More Drills to and Doubles the Budget at the Timmins Gold Project, Ontario.

2003-10-08; Innes, D.G., First Drill Assays Positive Ultramafic Zone Returns Excellent Grades and Widths Timmins Gold Project, Ontario.

2003-11-11; O'Connor, W.J., Lake Shore and Band-Ore Ink Timmins, Ontario Deal.

2003-11-12; Innes, D.G., Lake Shore Options Thunder Creek Property Adjoining The Timmins Gold Project, Ontario.

2003-12-03; Innes, D.G., Lake Shore Gold Reports More Timmins Gold Property Results and Updates from the Thunder Creek-Bazooka-Highway Projects Ontario-Quebec.

2004-01-08; Innes, D.G, Lake Shore Gold Corp. Drilling Expands Timmins Gold Resources High Grade Gold Recoveries from Metallurgical Testing.

2004-02-17; Innes, D.G. Lake Shore Gold Corp. More Drilling Results from the Timmins Gold Project Summary of 2003 Drilling.

2004-03-24; Innes, D.G., Lake Shore Confirms Gold Mineralization on Thunder Creek Property Timmins, Ontario.

O'Connor, W.J., Gold Mineralization Confirmed on Thunder Creek Property. Band-Ore Resources Ltd.

2004-03-30; Innes, D.G., Lake Shore Gold Corp., More Positive Results from Resource Expansion Drilling Timmins Gold Project, Ontario.

2004-06-01; Innes, D.G., Lake Shore Gold Corp., Resource Expansion and Drilling Update, Timmins Gold Project, Ontario.

2004-07-19; Innes, D.G., Lake Shore Gold Corp. First Phase Resource Expansion Drilling Completed, New Zone Discovered, Timmins Gold Project, Ontario.

2004-08-25; Innes, D.G., Lake Shore Gold Corp. Initiates Second Phase 3.000 Metre drilling Program Thunder Creek Property, Timmins, Ontario.

O'Connor, W.J., Lake Shore Gold Corp., Initiates Second Phase 3,000 Metre Drill Program Thunder Creek Gold Property, Band-Ore Resources Ltd., Timmins, Ontario.

2004-09-10; Innes, D.G., Lake Shore Gold Corp., Resources Expansion Program Triples Resources on the Timmins Gold Project.

2004-09-21; Innes, D.G., Lake Shore Completes Earn In, Timmins Gold Property, Ontario.

2004-10-05; Innes, D.G. Lake Shore Gold Corp., Step Out Drilling Continues to Expand Gold Mineralization, Timmins Gold Project , Ontario.

2004-10-20; Innes, D. G., Raman, K., Lake Shore and Holmer Announce Business Combination.

2004-12-29; Innes, D.G., Raman K., Lake Shore and Holmer Announce Shareholder Approval for Business Combination.

2004-12-31; Innes, D.G., Raman K., Lake Shore and Holmer Announce Complete Business Combination.

2005-01-06; Innes, D.G., Lake Shore Gold Exploration Update, 2005 Resource Expansion Drilling Pre-Feasibility to Start on Timmins Gold Project, Ontario.

2005-02-14; Innes, D.G., Thunder Creek Project Update, Timmins, Ontario.

O'Connor, W.J., Thunder Creek Project Update, Band-Ore Resources Ltd., Timmins, Ontario.

2005-05-30; Booth, B.R., Lake Shore's Timmins Gold Project Intersects High-Grade Gold up to 24.3 Grams Per Tonne Over 11.1 Metres and Expands Mineralization 450 Metres Down Plunge Beyond the Current Indicated Resource.

2005-08-15; Booth, B.R., Lake Shore Gold Intersects 18.09 Grams/Tonne Gold over 5.70 Metres, Timmins West Gold Project, Ontario.

2005-11-04; Booth, B.R., Lake Shore Gold Intersects 24.35 Metres Grading 9.28 Grams Per Tonne Gold, Timmins West Gold Property, Ontario.

2005-12-08; Booth, B.R., Lake Shore Starts Drilling At Desantis and Continues Drilling At Timmins West, Ontario.

2006-02-07; Booth, B.R., Summary of Gold Resources And An Exploration Update for Lake Shore's Timmins Area Properties.

2006-03-03; Booth, B.R., Seven Drills Operating In March, Lake Shore Gold Corp. Exploration Update.

2006-04-17; Booth, B.R., Lake Shore Gold Intersects 6.0 Metres Grading 32.52 Grams Per Tonne Gold As Sectional Resource Drilling Continues At Timmins West Gold Project, Ontario.

2006-05-23; Booth, B.R., Lake Shore Initiates Permit Process for Advanced Underground Exploration Programs At Timmins West And Vogel-Schumacher Gold Projects, Timmins, Ontario.

2006-06-21; O'Connor, W.J., Exploration Update, Thunder Creek Property, Band-Ore Resources Ltd., Timmins, Ontario.

2006-08-11; Booth, B.R., Lake Shore Gold Quarterly Project Update.

2006-08-16; Booth, B.R., Lake Shore Gold continues To Expand The Resource and Extends The Main Zone On The Timmins West Gold Project, Ontario.

2006-09-14; Wagner, D.W., West Timmins Mining Inc. To Begin Trading Sept. 18, Amalgamation of Sydney And Band-Ore Receives Final Approvals.

2006-09-26; Notice of Change in Corporate Structure, Report Date: 2006-09-26; Amalgamation Became Effective on September 13, 2006. (Sydney Resources Corporation and Band-Ore Resources Limited) - New - West Timmins Mining Inc.

2006-09-18; Wagner, D.W., Canadian Gold Company Launched on Toronto Stock Exchange – West Timmins Mining Inc. to Focus on Large Projects in West Timmins Camp and Sierra Madres of Mexico.

2006-10-30; Wagner, D.W., West Timmins Commences 12,000 Metre Drill Program on West Timmins Gold Project.

2006-10-31; Booth, B.R., Lake shore Reports Latest Results At Timmins West, Including Four Metres Grading 65.65 Grams Gold Per Tonne, And Provides Update At Vogel-Schumacher.

2006-11-09; Booth, B.R., Lake Shore Third Quarter Project Update.

2006-11-20; Booth, B.R., Lake Shore Gold Increases The Indicated Mineral Resource to 3.27 Million Tonnes at 12.29 Grams Gold Per Tonne (Uncut) at Timmins West).

2007-03-12; Booth, B.R., Lake Shore Gold Files Application for Advanced Exploration Permit At Timmins West.

2007-04-11; Wagner, D.W., West Timmins Mining Exploration Update: 5 Drills Turning on WTM Gold Projects; 8,000 metres, 10-12 holes, Thunder Creek Property, Timmins, funded by Lake Shore Gold.

2007-04-30; Booth, B.R., Lake Shore Recieves Approval to Initiate Advanced Underground Exploration at Timmins West.

2007-05-10; Booth, B.R. Lake Shore Gold First Quarter Project Update.

2007-07-09; Wagner, D.W., West Timmins Mining Inc. Annual Report 2006.

2007-07-11; Wagner, D.W. West Timmins Gold Project Exploration Update.

2007-07-19; Booth, B.R., Lake Shore Provides Update on Timmins West Pre-Feasibility Study.

2007-08-01; Booth, B.R., Lake Shore Intersects New High-Grade Gold Mineralization at Thunder Creek, Ontario.

Wagner, D.W., High Grade Gold Intersected on West Timmins' Thunder Creek Property, Ontario.

2007-08-15; Booth, B.R., Lake Shore Second Quarter Project Update.

2007-08-28; Booth, B.R., Lake Shore Reports Mineral Reserves and Positive Pre-Feasibility Study Results for Timmins West.

2007-09-05; Booth, B.R., Lake Shore Reports Additional High-Grade Gold Intersection at Thunder Creek.

2007-09-06; Wagner, D.W., West Timmins Reports New High Grade Gold Discovery at Thunder Creek Property, Timmins, Ontario.

2007-11-13; Booth, B.R., Lake Shore Reports Third Quarter Results.

2007-11-17; Wagner, D.W., West Timmins to Initiate Drilling on Highway 144 Gold Property, Timmins, Ontario.

2007-11-29; Booth, B.R., Lake Shore Transition into Mining -Plans Management Changes.

2007-12-04; Booth, B.R., Lake Shore Intersects 24.61 Grams Gold Per Tonne over 7.0 Metres at Thunder Creek Property in Ontario.

Wagner, D.W. 24.61 Grams Gold Per Tonne Intersected Over 7.0 Metres On West Timmins' Thunder Creek Property, Timmins, Ontario.

2008-02-07; Wagner, D.W., Drilling extends Pond and West Gold Zones, West Timmins Gold Project, Ontario.

2008-03-31; Makuch, T., Lake Shore Intersects 8.57 g/t Gold Over 9.0 Metres at Thunder Creek Property in Ontario.

Wagner, D.W., WTM Reports 8.57 g/t Gold over 9.0 Metres for Follow-Up Drilling at Thunder Creek.

2008-04-21; Wagner, D.W., WTM To Test Northern Extension of Thunder Creek – Timmins West Trend.

2008-05-15; Makuch, T., Lake Shore Gold Announces First Quarter 2008 Results.

2008-07-10; Wagner, D.W., West Timmins Mining Inc. Annual Report 2008.

2008-07-18; Makuch, T., Lake Shore Gold Corp Announces Timmins West Exploration Agreement with Flying Post and Mattagami First Nations.

2008-08-05; Makuch, T., Lake Shore Gold Provides Update on Thunder Creek Exploration.

Wagner, D.W., 22,000 Metre Diamond Drill Program Commences on WTM's Thunder Creek Property in Timmins, Ontario.

2008-08-12; Makuch, T., Lake Shore Gold on Track to Achieve 2008 Targets.

2008-08-13; Wagner, D.W., WTM Completes \$1,950,000 Non Brokered, Flow Through Private Placement – proceeds to fund the announced 22,000 metre diamond drill program on the Thunder Creek Property.

2008-09-11; Makuch, T., Lake Shore Gold Commence Ramp Development at Timmins West, Shaft Sinking Progressing on Schedule and Budget.

2008-11-10; Makuch, T., Lake Shore Gold Reports Timmins West on Schedule for Production in First Quarter 2009.

2008-12-02; Wagner, D.W., WTM Reports New High Grade intercepts from the Golden River West Zone.

2008-12-16; Makuch, T., Lake Shore Gold Significantly Extends Rusk Zone and Announces New High-Grade Gold Intercepts at Thunder Creek.

Wagner, D.W., WTM Reports 11.20 g/t Gold over 10.4 metres at Thunder Creek, Timmins, Ontario.

2009-01-21; Wagner, D.W., Drilling Program Accelerated on WTM's Thunder Creek Gold Property, Timmins, Ontario.

2009-02-18; Wagner, D.W., WTM Discovers Large New Gold System on HWY 144, Property, Timmins, Ontario.

2009-02-23; Makuch, T., Lake Shore Gold Provides Corporate Update.

2009-03-26; Makuch, T., Lake Shore Commences Processing At Bell Creek Mill.

2009-03-31; Makuch, T., Lake Shore Gold Announces 19.55 g/t over 6.0 Metres and Discovery of Second Mineralized Horizon in Porphyry at Thunder Creek.

Wagner, D.W., WTM Reports 8.86 g/t (0.26 oz/t) Gold over 24.85 Metres (81.58 feet) from Rusk Zone – Is History Being Repeated in Timmins, Ontario?

2009-04-16; Wagner, D.W., WTM Reports High-Grade Results from 100% Owned Thorne Property: District Scale Potential of the West Timmins Gold Project Continues to Expand.

2009-05-05; Makuch, T., Lake Shore Gold Continues To Advance Projects on Schedule and Budget and to Achieve Exploration Success In First Quarter of 2009.

2009-05-05; Makuch, T., Lake Shore Gold Reports Additional High-Grade Intercepts at Thunder Creek, Confirms 175 Metre minimum Strike Length for Rusk and Porphyry Zones and Identifies New Sub-Zone at Depth.

Wagner, D.W., WTM Reports 7.95 g/t (0.23 oz/t) Gold over 19.45 Metres (63.80 feet) as Thunder Creek Gold System Continues to Expand.

2009-06-08; Wagner, D.W., Third and Fourth Drill Added on TWM's Thunder Creek Property, Timmins, Ontario.

2009-06-24; Makuch, T., Lake Shore Gold Reports 12.75 Grams per Tonne Over 83.40 Metres at Thunder Creek.

Wagner, D.W., WTM Intersects 83.40 Metres (273.55 feet) Grading 12.75 g/t (0.37 oz/ton) Gold on Thunder Creek Property, Timmins, Ontario.

2009-07-13; Wagner, D.W., West Timmins Mining Inc. Annual Report 2009.

2009-08-05; Makuch, T., Lake Shore Gold advances Projects on Schedule and Budget and Achieves Exploration Success in Second Quarter and First Half of 2009.

2009-08-24; Wagner, D.W., West Timmins Gold Project Update.

2009-08-24; Makuch, T., Lake Shore Gold Reports High-Grade Intercepts from Underground Drilling at Timmins Mine.

2009-08-25; Makuch, T., Lake Shore Gold Continues to Establish Large Gold System at Thunder Creek, Porphyry Structure Extended To At Least 1,125 Metre Depth.

2009-08-25; Wagner, D.W., WTM Acquires 10 Additional Properties In The West Timmins Gold District.

Wagner, D.W., Thunder Creek Drilling Intersects 12.17 g/t Gold Over 9.00 Metres, Extends Porphyry System to 1,125 Vertical Metres Depth.

2009-08-27; Makuch, T., Lake Shore Gold and West Timmins Agree To Business Combination.

2009-10-07; Makuch, T., Lake Shore Gold Releases Updated National Instrument 43-101 Report for Timmins Mine.

2009-10-29; Makuch, T., Lake Shore Gold Reports Results of Underground Drilling and Development at Timmins Mine, Results Confirm Previous Drilling and Expand Resource Potential.

2009-11-04; Makuch, T., West Timmins Mining Shareholders Approve Business Combination Agreement With Lake Shore Gold.

2009-11-06; Makuch, T., Lake Shore Gold and West Timmins Mining Complete Business Combination.

2009-11-11; Makuch, T., Lake Shore Gold Continues to Achieve Development and Exploration Success and to Grow Property Position, Plans to Commence Accelerated Thunder Creek Advanced Exploration Program.

2010-01-06; Makuch, T., Lake Shore Gold Acquires Interest in RT Minerals Corp.

2010-01-26; Makuch, T., Lake Shore Gold Extends Thunder Creek to Depth, Confirms High-Grade Core and Discovers New Zone.

2010-02-12; Makuch, T., Lake Shore Gold Commences Drill Program on Gold River Trend, the Company's Third Major Timmins West Target.

2010-02-17; Makuch, T., Lake Shore Gold Reports Results of Underground Exploration at Timmins Mine 650-Level Test Block.

2010-02-18; Makuch, T., Lake Shore Gold Announces Major Extension to Timmins Mine Mineralization, Thunder Creek Rusk Horizon.

2010-03-10; Makuch, T., Lake Shore Gold Announces 2009 Year End Results, Continued Exploration and Development Success, Timmins Mine to Achieve Commercial Production in 2010.

2010-04-12; Makuch, T., Annual Report 2009.

2010-04-27; Makuch, T., Lake Shore Gold Expands Resources Potential at Timmins Mine.

2010-05-04; Makuch, T., Lake Shore Gold Advances Third Major Target in Timmins West Complex, Confirms Presence of Large Gold-Bearing System Along Gold River Trend Extending to Depth.

2010-05-05; Makuch, T., Lake Shore Gold Announces Continued Progress at Three Timmins Mining Projects During First Quarter 2010.

2010-06-23; Makuch, T., Lake Shore Gold Intersects High-Grade Mineralization at Thorne Property, Expands Resource Potential Near Surface and at Depth.

2010-06-29; Makuch, T., Lake Shore Gold Ramp Reaches Thunder Creek Deposit, Intersects High-Grade Gold Mineralization.

2010-08-10; Makuch, T., Lake Shore Gold Announces Continued Progress During Second Quarter 2010.

2010-08-10; Makuch, T., Lake Shore Gold Reports Wide, High-Grade Intercepts at Timmins Mine Including 13.55 GPT over 50.80 Metres and 61.35 GPT Over 15.00 Metres.

2010-08-30; Makuch, T., Lake Shore Gold Expands Thunder Creek Rusk Zone, Announces Additional Wide, High-Grade Intercepts.

2010-11-01; Makuch, T., Lake Shore Gold Continues to Confirm and Expand Thunder Creek Rusk Horizon, Initial Drilling on 650 Level Intersects Rusk Zone and 100 Metres of Porphyry.

2010-11-10; Makuch, T., Lake Shore Gold Achieves Key Production, Development and Exploration Milestones Following Successful Third Quarter.

2010-11-11; Makuch, T., Lake Shore Gold Announces New High-Grade Intercepts, Major Extension of Main Zone and Expansion of Resource Blocks at Timmins Mine.

2010-11-24; Makuch, T., Lake Shore Gold Confirms and Expands Large Gold System in Thunder Creek Porphyry, Intersects 99.60 Metres Grading 4.91 GPT Including 6.92 GPT Over 61.4 Metres.

2010-12-01; Makuch, T., Lake Shore Gold Achieves 12,000 Ounces of Gold in November, Files Closure Plan for Commercial Production.

2011-01-06; Makuch, T., Lake Shore Gold Declares Commercial Production at Timmins Mine, 12,300 Ounces of Gold Produced in December of 2010.

2011-01-07; Makuch, T., Lake Shore Increases Interest In RT Minerals Corp.

2011-01-25; Makuch, T., Lake Shore Gold to Nearly Triple Gold Production in 2011, Significantly Grow Resources and Increase Exploration Spending.

2011-01-25; Makuch, T., Lake Shore Gold Confirms Broad Mineralized Envelope With High-Grade Sections Around 730 Level at Thunder Creek.

2011-02-24; Makuch, T., Lake Shore Gold Intersects Wide, High-Grade Mineralization at Timmins Mine, Confirms and Expands Ultramafic and Main Zones.

2011-03-04; Makuch, T., Lake Shore Gold Reports Wide Intersections with High-Grade Sections within Porphyry Zone at Thunder Creek, Underground and Surface Drilling Highlight Potential to Expand Mineralized System.

2011-03-09; Makuch, T., Lake Shore Gold Achieves Major Milestones in 2010, On Track to Nearly Triple Production and Significantly Grow Resources in 2011.

2011-05-15; Makuch, T., Annual Report 2010.

2011-05-02; Makuch, T., Lake Shore Gold Intersects Wide, High-Grade Mineralization at Timmins Mine, Highlights Significant Potential For Resource Expansion and Discovery of New Zones.

2011-05-03; Makuch, T., Lake Shore Gold Announces First Quarter 2011 Production Results, Company Targeting 125,000 Ounces in 2011.

2011-05-25; Makuch, T., Lake Shore Announces First Quarter 2011 Results Including Strong Gold Sales, Low Operating costs and Continued Exploration Success.

2011-07-18; Makuch, T., Lake Shore Gold Releases Production Results for Second Quarter and First Six-Months of 2011, Reviews 2011 Outlook.

2011-07-26; Makuch, T., Lake Shore Gold Continues To Define and Extend Mineralization at Thunder Creek, Potential New Zone Discovered 500 Metres Along TC-144 Trend.

2011-08-09; Makuch, T., Lake Shore Gold Announces Second Quarter 2011 Financial Results, Comments On Progress Made in Support of Future Production.

2011-10-11; Makuch, T., Lake Shore Gold Reports Higher Commercial Production from Timmins Mine in Third Quarter, Maintains Target Production Range for 2011.

2011-11-10; Makuch, T., Lake Shore Gold discovers Potential 1.9 Kilometre Down Plunge Extension of Timmins Gold Mineralization.

2011-11-16; Makuch, T., Lake Shore Gold Announces Large, High-Grade Initial Resource at Thunder Creek.

2012-01-12; Makuch, T., Lake Shore Reports 2011 Operating Results, Pours 26,550 ounces in Fourth Quarter and 86,565 ounces for Full Year.

2012-01-17; Makuch, T., Lake Shore Gold Announces New Extension at Thorne Property, Mineralization Now Confirmed 750 Metres East of Existing Resource.

2012-02-08; Makuch, T., Lake Shore and Franco-Nevada Enter Agreement for \$50 Million Royalty and Equity Investment.

2012-02-15; Makuch, T., Lake Shore Confirms Large-Scale Resources For Timmins West Mine.

2012-02-22; Makuch, T., Lake Shore Gold Announces Large Increase in Resources at Gold River Trend, Total Ounces Nearly Triple, Grade, Doubles.

2012-02-28; Makuch, T., Lake Shore Gold Announces Results of Preliminary Economic Assessment for the Timmins West Mine, PEA Highlights Potential Positive Economics, Substantial Cash Flow, and Attractive Returns.

2012-03-08; Makuch, T., Lake Shore Gold and Franco-Nevada Complete \$50 Million Royalty and Equity Investment Transaction.

2012-03-26; Makuch, T., Lake Shore Gold Announces Fourth Quarter and Full-Year 2011 Financial Results, Company on Track for Rapid Production Growth by Late 2012.

2012-03-30; Makuch, T., Lake Shore Gold Announces Large Increase in Measured and Indicated Resources at Bell Creek Mine.

2012-03-30; Makuch, T., Lake Shore Gold Files Technical Report for Timmins West Mine.

2012-04-02; Makuch, T., Lake Shore Gold Announces Reserve Estimate for Timmins West Mine, New Reserve to Support Next Five Years of Production.

2012-04-05; Makuch, T., Lake Shore Gold Announces First Quarter 2012 Operating Results, Company on Track to Achieve 2012 Production Target.

2012-04-05; Makuch, T., Lake Shore Gold announces filing of Gold River Trend Technical Report.

2012-04-11; Makuch, T., Lake Shore Gold Enters Agreement for Credit Facility of up to \$70 Million with Sprott Resource Lending Partnership.

2012-05-01; Makuch, T., Lake Shore Gold Reports Significant New Drill Intercepts at Fenn-Gib Open-Pit Project Including 1.93 gpt Gold Over 241.20 Metres, Results Highlight Potential for Major Resource Expansion.

2012-05-10; Makuch, T., Lake Shore Gold Exceeds Targets and Achieves Continued Operating Improvements During First Quarter 2012, Company Remains on Track for Strong Production Growth and Positive Free Cash Flow.

2012-05-18; Makuch, T., Lake Shore Gold Files Timmins West Mine Reserve Technical Report.

2012-05-24; Makuch, T., Lake Shore Gold Reports Smoke from Forest Fire Results in Precautionary Suspension of Mining at Timmins West Mine, Mill Production Unaffected.

2012-05-27; Makuch, T., Lake Shore Gold Resumes Mining Operations at Timmins West Mine.

2012-06-07; Makuch, T., Lake Shore Gold Announces Significant Extension of High-Grade Core at Gold River Trend.

2012-06-13; Makuch, T., Lake Shore Gold Forecasts 2012 Cost Savings While Remaining on Track to Achieve Key Production Targets.

2012-06-14; Makuch, T., Lake Shore Gold Completes Credit Facility Agreement for Up to \$70 Million With Sprott Resource Lending Partnership.

2012-07-04; Makuch, T., Lake Shore Gold Reports Strong Second Quarter Production of 24,426 Ounces of Gold.

2012-07-13; Makuch, T., Lake Shore Gold Announces Details of Second Quarter 2012 Conference Call and Webcast

2012-07-26; Makuch, T., Lake Shore Gold and Revolution Resources Amend Option Agreement for Mexican Properties.

2012-08-09; Makuch, T., Lake Shore Gold Reports Strong Second Quarter Results.

2012-09-11; Makuch, T., Lake Shore Gold Announces Management Change.

2012-09-18; Makuch, T., Lake Shore Gold Announces Exercise of Underwriters' Over-Allotment Option for \$13.5 Million of Additional Convertible Debentures.

2012-10-10; Makuch, T., Lake Shore Gold Reports Third Quarter 2012 Production of 20,939 Ounces of Gold, Company Remains on Track to Achieve 2012 Production Guidance.

2012-10-25; Makuch, T., Lake Shore Gold Announces Details of Third Quarter 2012 Conference Call and Webcast.

2012-11-07; Makuch, T., Lake Shore Gold Reports Third Quarter 2012 Results, Company on Track to Meet 2012 Production Target and Achieve Strong Growth in 2013.

2012-12-11; Makuch, T., Lake Shore Gold on Track for Strong Finish to 2012, Processing Capacity Increased by 25%.

2013-01-10; Makuch, T., Lake Shore Gold Achieves 2012 Production Target, Company Poised for Sharply Higher Production and Lower Costs in 2013.

2013-01-11; Makuch, T., Lake Shore Gold Announces Adoption of Corporate Governance Measures.

2013-01-21; Makuch, T., Lake Shore Gold Discovers New Mineralization 850 Metres South of Thunder Creek Along TC-144 Trend.

2013-01-28; Makuch, T., Lake Shore Gold Announces Launch of Investor Webinar Series.

2013-01-30; Makuch, T., Lake Shore Gold Reaches Agreement to Sell Mexican Properties to Revolution Resources.

2013-02-01; Makuch, T., Lake Shore Gold to Draw \$35 Million Standby Line of Credit.

2013-02-06; Makuch, T., Lake Shore Gold Announces Management Change.

2013-02-25; Makuch, T., Lake Shore Gold to Reduce Carrying Value of Assets.

2013-02-28; Makuch, T., Lake Shore Gold to Host Second Investor Webinar.

2013-03-12; Makuch, T., Lake Shore Gold Announces Details of Full Year and Fourth Quarter 2012 Conference Call and Webcast.

2013-03-18; Makuch, T., Lake Shore Gold Reports Solid Progress in 2012, Company Nearing Completion of Key Construction Programs, Strong Production Growth and Lower Costs Planned in 2013.

2013-03-19; Makuch, T., Lake Shore Gold Announces Appointment of Philip C. Yee as Vice-President & Chief Financial Officer.

## 28.0 DATE AND SIGNATURE PAGE

This report titled "43-101 Technical Report, Resource Estimate Update , and Prefeasibility Study and Mineral Reserve Estimate For Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada" having an effective date of November 1, 2012 was prepared and signed by the following authors:

**(Signed & Sealed)** "Natasha Vaz"

Dated at Timmins, Ontario  
March 28, 2013

Natasha Vaz, P. Eng., MBA  
Director, Technical Services & Project Evaluations  
Lake Shore Gold Corp.

**(Signed & Sealed)** "Dean Crick"

Dated at Timmins, Ontario  
March 28, 2013

Dean Crick, P. Geo.  
Director of Geology  
Lake Shore Gold Corp.

**(Signed & Sealed)** "Ralph Koch"

Dated at Timmins, Ontario  
March 28, 2013

Ralph Koch, P. Geo.  
Chief Mines Resource Geologist  
Lake Shore Gold Corp.

## 29.0 CERTIFICATES OF QUALIFIED PERSONS

### CERTIFICATE

To Accompany the Report titled "43-101 Technical Report, Resource Estimate Update and Prefeasibility Study and Mineral Reserve Estimate For Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada.

I, Natasha Vaz, do hereby certify that:

1. My address is 181 University Ave., Suite 2000, Toronto, Ontario, Canada, M5H 3M7.
2. I am a graduate of the University of Toronto, Toronto, Ontario with a B.Sc. in Mineral Engineering.
3. I have practiced my profession continuously since 2002.
4. I am a member of the Professional Engineers of Ontario (Membership Number 100122657).
5. I have been continuously employed during this period by Goldcorp Inc., Red Lake Gold Mines, FNX Mining, and Lake Shore Gold Corporation.
6. I have experience in operations, engineering, and project management in underground mining environments. My accountabilities in this role included all phases of project development from project evaluation (study) through to project development (execution).
7. I have read the definition of "qualified person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purpose of NI 43-101.
8. I am currently employed by Lake Shore Gold Corp, (since May 2008) and now hold the position of Director, Technical Services & Project Evaluations. I am directly accountable for the PFS work for Bell Creek Mine carried out by Stantec. I have provided constant feedback and oversight throughout the development of the PFS and have reviewed all supporting documentation.
9. I take personal accountability for the content of Items 13, 15, 16, 17, 18, 19, 20, 21, 22, 24, 25, and 26 which I have reviewed and found to be fair and reasonable assessments suitable for inclusion in the PFS having an effective date of November 1, 2012.
10. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report.
11. I have read National Instrument 43-101 and form 43-101F1, as well as the Repeal and Replacement of National Instrument 43-101 Standards of Disclosure for Mineral Projects, Form 43-101F1 Technical Reports, and Companion Policy 43-101CP (April 08, 2011) and this Technical Report has been prepared in compliance with these instruments and forms.
12. 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.

Dated in Timmins, Ontario, this 28<sup>th</sup> day of March, 2013.

"Natasha Vaz"

**(Signed and Sealed)**

Natasha Vaz, P. Eng., MBA

## CERTIFICATE

To Accompany the Report titled "43-101 Technical Report, Resource Estimate Update and Prefeasibility Study and Mineral Reserve Estimate For Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada".

I, Dean Brian Crick, do here by certify that:

1. I reside at 833 Reg Pope Blvd., Timmins, Ontario, Canada, P4N 8K7.
2. I am a graduate from Laurentian University, Sudbury, Ontario with a M.Sc. in Economic Geology degree (1991), and an Honours B.Sc. in Geology (1986) from Brock University, St. Catharines, Ontario. I have practiced my profession continuously since 1989.
3. I am a member of the Association of Professional Geoscientists of Ontario (Membership Number 1071).
4. I have practiced my profession as a geologist for 22 years being employed by Falconbridge Exploration, VMS Group, Falconbridge Ltd, Kidd Creek Mine, Pentland Firth Ventures- Marlhill Mine, Boliden Westmin, Myra Falls Mine, Wallbridge Mining, Placer Dome Canada Ltd. Campbell Mine, Goldcorp Inc., Red Lake Gold Mines, and Lake Shore Gold. I have actively explored for Archean hosted gold deposits since 1991.
5. I have experience with various mineral deposit types, Mineral Resource estimation techniques, and the preparation of technical reports.
6. I have read the definition of "qualified person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purpose of NI 43-101.
7. I am currently employed by Lake Shore Gold Corp., (since August 2010), as the Director of Geology. I have been directly involved in the design and supervision of the surface and underground diamond drilling Advanced Exploration Program at the Bell Creek project. I have also provided technical support to the production geology team at the Bell Creek Mine for grade control and resource estimation.
8. I am responsible for the preparation of Items 1, 4, 25, and 26 of the Technical Report titled: "43-101 Technical Report, Resource Estimate Update , and Prefeasibility Study and Mineral Reserve Estimate For Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada" , having an effective date of November 1, 2012.
9. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report.
10. I have read National Instrument 43-101 and form 43-101F1, as well as the Repeal and Replacement of National Instrument 43-101 Standards of Disclosure for Mineral Projects, Form 43-101F1 Technical Reports, and Companion Policy 43-101CP (April 08, 2011) and this Technical Report has been prepared in compliance with these instruments and that forms.
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.

Dated in Timmins, Ontario, this 28<sup>th</sup> day of March, 2013.

"Dean Crick"

**(Signed and Sealed)**

Dean Crick, P. Geo.

## CERTIFICATE

To Accompany the Report titled "43-101 Technical Report, Resource Estimate Update and Prefeasibility Study and Mineral Reserve Estimate For Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada".

I, Ralph Koch, B. Sc., P. Geo., as an author of this report do hereby certify that:

1. I reside at 428 Pine St. North, Timmins Ontario, P4N 6L7
2. I graduated with a B.Sc Degree in Earth Sciences from the University of Waterloo in 1986.
3. I am a member of the Association of Professional Geoscientists of Ontario (Registration Number 0323).
4. I have worked continuously as a geologist for 26 years since graduation.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional Association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am responsible for Items 1, 2, 5-12, 14, 25, and 27 of this report.
7. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
8. I am currently employed by Lake Shore Gold Corporation in the capacity of Chief Mine Resource Geologist for the Bell Creek Complex and Timmins West Mine. I currently do not hold any securities of Lake Shore Gold other than options under the Lake Shore Gold's employee stock option plan.
9. I have read National Instrument 43-101 and Form 43-101F1 as well as the Repeal and Replacement of National Instrument 43-101 Standards of Disclosure for Mineral Projects, Form 43-101F1 Technical Reports, and Companion Policy 43-101CP (April 08, 2011) and this Technical Report has been prepared in compliance with these instruments and forms.
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.

Dated in Timmins, Ontario, this 28<sup>th</sup> day of March, 2013.

"R. Koch"

**(Signed and Sealed)**

R. Koch, B. Sc, P. Geo.

# **APPENDIX A**

## **SIGNIFICANT DRILL HOLE INTERSECTIONS**

## Historic Drilling

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
9135	5506.60	5561.72	1991.90	14.89	15.20	123.13	North B	96.26	101.14	4.88	0.31	0.31
9140	5507.33	5561.07	1991.06	51.50	-11.50	84.75	North A	61.95	65.15	3.20	2.09	2.09
9144	5706.00	5467.99	2049.60	28.00	0.00	526.82	North A	149.24	156.64	7.39	0.31	0.31
							North B	198.76	201.36	2.60	4.02	4.02
9151	5548.30	5611.40	1989.80	181.00	0.00	7.47	North A	0.26	5.89	5.37	7.87	7.87
9152	5548.30	5611.40	1989.80	144.00	0.00	9.30	North A	0.53	8.76	7.84	5.22	5.22
9153	5490.30	5580.20	1987.20	360.00	-28.00	61.28	North A	32.25	34.36	2.11	3.58	3.58
							North AX	44.39	49.76	5.37	4.55	4.55
9156	5520.50	5611.50	1988.00	11.00	0.00	21.34	North A	2.35	3.73	1.37	4.10	4.10
							North AX	13.82	16.10	2.28	0.04	0.04
9158	5506.20	5561.00	1989.40	360.00	-20.00	70.73	North A	51.45	53.45	1.99	0.54	0.54
							North AX	60.94	63.38	2.44	4.91	4.91
9159	5491.00	5581.30	1988.00	337.00	-25.00	66.14	North A	33.85	38.40	4.55	3.18	3.18
							North AX	49.54	51.83	2.29	4.08	4.08
9167	5559.20	5606.60	1988.00	0.00	0.00	6.10	North A	0.00	2.02	2.02	7.24	7.24
9168	5564.40	5607.20	1988.00	18.00	0.00	6.10	North A	0.00	1.56	1.56	1.91	1.91
9211	5695.50	5527.50	2048.00	18.00	-31.00	85.40	North A	65.21	67.32	2.11	7.82	7.82
							North A Footwall	74.38	76.42	2.04	5.53	5.53
9212	5695.50	5527.60	2047.90	18.00	-54.00	100.00	North A	75.08	77.18	2.10	2.00	2.00
							North A Footwall	80.18	82.83	2.65	43.84	19.10
9213	5696.60	5527.40	2047.90	40.00	-46.00	85.34	North A	75.24	77.12	1.88	0.37	0.37
9214	5550.00	5367.30	2024.80	355.00	-34.00	252.20	North A	240.83	243.63	2.80	5.75	5.75
9216	5549.30	5367.30	2024.70	346.00	-54.00	281.00	North AX	276.20	278.42	2.22	3.46	3.46
9219	5751.00	5354.30	2052.30	360.00	-39.00	255.00	North A	231.60	234.09	2.49	1.77	1.77
9222	5550.00	5367.20	2024.70	346.00	-42.00	273.00	North A	253.68	255.65	1.97	0.92	0.92
							North AX	268.97	271.10	2.13	4.83	4.83
9223	5696.60	5527.40	2047.90	44.00	-34.00	82.90	North A	76.00	78.28	2.29	4.31	4.31
9407	5701.00	5567.60	1987.10	0.00	-60.00	32.90	North A	10.10	13.00	2.90	2.41	2.41
9408	5701.00	5567.60	1989.60	0.00	38.00	21.00	North A	7.80	11.00	3.20	7.27	6.75
9409	5701.00	5567.60	1987.60	320.00	-40.00	25.90	North A	8.50	12.00	3.50	4.54	4.54
9411	5652.00	5581.50	1987.20	0.00	-80.00	21.95	North A	7.60	13.00	5.40	5.73	5.73
9412	5457.00	5617.70	1988.50	0.00	-55.00	20.40	North AX	12.43	15.11	2.68	3.56	3.56
9413	5465.00	5617.80	1988.40	0.00	-52.00	21.90	North AX	11.80	14.40	2.60	5.23	5.23
9414	5475.00	5616.20	1988.20	0.00	-50.00	20.40	North AX	13.10	16.30	3.20	3.54	3.54
9415	5485.00	5615.30	1988.20	0.00	-45.00	20.40	North AX	12.00	16.00	4.00	19.19	6.31
9430	5703.50	5490.20	2048.35	9.00	-5.00	116.50	North A	102.00	104.00	2.00	1.77	1.77
							North A Footwall	112.00	114.03	2.03	1.32	1.32
9431	5703.50	5490.20	2048.35	18.00	-16.00	127.50	North A	100.75	102.80	2.05	3.37	3.37
							North A Footwall	113.00	115.00	2.00	3.58	3.58
9432	5703.50	5490.20	2048.00	18.00	-50.00	141.00	North A	112.44	114.52	2.08	0.11	0.11
9433	5703.50	5490.20	2048.00	26.00	-29.00	121.50	North A	103.00	105.00	2.00	3.58	3.58
							North A Footwall	112.00	114.00	2.00	1.13	1.13

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
9434	5703.50	5490.20	2048.00	22.00	-5.00	126.00	North A	108.00	110.13	2.13	1.84	1.84
							North A Footwall	118.50	120.50	2.00	2.34	2.34
9435	5703.20	5490.20	2048.00	28.00	-15.00	162.00	North A	105.83	108.00	2.16	1.01	1.01
							North A Footwall	116.00	118.00	2.00	2.85	2.85
							North B	148.90	158.70	9.80	2.87	2.87
9436	5704.30	5490.30	2047.60	40.00	-15.00	147.00	North A	126.49	131.29	4.80	3.06	3.06
							North A Footwall	138.99	141.99	3.00	0.64	0.64
9437	5704.30	5490.30	2047.40	40.00	-45.00	141.00	North A	115.00	120.50	5.50	4.55	4.55
							North A Footwall	139.30	140.94	1.64	0.69	0.69
9439	5702.00	5490.00	2047.40	325.00	-63.00	156.00	North A	148.70	152.00	3.30	5.51	5.51
9440	5702.00	5490.00	2047.40	313.00	-68.00	171.00	North A	162.60	167.10	4.50	7.41	7.41
9441	5702.00	5490.00	2047.40	340.00	-47.00	130.50	North A	116.00	118.30	2.30	10.39	10.39
9442	5702.40	5490.00	2047.50	360.00	-60.00	142.00	North A	118.91	121.60	2.69	2.59	2.59
9443	5526.00	5509.20	1999.00	46.00	-42.00	129.00	North A	113.95	124.30	10.35	3.69	3.69
9444	5526.00	5509.20	1999.00	46.00	-17.00	124.50	North A	113.20	116.30	3.10	3.45	3.45
9445	5525.00	5509.20	1999.00	30.00	-17.00	114.00	North A	103.20	105.20	2.00	10.20	10.20
9446	5525.00	5509.20	1999.00	30.00	-32.00	114.00	North A	105.00	107.00	2.00	4.78	4.78
9448	5508.00	5560.00	1990.74	52.00	-24.00	84.00	North A	61.50	64.46	2.96	0.41	0.41
9449	5508.00	5560.00	1990.20	52.00	-51.00	84.00	North A	63.00	66.00	3.00	4.06	4.06
9450	5507.00	5561.00	1990.60	33.00	-30.00	66.00	North A	54.50	62.70	8.20	3.01	3.01
9451	5505.00	5560.50	1990.20	360.00	-50.00	64.50	North A	53.10	55.90	2.80	10.09	10.09
9452	5505.50	5561.00	1990.60	360.00	-10.00	300.00	North A	50.64	52.52	1.89	0.76	0.76
							North AX	60.77	62.54	1.78	5.93	5.93
9453	5505.40	5561.00	1990.20	23.00	-15.00	93.00	North A	52.50	55.30	2.80	9.85	8.15
							North B	84.70	88.70	4.00	0.88	0.88
9454	5504.50	5560.60	1990.30	321.00	-47.00	75.00	North A	69.25	72.15	2.91	0.60	0.60
9455	5504.50	5560.60	1990.30	321.00	-30.00	87.00	North A	59.80	62.40	2.60	2.99	2.99
							North AX	78.43	81.00	2.57	2.68	2.68
9459	5527.00	5508.00	1998.80	30.00	-48.00	130.50	North A	110.00	112.00	2.00	0.52	0.52
9460	5527.20	5507.00	1999.00	59.00	-21.00	135.00	North A	122.70	128.60	5.90	8.54	8.54
18002	5706.40	5630.90	2108.90	176.00	4.00	12.19	North A Footwall	0.00	0.04	0.00	0.00	0.00
2-1	5695.00	5640.50	2171.50	360.00	-5.00	47.85	North B	40.49	44.36	3.76	0.64	0.64
2-3	5695.00	5640.50	2171.50	30.00	-5.00	28.60	North B	43.50	45.50	2.00	2.49	2.49
4-2	5698.50	5425.50	2046.40	360.00	-70.00	243.80	North A	215.79	219.05	3.25	3.57	3.57
3-3	5698.00	5619.00	2109.00	30.00	-5.00	31.40	North A Footwall	13.44	15.89	2.45	5.30	5.30
4-3	5679.30	5400.80	2043.50	340.00	-60.00	320.04	North A	213.32	215.32	2.00	4.88	4.88
4-3	5679.30	5400.80	2043.50			320.04	North B	278.84	279.76	0.92	1.27	1.27
2-4	5650.00	5656.50	2172.00	360.00	-5.00	36.27	North B	26.90	30.50	3.60	1.15	1.15
2-3	5695.00	5640.50	2171.50	30.00	-5.00	28.60	North B	23.00	26.00	3.00	1.35	1.35
2-5	5675.00	5659.00	2172.00	360.00	-5.00	37.80	North B	24.80	29.50	4.70	0.90	0.90
3-5	5728.00	5632.00	2109.00	360.00	-5.00	40.20	North A Footwall	0.01	1.00	0.99	4.90	4.90
3-5	5728.00	5632.00	2109.00			40.20	North B	30.13	33.50	3.00	0.90	0.90
2-6	5700.00	5655.00	2171.50	0.00	-5.00	36.60	North B	25.30	29.46	4.16	2.64	2.64
3-6	5750.00	5634.00	2109.50	360.00	-5.00	38.10	North B	26.00	28.00	2.00	1.29	1.29

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
4-6	5679.00	5400.00	2043.50	327.00	-55.00	266.45	North A	244.32	247.73	3.40	5.09	5.09
2-7	5723.00	5652.50	2171.50	360.00	-5.00	33.50	North B	23.29	27.20	3.91	1.48	1.48
3-7	5775.00	5626.00	2109.50	360.00	-5.00	46.00	North B	38.10	42.10	4.00	1.54	1.54
3-8	5776.00	5625.00	2109.50	45.00	-5.00	62.50	North B	50.00	56.51	6.51	0.85	0.85
4-9	5679.30	5400.00	2043.50	340.00	-65.00	251.50	North A	226.90	229.19	2.29	4.59	4.59
240-01	5708.40	5603.00	2048.90	138.50	1.00	14.60	North A	8.13	10.98	2.85	2.54	2.54
240-02	5708.20	5605.40	2048.90	45.50	-1.50	15.32	North A Footwall	3.32	6.06	2.74	0.60	0.60
240-03	5708.50	5603.90	2048.90	107.50	0.00	31.70	North A	20.99	28.65	7.66	4.92	4.92
240-04	5708.30	5604.80	2048.90	64.00	1.00	22.25	North A Footwall	5.00	9.00	4.00	1.91	1.91
240-05	5736.90	5597.30	2048.90	44.00	1.00	55.20	North A	0.00	1.10	1.10	7.69	7.69
							North A Footwall	10.45	13.03	1.88	0.96	0.96
							North A	0.00	0.60	0.60	0.75	0.75
240-06	5734.60	5597.40	2048.90	27.50	0.50	54.90	North A Footwall	11.74	13.85	2.11	1.86	1.86
							North B	47.00	53.00	6.00	1.81	1.81
							North A Footwall	8.68	10.73	2.05	0.28	0.28
240-07	5737.60	5597.40	2048.00	27.50	-33.00	65.50	North B	44.95	49.50	4.55	0.59	0.59
							North A Footwall	10.23	13.58	3.35	2.34	2.34
240-08	5754.70	5596.30	2048.96	52.50	1.00	76.50	North B	70.38	73.11	2.73	0.20	0.20
							North A Footwall	8.30	10.95	2.65	1.38	1.38
240-09	5754.40	5596.10	2048.00	54.00	-37.00	68.35	North B	60.35	63.40	3.05	0.19	0.19
							North B	43.60	46.03	2.43	0.02	0.02
240-10	5702.50	5609.50	2048.00	340.50	0.50	81.38	North B	43.60	46.03	2.43	0.02	0.02
240-11	5702.90	5609.30	2047.90	1.00	-39.00	46.33	North A Footwall	1.10	2.34	1.24	7.22	7.22
							North B	41.25	43.12	1.87	0.70	0.70
240-12	5669.50	5619.00	2048.00	3.00	-34.50	57.30	North B	32.51	34.43	1.92	0.30	0.30
240-13	5736.90	5597.30	2047.70	360.00	-40.00	60.96	North A Footwall	9.42	11.50	2.08	1.55	1.55
							North B	52.00	54.17	2.17	5.80	5.80
240-14	5641.20	5630.10	2050.60	25.00	45.50	56.39	North B	47.70	50.85	3.15	1.26	1.26
2C01	5718.70	5672.00	2219.70	359.00	0.00	30.50	North B	23.10	26.30	3.20	3.23	3.23
2C02	5699.60	5674.50	2219.30	358.00	0.00	32.60	North B	25.60	28.30	2.70	1.22	1.22
3B01	5733.00	5643.60	2141.50	360.00	0.00	30.48	North B	24.99	28.00	3.01	0.70	0.70
3B02	5733.00	5643.60	2140.80	360.00	-20.00	29.60	North B	22.50	25.35	2.85	1.73	1.73
3B03	5686.00	5648.70	2140.70	360.00	3.00	35.97	North B	26.52	29.87	3.35	3.92	3.92
3B04	5686.00	5648.60	2140.20	358.00	-16.00	35.05	North B	22.86	25.91	3.05	2.26	2.26
3B05	5686.00	5648.80	2141.10	360.00	22.00	39.90	North B	29.30	33.50	4.20	5.04	5.04
4-1B	5698.50	5425.50	2046.40	360.00	-60.00	219.46	North A	175.00	181.00	6.00	7.03	7.03
BC05-12	5774.50	5437.20	2283.40	360.00	-78.00	407.00	North A	363.30	366.19	2.90	0.61	0.61
							North A Footwall	371.00	374.00	3.00	3.90	3.90
BC05-21	5824.10	5419.80	2283.10	360.00	-59.00	350.00	North A	292.10	295.00	2.90	1.20	1.20
							North B	345.00	347.55	2.55	13.60	7.67
BC05-22	5824.10	5419.80	2283.10	360.00	-72.00	410.00	North A	320.80	326.80	6.00	9.58	9.58
							North A Footwall	332.85	335.00	2.15	4.12	4.12
							North B	373.97	376.27	0.27	0.00	0.00
BC05-23	5774.30	5486.20	2284.00	360.00	-70.00	260.00	North A	256.20	259.96	3.76	3.63	3.63
BC05-28	5874.10	5353.50	2283.60	360.00	-58.00	461.00	North A	322.45	324.84	2.39	1.01	1.01

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC05-31	5898.10	5274.70	2282.60	330.00	-58.00	500.00	North A Footwall	333.15	338.25	5.10	7.17	7.17
							North B	393.84	396.10	2.25	0.21	0.21
							North A	456.50	459.75	3.25	2.09	2.09
							North A Footwall	462.20	464.00	1.80	3.38	3.38
BC05-33	6017.60	5302.50	2283.70	330.00	-62.00	491.00	North A	401.36	402.99	1.63	0.05	0.05
BC05-37	5995.60	5214.20	2283.50	330.00	-62.00	591.00	North A	520.35	523.10	0.00	0.00	0.00
							North A Footwall	533.40	536.70	3.30	1.31	1.31
							North B	568.14	570.50	2.36	0.03	0.03
C101	5624.40	5607.60	2283.30	0.00	-50.00	150.00	North B	134.61	136.89	2.27	0.12	0.12
C102	5685.40	5607.60	2282.90	0.00	-50.00	144.00	North B	126.50	129.50	3.00	2.74	2.74
C112	5717.20	5641.20	2283.00	0.00	-50.00	120.00	North B	81.00	84.50	3.50	3.63	3.63
C113	5594.10	5641.20	2283.10	0.00	-50.00	120.00	North B	107.28	109.50	2.22	0.85	0.85
C118	5593.80	5580.00	2283.40	0.00	-50.00	201.00	North B	175.45	177.54	2.09	0.03	0.03
C121	5655.90	5607.50	2283.20	0.00	-50.00	150.00	North B	126.00	129.00	3.00	2.01	2.01
C122	5624.40	5581.10	2283.40	0.00	-65.00	192.00	North B	171.95	173.95	2.00	0.50	0.50
C123	5688.20	5563.80	2283.00	0.00	-65.00	200.00	North B	174.80	177.80	3.00	3.40	3.40
C124	5749.00	5610.00	2282.80	0.00	-50.00	150.00	North A	77.90	80.89	2.99	6.56	6.56
							North B	114.03	116.05	2.02	2.96	2.96
C125	5718.70	5570.80	2283.00	0.00	-65.00	203.00	North B	170.80	174.00	3.20	2.43	2.43
C127	5688.20	5528.90	2283.00	0.00	-65.00	256.00	North B	208.00	211.00	3.00	5.04	5.04
C128	5749.30	5568.30	2282.90	0.00	-65.00	200.00	North A	142.09	146.25	4.16	2.06	2.06
							North B	175.50	177.30	1.80	3.91	3.91
C129	5780.40	5568.30	2282.80	0.00	-65.00	204.00	North A	136.00	138.24	2.24	3.15	3.15
							North B	173.40	176.75	3.35	0.77	0.77
C132	5596.30	5560.20	2283.40	360.00	-60.00	240.00	North B	221.42	223.81	2.38	0.15	0.15
C133	5660.20	5550.80	2283.00	360.00	-60.00	222.00	North B	201.09	203.22	2.12	0.00	0.00
C134	5689.00	5514.60	2283.00	360.00	-70.00	273.00	North B	262.50	264.50	2.00	1.62	1.62
C135	5749.40	5513.50	2283.00	360.00	-70.00	270.00	North A	212.40	216.00	3.60	4.56	4.56
							North A Footwall	228.80	230.80	2.00	2.72	2.72
							North B	262.50	264.50	2.00	1.13	1.13
C136	5811.28	5517.39	2282.93	360.00	-70.00	291.00	North A	196.70	199.30	2.60	1.91	1.91
							North B	246.70	250.30	3.60	1.55	1.55
C137	5856.98	5518.16	2282.91	360.00	-70.00	288.00	North A	178.70	181.70	3.00	1.87	1.87
							North B	239.00	242.00	3.00	0.87	0.87
C141	5718.70	5555.60	2283.00	360.00	-70.00	213.00	North B	200.40	203.25	2.85	3.98	3.98
C142	5779.76	5548.87	2282.93	360.00	-75.00	234.00	North A	183.00	185.30	2.30	5.00	5.00
							North B	226.29	228.70	2.41	3.34	3.34
C143	5780.40	5610.30	2283.00	360.00	-60.00	144.00	North A	81.82	84.49	2.67	5.20	5.20
							North B	127.20	130.20	3.00	1.24	1.24
C144	5809.16	5610.99	2282.94	360.00	-65.00	147.00	North A	79.40	83.50	4.10	0.75	0.75
							North B	133.00	136.00	3.00	1.13	1.13
C145	5856.00	5590.00	2283.00	360.00	-65.00	171.00	North A	92.20	95.39	3.20	1.10	1.10
							North B	151.00	154.00	3.00	1.90	1.90
C146	5719.00	5612.50	2283.00	0.00	-60.00	132.00	North B	118.74	122.00	3.26	1.99	1.99

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
C184	5507.00	5490.00	2286.00	360.00	-80.00	435.00	North A	348.87	351.15	2.28	3.76	3.76
							North AX	366.00	369.00	3.00	0.36	0.36
C185	5566.00	5490.00	2285.50	360.00	-80.00	363.00	North A	323.16	325.74	1.74	0.02	0.02
							North B	362.07	362.12	0.05	0.03	0.03
C188	5626.00	5450.00	2287.00	360.00	-80.00	381.00	North A	360.00	364.50	4.50	2.92	2.92
C190	5689.00	5425.00	2285.50	360.00	-80.00	432.00	North A	358.49	360.40	1.91	4.56	4.56
							North B	408.24	411.15	2.91	0.16	0.16
C191	5749.00	5425.00	2283.00	360.00	-80.00	378.00	North A	345.00	347.41	2.41	3.43	3.43
							North A Footwall	354.70	356.75	2.05	1.91	1.91
C192	5749.00	5475.00	2283.00	360.00	-80.00	312.00	North A	285.90	287.92	2.02	2.74	2.74
							North A Footwall	298.07	300.13	2.06	4.54	4.54
C299	5810.00	5475.00	2283.00	2.00	-70.00	342.00	North A	272.13	274.42	2.29	1.91	1.91
							North A Footwall	282.70	285.70	3.00	1.70	1.70
							North B	328.60	330.80	2.20	10.56	10.56
C300	5810.00	5425.00	2283.00	360.00	-70.00	399.00	North A	315.60	321.60	6.00	4.03	4.03
							North A Footwall	326.60	331.19	4.59	2.40	2.40
							North B	371.95	374.20	2.25	2.00	2.00
KB403	5818.20	5563.95	2282.92	340.00	-45.00	122.00	North A	120.08	121.96	1.88	1.74	1.74
KB404	5796.37	5625.92	2282.89	340.00	-50.00	206.00	North A	53.20	57.30	4.10	1.25	1.25
							North B	102.90	105.60	2.70	1.21	1.21
KB405	5776.10	5682.56	2282.86	340.00	-50.00	236.00	North B	40.40	43.40	3.00	4.24	4.24
MH8145	5666.66	5663.23	2282.50	0.00	-50.00	178.61	North B	75.79	78.62	2.72	0.42	0.42

### Lake Shore Gold Surface Drilling

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC-08-09	6045.14	4834.15	2284.03	3.27	-72.10	1301.00	North A2	956.20	961.00	3.70	1.05	1.05
							North A	1013.90	1028.60	14.70	4.43	4.43
							North B	1049.25	1053.90	4.65	6.07	6.07
							North B	1088.78	1092.08	3.30	0.34	0.34
BC-08-09A	wedge						North A2	948.30	961.45	13.15	2.26	2.26
							North A	1013.00	1016.50	3.50	2.70	2.70
							North B	1045.00	1048.60	3.60	0.59	0.59
							North B	1085.50	1088.50	3.00	1.29	1.29
BC-08-09B	wedge						North A2	929.25	933.70	4.45	3.78	3.78
							North A	994.10	996.70	2.60	0.66	0.66
							North B	1010.80	1013.00	2.20	4.58	4.58
							North B	1041.50	1044.30	2.80	0.44	0.44
BC-08-09C	wedge						North A2	908.20	916.00	7.80	4.76	4.76
							North A	973.60	979.40	5.80	5.94	5.94
							North B	1003.49	1005.59	2.10	4.42	4.42
							North B	1031.70	1033.75	2.06	0.90	0.90
BC-08-09D	wedge						North A2	932.50	934.60	2.10	3.80	3.80

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC-08-23	6043.56	5104.52	2284.21	7.73	-73.66	1121.00	North A	995.10	997.20	2.10	1.94	1.94
							North B	1025.30	1029.70	4.40	2.64	2.64
							North B	1054.70	1056.73	2.03	1.35	1.35
							North A2	612.60	617.80	5.20	2.93	2.93
							North A2	616.75	620.20	3.45	4.08	4.08
BC-08-23A	wedge						North A2	615.71	617.71	2.00	1.75	1.75
BC-08-23B	wedge						North A2	615.60	617.60	2.00	1.64	1.64
BC-08-23C	wedge						North A2	615.60	617.60	2.00	1.64	1.64
BC-08-27	5714.31	5163.27	2286.26	4.45	-69.12	805.00	North A	626.70	629.00	2.30	0.30	0.30
BC-09-02	5800.88	5108.18	2283.68	359.64	-72.46	912.00	North B	675.20	677.70	2.50	2.38	2.38
							North A3	682.30	684.64	2.35	1.18	1.18
							North A	739.55	749.15	9.60	5.08	5.08
							North B	841.10	843.58	2.48	0.78	0.78
							North A3	651.70	654.45	2.75	1.93	1.93
BC-09-02A	wedge						North A	720.00	729.10	9.10	3.43	3.43
BC-09-03	6041.94	4966.67	2284.13	4.76	-73.53	1122.80	North A2	784.10	789.60	5.50	1.91	1.91
BC-09-03A	wedge						North A	848.50	850.45	1.95	1.01	1.01
							North A2	781.60	787.05	5.45	7.47	7.47
							North A	864.30	866.50	2.20	3.55	3.55
							North B	918.00	920.15	2.00	1.23	1.23
							North A2	742.50	747.80	5.30	4.61	4.61
BC-09-03C	wedge						North A2	742.50	747.80	5.30	4.61	4.61
BC-09-07	5774.37	5198.29	2284.97	5.11	-67.16	702.00	North A3	529.35	538.10	8.75	2.78	2.78
BC-09-11	6041.58	4967.37	2283.96	352.66	-63.08	952.00	North A	597.07	599.35	2.28	3.22	3.22
							North B	658.35	665.44	7.09	1.44	1.44
							North A2	739.00	749.20	10.20	3.23	3.23
							North A	785.00	787.10	2.10	0.79	0.79
							North B	821.50	825.10	3.60	1.73	1.73
BC-09-12	5801.23	5108.04	2283.55	14.00	-73.00	876.00	North B	846.30	848.55	2.25	2.77	2.77
							North A4	686.40	688.90	2.50	7.00	7.00
							North A	721.90	730.40	8.50	5.18	5.18
							North B	748.00	750.10	2.10	2.50	2.50
							North B	779.54	781.63	2.09	4.74	4.74
BC-09-16	5995.07	5199.80	2283.83	350.00	-57.00	499.70	North A	482.80	485.30	2.50	1.06	1.06
BC-09-17	6041.68	4967.00	2284.16	351.77	-55.74	953.00	North A	722.80	724.85	2.05	2.96	2.96
BC-09-18	5904.80	5346.90	2284.00	0.04	-77.91	567.80	North B	791.70	793.70	2.00	1.99	1.99
							North A	452.65	455.14	2.50	1.77	1.77
							North B	529.65	532.65	3.00	0.46	0.46
							North A	415.80	418.20	2.40	0.38	0.38
							North B	492.05	494.80	2.75	1.62	1.62
BC-09-19	5904.80	5346.90	2284.00	1.00	-68.00	588.00	North A	415.80	418.20	2.40	0.38	0.38
BC-09-20	5904.80	5346.90	2284.00	358.10	-40.40	447.00	North B	492.05	494.80	2.75	1.62	1.62
							North A Footwall	309.10	311.60	2.50	3.20	3.20
							North A	646.10	650.10	4.00	1.46	1.46
							North B	677.10	679.18	2.08	1.25	1.25
							North A2	1118.50	1131.15	12.65	11.93	11.72
BC-09-23	5990.39	5134.50	2283.73	343.60	-56.60	705.70	North A	1138.50	1140.90	2.40	3.10	3.10
BC-09-24B	6052.65	4736.48	2283.71	6.42	-74.02	1406.00	North B	1198.35	1200.44	2.09	2.80	2.80
							North A	1138.50	1140.90	2.40	3.10	3.10

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC-09-24C	wedge						North B	1238.10	1240.25	2.16	1.02	1.02
							North A2	1073.50	1080.50	7.00	1.11	1.11
							North A	1110.40	1118.40	8.00	3.76	3.76
							North B	1144.00	1146.09	2.09	0.58	0.58
BC-09-24F	6052.65	4736.48	2283.71	6.42	-74.02	1358.00	North B	1183.28	1185.33	2.05	1.91	1.91
							North A2	1105.40	1114.50	9.10	6.16	6.16
							North A	1141.79	1144.80	3.01	5.53	5.53
							North B	1174.50	1177.40	2.90	1.88	1.88
BC-09-24H	6052.65	4736.48	2283.71	6.42	-74.02	1106.78	North B	1209.50	1212.00	2.50	1.26	1.26
							North A2	1006.02	1008.03	2.01	0.73	0.73
							North A	1044.05	1058.54	14.49	4.25	4.25
							North B	1074.03	1076.03	2.00	1.17	1.17
BC-09-24I	6052.65	4736.48	2283.71	6.42	-74.02	1118.00	North A2	992.03	994.33	2.30	3.96	3.96
							North A	1024.74	1027.10	2.36	0.23	0.23
BC-09-26	5774.40	5198.59	2284.96	4.00	-63.00	751.00	North A3	507.78	510.42	2.62	1.65	1.65
							North A	565.25	568.10	2.85	0.99	0.99
							North B	630.00	632.40	2.40	2.48	2.48
BC-09-29	5774.35	5198.87	2284.92	3.80	-73.02	783.00	North A3	563.95	566.24	2.29	1.71	1.71
							North A	641.70	644.14	2.45	1.22	1.22
							North B	708.35	710.70	2.35	0.63	0.63
BC-09-41	5774.48	5199.21	2284.89	4.00	-56.00	678.00	North A	517.90	519.80	1.90	1.96	1.96
							North A Footwall	523.00	525.20	2.20	1.40	1.40
							North B	568.89	571.10	2.20	0.92	0.92
BC-09-50	5650.00	5085.08	2286.03	6.22	-55.71	711.00	North A	623.40	625.60	2.20	11.55	11.55
							North B	671.00	673.00	2.00	2.86	2.86
BC-09-53	6046.88	4782.78	2284.18	347.07	-83.60	1364.00	North A2	1123.95	1125.99	2.04	1.79	1.79
							North A	1153.00	1177.70	24.70	8.09	8.09
							North B	1202.50	1205.50	3.00	4.15	4.15
							North B	1235.40	1238.40	3.00	3.70	3.70
BC-09-53A	wedge						North A2	1114.14	1116.20	2.06	7.17	7.17
							North A	1163.50	1189.90	26.40	5.13	5.13
							North B	1201.80	1203.90	2.10	3.89	3.89
							North B	1229.80	1232.50	2.70	2.44	2.44
BC-09-53B	wedge						North A2	1153.88	1156.80	2.92	7.08	7.08
							North A	1192.98	1217.29	24.32	3.12	3.12
							North B	1230.40	1236.80	6.40	9.56	9.56
							North B	1261.69	1270.10	8.40	2.12	2.12
BC-09-53D	wedge						North A4	1166.17	1169.60	3.43	6.76	6.76
							North A	1207.30	1212.00	4.70	5.79	5.79
							North B	1240.59	1242.09	1.49	0.05	0.05
							North B	1270.88	1272.70	1.82	0.42	0.42
BC-09-53E	wedge						North A4	1179.00	1181.00	2.00	1.73	1.73
							North A	1222.90	1227.10	4.20	4.45	4.45
BC-09-53G	wedge						North A4	1128.80	1131.20	2.40	2.89	2.89

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC-09-53H	wedge						North A	1170.70	1172.80	2.10	1.08	1.08
							North B	1199.50	1202.50	3.00	0.06	0.06
							North B	1238.80	1241.50	2.70	1.13	1.13
							North A2	1083.31	1086.40	3.10	4.89	4.89
							North A	1138.60	1152.31	13.71	2.87	2.87
							North B	1173.27	1175.47	2.20	3.30	3.30
BC-09-53L	wedge						North B	1201.49	1204.38	2.90	1.12	1.12
							North A2	1146.70	1149.50	2.80	15.02	10.86
							North A	1180.00	1227.10	47.10	3.81	3.81
							North B	1252.50	1257.40	4.90	3.04	3.04
							North B	1284.70	1287.75	3.05	0.86	0.86
							North A2	1142.80	1145.01	2.21	2.79	2.79
BC-09-53N	wedge						North A4	1169.98	1182.68	12.69	8.78	8.78
							North A	1210.90	1213.01	2.11	5.86	5.86
							North B	1237.31	1241.44	4.13	2.58	2.58
							North B	1276.99	1279.20	2.21	2.56	2.56
							North A2	1143.50	1146.80	3.30	9.60	9.60
							North A	1206.40	1212.00	5.60	10.32	10.32
BC-09-53O	wedge						North B	1238.90	1241.20	2.30	7.11	7.11
							North B	1259.50	1264.90	5.40	4.46	4.46
							North A	668.70	670.60	1.90	9.47	9.47
							North B	739.41	741.74	2.32	0.15	0.15
							North A	597.00	600.40	3.40	1.49	1.49
							North B	649.10	650.90	1.80	1.20	1.20
BC-09-61							North A2	782.60	786.10	3.50	1.80	1.80
							North A	832.30	839.40	7.10	5.61	5.61
							North B	868.90	871.10	2.20	7.39	7.39
							North B	914.00	916.58	2.58	2.24	2.24
							North A2	781.00	786.30	5.30	1.82	1.82
							North A	855.20	858.10	2.90	3.25	3.25
BC-09-63A	wedge						North B	904.97	906.94	1.73	0.87	0.87
							North A	810.10	812.30	2.20	3.57	3.57
							North B	835.60	838.50	2.90	6.32	6.32
							North B	874.90	877.50	2.60	1.79	1.79
							North A	578.86	580.91	2.04	1.98	1.98
							North B	627.00	630.72	3.00	1.71	1.71
BC-09-64							North A	633.47	636.30	2.83	2.25	2.25
							North B	679.53	682.84	3.07	0.15	0.15
							North A4	889.00	891.85	2.85	4.56	4.56
							North A	924.75	934.85	10.10	2.36	2.36
							North B	944.00	947.00	3.00	2.11	2.11
							North B	984.45	988.00	3.55	3.10	3.10
BC-09-67							North A4	870.22	872.29	2.07	6.96	6.96
							North A	909.01	912.50	3.49	6.22	6.22
BC-09-69												
BC-09-69A	wedge											

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC-09-69B	wedge						North B	934.42	936.42	2.01	1.39	1.39
							North B	973.20	975.60	2.40	2.51	2.51
							North A2	832.30	834.52	2.22	0.01	0.01
							North A4	876.30	878.00	1.70	7.29	7.29
							North A	902.41	907.92	5.50	6.63	6.63
BC-09-69C	wedge						North B	927.42	933.31	5.90	1.51	1.51
							North B	963.01	967.91	4.90	3.44	3.44
							North A2	818.13	820.06	1.06	0.20	0.20
							North A4	855.40	861.10	5.70	9.38	9.38
							North A	878.00	880.10	2.10	4.54	4.54
BC-09-69E	wedge						North B	912.70	915.50	2.80	9.16	9.16
							North B	940.72	943.57	2.85	3.50	3.50
							North A4	849.50	853.35	3.85	4.49	4.49
							North A Hangingwall	863.50	865.20	1.70	10.02	10.02
							North A	881.62	885.83	4.21	4.59	4.59
BC-09-71	5749.20	4831.00	2284.18	19.41	-75.97	1224.00	North B	904.81	906.55	1.74	0.72	0.72
							North B	946.34	948.32	1.98	2.35	2.35
							North A4	1058.09	1060.50	1.50	0.04	0.04
							North A	1095.00	1098.00	3.00	0.52	0.52
							North B	1122.00	1124.50	2.50	1.67	1.67
BC-09-71A	wedge						North B	1158.00	1160.60	2.60	2.24	2.24
							North A4	1058.41	1061.08	2.66	4.62	4.62
							North A	1092.55	1096.35	3.80	13.03	13.03
							North B	1116.50	1118.70	2.20	1.31	1.31
							North B	1145.80	1148.40	2.60	6.22	6.22
BC-09-71B	wedge						North A2	1002.90	1005.90	3.00	1.22	1.22
							North A4	1046.95	1051.16	4.21	0.03	0.03
							North A	1077.30	1082.50	5.20	3.05	3.05
							North B	1099.40	1101.40	2.00	1.20	1.20
							North B	1133.40	1136.95	3.55	2.18	2.18
BC-09-71C	wedge						North A2	996.00	1002.20	6.20	3.13	3.13
							North A4	1040.18	1043.84	3.54	1.21	1.21
							North A	1061.90	1065.00	3.10	7.42	7.42
							North B	1083.40	1085.60	2.20	4.21	4.21
							North B	1117.00	1119.10	2.10	0.89	0.89
BC-09-72	5802.00	5213.00	2284.00	6.58	-65.68	750.00	North A3	519.70	522.30	2.60	0.63	0.63
							North A Hangingwall	544.69	546.99	2.30	1.93	1.93
							North A	551.80	562.25	10.45	10.15	10.15
							North B	564.40	566.80	2.40	2.35	2.35
							North B	612.00	614.80	2.80	3.78	3.78
BC-09-73	5584.84	5074.99	2288.47	7.79	-71.66	785.00	North B	750.40	753.60	3.20	0.99	0.99
BC-09-77	5802.00	5212.00	2284.00	7.79	-71.66	723.00	North A3	556.30	559.79	0.00	0.00	0.00
							North A Hangingwall	604.79	619.41	14.62	6.10	6.10
							North A	626.20	630.40	4.20	0.56	0.56

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC-10-92	6350.52	4116.26	2291.09	20.45	-78.20	1916.00	North B	645.00	647.60	2.60	2.01	2.01
							North B	682.70	685.00	2.30	3.44	3.44
							North A2	1832.80	1835.00	2.20	3.11	3.11
							North A2	1851.37	1854.13	2.75	0.14	0.14
BC-10-92B	6350.52	4116.26	2291.09	20.45	-78.20	2113.00	North A	1873.00	1875.10	2.10	4.90	4.90
BC-10-94A	6047.05	4549.34	2284.42	16.19	-79.12	1563.00	North B	1889.50	1892.50	3.00	2.78	2.78
							North B	1912.80	1915.80	3.00	1.51	1.51
							North A2	1313.10	1317.20	4.10	22.03	18.82
							North A	1355.10	1357.70	2.60	1.56	1.56
BC-10-94C	wedge						North B	1409.20	1411.40	2.20	1.86	1.86
							North B	1434.50	1437.80	3.30	0.79	0.79
							North A2	1330.30	1334.69	4.39	0.04	0.04
							North A	1358.90	1409.50	50.60	5.20	5.20
BC-10-94E	wedge						North B	1433.90	1443.09	9.19	6.45	6.45
							North B	1460.09	1462.70	2.61	2.39	2.39
							North A2	1321.20	1323.20	2.00	0.18	0.18
							North A	1355.00	1365.25	10.25	3.15	3.15
BC-10-94H	wedge						North B	1389.00	1391.00	2.00	1.11	1.11
							North B	1410.76	1414.80	4.04	8.68	8.68
							North B	1507.71	1509.80	2.09	2.38	2.38
							North A2	1334.30	1337.70	3.40	0.58	0.58
BC-10-94L	wedge						North A	1371.40	1391.40	20.00	2.03	2.03
BC-10-96	5551.35	5029.08	2288.88	8.00	-64.70	857.00	North B	1417.50	1426.30	8.80	4.31	4.31
							North B	1436.80	1439.90	3.10	2.59	2.59
							North AX	742.00	743.97	1.97	0.98	0.98
							North B	1966.80	1970.20	3.40	1.26	1.26
BC-11-103A	6040.45	4280.86	2286.48	14.88	-84.15	2056.00	North B	1968.10	1971.10	3.00	5.64	5.64
BC-11-103B	wedge						North B	2032.70	2036.90	4.20	4.84	4.84
BC-11-103D	wedge						North B	2019.70	2023.95	4.26	3.08	3.08
BC-11-103E	wedge						North B	1954.40	1960.10	5.70	7.76	7.76
BC-11-103F	wedge						North A	1980.30	1991.85	11.55	1.98	1.98
BC-11-103G	wedge						North B	2008.55	2012.25	3.70	5.37	5.37
							North A2	1948.60	1951.40	2.80	0.98	0.98
							North A	1968.85	1973.40	4.55	2.73	2.73
							North B	1984.95	1987.50	2.55	0.07	0.07
BC-11-105B	5745.42	4830.46	2284.50	30.01	-81.00	1456.00	North B	2009.90	2012.50	2.60	0.23	0.23
							North A	1280.75	1299.50	18.75	6.41	6.41
							North B	1307.00	1330.75	23.75	4.72	4.72
							North B	1337.00	1339.60	2.60	4.99	4.99
BC-11-105C	wedge						North A	1246.80	1260.70	13.90	3.71	3.71
							North B	1283.20	1291.50	8.30	3.32	3.32
							North B	1304.69	1308.90	4.20	5.31	5.31
							North A	1236.20	1252.80	16.60	7.24	7.24
BC-11-105D	wedge						North B	1274.50	1277.40	2.90	14.18	14.18

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC-11-97	6048.43	4393.85	2285.60	2.09	-83.25	1899.00	North B	1290.90	1300.30	9.40	6.48	6.48
							North A2	1638.90	1647.20	8.30	4.99	4.99
							North A	1690.50	1694.00	3.50	3.41	3.41
							North B	1709.90	1712.40	2.50	1.51	1.51
							North B	1738.00	1742.40	4.40	3.18	3.18
BC-11-97B	wedge						North A2	1636.00	1638.00	2.00	1.34	1.34
							North A	1677.54	1679.60	2.06	4.43	4.43
							North B	1705.50	1707.56	2.06	5.66	5.66
							North B	1742.80	1750.00	7.20	2.78	2.78
							North B	1873.60	1876.60	3.00	4.26	4.26
BC-11-97D	wedge						North A	1799.90	1802.75	2.85	2.00	2.00
BC-11-97E	wedge						North B	1838.30	1840.65	2.35	2.47	2.47
S-09-06B	6193.09	4694.56	2286.71	3.94	-79.64	1260.00	North A2	1174.10	1176.60	2.50	0.70	0.70
S-09-06C	wedge						North A2	1223.90	1226.11	2.21	3.39	3.39
S-09-06D	wedge						North A2	1068.50	1109.30	40.80	1.44	1.44
S-09-06F	wedge						North A2	1105.65	1107.91	2.26	2.49	2.49
							North A	1142.15	1157.00	14.85	1.86	1.86
							North B	1176.60	1178.75	2.15	0.77	0.77
							North B	1211.60	1213.90	2.30	1.19	1.19
							North A2	1318.90	1322.40	3.50	0.97	0.97
S-09-07	6141.38	4548.90	2287.94	10.33	-79.74	1420.00	North A	1347.00	1349.06	2.07	7.60	7.60
							North B	1371.20	1373.48	2.28	1.19	1.19
							North A2	1287.30	1289.53	2.24	5.13	5.13
							North A	1323.30	1325.40	2.10	3.73	3.73
							North B	1391.40	1393.51	2.11	1.41	1.41
S-09-07B	wedge						North B	1429.10	1431.50	2.40	2.42	2.42
							North A2	1295.00	1307.30	12.30	2.04	2.04
							North A	1334.50	1339.00	4.50	4.67	4.67
							North B	1396.20	1398.70	2.50	0.36	0.36
							North B	1434.49	1436.70	2.21	0.58	0.58
S-09-07C	wedge						North A2	1301.00	1303.17	2.17	1.07	1.07
							North A	1315.00	1317.30	2.30	4.21	4.21
S-09-07E	wedge						North A2	1237.00	1262.00	25.00	3.11	3.11
S-09-07G	wedge						North A2	1287.40	1289.70	2.30	3.36	3.36
S-09-07H	wedge						North A	1317.90	1320.10	2.20	7.57	7.57
							North B	1370.50	1376.30	5.80	2.31	2.31
							North B	1396.60	1399.00	2.40	2.74	2.74
							North A2	1538.50	1540.60	2.10	2.07	2.07
							North A	1566.00	1568.00	2.00	5.40	5.40
S-10-11B	6141.81	4399.94	2288.03	17.01	-80.80	1634.00	North B	1588.00	1590.00	2.00	0.20	0.20
							North B	1615.50	1619.30	3.80	5.84	5.84
							North A2	1567.00	1569.50	2.50	2.97	2.97
							North A	1623.00	1625.05	2.05	1.95	1.95
							North B	1637.20	1639.49	2.30	5.88	5.88

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
S-10-11F	wedge						North B	1669.40	1672.00	2.60	0.56	0.56
							North A	1827.40	1831.40	4.00	1.01	1.01
							North B	1848.90	1853.49	4.60	12.56	12.56
S-10-11H	wedge						North B	1905.30	1907.50	2.20	3.54	3.54
S-10-11I	wedge						North A	1761.40	1775.80	14.40	1.86	1.86
							North B	1790.80	1799.42	8.62	5.98	5.98
							North A	1734.90	1737.70	2.80	0.34	0.34
S-10-11J	wedge						North B	1760.00	1762.50	2.50	1.33	1.33
S-10-11K	wedge						North A2	1574.00	1576.50	2.50	7.05	7.05
							North A	1615.90	1627.00	11.10	5.17	5.17
							North B	1663.09	1674.49	11.40	10.84	10.84
S-10-11N	wedge						North B	1692.61	1698.01	5.40	4.09	4.09
							North A2	1719.50	1724.40	4.90	6.10	6.10
							North A	1786.40	1791.10	4.70	4.48	4.48
S-10-11O	wedge						North B	1840.60	1848.00	7.40	4.05	4.05
							North A2	1670.20	1674.80	4.60	4.31	4.31
							North A	1714.40	1716.80	2.40	5.70	5.70
S-10-12A							North B	1742.91	1745.01	2.10	2.82	2.82
							North B	1773.90	1780.40	6.50	1.60	1.60
							North A2	2180.63	2182.73	2.10	0.90	0.90

### Lake Shore Gold Underground Drilling

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC180-221	5640.50	5452.20	2108.30	316.50	-48.00	297.00	North A	261.30	264.00	2.70	4.81	4.81
							North AX	281.70	284.50	2.80	4.37	4.37
BC180-222	5639.80	5452.20	2108.20	312.00	-44.00	297.00	North A	244.00	246.00	2.00	2.28	2.28
							North AX	257.75	262.50	4.75	2.78	2.78
BC180-223	5640.90	5452.20	2108.10	332.40	-61.00	252.00	North A	232.20	233.96	1.76	3.27	3.27
BC180-224	5641.10	5452.00	2108.00	331.00	-69.00	270.00	North A	249.09	256.30	7.20	3.09	3.09
BC180-225	5641.66	5452.10	2107.90	351.00	-69.00	240.00	North A	198.40	207.01	7.60	6.24	6.24
BC180-226	5641.70	5451.60	2108.00	352.00	-75.00	315.00	North A	225.30	227.66	2.36	2.02	2.02
							North B	295.43	297.60	2.17	0.34	0.34
BC180-227	5642.20	5452.00	2108.10	10.00	-64.00	291.00	North A	201.00	203.60	2.60	3.69	3.69
							North B	254.45	256.60	1.00	1.41	1.41
BC180-228	5642.20	5451.90	2107.90	13.00	-74.00	252.00	North A	226.00	228.46	2.46	6.59	6.59
BC180-229	5642.30	5452.10	2108.20	10.00	-55.00	252.00	North A	186.70	188.85	2.15	1.18	1.18
							North B	244.10	246.00	1.90	0.77	0.77
BC180-230	5640.60	5451.90	2107.60	30.00	-74.00	321.00	North A	242.70	245.50	2.80	0.99	0.99
							North B	318.15	320.96	1.75	0.25	0.25
BC180-231	5643.20	5451.90	2108.10	31.50	-60.00	231.00	North A	194.10	198.00	3.90	5.93	5.93
BC180-233	5643.30	5451.80	2107.90	33.70	-74.90	267.00	North A	235.52	238.20	2.68	0.75	0.75
BC210-232	5791.80	5510.40	2076.70	37.50	-55.50	210.00	North A	99.80	102.40	2.60	1.94	1.94

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC210-252	5788.20	5510.80	2076.70	331.00	-58.00	231.00	North A Footwall	110.84	112.44	1.60	0.24	0.24
							North B	168.00	170.30	2.30	0.37	0.37
							North A	112.16	114.95	2.79	4.51	4.51
							North A Footwall	129.80	132.23	2.43	1.16	1.16
BC210-253	5787.30	5510.80	2076.70	18.00	-68.00	171.00	North B	184.40	186.60	2.20	2.58	2.58
							North A	116.60	119.60	3.00	4.52	4.52
							North A Footwall	122.80	125.20	2.40	1.96	1.96
BC210-254	5791.70	5510.30	2076.80	34.50	-45.50	231.00	North A	93.60	96.00	2.40	4.03	4.03
							North A Footwall	99.80	101.80	2.00	1.30	1.30
							North B	157.00	159.20	2.20	0.15	0.15
BC210-255	5787.00	5510.90	2076.70	41.00	-64.50	175.00	North A	127.00	131.00	4.00	9.07	9.07
							North A Footwall	140.60	145.20	4.60	0.87	0.87
							North A	86.00	88.80	2.80	4.39	4.39
BC210-256	5791.20	5510.50	2079.30	46.00	-31.50	141.00	North A Footwall	96.00	99.00	3.00	1.02	1.02
							North A	89.00	92.10	3.10	1.17	1.17
							North A Footwall	104.00	112.19	8.19	4.58	4.58
BC210-257	5791.60	5510.30	2077.40	55.00	-16.00	150.00	North A	107.91	111.01	3.10	4.48	4.48
							North A Footwall	115.52	128.66	13.14	5.80	5.80
							North A	139.00	146.80	7.80	0.26	0.26
BC210-258	5789.10	5510.50	2076.70	56.00	-54.00	144.00	North A Footwall	163.00	168.00	5.00	0.57	0.57
							North A	108.00	111.40	3.40	0.96	0.96
							North A Footwall	128.01	132.00	3.30	0.97	0.97
BC210-259	5791.60	5510.30	2076.80	64.50	-43.00	144.00	North A	136.49	140.89	4.40	1.62	1.62
							North A Footwall	156.23	159.50	2.50	0.04	0.04
							North A	120.79	126.39	5.60	2.74	2.74
BC210-260	5790.80	5510.00	2076.70	67.60	-56.80	201.00	North A Footwall	142.00	145.99	3.99	0.18	0.18
							North A	61.96	64.00	2.04	0.92	0.92
							North A Footwall	75.60	78.00	2.40	0.28	0.28
BC210-261	5850.00	5508.80	2078.10	360.00	-52.00	117.00	North A	70.20	82.50	12.30	3.30	3.30
BC210-262	5837.50	5508.50	2080.40		4.00	102.00	North A	73.60	75.90	2.30	2.45	2.45
							North A Footwall	83.40	85.50	2.10	1.79	1.79
							North A	103.00	105.40	2.40	11.45	11.45
BC210-263	5870.50	5508.50	2078.50		5.00	102.00	North A Footwall	110.34	119.00	8.66	5.83	5.83
							North B	188.00	191.30	3.30	1.45	1.45
							North A	69.89	72.19	2.30	3.80	3.80
BC210-264	5870.50	5508.50	2078.50	26.00	-28.00	111.00	North A Footwall	76.80	78.50	1.70	2.99	2.99
							North A	61.00	69.00	8.00	6.81	6.81
							North A Footwall	70.80	73.00	2.20	2.30	2.30
BC210-265	5870.50	5508.50	2078.50	15.00	-30.00	96.00	North A	58.20	61.00	2.80	1.34	1.34
							North A Footwall	72.00	73.90	1.90	0.96	0.96
							North A	61.90	66.10	4.20	7.68	7.68
BC210-266	5870.50	5508.50	2078.50	13.00	-10.00	96.00	North A Footwall	69.50	73.90	4.40	3.02	3.02
							North A	69.10	72.20	3.10	1.16	1.16
							North A Footwall	82.00	84.47	2.47	0.84	0.84

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC210-466	5870.50	5508.50	2078.50	4.00	-12.00	90.00	North A	56.50	58.50	2.00	3.75	3.75
							North A Footwall	69.20	72.00	2.80	2.14	2.14
BC210-467	5862.50	5508.70	2078.90		-51.00	108.00	North A	66.24	70.44	4.20	0.82	0.82
							North A Footwall	79.60	82.10	2.50	0.15	0.15
BC210-468	5862.50	5508.70	2078.90	0.00	-45.00	99.00	North A	62.00	64.50	2.50	1.34	1.34
							North A Footwall	76.00	79.10	3.10	3.12	3.12
BC210-469	5850.00	5508.80	2078.50	0.00	-50.00	111.00	North A	71.60	82.80	11.20	3.05	3.05
							North A Footwall	82.80	84.04	1.24	0.25	0.25
BC210-470	5850.00	5508.80	2078.50	360.00	-44.00	105.00	North A	74.90	79.60	4.70	1.64	1.64
							North A Footwall	79.60	80.81	1.21	0.01	0.01
BC210-471	5850.00	5508.80	2078.50		-25.00	90.00	North A	67.07	69.30	2.24	0.16	0.16
							North A Footwall	74.25	76.20	1.95	1.63	1.63
BC210-472	5850.00	5508.80	2078.50		-10.00	90.00	North A	69.90	72.00	2.10	0.75	0.75
							North A Footwall	80.00	82.00	2.00	2.90	2.90
BC210-473	5837.50	5508.80	2078.20		-50.00	117.00	North A	79.60	81.80	2.20	1.49	1.49
							North A Footwall	85.04	87.36	2.32	0.13	0.13
BC210-474	5837.50	5508.80	2078.20		-44.00	111.00	North A	76.30	78.30	2.00	1.41	1.41
							North A Footwall	81.00	83.10	2.10	2.45	2.45
BC210-475	5837.50	5508.80	2078.20		-19.00	102.00	North A	69.51	71.40	1.89	1.06	1.06
							North A Footwall	76.10	78.40	2.30	0.84	0.84
BC210-476	5825.00	5508.90	2078.50	0.00	-43.00	108.00	North A	75.00	82.20	7.20	2.17	2.17
							North A Footwall	86.86	89.12	2.27	0.06	0.06
BC210-477	5825.00	5508.90	2078.50	0.00	-36.00	108.00	North A	72.50	78.90	6.40	1.97	1.97
							North A Footwall	81.60	83.40	1.80	6.93	6.93
BC210-478	5825.00	5508.90	2078.50		-28.00	105.00	North A	72.00	74.80	2.80	5.97	5.97
							North A Footwall	76.90	79.00	2.10	4.37	4.37
BC210-479	5825.00	5508.90	2078.50		-11.00	99.00	North A	73.01	77.01	4.00	3.38	3.38
							North A Footwall	80.00	82.71	2.71	2.66	2.66
BC210-480	5812.50	5508.90	2078.10		-41.00	120.00	North A	83.70	85.80	2.10	11.21	11.21
							North A Footwall	93.70	96.00	2.30	0.34	0.34
BC210-481	5800.00	5509.00	2077.40	0.00	-42.00	117.00	North A	88.60	90.50	1.90	3.89	3.89
							North A Footwall	95.00	97.00	2.00	1.32	1.32
BC210-482	5800.00	5509.00	2077.40	0.00	-35.00	111.00	North A	87.00	88.90	1.90	1.44	1.44
							North A Footwall	91.90	93.50	1.60	0.29	0.29
BC210-483	5800.00	5509.00	2077.40		-25.00	111.00	North A	84.61	86.42	1.80	0.90	0.90
BC210-484	5800.00	5509.00	2077.40	0.00	-15.00	111.00	North A	84.34	86.30	1.96	5.32	5.32
BC210-485	5787.50	5512.10	2077.50		-11.00	111.00	North A	92.99	95.20	2.20	2.35	2.35
BC210-486	5787.50	5512.10	2077.70		-30.00	111.00	North A	91.46	94.83	3.33	0.03	0.03
							North A Footwall	97.37	99.39	2.02	0.54	0.54
BC240-268	5796.30	5349.60	2053.10	12.00	-58.00	345.00	North A	270.30	272.70	2.40	1.39	1.39
							North B	318.20	322.60	4.40	5.45	5.45
BC240-269	5796.30	5349.60	2053.10	3.50	-54.00	351.00	North A	255.82	258.00	2.18	3.24	3.24
							North B	316.11	318.00	1.89	1.95	1.95
BC240-270	5797.60	5352.40	2053.10	22.00	-57.50	345.00	North A3	226.84	228.75	0.91	0.05	0.05

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC240-271	5797.50	5352.50	2053.10	15.60	-45.60	321.00	North A	269.70	276.20	6.50	4.12	4.12
							North B	318.20	323.10	4.90	7.80	7.80
							North A	230.41	235.01	4.60	3.17	3.17
							North A Footwall	245.30	248.90	3.60	1.49	1.49
							North B	289.18	291.08	1.90	0.45	0.45
BC240-272	5796.30	5349.60	2053.10	40.00	-52.50	357.00	North A	268.20	270.80	2.59	0.54	0.54
							North B	331.30	334.00	2.70	1.55	1.55
BC240-273	5796.30	5349.60	2053.10	28.00	-51.50	336.10	North A	247.40	249.30	1.90	0.93	0.93
							North B	308.60	310.90	2.30	1.55	1.55
BC240-274	5796.30	5349.60	2053.10	349.00	-56.00	357.00	North A	270.08	272.30	2.22	1.50	1.50
							North B	326.90	329.00	2.10	1.13	1.13
BC240-276	5796.30	5349.60	2053.10	354.00	-68.10	402.20	North A3	242.30	245.70	3.40	7.42	7.42
							North A	310.30	312.90	1.00	0.74	0.74
							North B	376.50	379.50	3.00	1.51	1.51
BC240-277	5599.10	5371.40	2031.40	14.00	-54.00	300.00	North A	225.60	227.70	2.10	1.05	1.05
							North B	286.80	288.80	2.00	18.00	18.00
							North A	265.50	268.20	2.70	2.43	2.43
BC240-280	5600.50	5371.10	2031.40	24.00	-56.00	306.00	North A	230.00	232.00	2.00	0.61	0.61
							North B	296.14	298.30	2.16	1.01	1.01
BC240-281	5600.80	5370.60	2031.40	26.00	-62.00	270.00	North A	233.47	235.50	2.03	0.73	0.73
BC240-283	5650.00	5370.00	2040.00	13.50	-69.50	352.00	North B	304.90	307.10	2.20	2.04	2.04
BC240-284A	5650.00	5370.40	2040.00	22.00	-66.00	342.00	North A	266.00	268.30	2.30	0.64	0.64
							North B	326.50	328.90	2.40	1.46	1.46
BC240-285	5650.00	5370.00	2040.00	33.00	-62.60	390.00	North A	252.62	254.30	1.68	0.15	0.15
							North B	307.52	310.53	0.00	0.00	0.00
BC240-286	5650.00	5370.00	2040.00	32.00	-55.50	317.00	North A	256.20	258.50	2.30	1.50	1.50
							North B	312.20	314.70	2.50	0.41	0.41
BC240-287	5650.00	5370.00	2040.00	26.00	-48.50	285.00	North A	230.74	232.95	2.21	0.21	0.21
BC240-289	5551.00	5369.60	2023.62	18.00	-54.50	336.00	North B	313.70	317.20	3.50	10.98	10.98
BC240-290	5551.00	5369.60	2023.60	11.00	-49.50	272.80	North A	239.20	245.90	6.70	5.30	5.30
BC240-291	5551.00	5369.60	2023.60	12.00	-59.00	357.00	North A	262.70	271.99	9.30	2.03	2.03
							North B	316.60	318.70	2.10	0.95	0.95
BC240-292	5551.00	5369.60	2023.60	6.00	-41.50	270.00	North A	238.70	240.60	1.90	2.03	2.03
BC240-293	5551.00	5369.60	2023.60	6.00	-54.50	351.00	North A	247.90	250.30	2.40	3.31	3.31
							North B	300.70	302.37	1.67	1.02	1.02
BC240-294	5551.00	5369.60	2023.60	6.00	-61.50	297.00	North A	248.80	269.40	20.60	2.02	2.02
BC240-295	5551.00	5369.60	2023.60	359.60	-53.40	315.00	North A	238.60	252.00	13.40	2.90	2.90
							North B	305.67	307.27	1.61	0.08	0.08
BC240-296	5551.00	5369.60	2023.60	346.60	-58.50	351.00	North AX	280.44	282.44	2.00	10.16	10.16
BC240-297	5797.70	5353.20	2054.50	33.00	-41.00	429.00	North A	270.60	273.30	2.70	1.92	1.92
BC240-302	5797.70	5353.20	2054.50	23.00	-9.00	372.00	North A	225.00	227.90	2.90	2.13	2.13
							North A Footwall	236.00	239.00	3.00	1.35	1.35
BC240-303	5797.70	5353.20	2054.50	20.00	-5.00	400.00	North A	231.49	234.49	3.00	2.72	2.72
							North A Footwall	237.00	239.14	2.14	2.32	2.32

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BC240-304	5797.70	5353.20	2054.50	30.00	-18.00	402.00	North A	241.10	243.54	2.43	0.17	0.17
BC240-305	5797.70	5353.20	2054.50	32.00	-36.00	381.00	North A	240.50	242.70	2.20	0.39	0.39
							North B	292.60	294.80	2.20	1.38	1.38
BC240-306	5551.00	5369.60	2054.50	349.00	-66.00	430.00	North AX	303.10	305.06	1.96	0.04	0.04
BC240-308	5797.70	5353.20	2054.50	34.00	-25.00	370.00	North A	250.64	253.24	2.59	0.02	0.02
BC240-323	5796.60	5353.20	2054.50	10.00	7.00	381.00	North A	228.30	230.50	2.20	0.84	0.84
							North A Footwall	238.30	240.80	2.50	0.70	0.70
							North B	288.10	289.90	1.80	1.20	1.20
BC240-325	5796.60	5353.20	2054.50	23.00	3.50	381.00	North A Footwall	245.00	246.90	1.90	0.11	0.11
BC240-327	5796.60	5353.20	2054.50	16.00	17.00	390.00	North A	253.50	256.50	3.00	0.61	0.61
BC240-328A	5796.60	5353.20	2054.50	4.50	16.00	381.00	North A	249.00	251.00	2.00	1.80	1.80
							North B	296.29	298.19	1.90	5.74	5.74
BC240-330	5797.60	5353.20	2054.50	13.00	12.00	381.00	North A	238.21	240.30	2.09	0.83	0.83
							North A Footwall	246.60	248.60	2.00	1.47	1.47
BC240-332	5796.60	5353.20	2054.50	8.00	15.00	380.00	North A	242.37	244.87	2.50	0.98	0.98
							North A Footwall	257.69	259.69	2.00	6.28	6.28
							North B	302.70	305.20	2.50	2.53	2.53
BC240-342	5799.30	5352.10	2053.10	40.00	-74.00	500.00	North A4	336.10	338.32	0.00	0.00	0.00
							North A	379.38	384.26	4.87	0.40	0.40
							North B	410.50	412.70	2.20	0.88	0.88
							North B	461.89	468.79	6.90	3.57	3.57
BC240-343	5799.30	5352.10	2053.10	22.00	-70.00	399.00	North A3	278.10	280.90	2.80	0.98	0.98
							North A Hangingwall	312.60	314.70	2.10	3.67	3.67
							North A	327.00	332.30	5.30	5.56	5.56
							North B	339.22	341.02	1.80	0.16	0.16
							North B	373.00	375.30	2.30	7.02	7.02
BC300-366	5861.90	5545.40	1994.95	7.00	0.00	18.00	North A Footwall	6.80	9.00	2.20	2.10	2.10
BC300-367	5850.05	5549.43	1994.85	4.00	0.00	18.00	North A Footwall	4.40	11.70	7.30	4.06	4.06
BC300-369	5836.88	5555.12	1994.71	4.00	0.00	18.00	North A Footwall	6.10	8.60	2.50	5.54	5.54
BC300-371	5825.43	5564.56	1994.28	3.00	0.00	5.70	North A Footwall	4.30	5.70	1.40	0.24	0.24
BC300-371A	5825.42	5564.56	1994.28	3.00	0.00	18.00	North A Footwall	4.30	5.80	1.50	0.27	0.27
BC300-373	5812.66	5568.68	1994.05	11.00	0.00	18.00	North A Footwall	5.00	7.20	2.20	13.88	13.88
BC300-375	5799.60	5570.54	1993.83	358.00	0.00	18.00	North A	0.00	0.50	0.50	3.64	3.64
							North A Footwall	6.11	9.97	3.86	5.81	5.81
BC300-377	5787.81	5570.02	1993.60	0.00	0.00	18.00	North A	0.00	1.99	1.99	4.77	4.77
							North A Footwall	8.59	11.39	2.80	4.35	4.35
BC300-379	5775.15	5571.67	1993.36	4.00	0.00	18.00	North A Footwall	6.80	9.00	2.20	2.55	2.55
BC300-380	5775.01	5567.43	1993.44	179.00	0.00	12.00	North A	0.00	0.50	0.50	9.16	9.16
BC320-400	5858.50	5543.20	1976.00	28.00	0.00	31.00	North A Footwall	7.05	9.46	2.40	0.34	0.34
BC320-401	5858.90	5543.20	1976.90	28.00	30.00	35.00	North A Footwall	9.00	12.00	3.00	3.90	3.90
BC320-402	5850.00	5544.80	1976.00	0.00	0.00	21.00	North A Footwall	4.10	8.80	4.70	5.29	5.29
BC320-403	5850.00	5544.80	1977.00	0.00	30.00	24.00	North A Footwall	6.00	12.00	6.00	4.72	4.72
BC320-404	5839.40	5546.60	1975.90	0.00	0.00	22.00	North A Footwall	8.20	11.80	3.60	5.33	5.33
BC320-405	5839.40	5546.60	1977.10	0.00	27.00	27.00	North A Footwall	12.00	15.90	3.90	14.59	14.59

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BC320-406	5824.50	5559.50	1975.60	0.00	28.00	24.00	North A Footwall	3.00	5.10	2.10	5.52	5.52
BC320-407	5824.50	5559.50	1975.10	0.00	0.00	18.00	North A Footwall	2.00	3.80	1.80	3.39	3.39
BC320-408	5812.50	5561.90	1975.70	0.00	37.00	24.00	North A Footwall	3.70	10.30	6.60	6.43	6.13
BC320-409	5812.50	5561.90	1974.30	0.00	0.00	19.00	North A Footwall	0.90	4.47	3.56	1.41	1.41
BC320-410	5800.00	5563.50	1974.70	0.00	34.00	24.00	North A	0.00	3.10	2.40	2.15	2.15
							North A Footwall	5.80	9.50	3.70	2.27	2.27
BC320-411	5800.00	5563.50	1973.80	0.00	0.00	18.00	North A	0.00	1.92	1.92	1.77	1.77
							North A Footwall	3.70	6.30	2.60	5.74	5.74
BC320-412	5787.50	5561.90	1974.70	360.00	32.00	27.00	North A	0.00	1.00	1.00	8.39	8.39
							North A Footwall	14.00	21.40	7.40	3.14	3.14
BC320-413	5787.50	5561.70	1973.40	360.00	0.00	24.00	North A Footwall	6.80	10.00	3.20	2.74	2.74
BC320-414	5775.00	5561.70	1974.05	360.00	33.00	30.00	North A	0.00	1.90	1.90	1.03	1.03
							North A Footwall	10.00	18.40	8.40	1.98	1.98
BC320-415	5775.00	5561.70	1973.80	360.00	0.00	27.00	North A	0.00	0.41	0.41	0.42	0.42
							North A Footwall	6.00	8.60	2.60	11.93	8.51
BC320-416	5762.80	5563.50	1974.20	360.00	32.00	30.00	North A Footwall	10.60	13.70	3.10	1.82	1.82
BC320-417	5762.80	5563.50	1972.70	360.00	0.00	21.00	North A Footwall	6.10	8.30	2.20	4.90	4.90
BC320-426	5858.90	5543.20	1974.50	28.00	-60.00	21.00	North A Footwall	13.00	17.00	4.00	2.12	2.12
BC320-427	5850.00	5544.80	1974.60	0.00	-50.00	21.00	North A Footwall	3.30	9.30	6.00	5.96	5.96
BC320-428	5839.40	5546.60	1974.20	0.00	-56.00	21.00	North A Footwall	12.00	16.00	4.00	5.32	5.32
BC320-429	5824.50	5559.50	1973.40	0.00	-50.00	21.00	North A Footwall	2.14	4.38	2.24	3.36	3.36
BC320-430	5812.50	5561.90	1972.70	0.00	-50.00	21.00	North A Footwall	0.00	3.60	3.60	4.21	4.21
BC320-431	5800.00	5563.50	1972.10	0.00	-50.00	21.00	North A	0.00	1.80	1.80	2.03	2.03
							North A Footwall	3.00	5.30	2.30	3.40	3.40
BC320-432	5787.50	5561.90	1972.00	0.00	-50.00	21.00	North A Footwall	6.50	10.40	3.90	2.90	2.90
BC320-433	5775.00	5563.70	1971.50	360.00	-50.00	21.00	North A Footwall	5.00	7.21	2.21	96.27	17.48
BC320-434	5762.80	5563.50	1971.20	360.00	-50.00	21.00	North A Footwall	6.00	8.20	2.20	1.49	1.49
BC330-418	5850.00	5541.60	1953.40	360.00	0.01	21.00	North A	0.00	4.00	4.00	12.20	12.20
							North A Footwall	5.00	8.00	3.00	2.08	2.08
BC330-419	5836.20	5543.00	1953.10	360.00	0.01	21.00	North A	0.00	0.84	0.84	0.02	0.02
							North A Footwall	10.00	12.40	2.40	0.65	0.65
BC330-420	5825.00	5553.80	1952.30	360.00	0.00	24.00	North A Footwall	1.50	3.50	2.00	4.56	4.56
BC330-421	5812.20	5556.00	1952.20	360.00	0.01	18.00	North A	0.00	2.30	2.30	8.82	8.82
							North A Footwall	3.60	5.71	2.11	1.48	1.48
BC330-422	5799.50	5556.60	1952.25	360.00	0.01	18.00	North A Footwall	2.00	4.00	2.00	33.25	22.46
BC330-423	5785.40	5555.20	1951.90	360.00	0.01	18.00	North A Footwall	9.50	11.50	2.00	2.21	2.21
BC330-424	5774.10	5552.70	1951.60	360.00	0.01	15.00	North A Footwall	7.80	9.80	2.00	10.75	10.75
BC355-317	5602.07	5562.93	1931.70	259.00	0.00	5.00	North A	0.00	2.29	2.29	5.92	5.92
BC355-318	5603.08	5568.01	1931.70	259.00	0.00	5.00	North A	0.00	5.00	5.00	3.97	3.97
BC355-319	5593.32	5575.20	1931.70	39.00	0.00	7.50	North A	0.00	1.60	1.60	15.22	15.22
BC355-360	5600.70	5559.30	1928.70	289.00	-35.00	10.50	North A	0.00	10.50	10.50	4.57	4.11
BC355-361	5600.70	5559.30	1929.00	289.00	-50.00	12.00	North A	0.00	12.00	12.00	5.94	5.94
BC355-362	5602.00	5563.00	1929.60	292.00	-33.00	19.50	North A	0.00	19.50	19.50	6.28	6.13
BC355-363	5609.90	5561.00	1931.60	292.00	45.00	12.00	North A	0.00	8.83	8.83	0.84	0.84

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BC355-364	5609.90	5561.00	1931.00	292.00	30.00	12.00	North A	0.00	9.78	3.50	0.25	0.25
BC355-365	5602.00	5568.00	1928.30	245.00	-30.00	15.00	North A	0.00	14.38	14.38	7.16	7.16
BC370-309	5462.80	5512.10	1929.10	37.00	-44.50	180.00	North AX	101.73	104.73	3.00	2.94	2.94
BC370-310	5462.80	5512.10	1929.10	51.50	-30.00	180.00	North A	83.30	86.20	2.90	1.30	1.30
							North B	139.80	142.10	2.30	1.43	1.43
BC370-311	5595.18	5558.66	1914.65	233.00	0.00	10.90	North A	0.00	0.05	0.05	10.83	10.83
BC370-312	5592.57	5562.56	1914.65	233.00	0.00	7.90	North A	0.00	2.16	2.16	0.03	0.03
BC370-313	5585.61	5569.04	1914.65	233.00	0.00	6.50	North A	0.00	3.52	3.52	5.43	5.43
BC370-314	5582.50	5572.52	1914.65	233.00	0.00	6.50	North A	0.00	3.91	3.91	0.85	0.85
BC370-315	5613.03	5555.50	1914.65	174.00	0.00	11.00	North A	3.00	6.40	3.40	3.76	3.76
BC370-316	5605.19	5555.14	1914.65	174.00	0.00	11.30	North A	0.00	2.07	2.07	0.54	0.54
BC370-326	5462.80	5512.10	1929.10	14.50	-52.00	150.00	North AX	94.80	100.80	6.00	8.26	8.26
BC370-329B	5462.80	5512.10	1934.20	58.80	-64.00	204.00	North AX	139.99	143.00	3.01	0.31	0.31
							North B	192.90	196.25	3.35	5.45	5.45
BC415-366	5661.60	5482.33	1876.90	4.50	-40.00	150.00	North A	54.00	56.00	2.00	0.30	0.30
							North B	102.90	105.90	3.00	6.16	6.16
BC415-367	5661.64	5482.32	1876.64	4.50	-42.00	150.00	North A	52.45	54.70	2.25	2.34	2.34
							North B	107.00	109.40	2.40	0.69	0.69
BC415-368	5659.84	5482.77	1876.86	330.00	-23.00	135.00	North A	49.00	53.00	4.00	5.67	5.67
							North B	123.00	125.40	2.40	1.64	1.64
BC415-369	5661.35	5482.37	1877.70	33.00	-10.00	135.00	North A	57.11	59.52	2.41	1.81	1.81
							North B	120.20	122.50	2.30	1.04	1.04
BC415-370	5661.40	5482.36	1877.12	33.50	-29.00	135.00	North A	55.50	57.93	2.43	0.77	0.77
							North B	120.00	123.00	3.00	0.18	0.18
BC415-371	5658.36	5481.79	1877.09	317.00	-28.00	85.00	North A	55.90	58.47	2.57	0.40	0.40
BC415-374	5662.06	5482.23	1876.64	51.00	-65.00	126.00	North A	77.00	80.00	3.00	1.56	1.56
BC415-386	5582.60	5556.60	1873.10	230.00	0.00	15.00	North A	0.62	4.32	1.32	0.40	0.40
BC415-387	5579.60	5558.40	1873.64	230.00	0.00	15.00	North A	2.40	6.60	4.20	1.91	1.91
BC415-388	5575.17	5560.28	1874.10	230.00	0.00	15.00	North A	3.60	10.30	5.40	1.42	1.42
BC415-389	5525.00	5564.10	1876.00	197.00	0.00	30.00	North A	4.10	13.00	8.90	3.57	3.57
BC415-390	5525.00	5564.10	1877.00	180.00	45.00	27.00	North A	4.80	10.50	5.70	2.74	2.74
BC415-391	5525.00	5564.10	1874.60	180.00	-30.00	42.00	North A	6.01	25.00	18.99	1.72	1.72
BC415-392	5521.00	5579.00	1874.30	180.00	-50.00	80.00	North AX	0.00	6.26	6.26	0.01	0.01
BC415-393	5521.00	5579.00	1874.30	151.70	-40.00	81.00	North AX	0.00	5.92	5.92	0.00	0.00
							North A	40.49	72.50	32.00	1.91	1.91
BC415-394	5512.50	5579.50	1876.00	180.00		30.00	North A	19.50	25.60	6.10	3.35	3.35
BC415-436	5597.76	5490.15	1869.66	334.00	-16.00	96.00	North A	64.00	67.22	3.22	0.16	0.16
BC415-437	5597.89	5490.16	1869.23	332.00	-35.00	102.00	North A	67.30	71.10	3.80	3.41	3.41
BC415-438	5596.83	5490.16	1869.15	328.00	-51.00	117.00	North A	70.00	71.90	1.90	2.34	2.34
BC415-441	5597.12	5490.17	1869.92	345.00	-18.00	90.00	North A	57.38	60.20	1.62	0.02	0.02
BC420-344	5806.90	5477.50	1883.00	5.00	-27.00	135.00	North A3	11.94	13.84	1.91	0.35	0.35
							North A	58.80	60.90	2.10	3.66	3.66
							North B	100.00	102.16	2.16	5.67	5.67
BC420-345	5806.90	5477.50	1882.00			160.00	North A3	10.98	13.63	2.65	0.30	0.30

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC420-346	5806.90	5477.50	1883.00	5.00	-14.50	135.00	North A	64.60	68.50	3.90	3.10	3.10
							North B	113.00	116.30	3.30	4.38	4.38
							North A	56.32	59.40	2.30	0.38	0.38
							North B	99.34	101.39	2.05	0.72	0.72
BC420-347	5806.90	5477.00	1882.00	5.00	-57.00	180.00	North A3	11.12	14.17	3.05	2.88	2.88
							North A	68.40	70.80	2.40	1.43	1.43
							North B	120.40	127.60	7.20	1.36	1.36
							North A3	16.81	19.90	3.09	1.84	1.84
BC420-349A	5806.90	5477.50	1883.00	33.00	-26.00	120.00	North A Hangingwall	46.70	49.40	2.70	1.95	1.95
							North A	55.10	57.90	2.80	2.04	2.04
							North B	68.54	69.77	1.06	0.83	0.83
							North B	111.24	113.60	2.36	0.66	0.66
BC420-350	5806.90	5477.50	1883.00	29.00	-7.00	120.00	North A3	16.50	18.50	2.00	3.78	3.78
							North A	54.36	54.92	0.55	0.02	0.02
							North B	113.66	116.22	2.55	0.61	0.61
							North A3	14.40	15.00	0.60	0.50	0.50
BC420-351A	5806.90	5476.50	1882.15	29.00	-80.00	291.00	North A3	14.12	18.43	1.30	0.01	0.01
							North A Hangingwall	89.10	97.40	8.30	2.20	2.20
							North A	119.70	124.59	4.90	11.30	11.30
							North B	132.98	138.07	5.10	1.43	1.43
BC420-352	5806.90	5476.50	1882.15	29.00	-66.00	222.00	North B	206.29	210.70	4.41	4.08	4.08
							North A3	12.52	16.02	1.02	0.38	0.38
							North A Hangingwall	63.00	65.12	2.12	3.64	3.64
							North A	82.30	91.69	9.39	5.20	5.20
BC420-354	5806.90	5477.50	1883.00	45.00	-31.00	171.00	North B	147.40	151.30	3.90	9.94	9.94
							North A3	19.40	21.51	2.11	3.24	3.24
							North A	58.20	60.90	2.70	3.35	3.35
							North B	137.50	142.40	4.90	2.03	2.03
BC420-355	5806.90	5477.00	1882.00	66.00	-65.00	210.00	North A3	18.30	21.40	3.10	3.41	3.41
							North A	89.22	98.80	9.58	2.41	2.41
							North B	127.80	132.79	5.00	1.93	1.93
							North B	201.29	206.69	5.39	2.41	2.41
BC420-356	5806.90	5476.50	1882.15	84.00	-74.00	292.80	North A3	20.00	25.40	5.40	9.53	9.53
							North A Hangingwall	116.85	128.29	10.29	2.25	2.25
							North A	131.98	133.60	1.62	4.72	4.72
							North B	174.28	179.00	4.70	1.06	1.06
BC420-357	5806.90	5476.50	1882.15	23.00	-70.00	450.00	North B	262.50	273.99	11.49	2.64	2.64
							North A3	12.48	16.31	3.83	0.50	0.50
							North A Hangingwall	71.72	75.20	3.48	1.39	1.39
							North A	93.07	97.06	3.99	3.82	3.82
BC420-381	5806.90	5477.50	1883.60	360.00	2.00	125.00	North B	97.06	101.66	4.60	0.12	0.12
							North B	164.09	168.50	4.40	3.57	3.57
							North A	57.00	59.07	2.07	0.38	0.38
							North B	101.80	103.80	2.00	2.91	2.91

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC420-382	5806.90	5477.50	1883.30	360.00	-17.00	126.00	North A	54.80	56.70	1.90	3.08	3.08
							North B	99.60	101.80	2.20	5.45	5.45
BC420-383	5806.90	5477.50	1882.00	360.00	-55.00	142.20	North A3	10.81	13.73	2.92	1.06	1.06
							North A	66.00	68.35	2.35	0.60	0.60
BC420-384	5806.90	5477.50	1882.50	337.00	-30.00	151.50	North B	117.00	122.50	5.50	2.65	2.65
							North A	56.00	58.09	2.09	1.12	1.12
BC420-385	5806.90	5477.50	1882.00	334.00	-48.00	162.00	North B	111.00	114.00	3.00	1.24	1.24
							North A	65.00	67.80	2.80	1.62	1.62
BC420-425A	5806.90	5477.50	1882.00	25.00	-51.00	162.00	North B	125.00	127.60	2.60	1.40	1.40
							North A3	11.59	14.20	2.61	0.15	0.15
BC420-435	5806.90	5477.50	1881.90	48.00	-50.00	210.00	North A Hangingwall	49.26	51.90	2.64	2.51	2.51
							North A	65.38	75.40	10.01	5.00	5.00
BC420-490	5848.80	5477.70	1883.60	0.00	-25.00	120.00	North B	122.99	125.30	2.31	7.53	7.53
							North A3	13.51	19.30	5.80	2.00	2.00
BC420-491	5848.80	5477.70	1884.30		-4.00	111.00	North A Hangingwall	62.95	65.76	0.66	0.01	0.01
							North A	68.00	72.00	4.00	5.20	5.20
BC420-492	5848.80	5477.70	1887.50		36.00	102.00	North B	91.30	95.50	4.20	3.30	3.30
							North B	155.29	157.90	2.60	1.04	1.04
BC420-493	5848.80	5477.70	1885.10	3.00	20.00	150.00	North A	40.80	42.81	2.01	1.74	1.74
							North B	96.50	99.00	2.50	1.21	1.21
BC420-500	5846.60	5477.10	1882.90	3.00	-71.00	225.00	North A	39.90	42.00	2.10	2.28	2.28
							North B	97.88	100.11	2.23	0.15	0.15
BC420-501	5846.60	5476.00	1882.90	3.00	-80.00	252.00	North A	61.30	68.30	7.00	4.62	4.62
							North A Footwall	71.00	73.10	2.10	1.88	1.88
BC420-502	5850.80	5476.00	1882.90	58.00	-73.00	252.00	North A	49.09	51.50	2.40	3.73	3.73
							North B	113.60	115.90	2.30	2.54	2.54
BC420-503	5850.80	5476.00	1882.90	75.00	-79.00	300.00	North A	61.40	70.37	8.97	2.64	2.64
							North B	93.99	100.29	6.30	3.15	3.15
BC420-505	5851.00	5476.00	1882.90	75.00	-60.00	150.00	North B	158.10	161.89	3.80	3.89	3.89
							North A	81.49	85.89	4.40	3.01	3.01
BC420-506	5846.60	5476.90	1882.90	345.00	-72.00	171.00	North B	113.20	118.69	5.50	2.67	2.67
							North B	180.30	183.69	3.40	2.13	2.13
BC420-507	5846.60	5476.50	1882.90	340.00	-78.00	225.00	North A	81.05	85.53	4.48	3.09	3.09
							North B	116.57	121.29	4.72	1.62	1.62
BC420-508	5846.60	5476.50	1882.90	340.00	-78.00	225.00	North B	184.00	188.00	4.00	1.12	1.12
							North A	106.49	110.09	3.60	5.86	5.86
BC420-509	5846.60	5476.50	1882.90	340.00	-78.00	225.00	North B	149.50	154.49	4.99	2.00	2.00
							North B	217.80	226.19	8.39	1.78	1.78
BC420-510	5846.60	5476.50	1882.90	340.00	-78.00	225.00	North A	95.20	101.06	4.10	3.55	2.41
							North B	129.10	135.50	6.40	1.61	1.61
BC420-511	5846.60	5476.50	1882.90	340.00	-78.00	225.00	North A	66.90	74.00	7.10	9.03	9.03
							North B	92.30	96.30	4.00	5.08	5.08
BC420-512	5846.60	5476.50	1882.90	340.00	-78.00	225.00	North B	154.05	156.99	2.94	3.73	3.73
							North A	83.40	83.45	0.05	4.69	4.69

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC445-445	5850.12	5512.35	1847.03	360.00	-29.00	75.00	North A Hangingwall	83.45	86.99	3.54	5.37	5.37
							North A	100.49	108.30	7.81	3.25	3.25
							North B	116.20	119.50	3.30	0.91	0.91
							North B	179.39	182.30	2.90	1.79	1.79
							North B	11.50	13.90	2.40	5.48	5.48
							North B	54.30	57.80	3.50	1.12	1.12
BC445-447	5836.56	5518.37	1847.69	180.00	0.00	15.00	North A	0.00	0.32	0.32	0.10	0.10
BC445-448	5824.44	5524.34	1847.20	180.00	0.00	27.00	North A Hangingwall	9.00	10.50	1.50	2.19	2.19
							North A	0.00	4.40	4.40	2.59	2.59
							North A Hangingwall	14.87	16.90	2.03	0.58	0.58
BC445-449	5812.71	5523.69	1846.57	180.00	0.00	21.00	North A Hangingwall	15.58	17.35	1.78	4.61	4.61
BC445-450	5863.04	5508.94	1847.33	360.00	-40.00	84.00	North B	59.10	61.40	2.30	0.77	0.77
BC445-451	5863.04	5508.94	1846.87	360.00	-57.00	96.00	North B	18.11	20.71	2.60	0.92	0.92
							North B	70.70	73.00	2.30	6.58	6.58
							North B	24.12	27.34	3.21	1.37	1.37
BC445-452	5863.04	5508.94	1846.87		-70.00	111.00	North B	87.50	91.50	4.00	2.79	2.79
							North B	2.21	4.30	2.09	1.90	1.90
BC445-453	5836.14	5527.17	1847.80	360.00	0.01	57.00	North B	41.25	43.20	1.95	1.67	1.67
							North B	2.00	4.00	2.00	2.30	2.30
BC445-454	5836.14	5527.17	1847.14		-36.00	60.00	North B	42.23	44.20	1.97	0.62	0.62
							North B	49.30	51.30	2.00	0.14	0.14
BC445-455	5827.04	5527.37	1847.78		24.00	69.00	North B	40.44	42.40	1.95	0.42	0.42
BC445-456	5827.04	5527.37	1846.94			66.00	North B	0.00	1.80	1.80	3.87	3.87
BC445-458	5812.83	5526.71	1846.77		5.00	57.00	North A	44.00	46.00	2.00	1.23	1.23
							North B	0.00	2.20	1.70	2.32	2.32
							North B	42.51	45.00	2.49	2.03	2.03
BC445-459	5812.83	5526.71	1845.27	0.00	-42.00	66.00	North B	60.60	63.20	2.60	4.66	4.66
BC445-460	5799.57	5525.70	1844.34	349.80	-57.90	121.30	North B	19.00	22.00	3.00	0.38	0.38
BC445-497	5812.19	5523.67	1845.97	180.00	-29.00	30.00	North A Hangingwall	0.00	10.90	10.90	2.53	2.53
BC445-498	5823.85	5524.29	1845.59	180.00	-34.00	36.00	North A	22.80	25.00	2.20	1.37	1.37
BC445-499	5836.56	5518.37	1846.49	180.00	-30.00	30.00	North A Hangingwall	0.00	1.01	1.01	2.48	2.48
							North A	12.72	15.00	2.28	2.37	2.37
							North B	43.98	46.00	2.02	3.37	3.37
BC445-504	5801.45	5526.16	1845.73	0.00	-14.00	57.00	North B	3.10	5.40	2.30	8.12	8.12
BC445-612	5843.87	5513.65	1847.81	191.00	0.01	30.00	North A	0.00	0.05	0.05	0.14	0.14
BC445-613	5831.14	5523.35	1847.29	191.00	0.01	33.00	North A	12.12	14.00	1.88	3.68	3.68
BC445-614	5818.49	5523.88	1846.52	191.00	0.01	33.00	North A Hangingwall	0.00	1.27	1.27	0.73	0.73
							North A	15.30	17.30	2.00	4.48	4.48
							North A	0.00	1.40	1.40	3.08	3.08
BC445-616	5819.05	5527.04	1846.52	360.00	0.01	6.00	North A	19.21	21.00	1.79	3.11	3.11
BC460-517	5875.39	5502.42	1832.40		-50.00	21.00	North B	0.00	3.74	3.74	4.74	4.74
BC460-518	5862.69	5504.59	1833.20	360.00	0.00	21.00	North A	14.96	16.98	2.02	0.92	0.92
							North B	10.60	14.10	3.50	4.56	4.56
BC460-520	5849.90	5510.53	1832.90	0.00	0.00	21.00	North B	11.30	16.60	5.30	1.86	1.86
BC460-521	5849.90	5510.53	1831.60	360.00	-32.00	66.00	North B					

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC460-522	5849.90	5510.53	1831.40	0.00	-52.00	84.00	North B	52.10	56.30	4.20	4.17	4.17
							North B	13.70	18.90	5.20	6.47	6.47
							North B	61.40	64.00	2.60	8.80	8.80
BC460-523	5849.90	5505.87	1832.83	180.00	0.00	24.00	North A	0.00	2.10	2.10	8.32	8.32
BC460-524	5837.25	5520.26	1832.70	360.00		54.00	North B	4.26	6.36	2.10	1.47	1.47
							North B	44.50	46.60	2.10	0.46	0.46
BC460-525	5837.25	5520.26	1831.20		-37.00	69.00	North B	1.60	3.71	2.11	4.13	4.13
							North B	43.97	44.59	0.63	0.09	0.09
							North B	44.60	46.05	1.45	2.85	2.85
BC460-526	5837.39	5513.88	1832.49	180.00	0.00	24.00	North A Hangingwall	8.74	10.57	1.83	0.12	0.12
BC460-527	5837.39	5513.88	1831.32	180.00	-42.00	42.00	North A	0.00	2.50	2.50	4.68	4.68
							North A Hangingwall	16.25	19.90	3.65	6.62	6.62
							North A Hangingwall	19.91	21.49	1.58	0.67	0.67
BC460-528	5837.39	5513.88	1834.51	180.00	40.00	24.00	North A Hangingwall	8.52	10.20	1.68	1.20	1.20
BC460-529	5825.35	5523.18	1832.40	0.00	-4.00	57.00	North A	0.00	0.50	0.50	16.78	16.78
							North B	38.00	40.00	2.00	4.13	4.13
BC460-530	5824.77	5520.21	1832.20	180.00	0.00	30.00	North A	0.00	5.19	5.19	2.00	2.00
							North A Hangingwall	15.20	16.83	1.63	0.06	0.06
BC460-531	5824.77	5520.21	1833.95	180.00	37.00	30.00	North A	0.00	6.31	6.31	4.42	4.42
							North A Hangingwall	15.30	17.27	1.97	0.70	0.70
BC460-532	5824.77	5520.21	1830.32	180.00	-44.00	57.00	North A	0.00	13.89	13.89	3.54	3.54
							North A Hangingwall	29.30	32.50	3.20	6.88	6.88
BC460-533	5813.21	5522.94	1831.80	360.00	-18.00	54.00	North A	0.00	0.56	0.56	1.24	1.24
							North B	39.04	42.73	1.73	1.16	1.16
BC460-534	5812.18	5519.51	1831.22	180.00	-35.00	45.00	North A Hangingwall	20.40	23.70	3.30	1.55	1.55
BC460-537	5800.62	5521.38	1830.70		-61.00	113.00	North B	61.00	63.60	2.60	1.89	1.89
BC460-606	5843.55	5509.52	1832.87	180.00	0.01	30.00	North A	0.69	2.60	1.91	4.50	4.50
BC460-607	5830.72	5519.99	1832.55	180.00	0.01	15.00	North A	0.00	6.14	6.14	2.15	2.15
BC460-607A	5830.72	5519.99	1832.35	180.00	0.01	39.00	North A	0.00	6.21	6.21	5.83	5.83
							North A Hangingwall	15.00	17.07	2.07	4.45	4.45
BC460-608	5818.80	5519.30	1832.10	180.00	0.01	39.00	North A Hangingwall	14.00	16.10	2.10	1.08	1.08
BC460-609	5856.23	5505.93	1833.19	360.00	0.01	39.00	North B	13.90	16.43	2.53	0.29	0.29
BC460-610	5844.66	5512.25	1832.89	360.00	0.10	30.00	North B	8.70	10.80	2.10	2.79	2.79
BC475-538	5802.18	5402.58	1822.21	19.00	-25.00	192.00	North A3	58.00	61.10	3.10	6.72	6.72
							North A Hangingwall	98.80	101.00	2.20	7.51	7.51
							North A	111.00	117.60	6.60	5.82	5.82
							North B	123.20	125.00	1.80	1.47	1.47
							North B	156.00	159.70	3.70	7.36	7.36
BC475-539	5801.60	5402.64	1822.35	20.00	-41.00	201.00	North A3	58.60	61.50	2.90	2.70	2.70
							North A Hangingwall	100.80	110.60	9.80	6.32	6.32
							North A	120.10	124.00	3.90	9.51	9.51
							North B	131.40	133.60	2.20	3.63	3.63
							North B	166.40	168.70	2.30	0.36	0.36
BC475-540	5801.60	5402.68	1822.48	27.00	-36.00	201.00	North A3	63.00	69.00	6.00	4.58	4.58

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC475-541	5801.56	5402.60	1822.25	34.00	-37.00	201.00	North A Hangingwall	104.00	109.19	5.20	3.10	3.10
							North A	115.00	117.90	2.90	6.98	6.98
							North B	121.80	124.48	2.68	1.64	1.64
							North B	168.00	171.20	3.20	2.72	2.72
							North A3	68.26	71.73	3.48	4.00	4.00
							North A	117.96	119.80	1.84	8.27	8.27
							North B	141.70	144.20	2.50	1.48	1.48
							North B	183.40	185.50	2.10	1.77	1.77
BC475-542	5801.16	5402.77	1822.12	44.00	-40.00	216.00	North A4	101.60	103.50	1.90	10.98	10.98
							North A	125.75	128.64	2.89	0.82	0.82
							North B	148.31	150.30	1.98	0.02	0.02
							North B	198.47	201.95	3.48	0.57	0.57
BC475-543A	5802.92	5401.97	1822.19	54.00	-31.00	222.00	North A	122.83	126.27	3.43	1.70	1.70
							North B	152.50	155.00	2.50	1.13	1.13
							North B	187.41	189.64	2.24	0.65	0.65
BC475-544	5800.86	5401.62	1822.26	56.90	-31.20	231.00	North A	148.06	152.11	4.05	0.45	0.45
							North B	180.00	183.00	3.00	1.14	1.14
							North B	220.20	223.20	3.00	1.07	1.07
BC475-545	5800.95	5402.45	1821.93	24.00	-58.00	225.00	North A3	67.00	71.41	4.41	0.55	0.55
							North A Hangingwall	116.70	127.60	10.90	2.25	2.25
							North A	141.86	144.51	2.65	5.88	5.88
							North B	153.30	155.00	1.70	1.87	1.87
							North B	191.00	193.90	2.90	4.60	4.60
BC475-546	5801.33	5402.50	1821.98	30.00	-48.00	210.00	North A3	68.25	72.46	4.21	2.74	2.74
							North A Hangingwall	119.32	125.80	6.48	2.60	2.60
							North A	125.80	133.02	7.20	10.09	10.09
							North B	141.00	143.60	2.60	0.39	0.39
							North B	191.50	193.90	2.40	3.30	3.30
BC475-547	5800.25	5402.77	1821.99	33.00	-58.00	231.00	North A3	72.99	75.30	2.30	2.84	2.84
							North A Hangingwall	121.00	134.30	13.30	3.48	3.48
							North A	144.00	148.00	4.00	6.06	6.06
							North B	157.28	160.07	2.79	0.04	0.04
							North B	202.80	205.29	2.49	2.00	2.00
BC475-548	5801.56	5402.51	1821.91	38.00	-50.00	216.00	North A3	80.50	82.90	2.40	7.31	7.31
							North A4	99.40	103.20	3.80	0.73	0.73
							North A Hangingwall	121.00	123.90	2.90	3.29	3.29
							North A	124.75	128.45	2.15	0.06	0.06
							North B	143.20	145.55	2.35	0.35	0.35
BC475-549	5800.43	5402.77	1821.99	42.00	-58.00	180.00	North B	189.36	191.50	2.14	0.84	0.84
							North A3	86.49	88.90	2.40	1.13	1.13
							North A4	110.99	113.90	2.90	6.05	6.05
							North A	141.90	144.70	2.80	3.46	3.46
							North B	169.30	172.59	3.30	4.93	4.93
BC475-550	5800.55	5402.77	1822.48	46.00	-65.00	275.00	North A3	93.93	96.34	2.41	1.98	1.98

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC475-551	5800.74	5402.77	1821.19	47.00	-50.00	231.00	North A4	121.60	124.70	3.10	1.39	1.39
							North A	161.99	173.99	12.00	4.68	4.68
							North B	192.60	195.10	2.50	3.18	3.18
							North B	240.00	250.99	10.99	3.71	3.71
							North A4	101.80	104.30	2.50	3.60	3.60
							North A	141.50	145.60	4.10	2.64	2.64
							North B	167.50	170.10	2.60	0.33	0.33
							North B	209.50	211.90	2.40	1.71	1.71
BC475-552	5792.76	5400.62	1822.40	54.60	-48.90	246.00	North A4	117.87	121.10	3.23	0.22	0.22
							North A	155.00	158.20	3.20	3.03	3.03
							North B	181.10	184.70	3.60	0.59	0.59
							North B	227.50	231.00	3.50	1.22	1.22
BC475-553	5800.95	5402.77	1821.99	59.20	-50.00	255.00	North A	143.70	159.00	15.30	5.60	5.60
							North B	198.99	202.19	3.20	4.46	4.46
							North B	241.20	244.50	3.30	0.36	0.36
BC475-554	5802.85	5400.45	1822.20	64.00	-42.00	246.00	North A	165.20	170.18	3.18	4.03	4.03
							North B	220.31	223.35	3.05	1.48	1.48
BC475-555	5776.87	5402.81	1822.37	22.00	-16.00	138.00	North A3	53.98	58.12	4.14	0.24	0.24
							North A	113.60	116.61	3.01	6.00	6.00
BC475-556	5775.90	5402.30	1821.30	23.00	-29.00	195.00	North A3	53.04	59.38	6.34	0.44	0.44
							North A Hangingwall	102.50	104.50	2.00	1.15	1.15
							North A	117.00	119.80	2.80	5.60	5.60
							North B	163.10	165.50	2.40	0.52	0.52
BC475-557	5776.89	5402.66	1821.84	26.00	-41.00	207.00	North A3	61.34	64.08	2.74	0.76	0.76
							North A Hangingwall	109.38	111.70	2.32	2.25	2.25
							North A	124.20	126.40	2.20	5.51	5.51
							North B	130.99	133.20	2.20	2.33	2.33
							North B	169.50	173.50	4.00	2.68	2.68
BC475-558	5776.90	5402.86	1822.42	17.00	-13.00	195.00	North A3	54.33	58.34	1.24	0.00	0.00
							North A Hangingwall	100.35	102.97	2.62	0.91	0.91
							North A	116.20	119.20	3.00	8.82	8.82
							North B	159.70	162.60	2.90	4.20	4.20
BC475-559	5776.83	5402.74	1822.22	17.00	-25.00	201.00	North A3	51.00	58.61	7.61	1.36	1.36
							North A Hangingwall	102.50	104.60	2.10	2.02	2.02
							North A	115.91	118.65	2.75	8.98	8.98
							North B	163.68	165.26	1.59	1.42	1.42
BC475-560	5777.08	5402.69	1821.87	19.00	-35.00	207.00	North A3	57.74	61.02	0.00	0.00	0.00
							North A Hangingwall	108.40	112.30	3.90	3.43	3.43
							North A	123.80	125.70	1.90	7.02	7.02
							North B	133.60	135.90	2.30	0.85	0.85
BC475-561	5776.87	5402.81	1822.17	10.00	-21.00	109.00	North B	170.00	172.10	2.10	1.39	1.39
							North A3	51.00	58.40	7.40	5.19	5.19
							North A	107.10	109.00	1.90	1.69	1.69
BC475-562	5776.28	5402.63	1822.14	10.00	-35.00	225.00	North A3	52.90	60.70	7.80	5.49	5.49

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC475-564	5776.26	5402.59	1821.73	3.00	-46.00	171.00	North A	113.96	116.16	2.20	0.57	0.57
							North B	167.03	169.13	2.10	1.65	1.65
							North A3	58.89	64.30	5.41	2.36	2.36
							North A Hangingwall	102.10	104.30	2.20	3.19	3.19
BC475-565	5777.20	5402.63	1821.32	21.00	-49.00	225.00	North A	124.50	126.50	2.00	1.81	1.81
							North A3	65.60	69.00	3.40	2.01	2.01
							North A Hangingwall	108.43	110.30	1.87	1.72	1.72
							North A	124.70	130.80	6.10	6.47	6.47
BC475-566	5777.20	5402.63	1821.22	23.00	-59.00	252.00	North B	132.30	135.70	3.40	1.59	1.59
							North B	173.60	176.30	2.70	2.58	2.58
							North A3	70.40	73.60	3.20	7.87	7.87
							North A Hangingwall	115.03	117.96	2.93	0.55	0.55
BC475-568	5777.42	5402.62	1821.22	14.00	-57.00	231.00	North A	139.00	143.60	4.60	5.61	5.61
							North B	197.87	199.65	1.78	3.85	3.85
							North A3	67.50	70.60	3.10	7.30	7.30
							North A Hangingwall	110.80	114.80	4.00	3.07	3.07
BC475-569	5776.72	5402.64	1821.22	15.00	-66.00	165.00	North A	135.60	138.50	2.90	10.97	10.97
							North B	195.80	199.90	4.10	1.91	1.91
							North A3	71.00	73.00	2.00	4.07	4.07
							North A Hangingwall	125.10	128.10	3.00	1.72	1.72
BC475-570	5777.10	5402.13	1821.12	4.00	-65.00	165.00	North A	149.40	153.10	3.70	11.50	11.50
							North A3	64.50	67.20	2.70	3.86	3.86
							North A Hangingwall	126.00	129.00	3.00	1.88	1.88
BC475-573	5849.75	5504.44	1818.17	180.00	0.00	9.00	North A	145.10	158.10	13.00	3.76	3.76
BC475-574	5836.36	5511.33	1817.47	180.00	0.00	18.20	North A	4.10	8.70	4.60	3.83	3.83
							North A	0.00	6.00	5.40	3.37	3.37
BC475-575	5824.90	5515.90	1817.00	180.00	0.00	12.00	North A Hangingwall	11.20	12.66	1.46	2.69	2.69
							North A	0.00	6.70	6.70	4.18	4.18
BC475-577	5877.02	5497.98	1816.06	360.00	0.01	30.00	North A	16.60	18.46	1.87	1.68	1.68
BC475-578	5870.21	5498.70	1819.97	0.00	0.00	12.00	North A	0.00	1.43	1.43	0.02	0.02
BC475-579	5865.49	5500.68	1819.13	360.00	0.01	30.00	North A	0.00	2.00	2.00	1.67	1.67
							North B	13.40	16.80	3.40	7.83	7.83
BC475-580	5850.40	5507.70	1818.09	0.00	0.00	21.00	North B	9.50	15.15	5.65	5.14	5.14
BC475-581	5839.95	5512.73	1817.59	0.00	0.00	18.00	North B	3.70	5.80	2.10	1.93	1.93
BC475-582	5824.77	5518.51	1817.14	0.00	0.00	9.00	North A	0.00	0.90	0.90	2.35	2.35
BC475-583	5812.65	5517.64	1816.41	0.00	0.00	9.00	North A	0.00	2.60	2.60	1.54	1.54
BC475-600	5843.88	5506.47	1817.71	180.00	0.00	15.00	North A	3.04	7.62	4.58	10.05	7.32
BC475-601	5832.98	5514.86	1816.81	202.00	0.00	27.00	North A	0.00	6.00	6.00	3.01	3.01
							North A Hangingwall	16.69	18.75	2.06	1.68	1.68
BC475-602	5819.49	5514.86	1816.81	180.00	0.01	27.00	North A	0.00	0.35	0.35	0.37	0.37
							North A Hangingwall	13.80	16.00	2.20	3.47	3.47
BC475-605	5801.27	5402.58	1822.35	8.00	-44.00	198.00	North A3	54.10	55.90	1.80	1.59	1.59
							North A Hangingwall	105.90	112.10	6.20	3.95	3.95
							North A	124.40	126.10	1.70	2.02	2.02

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BC475-606	5801.68	5402.60	1822.04	8.00	-34.00	190.00	North B	133.30	135.20	1.90	2.80	2.80
							North B	172.40	173.80	1.40	4.40	4.40
							North A3	51.51	54.30	2.79	0.47	0.47
							North A Hangingwall	99.63	102.64	3.00	1.60	1.60
							North A	114.50	116.40	1.90	7.70	7.70
BC475-607	5800.35	5402.77	1821.19	16.00	-55.00	213.00	North B	116.40	117.28	0.88	1.69	1.69
							North B	160.21	162.41	2.20	1.42	1.42
							North A3	60.80	63.21	2.42	2.93	2.93
							North A Hangingwall	114.00	117.00	3.00	0.95	0.95
							North A	130.30	136.00	5.70	1.86	1.86
BC475-608	5800.24	5402.77	1820.09	18.00	-65.00	225.00	North B	145.00	147.34	2.35	4.18	4.18
							North B	185.97	188.69	2.73	3.29	3.29
							North A3	68.67	71.47	2.80	2.40	2.40
							North A Hangingwall	129.59	131.80	2.20	1.44	1.44
							North A	157.10	160.60	3.50	6.37	6.37
BC475-609	5801.27	5402.32	1821.84	35.00	-32.00	195.00	North B	175.99	177.90	1.90	1.26	1.26
							North B	222.99	224.98	1.99	5.10	5.10
							North A3	69.32	72.68	0.00	0.00	0.00
							North A	113.89	115.10	1.20	6.12	6.12
							North B	134.86	137.38	2.52	0.19	0.19
BC475-610	5802.27	5402.63	1822.58	42.00	-26.00	195.00	North B	179.46	181.70	2.24	1.35	1.35
							North A	115.13	117.34	2.21	4.74	4.74
							North B	135.97	138.40	2.43	1.38	1.38
							North B	183.79	186.20	2.42	1.08	1.08
							North A	132.10	137.00	4.90	12.91	8.01
BC475-611	5802.77	5402.08	1822.19	45.00	-36.00	207.00	North B	160.70	163.10	2.40	1.30	1.30
							North B	201.40	206.30	4.90	2.28	2.28
							North B	0.00	2.00	2.00	4.43	4.43
BC475-619	5846.28	5560.88	1813.65	180.00	0.01	9.00	North B	0.00	2.00	2.00	4.43	4.43
BC475-620	5820.69	5559.87	1812.89	180.00	0.01	9.00	North B	0.00	2.57	2.57	1.97	1.97
BC475-621	5795.94	5564.94	1812.36	180.00	0.01	9.00	North B	0.00	2.79	2.79	0.05	0.05
BC475-625	5777.20	5402.13	1821.12	19.00	-76.00	276.00	North A3	78.99	81.50	2.50	2.49	2.49
							North A Hangingwall	145.00	149.30	4.30	4.53	4.53
							North A	165.70	168.30	2.60	5.09	5.09
							North B	257.30	260.00	2.70	1.02	1.02
							North A	0.00	4.29	3.99	4.81	4.81
BC490-587	5846.33	5497.82	1803.90	223.00	0.00	9.00	North A	0.00	4.29	3.99	4.81	4.81
BC490-588	5837.23	5508.18	1803.10	180.00	0.00	30.00	North A	0.00	3.95	3.95	3.20	3.20
							North A Hangingwall	11.88	13.72	1.84	8.16	8.16
BC490-589	5826.90	5510.17	1803.20	180.00	0.00	30.00	North A	0.00	4.80	4.80	9.68	9.68
							North A Hangingwall	14.60	16.20	1.60	3.83	3.83
BC490-590	5812.81	5509.17	1803.10	180.00	0.00	30.00	North A Hangingwall	10.00	13.00	3.00	1.04	1.04
BC490-591	5874.96	5493.33	1804.40	0.00	0.00	30.00	North A	0.00	0.03	0.03	0.31	0.31
							North B	16.73	18.80	2.07	1.69	1.69
BC490-592	5862.97	5496.00	1804.30	0.00	0.00	30.00	North B	12.10	16.20	4.10	0.61	0.61
BC490-593	5850.16	5499.29	1804.00	0.00	0.00	30.00	North B	13.50	17.00	3.50	8.14	6.21

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BC490-594	5837.04	5513.84	1803.10	0.00	0.00	24.00	North B	0.00	1.00	1.00	2.28	2.28
BC490-597	5830.50	5509.23	1803.20	191.50	0.00	9.00	North A	0.00	4.66	4.66	7.55	7.55
BC490-597A	5830.50	5509.23	1803.20	180.00	0.00	30.00	North A	0.00	4.80	4.80	8.36	8.36
							North A Hangingwall	13.00	15.02	2.02	2.33	2.33
BC490-598	5818.45	5509.66	1803.20	180.00	0.00	30.00	North A Hangingwall	11.50	13.60	2.10	3.87	3.87
BC490-599	5805.90	5511.37	1802.90	180.00	0.00	30.00	North A	0.00	2.00	2.00	3.28	3.28
BC505-658	5845.00	5502.39	1787.08	16.00	0.01	12.00	North B	5.60	8.70	3.10	5.07	5.07
BC505-659	5858.56	5492.02	1787.62	360.00	0.01	26.70	North B	15.10	17.20	2.10	3.77	3.77
BC505-660	5873.64	5490.39	1788.25	360.00	0.01	24.00	North B	15.60	18.30	2.70	4.97	4.97
BC520-626	5821.70	5500.20	1771.34	180.00	0.01	25.00	North A	0.00	0.05	0.05	0.04	0.04
							North A Hangingwall	10.90	14.90	4.00	5.88	5.88
BC520-627	5856.87	5488.27	1773.20	360.00	0.01	27.00	North B	16.81	19.30	2.49	2.09	2.09
BC520-628	5875.98	5485.84	1773.52	360.00	0.01	30.00	North B	16.00	18.00	2.00	5.88	5.88
BC535-629	5810.98	5497.55	1755.40	180.00	0.01	24.00	North A	0.00	1.00	1.00	6.84	6.84
							North A Hangingwall	12.00	14.50	2.50	0.59	0.59
BC535-630	5834.53	5494.19	1756.30	180.00	0.01	24.00	North A	0.00	2.00	2.00	9.11	9.11
							North A Hangingwall	8.50	13.70	5.20	1.61	1.61
BC535-631	5856.68	5483.77	1756.70	360.00	0.01	30.00	North B	15.00	17.00	2.00	2.48	2.48
BC535-632	5876.07	5481.09	1757.07	360.00	0.01	30.00	North B	16.70	18.70	2.00	3.23	3.23
BC535-641	5850.74	5328.65	1752.19	6.00	-49.00	237.00	North A4	119.60	125.50	5.90	3.77	3.77
							North A	159.10	162.10	3.00	3.63	3.63
							North B	190.05	192.12	1.72	0.47	0.47
							North B	226.60	231.10	4.50	3.67	3.67
BC535-642	5850.74	5328.65	1751.89	6.00	-56.00	227.00	North A4	123.60	132.95	9.35	4.23	4.23
							North A	163.20	176.90	13.70	5.33	5.33
							North B	208.30	210.70	2.40	4.73	4.73
BC535-643	5850.65	5328.31	1751.87	6.00	-64.00	297.00	North A4	129.60	143.00	13.10	4.61	4.61
							North A	168.60	187.90	19.30	5.18	5.18
							North B	213.79	215.59	1.79	0.84	0.84
							North B	244.80	247.50	2.70	1.52	1.52
BC535-644	5849.74	5328.37	1751.87	9.00	-71.00	315.00	North A4	173.20	177.40	4.20	7.08	7.08
							North A	216.00	223.20	7.20	13.63	13.63
							North B	248.10	250.50	2.40	0.76	0.76
							North B	296.50	300.60	4.10	1.66	1.66
BC535-645	5849.70	5328.19	1751.87	9.00	-77.00	345.00	North A4	174.70	178.20	3.50	6.24	6.24
							North A	217.50	228.10	10.60	6.51	6.51
							North B	252.58	254.90	2.32	2.09	2.09
							North B	299.40	303.20	3.80	0.71	0.71
BC535-647	5889.32	5318.96	1753.70	10.00	-34.00	237.00	North A	137.00	141.20	4.20	4.74	4.74
							North B	174.10	176.10	2.00	1.55	1.55
							North B	207.30	209.50	2.20	1.01	1.01
BC535-648	5889.36	5318.97	1753.30	10.00	-44.00	258.00	North A	144.10	147.10	3.00	1.75	1.75
							North B	180.30	185.00	4.70	2.56	2.56
							North B	212.20	214.10	1.90	1.08	1.08

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC535-649	5889.32	5318.96	1752.93	12.00	-57.00	279.00	North A	161.20	169.50	8.30	7.45	7.45
							North B	198.39	201.79	3.39	0.67	0.67
							North B	242.00	246.10	4.10	5.90	5.90
BC535-650	5889.27	5318.93	1752.90	12.00	-63.00	297.00	North A2	115.69	119.80	4.10	3.30	3.30
							North A	178.50	182.20	3.70	2.63	2.63
							North B	214.20	217.30	3.10	2.44	2.44
BC535-651	5889.90	5318.20	1753.00	14.00	-68.00	306.00	North B	261.50	264.40	2.90	2.38	2.38
							North A2	126.20	132.39	6.20	1.59	1.59
							North A	198.00	202.80	4.80	3.34	3.34
BC535-652	5889.90	5318.20	1753.00	14.00	-74.00	366.00	North B	238.29	241.30	3.00	1.42	1.42
							North B	287.00	291.00	4.00	2.73	2.73
							North A2	140.01	142.83	2.82	1.05	1.05
BC535-653	5889.79	5318.71	1753.80	21.00	-31.00	231.00	North A	224.80	236.60	11.80	4.98	4.98
							North B	258.90	265.50	6.60	1.87	1.87
							North B	320.90	324.30	3.40	2.11	2.11
BC535-654	5889.79	5318.64	1753.00	24.00	-52.00	270.00	North A	150.35	152.98	2.63	0.01	0.01
							North B	182.36	184.60	2.24	0.02	0.02
							North B	207.28	209.45	2.17	0.02	0.02
BC535-655	5889.79	5316.64	1752.93	26.00	-59.00	297.00	North A2	103.40	105.30	1.90	7.20	7.20
							North A	158.50	161.10	2.60	4.14	4.14
							North B	194.70	198.00	3.30	5.63	5.63
BC535-656	5889.79	5316.64	1752.93	26.00	-59.00	297.00	North B	224.40	226.40	2.00	1.91	1.91
							North A2	118.19	122.49	4.30	1.11	1.11
							North A	170.90	176.00	5.10	4.64	4.64
BC535-657	5889.79	5316.64	1752.93	30.00	-70.00	363.00	North B	215.60	217.00	1.40	2.32	2.32
							North B	248.40	250.70	2.30	0.41	0.41
							North A2	126.65	131.59	3.95	0.21	0.21
BC535-662	5874.93	5322.61	1753.38	5.00	-33.00	231.00	North A	188.30	192.10	3.80	4.03	4.03
							North B	215.10	220.90	5.80	3.97	3.97
							North B	273.96	276.25	2.30	0.29	0.29
BC535-663	5874.93	5322.61	1752.84	5.00	-43.00	243.00	North A2	140.50	143.40	2.90	5.78	5.78
							North A	213.50	217.10	3.60	3.16	3.16
							North B	245.70	248.80	3.10	3.29	3.29
BC535-664	5874.93	5322.61	1752.77	6.00	-51.00	252.00	North B	302.95	306.37	2.15	0.12	0.12
							North A4	121.74	124.02	2.28	6.13	6.13
							North A	148.00	150.70	2.70	5.55	5.55
BC535-666	5874.93	5322.61	1752.77	6.00	-51.00	252.00	North B	174.51	176.50	1.99	0.78	0.78
							North B	212.00	214.20	2.20	4.17	4.17
							North A4	125.18	127.30	2.12	2.55	2.55
BC535-667	5874.93	5322.61	1752.77	6.00	-51.00	252.00	North A	152.80	155.70	2.90	6.39	6.39
							North B	180.60	182.80	2.20	2.74	2.74
							North B	220.00	225.70	5.70	2.51	2.51
BC535-668	5874.93	5322.61	1752.77	6.00	-51.00	252.00	North A4	130.49	133.08	2.58	4.70	4.70
							North A	160.00	161.84	1.84	2.24	2.24

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC535-665	5874.87	5322.39	1752.65	6.00	-63.00	294.00	North B	189.00	191.09	2.09	0.69	0.69
							North B	226.35	234.89	8.54	4.00	4.00
							North A4	157.80	165.60	7.80	5.64	5.64
							North A	180.10	182.20	2.10	5.33	5.33
							North B	216.99	219.69	2.70	2.18	2.18
BC535-666	5875.06	5322.34	1752.65	8.00	-71.00	321.00	North B	248.20	250.60	2.40	1.93	1.93
							North A4	175.60	181.69	6.10	3.62	3.62
							North A	203.40	212.10	8.70	4.13	4.13
							North B	242.60	249.90	7.30	4.62	4.62
							North B	279.70	282.19	2.50	0.34	0.34
BC535-667	5875.02	5322.19	1752.65	8.00	-77.00	354.00	North A4	166.70	177.80	11.10	3.17	3.17
							North A	205.90	214.92	8.70	4.85	4.85
							North B	243.28	245.01	0.00	0.00	0.00
							North B	283.30	287.20	3.90	1.39	1.39
							North A3	75.50	77.60	2.10	9.49	9.49
BC535-669	5799.24	5341.38	1752.18	5.00	-28.00	189.00	North A Hangingwall	125.00	126.80	1.80	3.66	3.66
							North A	146.46	152.29	5.83	7.30	7.30
							North A3	79.70	81.70	2.00	6.64	6.64
							North A Hangingwall	117.00	119.00	2.00	3.62	3.62
							North A	147.77	152.36	4.59	9.02	9.02
BC535-670	5799.24	5341.38	1751.89	5.00	-39.00	228.00	North B	167.00	169.60	2.60	3.39	3.39
							North B	211.70	214.70	3.00	4.29	4.29
							North A3	83.50	85.50	2.00	3.53	3.53
							North A Hangingwall	120.30	122.20	1.90	2.16	2.16
							North A	149.77	154.27	4.50	12.10	12.10
BC535-671	5799.24	5341.38	1751.70	5.00	-49.00	246.00	North B	171.50	174.30	2.80	3.76	3.76
							North B	222.31	225.00	2.69	2.29	2.29
							North B	227.39	227.40	0.01	4.64	4.64
							North A3	94.03	96.86	1.97	0.57	0.57
							North A	158.20	165.00	6.80	4.05	4.05
BC535-672	5799.24	5341.38	1751.58	6.00	-58.00	280.00	North B	253.10	255.00	1.90	2.25	2.25
							North A3	103.80	106.59	2.79	1.44	1.44
							North A	169.16	175.80	6.63	9.27	9.27
							North B	262.90	265.00	2.10	1.69	1.69
							North A3	125.18	127.88	2.70	1.91	1.91
BC535-673	5799.12	5341.38	1751.27	6.00	-66.00	348.00	North A	193.70	199.31	4.30	1.46	1.46
							North A3	144.10	149.37	5.27	1.08	1.08
							North A3	142.70	146.10	3.40	1.73	1.73
							North A	168.22	170.30	2.08	6.46	6.46
							North B	205.09	207.50	2.40	4.89	4.89
BC535-674	5799.12	5340.91	1751.18	7.00	-73.00	361.00	North B	234.80	237.80	3.00	3.58	3.58
							North A3	98.20	100.34	0.34	0.00	0.00
							North A Hangingwall	134.81	150.02	15.21	3.98	3.98
							North A	154.78	160.27	5.49	5.98	5.98
BC535-675	5799.13	5340.36	1751.02	12.00	-80.00	447.00						
BC535-677	5874.93	5322.61	1752.56	6.00	-57.00	261.00						
BC535-681	5824.55	5335.07	1752.37	5.00	-41.00	237.00						

HOLE-ID	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	LENGTH	ROCKCODE	FROM	TO	WIDTH	AU	AU_CUT
BC535-682	5824.55	5335.07	1751.85	5.00	-50.00	243.00	North B	178.29	180.00	1.71	17.81	17.81
							North B	208.80	210.90	2.10	2.66	2.66
							North A3	105.10	107.18	2.08	3.87	3.87
							North A Hangingwall	137.50	144.00	6.50	7.54	7.54
							North A	153.52	162.50	8.98	4.63	4.63
							North B	180.00	181.80	1.80	3.80	3.80
BC535-683	5824.55	5335.07	1751.62	6.00	-58.00	195.00	North B	224.30	226.50	2.20	4.59	4.59
							North A3	116.80	118.61	1.82	2.24	2.24
							North A Hangingwall	143.00	145.60	2.60	17.65	17.65
BC535-683	5824.55	5335.07	1751.62	6.00	-58.00	195.00	North A	166.00	174.40	8.40	3.46	3.46
							North B	194.51	194.93	0.00	0.00	0.00
BC535-684	5824.49	5334.78	1751.53	5.00	-69.00	318.00	North A4	154.60	158.90	4.30	7.65	7.65
							North A Hangingwall	171.00	172.70	1.70	3.58	3.58
							North A	190.98	199.40	8.43	5.16	5.16
							North B	220.85	222.60	1.75	1.77	1.77
							North B	275.65	277.88	2.23	0.80	0.80
BC535-702	5780.06	5347.19	1751.38	7.00	-35.00	216.00	North A3	72.10	75.10	3.00	2.63	2.63
							North A Hangingwall	123.40	125.70	2.30	6.49	6.49
							North A	137.70	152.70	15.00	6.42	6.42
							North B	204.55	206.71	2.16	0.11	0.11
BC550-689	5807.27	5493.92	1741.08	180.00	0.01	27.00	North A Hangingwall	13.40	15.40	2.00	2.19	2.19
BC550-690	5820.55	5491.49	1741.49	180.00	0.01	24.00	North A Hangingwall	10.50	19.06	8.56	4.31	4.31
BC550-691	5856.15	5479.47	1742.33	360.00	0.01	27.00	North B	15.75	18.12	2.37	0.37	0.37
BC550-692	5869.48	5478.72	1742.77	360.00	0.01	30.00	North A	0.00	0.17	0.17	0.01	0.01
							North B	18.09	20.29	2.20	0.25	0.25
BC550-693	5877.84	5476.46	1742.63	360.00	0.01	30.00	North B	17.77	19.82	2.06	0.23	0.23
BC565-633	5724.66	5436.95	1733.72	1.00	-29.00	135.00	North A	44.98	48.09	3.11	0.11	0.11
							North B	108.00	110.00	2.00	2.70	2.70
BC565-634	5724.66	5436.95	1733.02	1.00	-56.00	171.00	North A	60.00	62.60	2.60	4.45	4.45
BC565-635	5724.78	5435.89	1732.71	1.00	-73.00	231.00	North A	81.00	84.59	3.60	3.54	3.54
BC565-636	5725.75	5436.52	1733.72	33.00	-25.00	81.00	North A	55.90	59.25	3.35	2.19	2.19
BC565-637	5725.00	5435.80	1732.80	49.00	-67.00	105.00	North A	87.60	93.50	5.90	0.64	0.64
BC565-638	5725.00	5436.80	1732.80	330.00	-27.00	148.00	North A	59.00	61.20	2.20	3.77	3.77
BC565-639	5725.00	5436.80	1732.80	324.00	-50.00	177.00	North A	67.20	69.58	1.80	1.41	1.41
BC565-694	5862.15	5475.67	1727.28	360.00	0.01	27.00	North A	0.00	0.07	0.07	0.01	0.01
							North B	18.21	20.22	2.02	0.22	0.22
BC565-695	5868.11	5474.02	1727.49	360.00	0.01	34.00	North A	0.00	2.10	2.10	0.02	0.02
							North B	19.75	21.58	1.84	0.16	0.16
BC565-696	5823.31	5486.19	1725.89	183.00	0.01	27.00	North A Hangingwall	12.52	20.80	8.28	3.06	3.06
BC565-697	5834.92	5483.68	1725.81	195.00	0.01	27.00	North A Hangingwall	6.20	19.00	12.80	5.90	5.90

1. AU = gold grades in g/t
2. AU\_CUT = gold grade cut to 44 g/t for North A (including HW and FW). All others cut to 34 g/t

## **APPENDIX B**

### **STATISTICAL ANALYSIS OF BELL CREEK MINE ASSAY DATA**

## **Statistical Analysis of Bell Creek Mine Assay Data (26 October 2010 – 01 November 2012)**

### **1.0 Standards**

Results from a variety of standard pulps from five labs have been separated and analyzed from the Bell Creek Mine project. The labs used were as follows: Accurassay Laboratories, ALS Canada Ltd., Bell Creek Laboratory, SGS Canada Inc., and SPJ Assay Labs (Figs. 1.1 to 1.5). Summary statistics of standard results are shown below (Tables 1.1 to 1.5). Each table lists the following:

- Target value of standard
- Standard deviation of standard
- The minimum / maximum gates of the standard ( + / - 3 standard deviations)
- The number of results for the standard (Nb)
- The mean / average result (Average)
- % relative difference between the mean result and the target (%Diff)
- The weighted % relative difference
- A flag which indicates if the difference is significant at the 95% confidence level, given the expected standard deviation of the number of results. The difference is significant if its absolute value exceeds  $(2 * \text{StDev}) / \text{Nb}^{0.5}$  (Sig=1 if significant).
- Percentage of results below and above the target (PBelow and PAbove)
- Percentage of results outside the Min/Max gates of target

SGS Canada Inc., ALS Canada Ltd., and Bell Creek showed no obvious trend for the sign (+ or -) of difference between average result and target value (Tables 1.1 to 1.5). Accurassay has a slight negative difference than positive, which indicates that it may be undervaluing the true grade of the standards. SPJ Assay Labs has a significant positive difference, indicating a high bias. Though this is a smaller sample size a problem was recognized immediately, resulting in SPJ Assay Labs discontinued use.

ALS Canada Ltd. performed well for standards, having 9.21% failures. The average difference between returned and target values is -2.03%. The proportions of below/above target results are relatively close, having 40.26% below target and 59.74% above target (Fig. 1.2, Table 1.2). The proportions of below/above target results are closer when standard O-61d is removed, having 46.49% below target and 53.51% above target. It is recommended to discontinue the use of standard O-61d due to high failure rates.

Accurassay has an average difference of -3.77%, a slightly negative difference than positive, which indicates that it may be undervaluing the true grade of the standards. This is also reflected in proportions of below/above target results, having 64.25% below target and 34.75% above target (Fig. 1.1). It is notable that the percentage of failures is higher than ALS, having 14.46% failures; though more samples were sent to Accurassay than ALS (1002 standards were sent to Accurassay, 384 standards were sent to ALS Canada Ltd.). This high failure rate for standards is a concern and a review of the actions taken for these failures should be undertaken to ensure sample batches with significant gold values in particular were re-run as per LSG protocol.

Bell Creek Lab also performed well for standards, having 8.29% failures, however performed poorly with precision and accuracy, with the proportions of results above and below target being 37.93% and 62.07%

respectively (Table 1.3). Bell Creek has an average difference of -2.19%, showing a slight negative bias (Fig. 1.3). The proportions of results above and below target value for standards is a concern and a review of the actions taken for these failures should be undertaken to ensure sample batches with significant gold values in particular were re-run as per LSG protocol.

SGS Canada Inc. performed poorly for standards, having 21.35% failures. However, this was due mainly to a 64.3% failure rate for standard O-18c (Table 1.5). SGS Canada Inc. also performed poorly with precision and accuracy, with the proportions of results above and below target being 64.28% and 35.72% respectively (Table 1.5). The proportions of below/above target results are closer when standard O-61d is removed, having 57.64% above target and 42.36% below target. It is recommended to discontinue the use of standard O-61d due to high failure rates (Fig. 1.4). This issue is recognized at ALS as well (Table 1.2).

By far SPJ Assay Labs performed the worst out of all the other labs used (Fig. 1.5). SPJ Assay Labs had 70.15% failures. The average difference between returned and target values is 9.24%, indicating a high positive bias. SPJ Assay Labs also performed poorly with precision and accuracy, with the proportions of results above and below target being 39.66% and 60.34% respectively. As mentioned earlier, issues with this lab were identified and LSG discontinued using the lab after a two month period.

See Fig. 1.1 to Fig. 1.5 for detailed plots of standard results.

## 2.0 Blanks

Results from blanks have also been separated by each lab. Here we determine the percentage of results above a given failure limit. Traditionally the cutoff limit is five times the detection limit (0.0125 g/t Au). The Lake Shore Gold cutoff limit is 0.1 g/t Au, which allows for a very minimal amount of contamination, see Table 2.1.

<b>Table 2.1: Bell Creek Mine Blank Statistics</b>					
Lab	Total blanks	Number > 0.0125	% > 0.0125	Number > 0.1	% > 0.1
<b>ACCURASSAY</b>	1072	443	41.32	46	<b>4.29</b>
<b>ALS Canada</b>	480	47	9.79	2	<b>0.42</b>
<b>Bell Creek</b>	203	106	52.22	6	<b>2.96</b>
<b>SGS Canada Inc.</b>	305	71	23.28	10	<b>3.28</b>
<b>SPJ Assay Labs</b>	90	13	14.44	13	<b>14.44</b>

ALS performed the best for the labs, having 0.42% failures. This is a reasonable failure rate (Fig. 2.1).

Bell Creek Lab, SGS Canada, and Accurassay all had satisfactory failure rate for blanks, at 2.96%, 3.28% and 4.29% respectively (Fig. 2.2 to Fig. 2.4).

SPJ Assay Lab did not perform well on the blanks. Out of 90 samples, 13 of them failed (14.44%). Though this is a smaller sample size, a problem was recognized right away and the lab was discontinued (Fig. 2.5).

### **3.0 Coarse Duplicates**

Coarse duplicates are assays from a new pulp taken from the crushed and ground (but not pulverized) reject of the original sample. There tends to be more variability for pairs under 0.1g/t Au, so statistics for pairs above 0.1g/t are reported (Fig. 3.1 to 3.5).

For pairs above 0.1 g/t Au:

ALS Canada produced the best coarse duplicates, having a percent difference of 0.23%. Comparing this to the percent difference for all samples, -0.12%, ALS shows excellent repeatability (Fig. 3.1).

Accurassay has a percent difference of -7.26%, which indicates that the duplicates return lower results than the original. For all samples, Accurassay has a percent difference of -12.67%, which indicates higher variability in the samples (Fig. 3.2).

Bell Creek Lab performed similarly to Accurassay, having a percent difference of -9.79% for pairs above 0.1 g/t Au. This also indicates that the duplicates have a low bias. Like with Accurassay, for all pairs, Bell Creek shows higher variability (all pairs have a percent difference of -10.39) (Fig. 3.3).

SGS Canada has a percent difference of 10.92, which means the duplicates tend to have results higher than the original (Fig. 3.4).

Out of 60 coarse duplicates, SPJ has a percent difference of 58.44%, which shows poor repeatability. For the pairs above 0.1g/t Au, SPJ has a percent difference of 38.00%, which is still quite high. LSG noticed a problem with the lab immediately and the lab was discontinued (Fig. 3.5).

### **4.0 Check Assays**

#### **4.1 Underground 2011 Check Assay Program – Accurassay Lab and ALS Canada Ltd.**

A total of 265 pulps from Accurassay lab were sent for check assay to ALS. ALS lab was not used to analyze the underground core, so it was an appropriate choice for the underground check assay program.

The original Accurassay values range from 0.0025 to 31.0230 g/t Au with a mean of 0.6063 g/t Au. The ALS check values range from 0.0025 to 12.5 g/t Au, having a mean of 0.6805 g/t Au. The correlation coefficient is 0.73, which represents a strong linear relationship between the two data sets. The percent difference between means is 11.53%, which indicates that ALS tends to report higher than Accurassay. A sign test was performed, with 37.7% of ALS values being larger than Accurassay, 50.5% being smaller, and 11.74% being equal.

See Fig. 4.1 for a detailed log-normal plot.

#### **4.2 Underground 2011 Check Assay Program – SGS Canada Inc. and ALS Canada Ltd.**

A total of 188 pulps from SGS Canada Inc. were sent to ALS Canada Ltd. for check assay.

The original SGS values range from 0.0025 to 19.3 g/t Au, having a mean of 2.00 g/t Au. The ALS check values range from 0.0025 to 16.3 g/t Au, with a mean of 1.83 g/t Au. Their correlation coefficient is 0.92, which represents a very strong linear relationship between the two data sets. The percent difference

between means is -9.18%, which means that ALS may tend to report lower than SGS. A sign test was performed, 49.4% of ALS values being larger than SGS, 47.9% being lower, and 2.7% being equal.

See Fig. 4.2 for a detailed log-normal plot.

#### **4.3 Underground 2012 Check Assay Program – Accurassay Lab and ALS Canada Ltd.**

A total of 901 pulps from Accurassay lab were sent to ALS for check assay in 2012.

The original Accurassay values range from 0.0025 to 14.9840 g/t Au, with a mean of 1.08 g/t Au. The ALS check values range from 0.0025 to 16.2500 g/t Au, having a mean of 1.12 g/t Au. Their correlation coefficient is 0.92, which represents a very strong relationship between the data sets. The percent difference between the means is 3.90%. A sign test was performed, having 46.4% of ALS values being larger than Accurassay, 51.6% being smaller, and 2.0% being equal.

See Fig. 4.3 for a detailed log-normal plot.

#### **4.4 Surface May 2011 Check Assay Program – ALS Canada Ltd. and SGS Canada Inc.**

A total of 151 pulps from ALS Canada Ltd. were sent to SGS Canada Inc. for check assay from November 1, 2010 to May 31, 2011.

The original ALS values range from 0.0025 to 16.8 g/t Au, having a mean of 1.01 g/t Au. The SGS check values range from 0.0025 to 9.88 g/t Au. The correlation coefficient is 0.94, which represents a very strong linear relationship. The percent difference between the means is -6.50%. A sign test was performed, having 59.0% of SGS values being higher than ALS, 36.4% being smaller, and 4.6% being equal.

See Fig. 4.4 for a detailed log-normal plot.

#### **4.5 Surface October 2011 Check Assay Program – ALS Canada Ltd. and SGS Canada Inc.**

A total of 377 of pulps from ALS Canada Ltd. were sent to SGS Canada Inc. for check assay from June 1, 2011 to October 31, 2011.

The original ALS values range from 0.0025 to 19.25 g/t Au, having a mean of 1.25 g/t Au. The SGS check values range from 0.0025 to 18.00 g/t Au, with a mean of 1.20 g/t Au. The correlation coefficient is 0.97, which represents a near perfect linear relationship. The percent difference between the means is -4.54%. A sign test was performed, having 48.8% of SGS values being larger than ALS, 45.1% being smaller, and 6.1% being equal.

See Fig. 4.5 for a detailed log-normal plot.

#### **4.6 Surface October 2012 Check Assay Program – ALS Canada Ltd. and SGS Canada Inc.**

A total of 146 pulps from ALS were sent to SGS Canada Inc. for check assay from November 1, 2011 to October 31, 2012.

The original ALS values range from 0.0025 to 16.05 g/t Au, with a mean of 1.31 g/t Au. The SGS check values range from 0.0025 to 18.00 g/t Au, having a mean of 1.28 g/t Au. The correlation coefficient is 0.93, which represents a very strong linear relationship. The percent difference between the means is -2.27%.

See Fig. 4.6 for a detailed log-normal plot.

Table 1.1: Accurassay Lab Standard Statistics														
Standard	Target	Std Dev	3Std Dev Min	3Std Dev Max	Nb	Average	%Diff	Sig.	#Below	#Above	#Outside	Pbelow	Pabove	Poutside
	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)		Au (g/t)	%					%	%	%
O-10c	6.66	0.14	6.11	7.08	107	6.51	-2.27	0	65	42	12	60.75	39.25	11.21
O-15d	1.56	0.04	1.43	1.69	58	1.53	-1.56	1	19	39	5	32.76	67.24	8.62
O-18c	3.52	0.11	3.20	3.84	131	3.38	-3.86	1	97	34	18	74.05	25.95	13.74
O-2Pd	0.89	0.03	0.80	0.97	292	0.87	-1.80	1	164	128	35	56.16	43.84	11.99
O-67a	2.24	0.10	1.95	2.53	239	2.12	-5.21	1	191	48	34	79.92	20.08	14.23
O-68a	3.89	0.15	3.45	4.33	46	3.53	-9.26	1	41	5	13	89.13	10.87	28.26
O-6Pc	1.52	0.07	1.32	1.72	129	1.48	-2.43	1	74	56	17	56.98	43.02	13.18
<b>ALL</b>	<b>2.90</b>				<b>1002</b>	<b>2.78</b>	<b>-3.77</b>					<b>64.25</b>	<b>35.75</b>	<b>14.46</b>

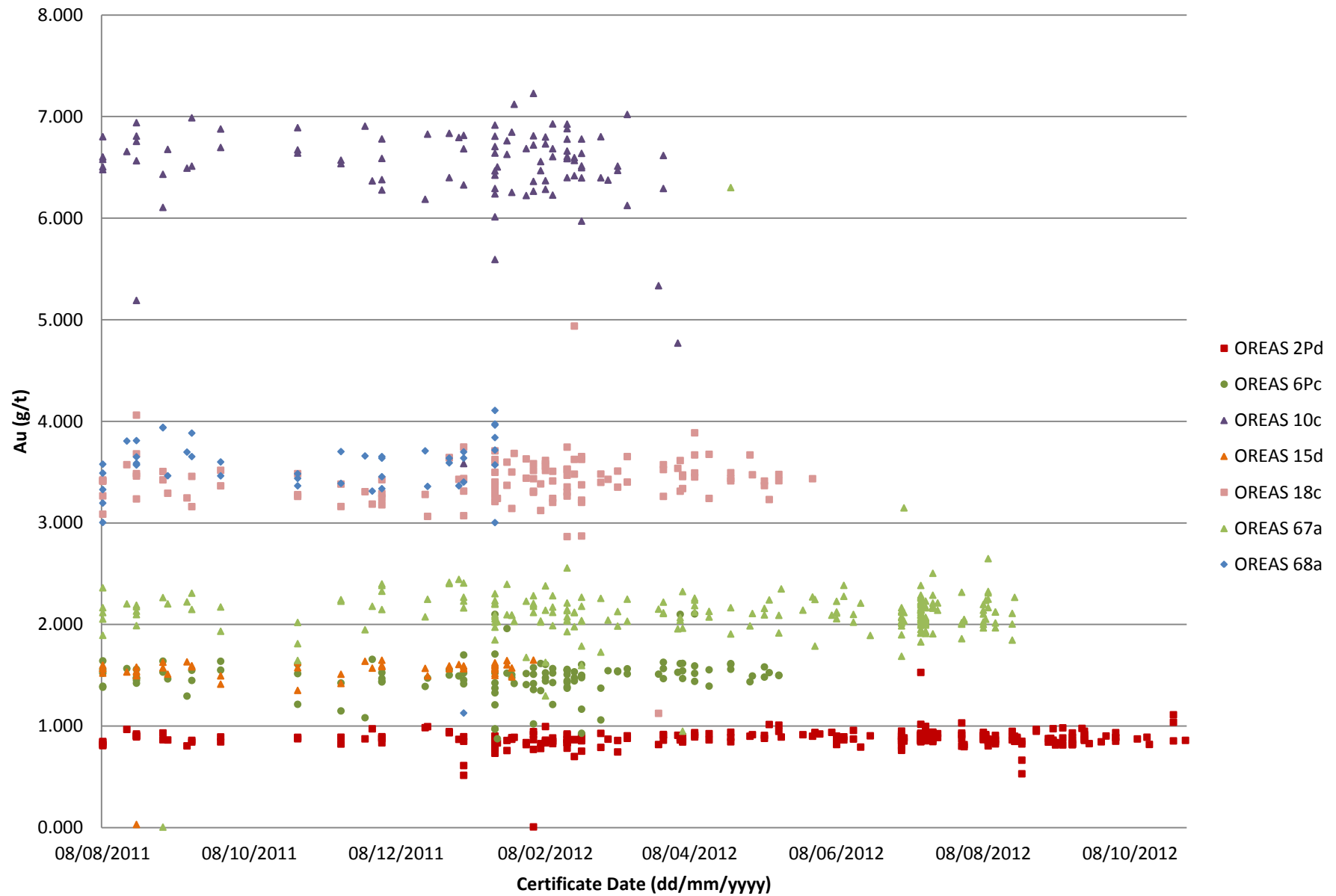
Table 1.2: ALS Canada Ltd. Standard Statistics														
Standard	Target	Std Dev	3Std Dev Min	3Std Dev Max	Nb	Average	%Diff	Sig.	#Below	#Above	#Outside	Pbelow	Pabove	Poutside
	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)		Au (g/t)	%					%	%	%
O-10c	6.66	0.14	6.11	7.08	88	6.61	-0.81	0	53	35	9	60.23	39.77	10.23
O-2Pd	0.89	0.03	0.80	0.97	132	0.88	-0.82	0	73	60	10	54.92	45.08	7.58
O-61d	4.76	0.14	4.33	5.19	22	4.87	2.29	0	2	20	0	9.09	90.91	0.00
O-67a	2.24	0.10	1.95	2.53	54	2.15	-4.15	1	23	31	7	42.59	57.41	12.96
O-68a	3.89	0.15	3.45	4.33	19	3.60	-7.58	1	8	11	3	42.11	57.89	15.79
O-6Pc	1.52	0.07	1.32	1.72	69	1.50	-1.11	0	23	47	6	32.61	67.39	8.70
<b>ALL</b>	<b>3.33</b>				<b>384</b>	<b>3.27</b>	<b>-2.03</b>					<b>40.26</b>	<b>59.74</b>	<b>9.21</b>

Table 1.3: Bell Creek Lab Standard Statistics														
Standard	Target	Std Dev	3Std Dev Min	3Std Dev Max	Nb	Average	%Diff	Sig.	#Below	#Above	#Outside	Pbelow	Pabove	Poutside
	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)		Au (g/t)	%					%	%	%
O-10c	6.66	0.14	6.11	7.08	34	6.56	-1.58	0	25	10	2	72.06	27.94	5.88
O-18c	3.52	0.11	3.20	3.84	24	3.54	0.62	0	10	14	0	41.67	58.33	0.00
O-2Pd	0.89	0.03	0.80	0.97	47	0.85	-4.43	1	35	12	10	74.47	25.53	21.28
O-67a	2.24	0.10	1.95	2.53	30	2.16	-3.46	0	17	13	1	56.67	43.33	3.33
O-68a	3.89	0.15	3.45	4.33	24	3.89	-0.03	0	14	10	0	58.33	41.67	0.00
O-6Pc	1.52	0.07	1.32	1.72	26	1.45	-4.30	1	18	8	5	69.23	30.77	19.23
<b>ALL</b>	<b>3.12</b>				<b>185</b>	<b>3.07</b>	<b>-2.19</b>					<b>62.07</b>	<b>37.93</b>	<b>8.29</b>

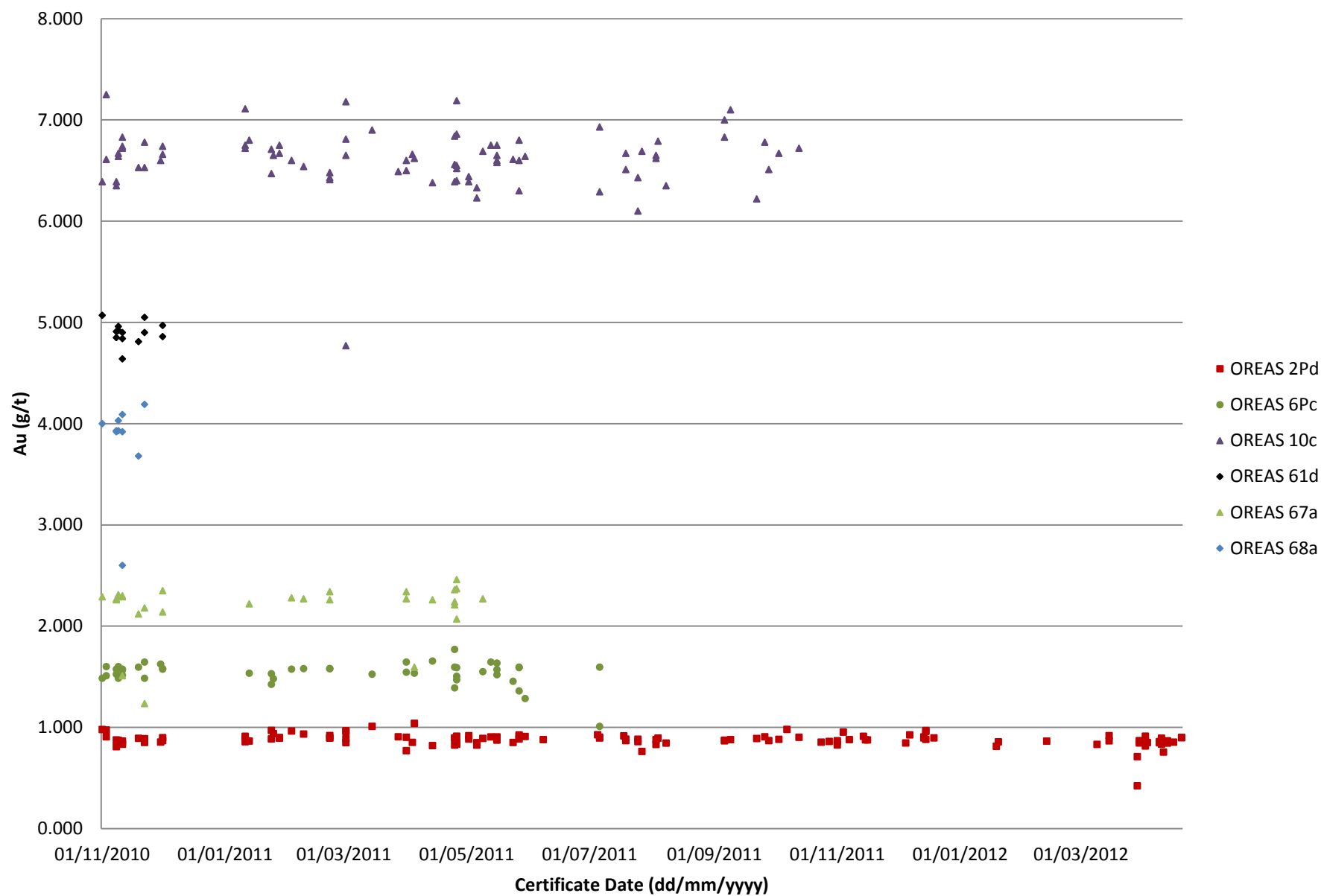
Table 1.4: SGS Canada Inc. Standard Statistics														
Standard	Target	Std Dev	3Std Dev Min	3Std Dev Max	Nb	Average	%Diff	Sig.	#Below	#Above	#Outside	Pbelow	Pabove	Poutside
	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)		Au (g/t)	%					%	%	%
O-18c	3.52	0.11	3.20	3.84	84	3.40	-3.32	1	45	39	54	53.57	46.43	64.29
O-2Pd	0.89	0.03	0.80	0.97	88	0.87	-1.33	1	45	43	7	51.14	48.86	7.95
O-61d	4.76	0.14	4.33	5.19	76	4.96	4.19	1	12	64	6	15.79	84.21	7.89
O-6Pc	1.52	0.07	1.32	1.72	38	1.54	0.99	0	9	30	2	22.37	77.63	5.26
<b>ALL</b>	<b>2.67</b>				<b>286</b>	<b>2.69</b>	<b>0.13</b>					<b>35.72</b>	<b>64.28</b>	<b>21.35</b>

Table 1.5: SPJ Assay Labs Standard Statistics														
Standard	Target	Std Dev	3Std Dev Min	3Std Dev Max	Nb	Average	%Diff	Sig.	#Below	#Above	#Outside	Pbelow	Pabove	Poutside
	Au (g/t)	Au (g/t)	Au (g/t)	Au (g/t)		Au (g/t)	%					%	%	%
O-10c	6.66	0.14	6.11	7.08	28	6.21	-6.76	1	18	10	24	64.29	35.71	85.71
O-68a	3.89	0.15	3.45	4.33	11	4.86	24.82	1	8	3	8	72.73	27.27	72.73
O-6Pc	1.52	0.07	1.32	1.72	25	1.67	9.67	1	11	14	13	44.00	56.00	52.00
<b>ALL</b>	<b>4.02</b>				<b>64</b>	<b>4.24</b>	<b>9.24</b>					<b>60.34</b>	<b>39.66</b>	<b>70.15</b>

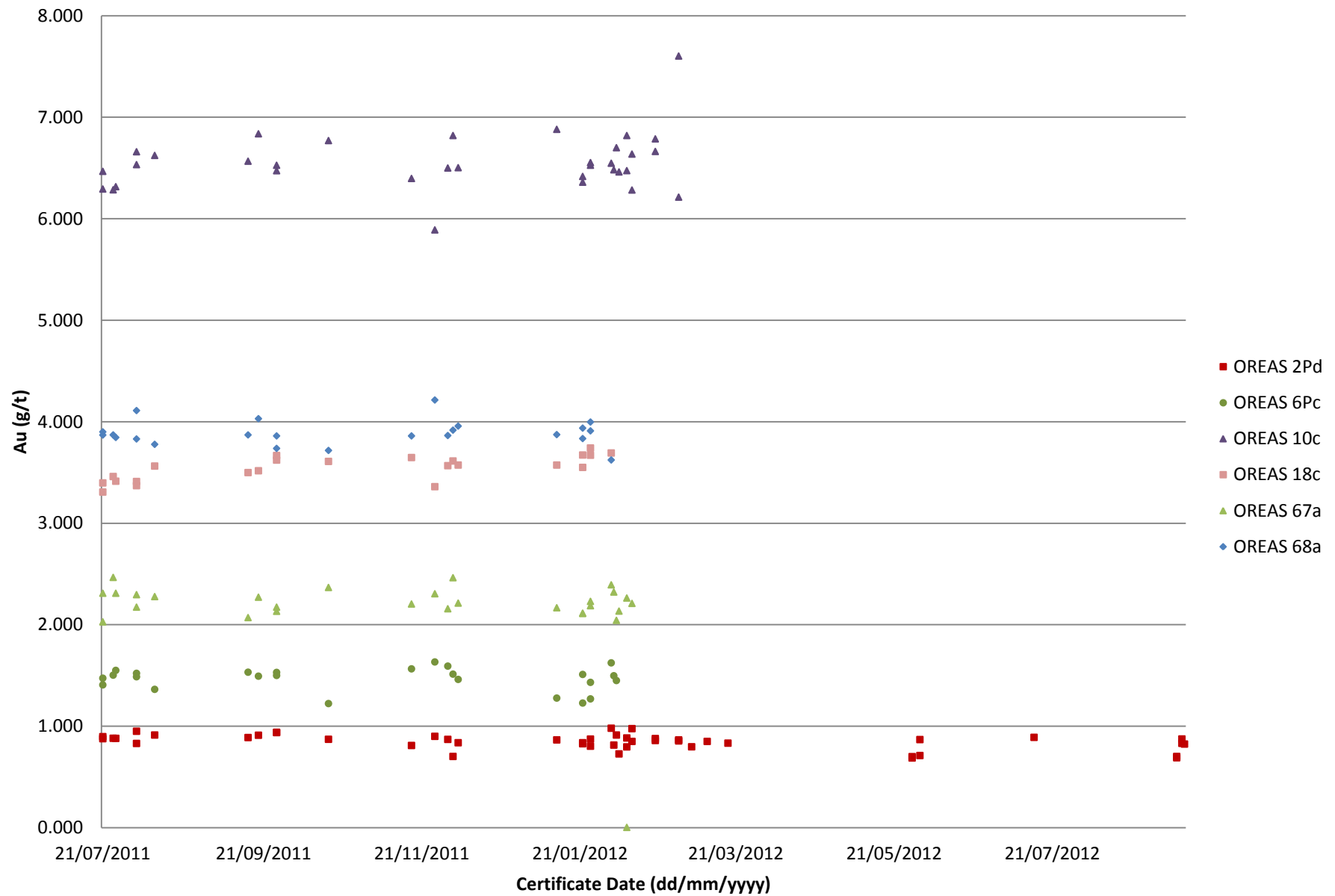
**Fig. 1.1: Bell Creek Mine Oreas Standards - Accurassay**



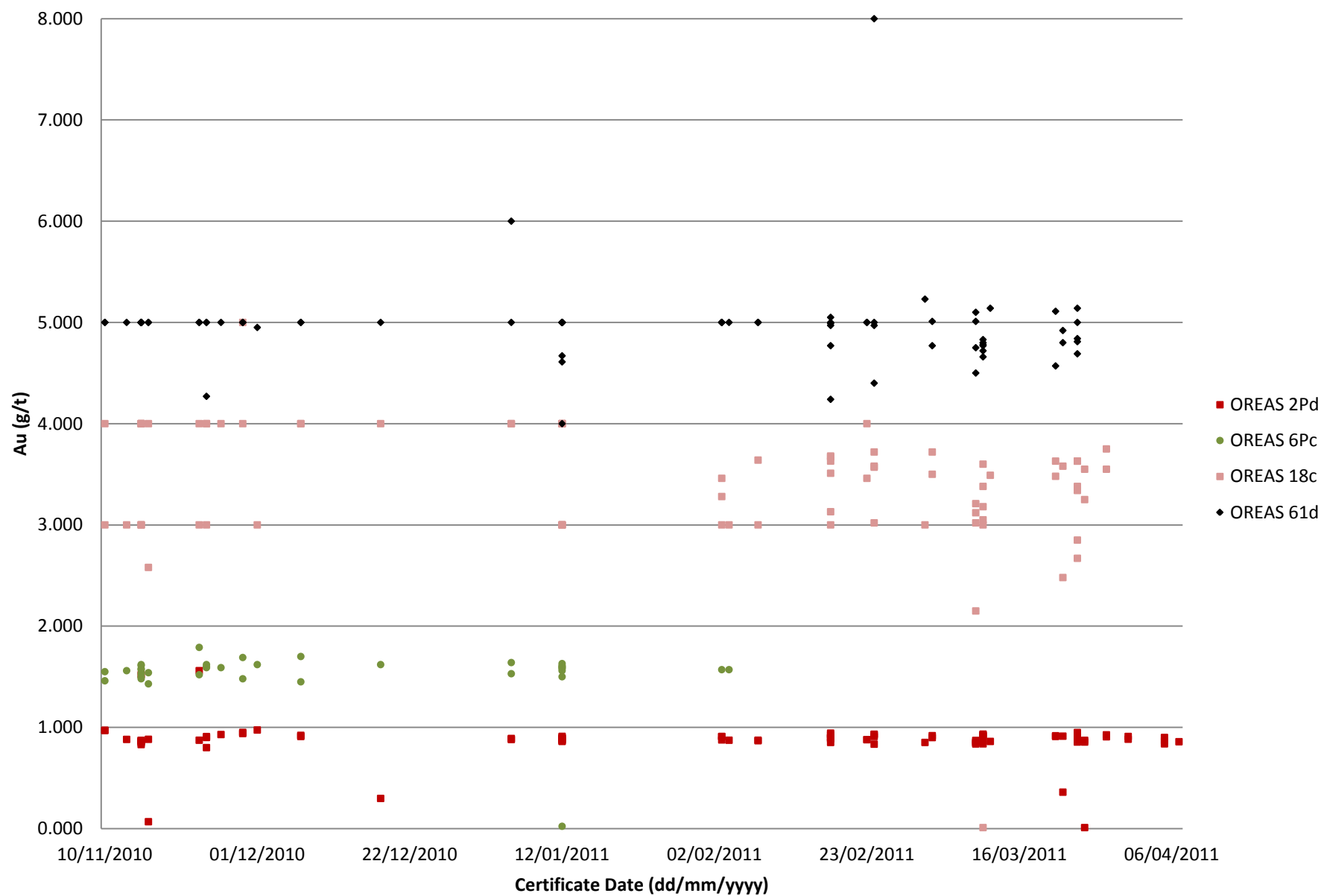
**Fig. 1.2: Bell Creek Mine Oreas Standards - ALS Canada Ltd.**



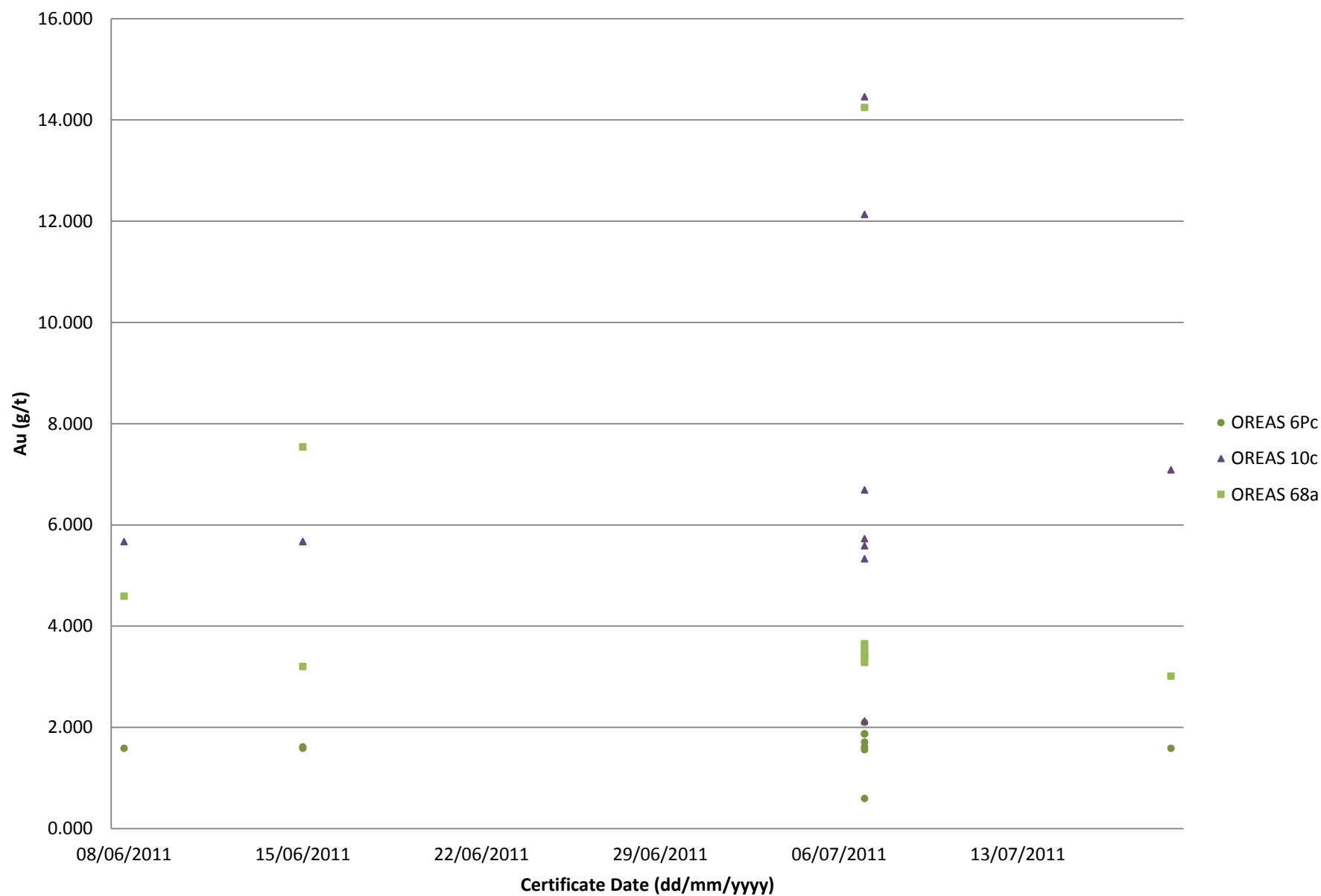
**Fig. 1.3: Bell Creek Mine Oreas Standards - Bell Creek Lab**



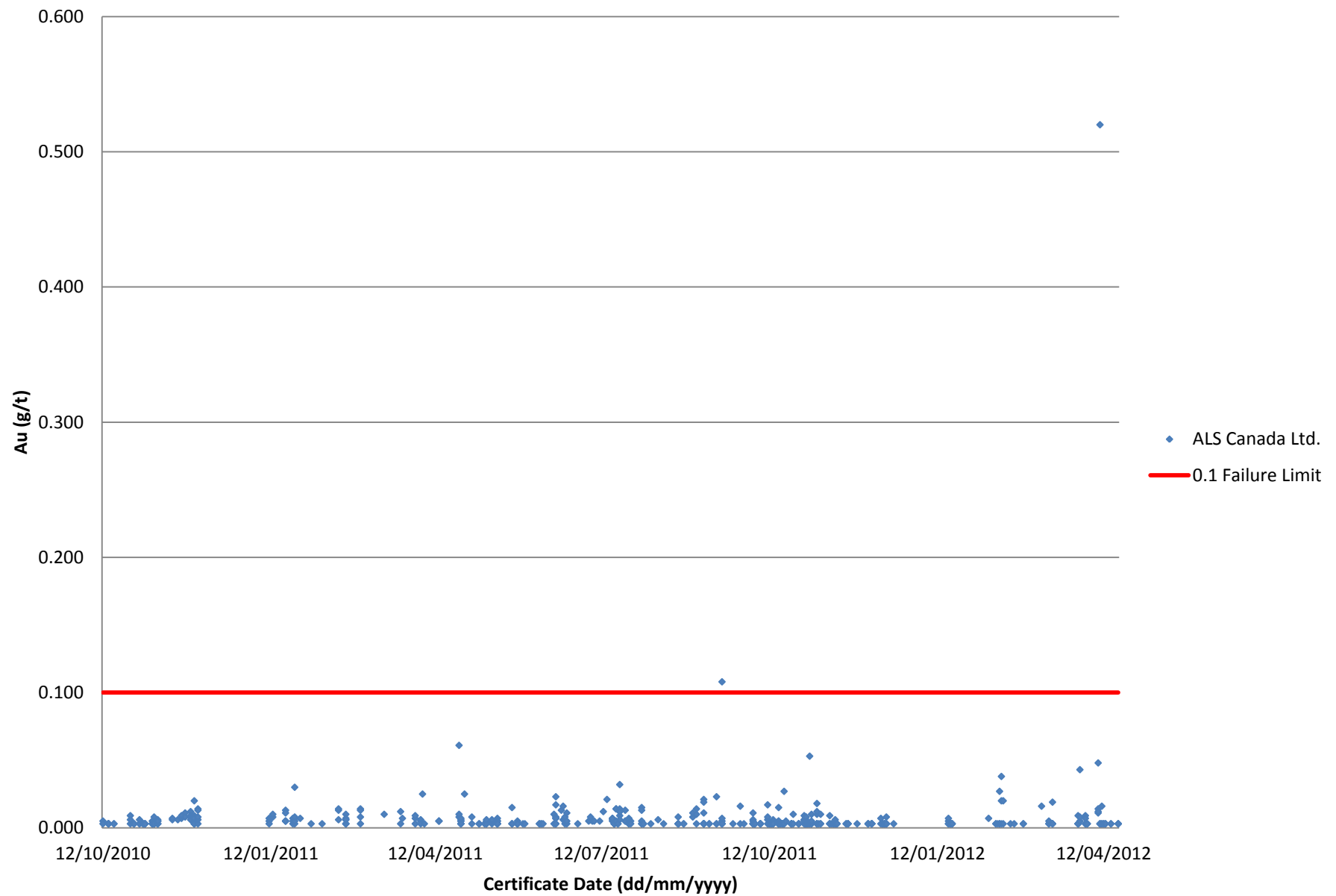
**Fig. 1.4: Bell Creek Mine Oreas Standards - SGS Canada Inc.**



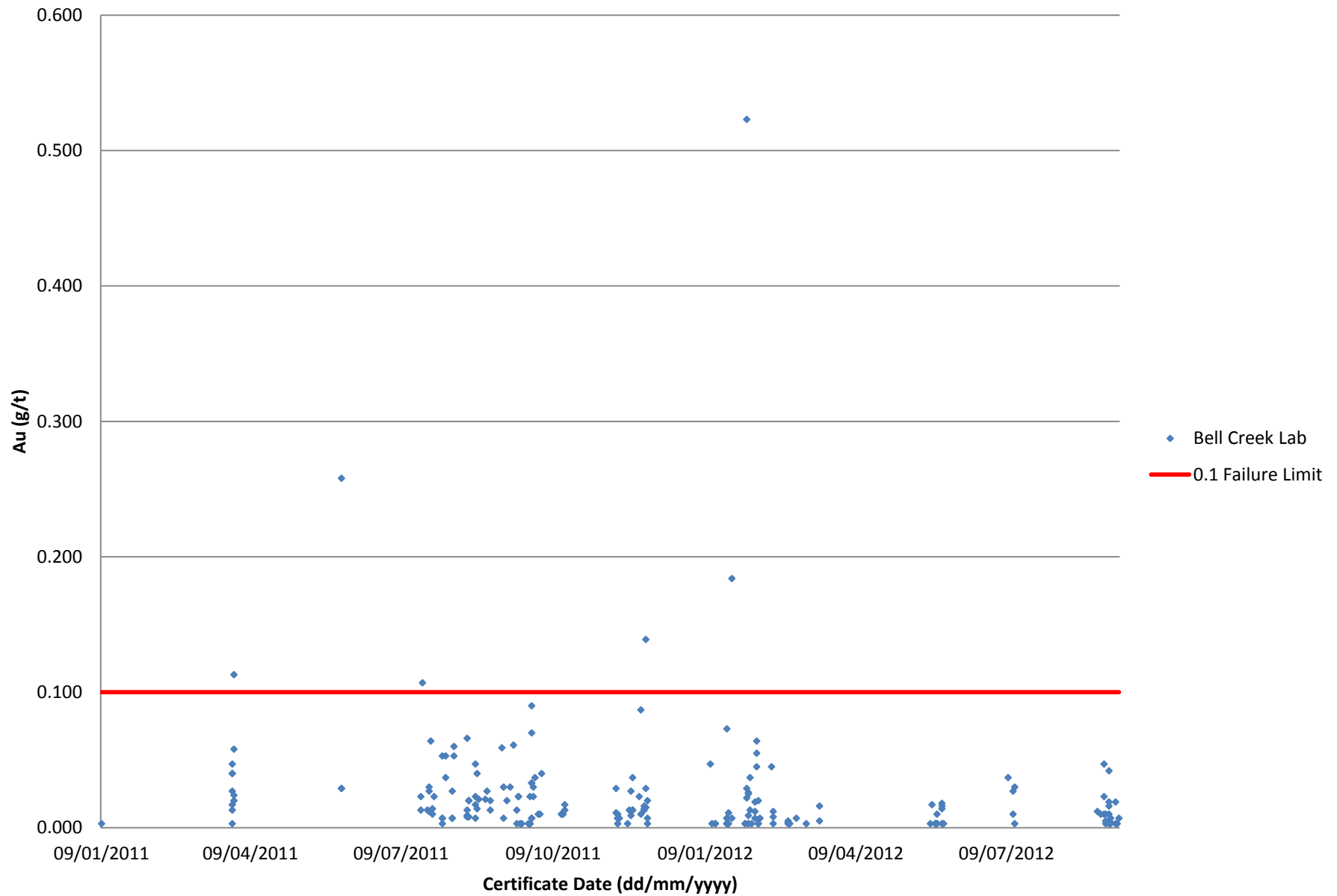
**Fig. 1.5: Bell Creek Mine Oreas Standards - SPJ Assay Labs**

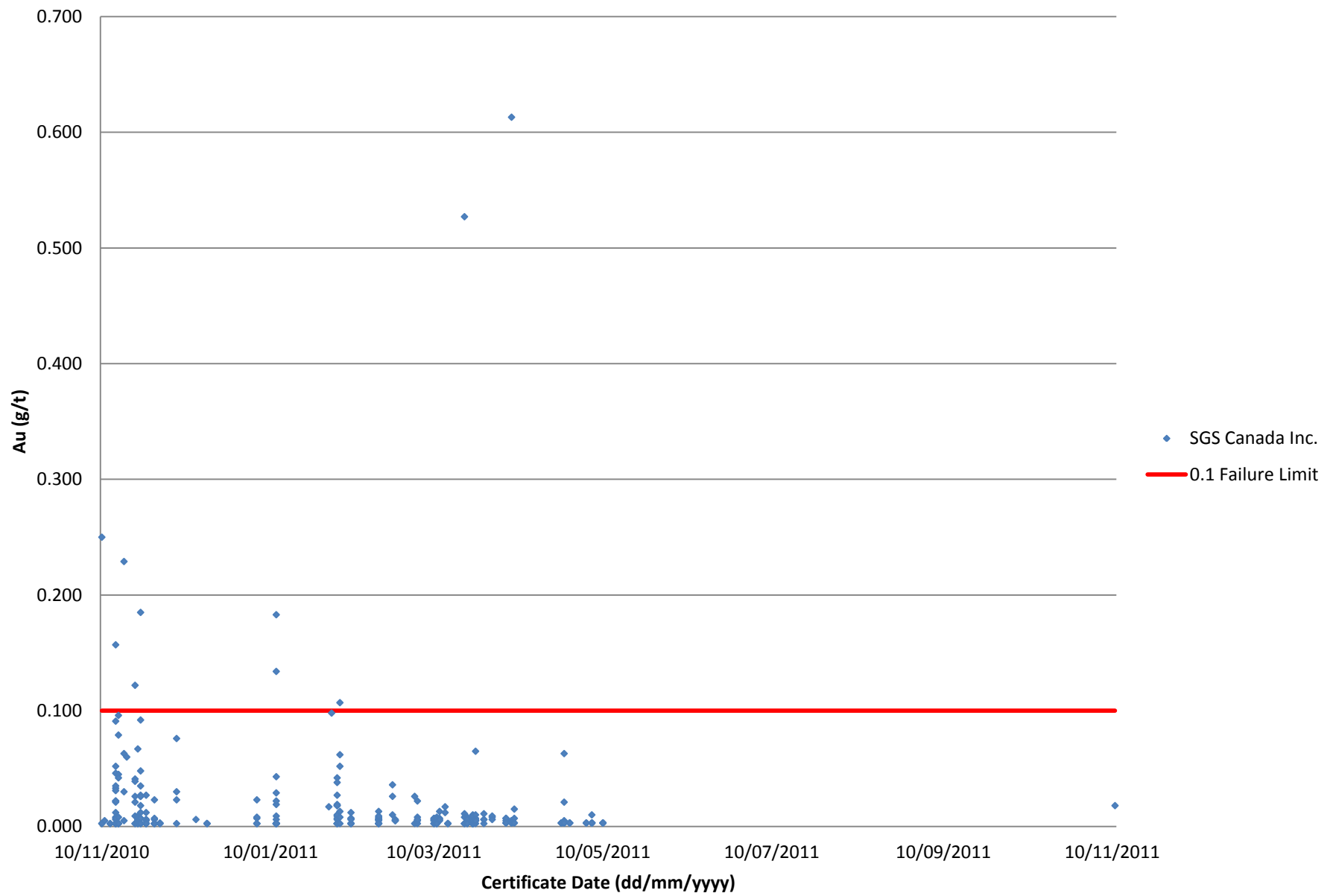


**Fig. 2.1: Bell Creek Mine Blanks - ALS Canada Ltd.**

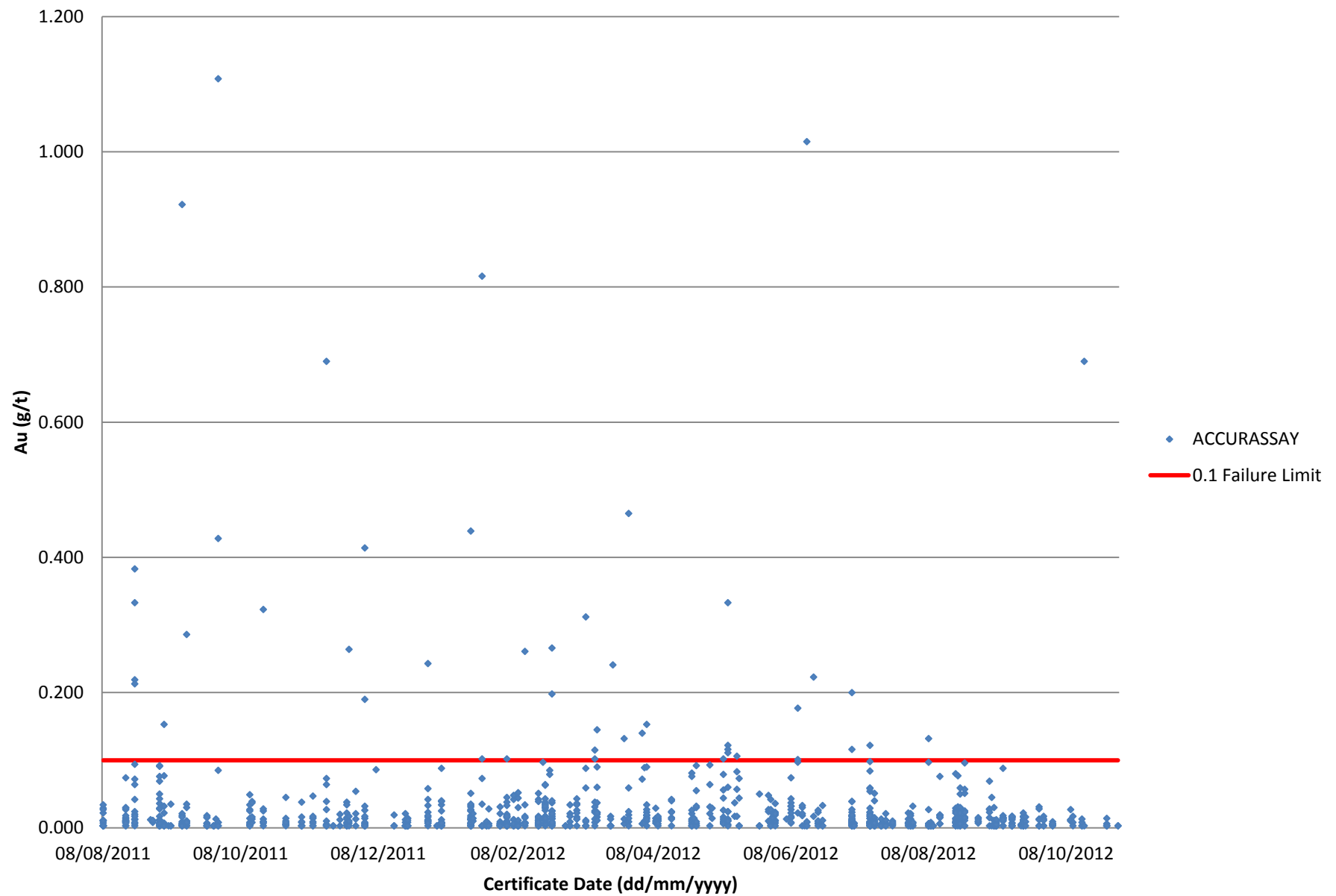


**Fig. 2.2: Bell Creek Mine Blanks - Bell Creek Lab**

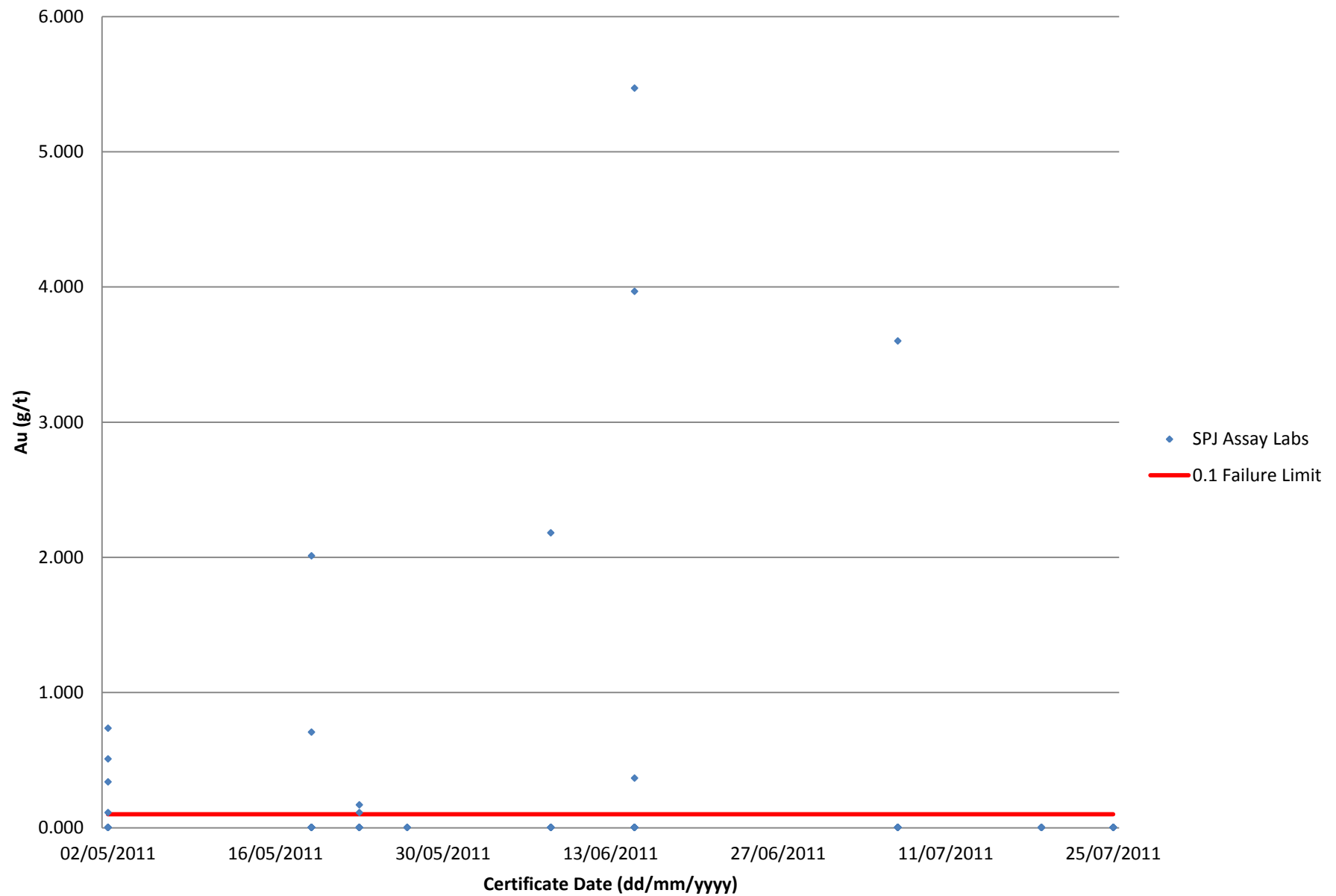


[illegible]

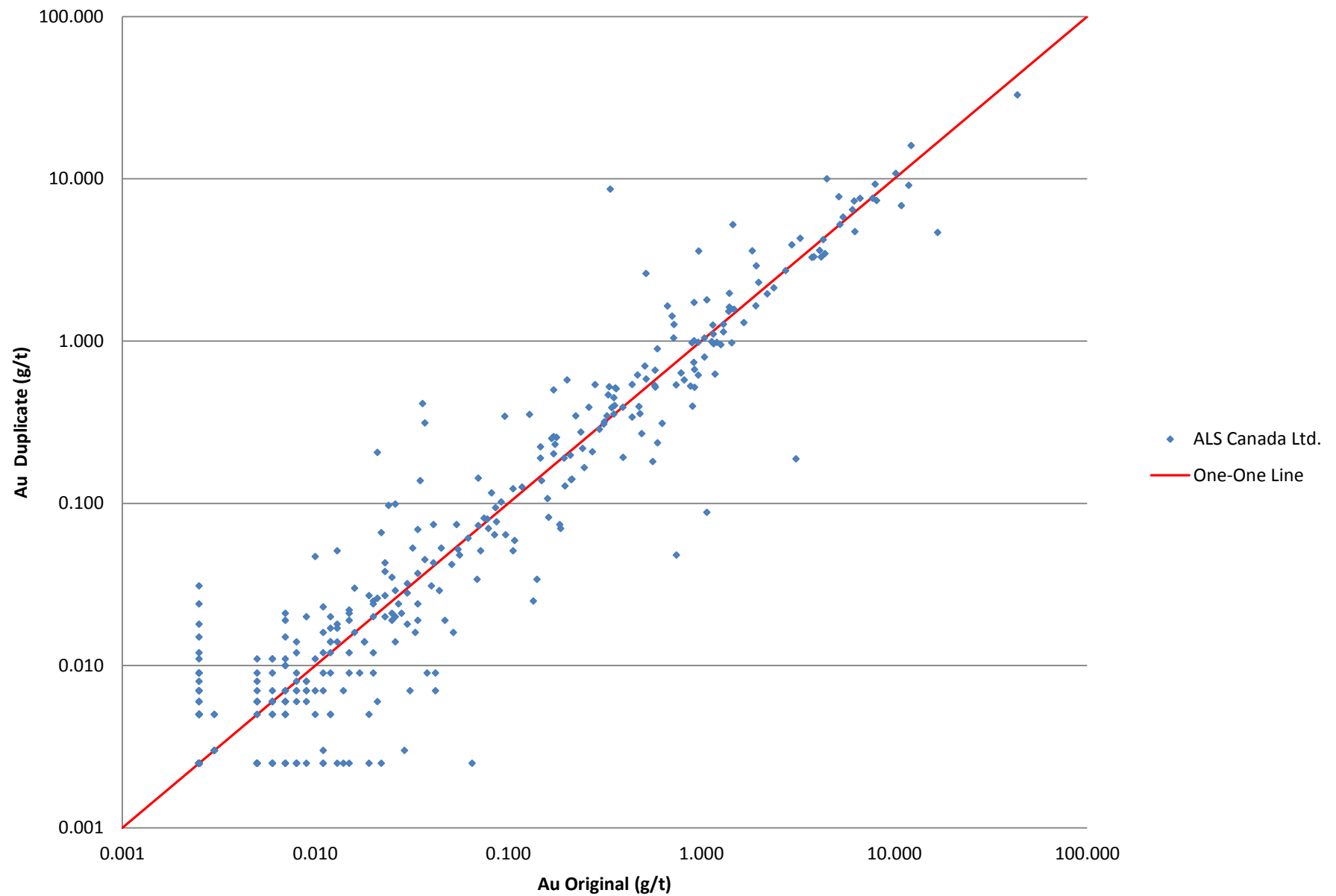
**Fig. 2.4: Bell Creek Mine Blanks - Accurassay Lab**



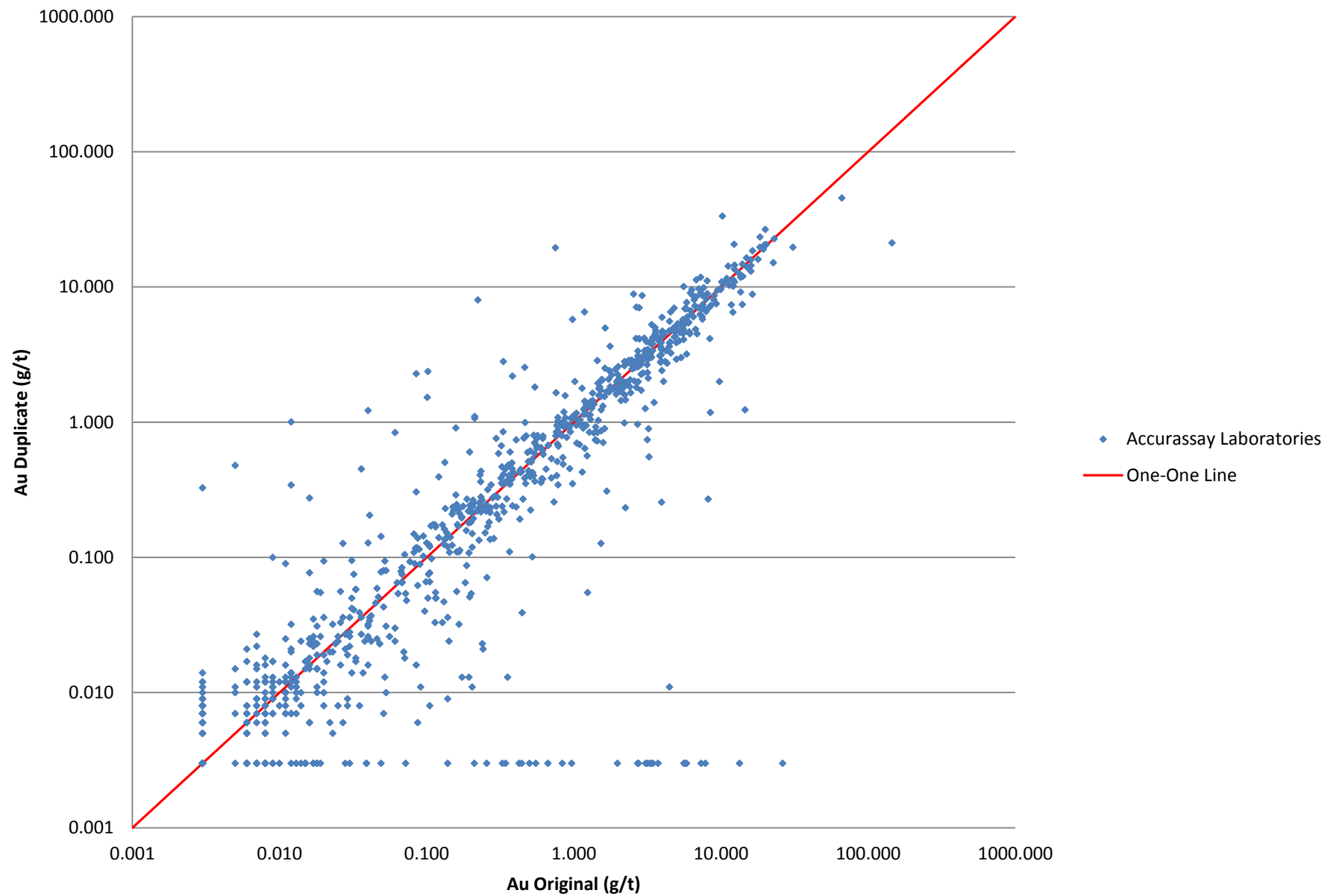
**Fig. 2.5: Bell Creek Mine Blanks - SPJ Assay Labs**



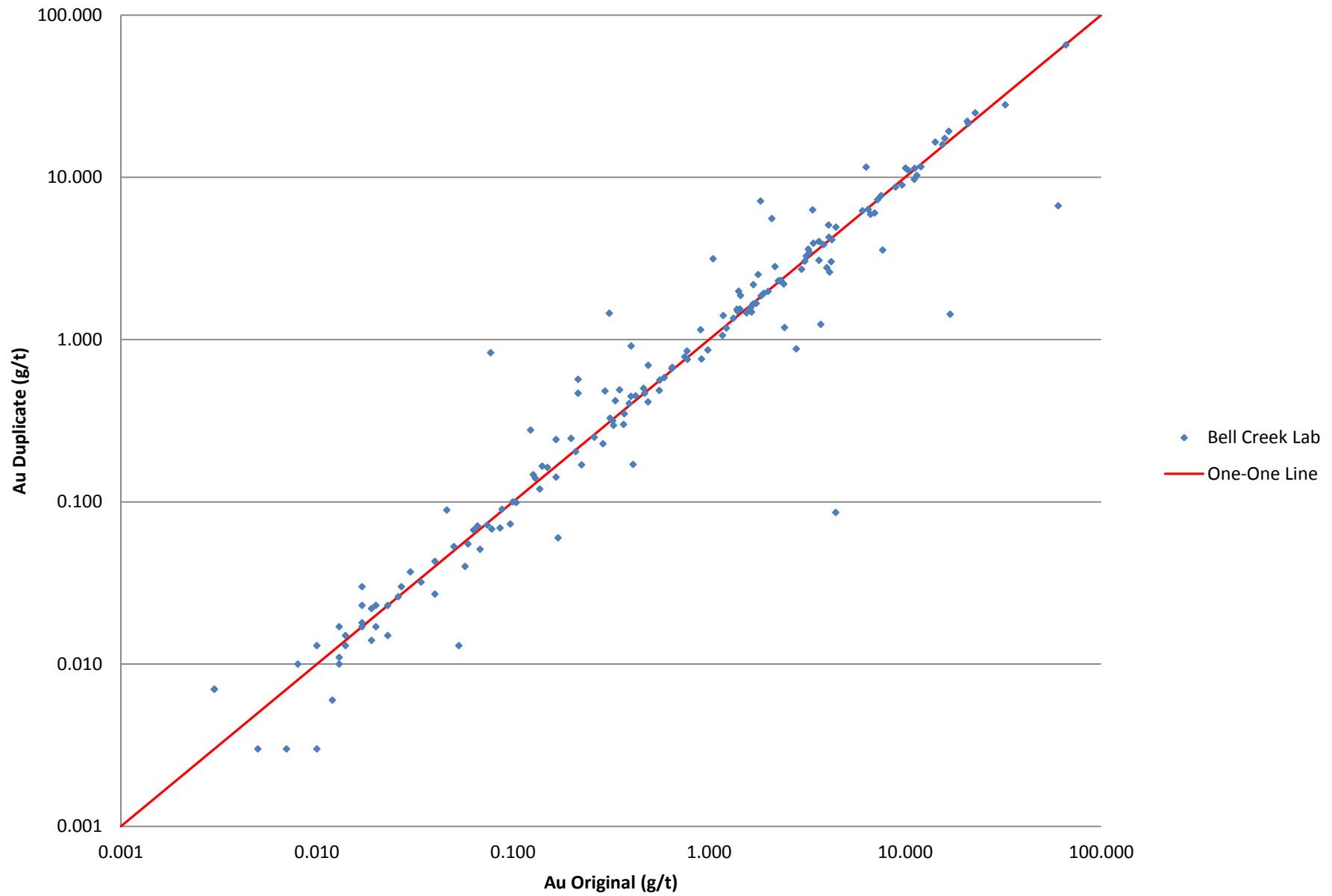
**Fig. 3.1: Bell Creek Mine Coarse Duplicates - ALS Canada Ltd.**



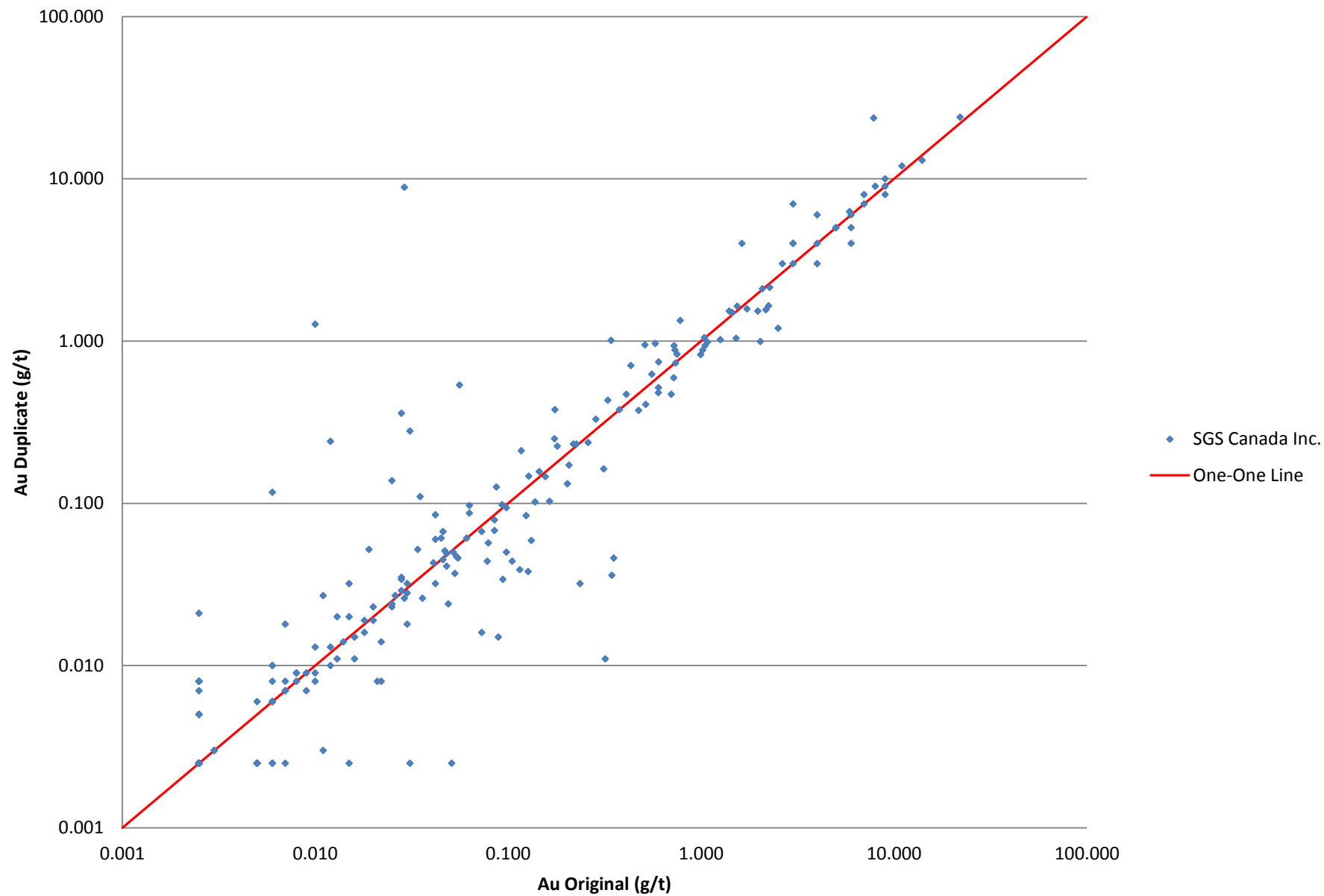
**Fig. 3.2: Bell Creek Mine Coarse Duplicates - Accurassay Laboratories**



**Fig. 3.3: Bell Creek Mine Coarse Duplicates - Bell Creek Lab**



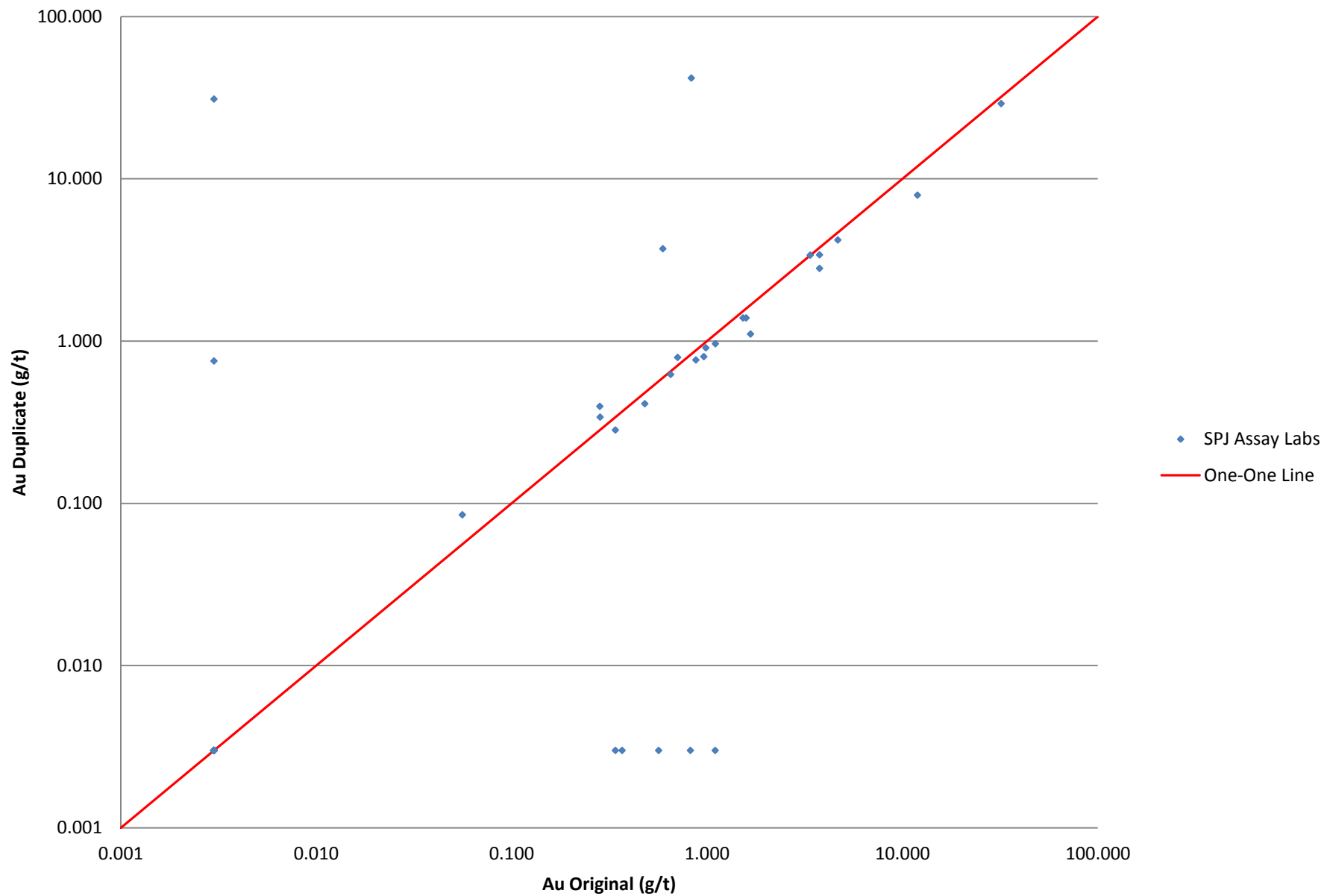
**Fig. 3.4: Bell Creek Mine Coarse Duplicates - SGS Canada Inc.**



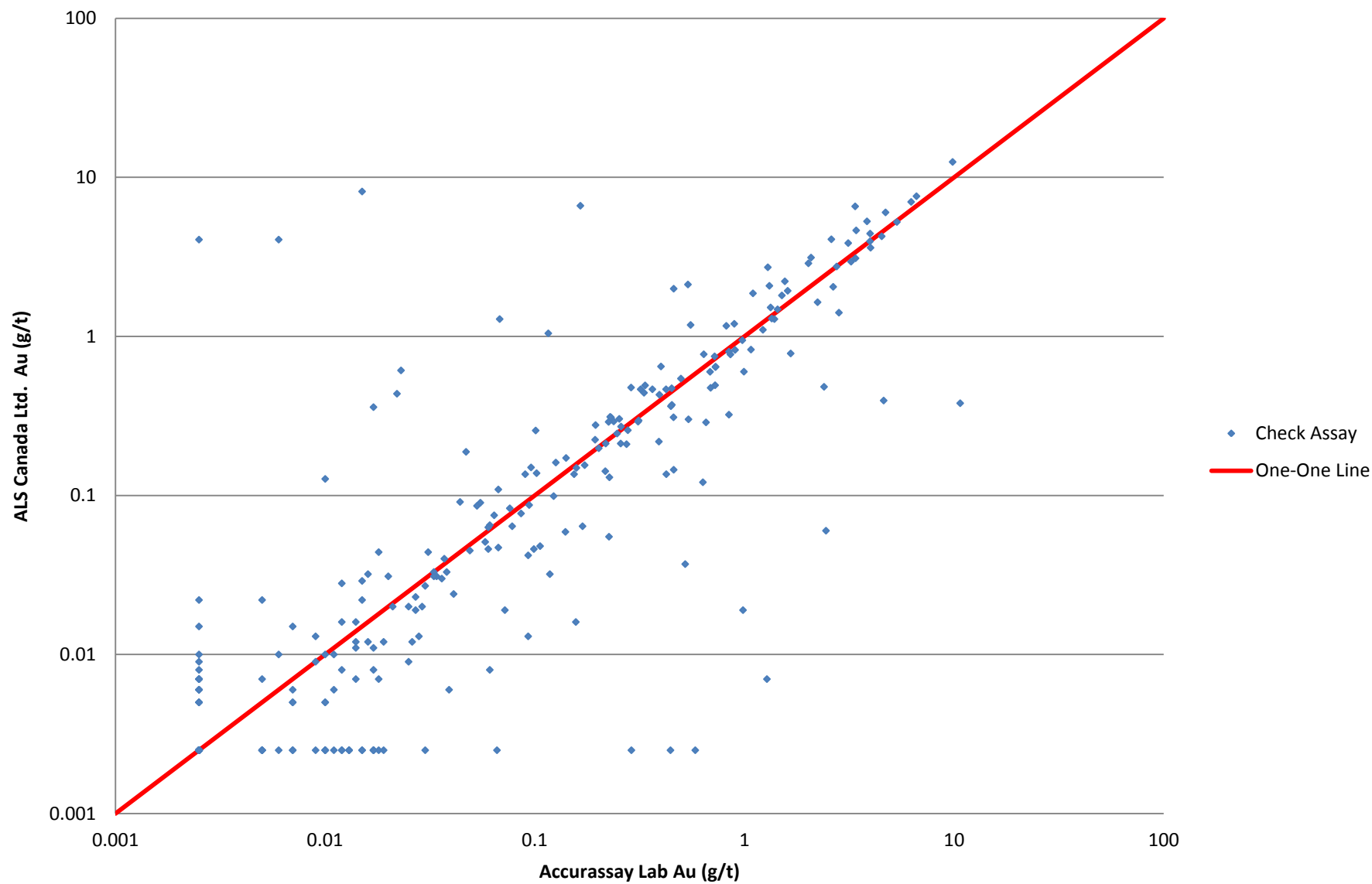
**Fig. 3.5: Bell Creek Mine Coarse Duplicates - SPJ Assay Labs**

This scatter plot compares the results of duplicate assays from SPJ Assay Labs. The x-axis represents the 'Au Original (g/t)' and the y-axis represents the 'Au Duplicate (g/t)', both on a logarithmic scale ranging from 0.001 to 100,000. A solid red line, labeled 'One-One Line' in the legend, represents the ideal 1:1 relationship. Data points, marked with blue diamonds, are clustered tightly around this line, indicating high assay accuracy. There are a few outliers, notably at higher concentrations where the duplicate is slightly higher than the original, and a small cluster of points at lower concentrations where the duplicate is slightly lower.

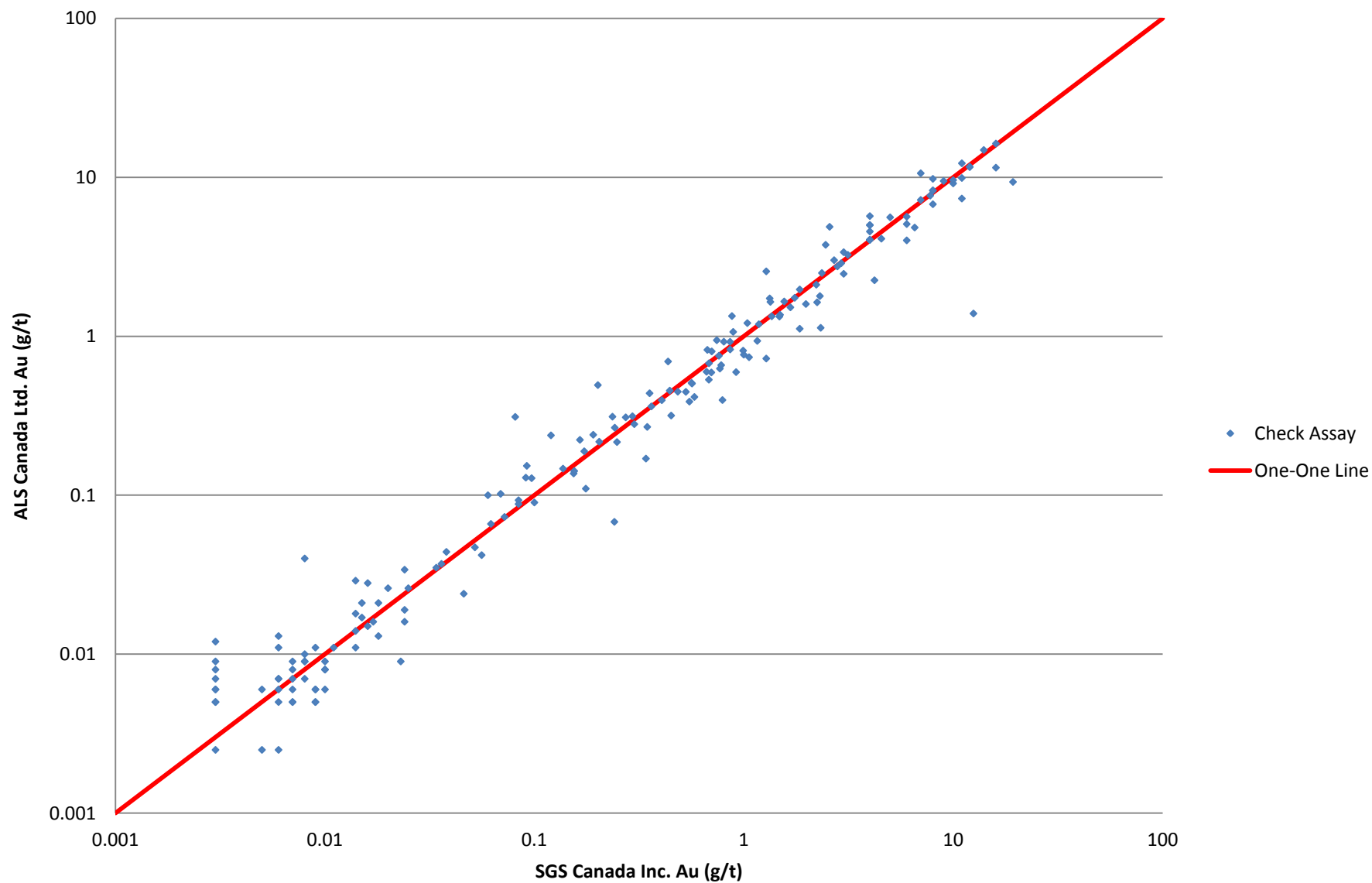
Au Original (g/t)	Au Duplicate (g/t)
0.003	0.003
0.005	0.7
0.005	3000
0.05	0.08
0.2	0.3
0.2	0.4
0.2	0.5
0.3	0.25
0.4	0.4
0.5	0.6
0.6	3.5
0.7	0.6
0.7	0.8
0.8	4000
0.9	0.8
1.0	0.8
1.0	0.9
1.1	0.9
1.2	0.9
1.3	1.0
1.5	1.3
1.8	1.1
3.5	3.2
3.8	3.0
4.0	3.2
4.5	4.0
12	8
30	25



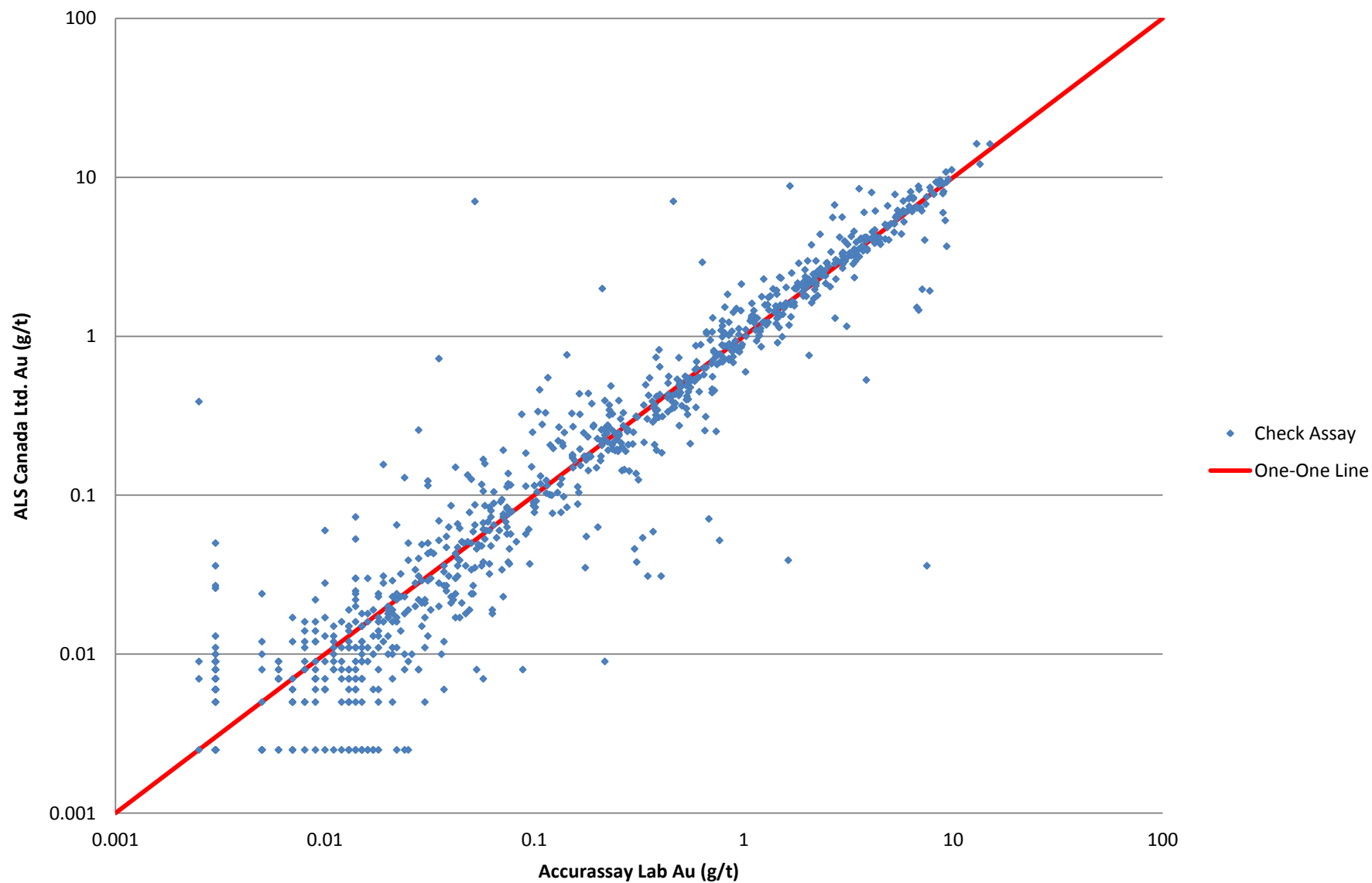
**Fig. 4.1: Bell Creek Mine Underground 2011 Check Assay Program -  
Accurassay Lab and ALS Canada Ltd.**



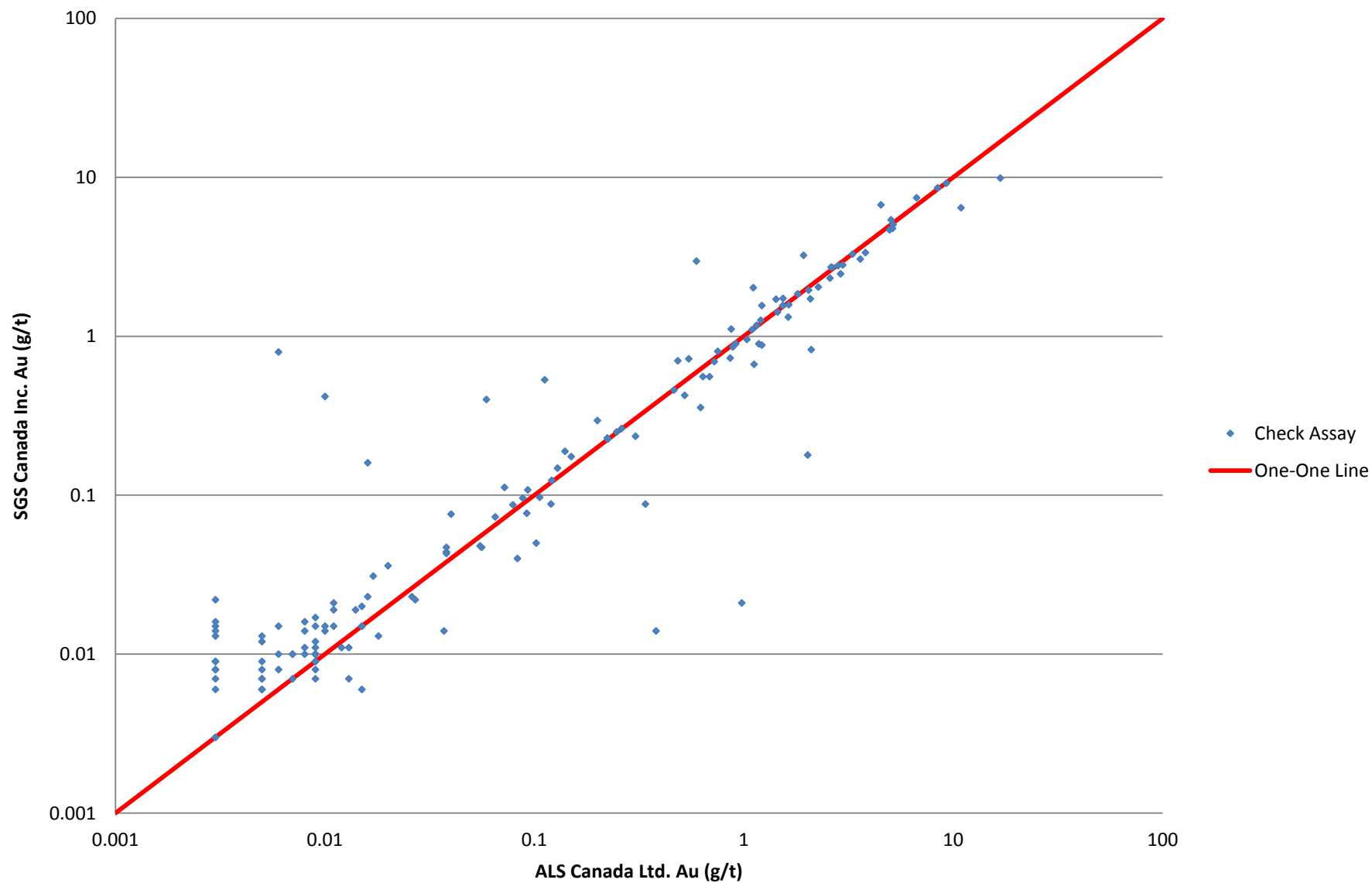
**Fig. 4.2: Bell Creek Mine Underground 2011 Check Assay Program -  
SGS Canada Inc. and ALS Canada Ltd.**



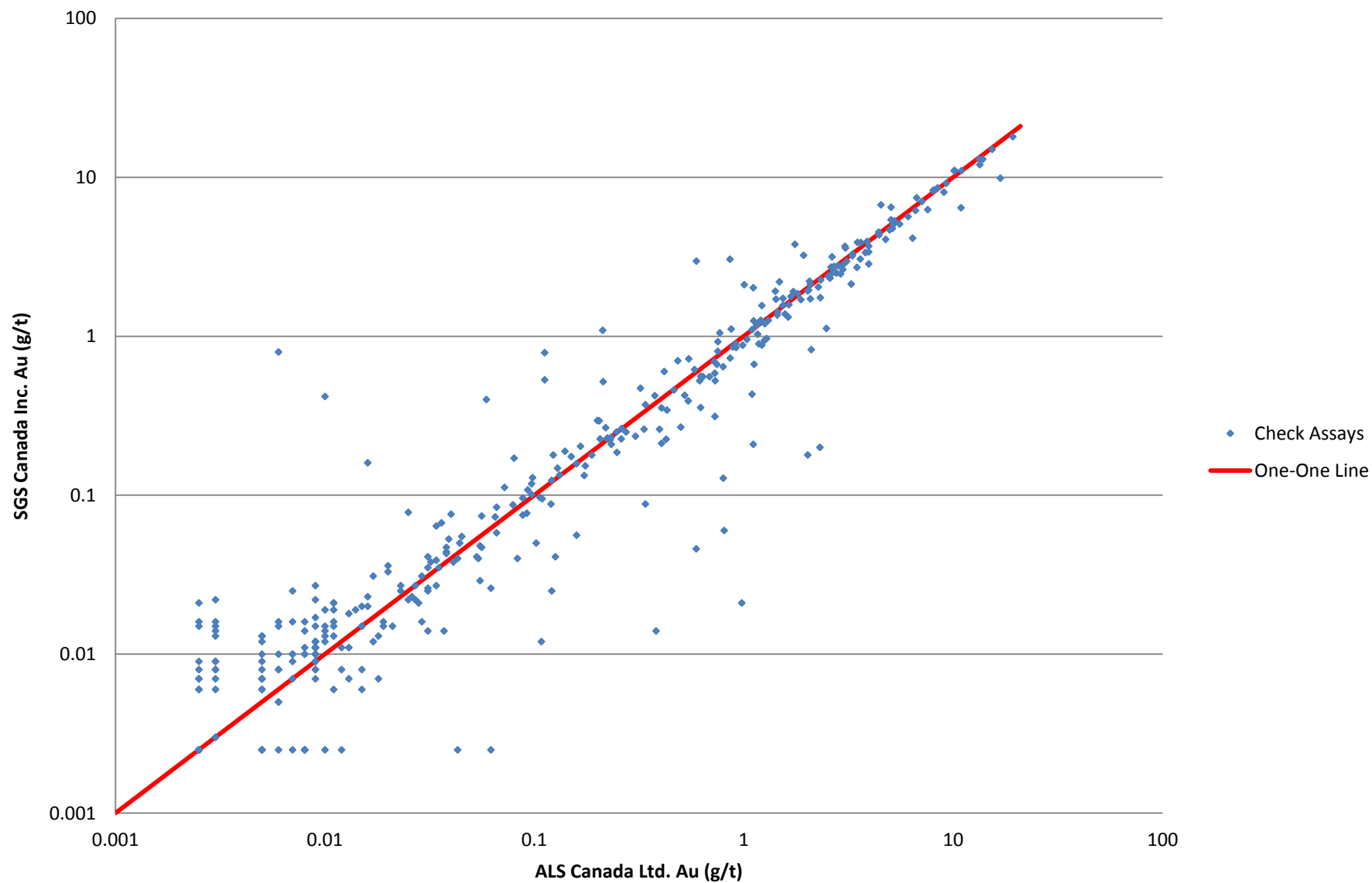
**Fig. 4.3: Bell Creek Mine Underground 2012 Check Assay Program -  
Accurassay Lab and ALS Canada Ltd.**



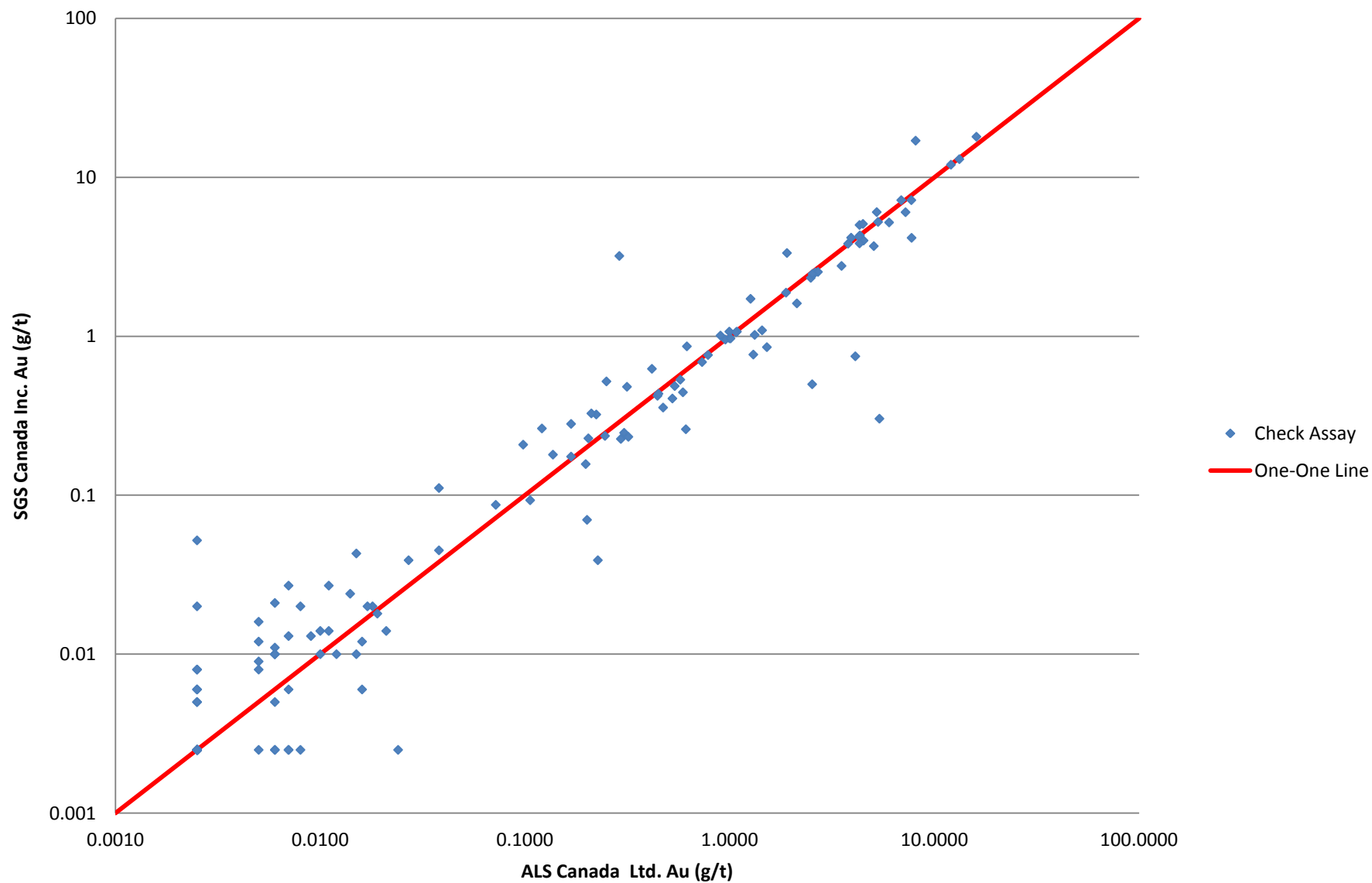
**Fig. 4.4: Bell Creek Mine Surface Check Assay Program May 2011 -  
ALS Canada Ltd. and SGS Canada Inc.**



**Fig. 4.5: Bell Creek Mine Surface October 2011 Check Assay Program -  
ALS Canada Ltd. and SGS Canada Inc.**



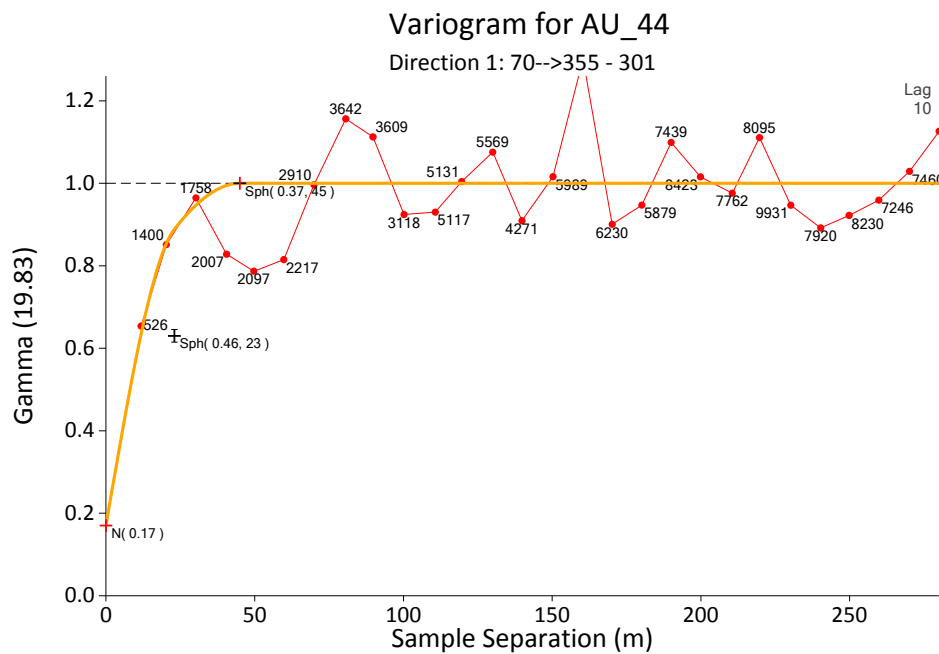
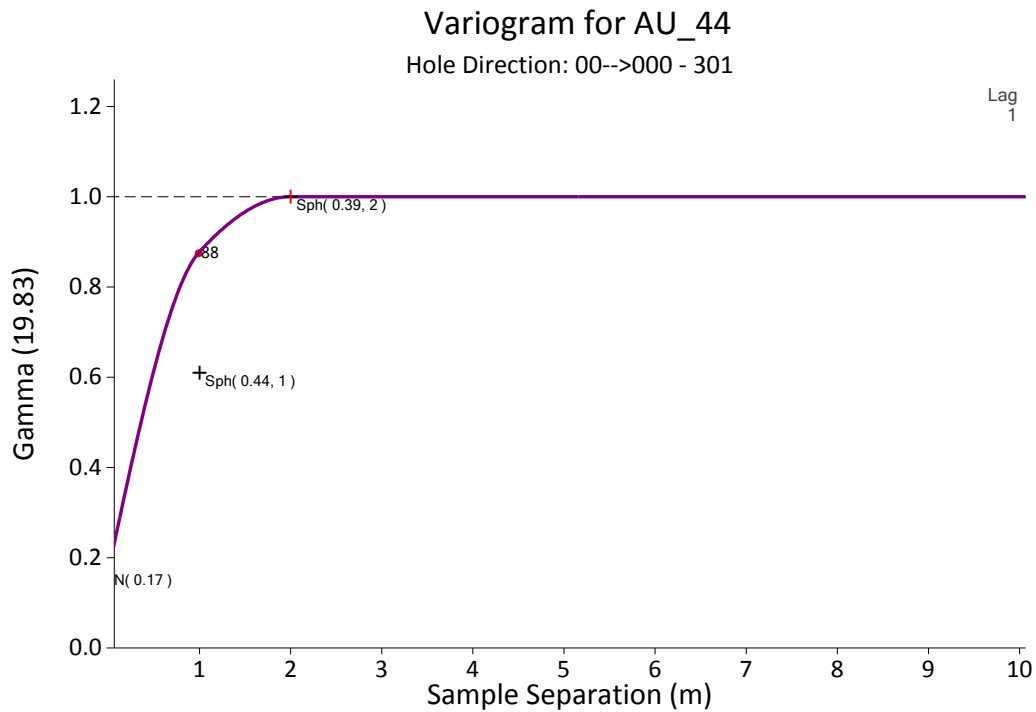
**Fig. 4.6: Bell Creek Mine Surface October 2012 Check Assays -  
ALS Canada Ltd. and SGS Canada Inc.**



# **APPENDIX C**

## **VARIOGRAPHY**

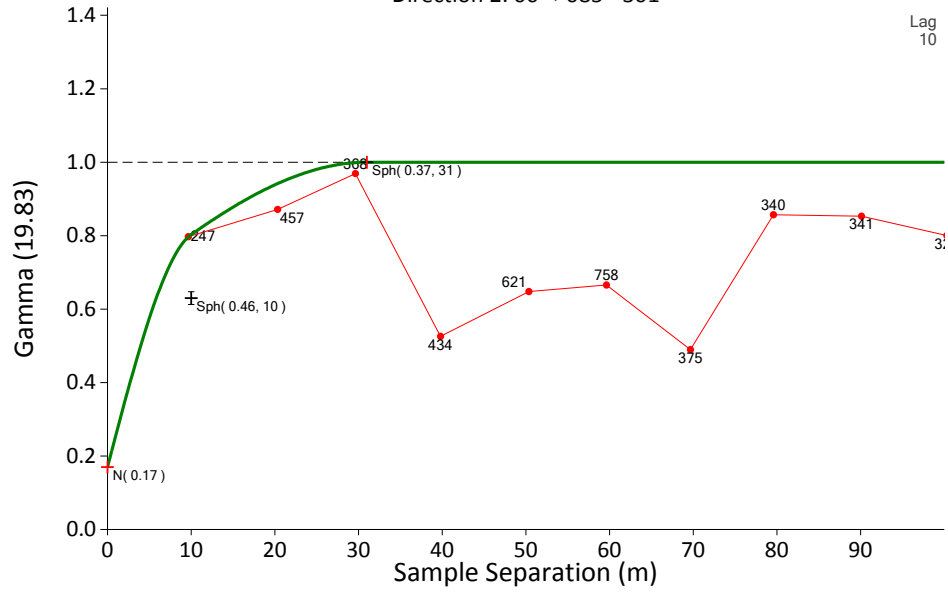
## North A



C1 .46 23m  
C2 .37 45m

### Variogram for AU\_44

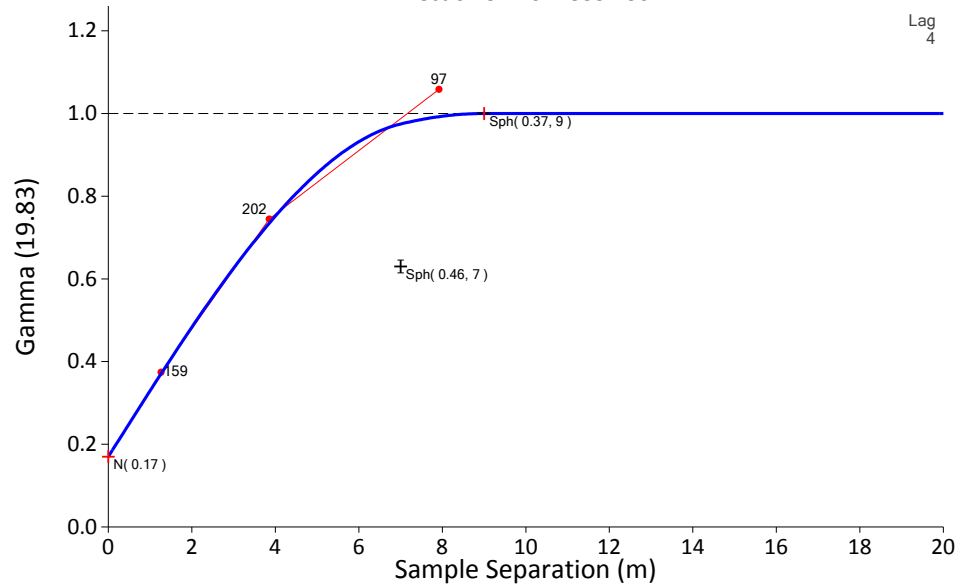
Direction 2: 00-->085 - 301



C1 .46 10 m  
C2 .37 31 m

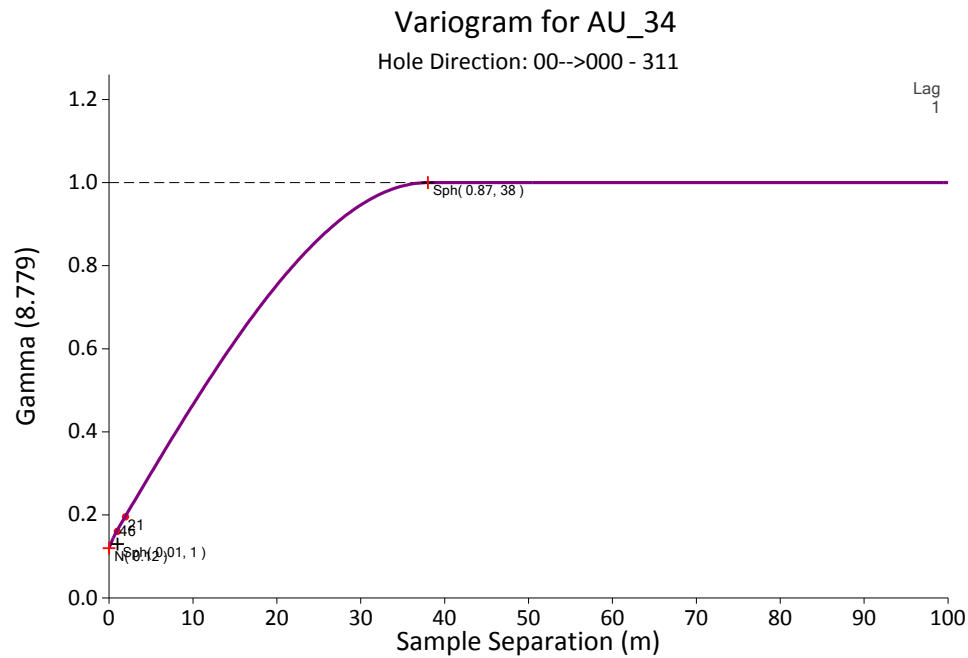
### Variogram for AU\_44

Direction 3: -20-->355 - 301

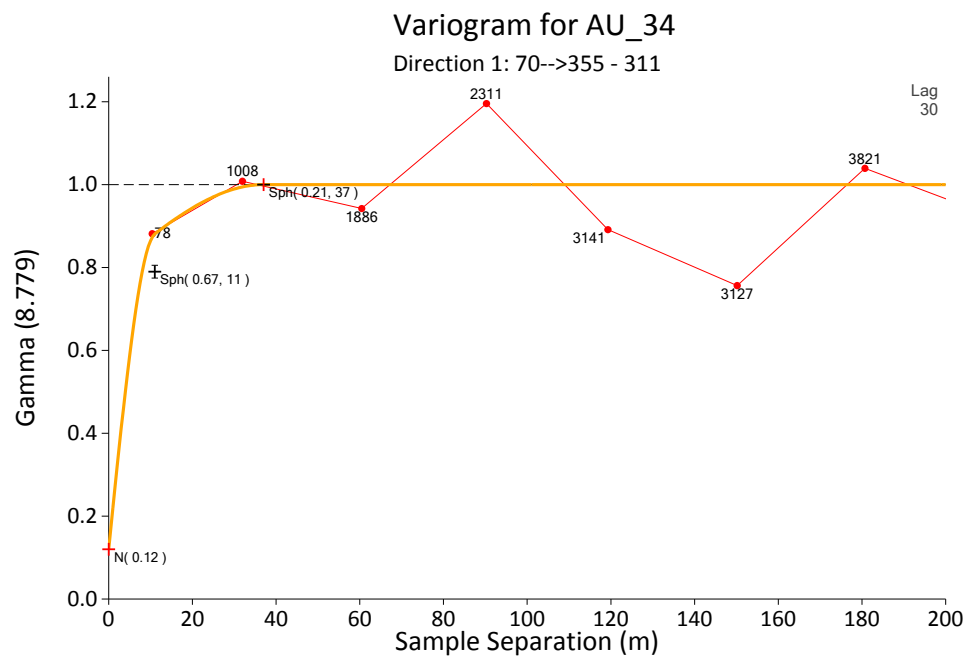


C1 .46 7 m  
C2 .37 9 m

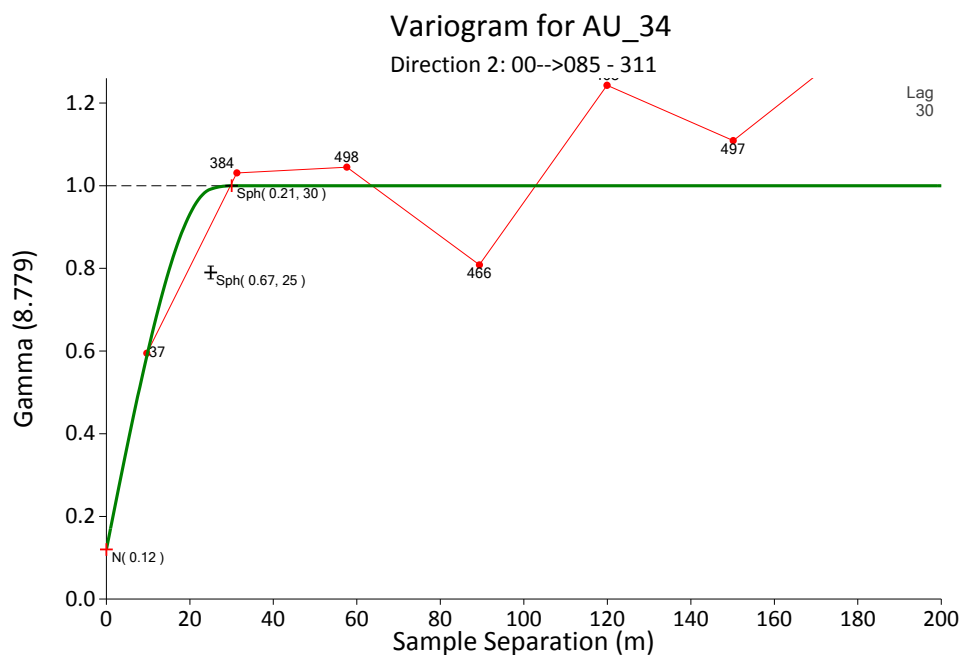
## North B



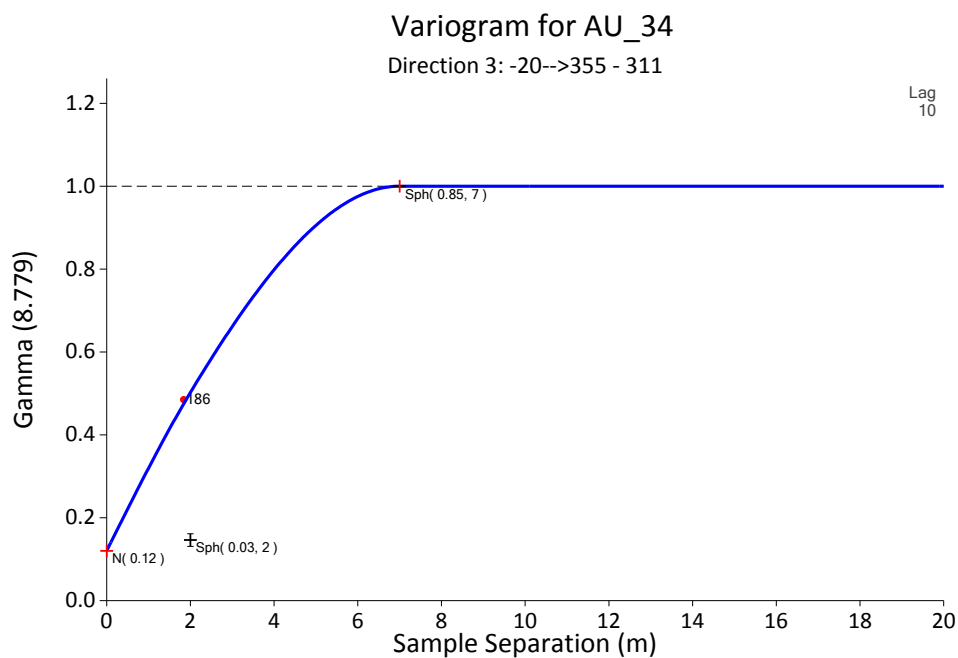
Nugget 0.12



C1 0.67 11 m  
C2 0.21 37 m



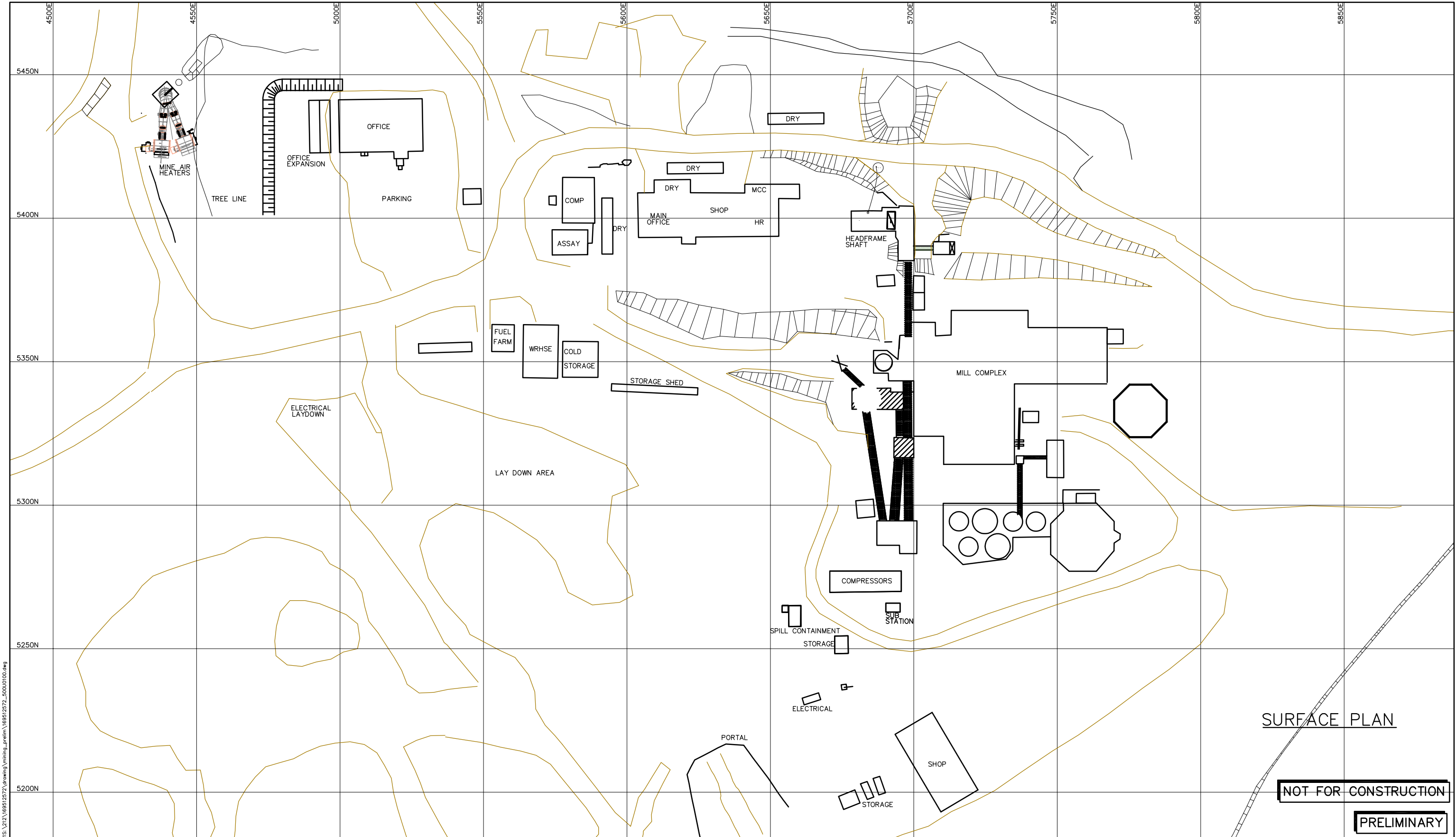
C1 .67 25 m  
C2 .21 30 m



C1 .03 2 m  
C2 .85 7 m

# **APPENDIX D**

## **MINING DRAWINGS**



Mar 22, 2013 - 1:15pm \\001212-HQIS-1212\169512572\working\mining\prelim\169512572\_500\U0100.dwg

PROJ. NO. 169512572  
DWG. NO. 500-U0100  
REV. NO. A

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	APPROVED
A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	MDL			

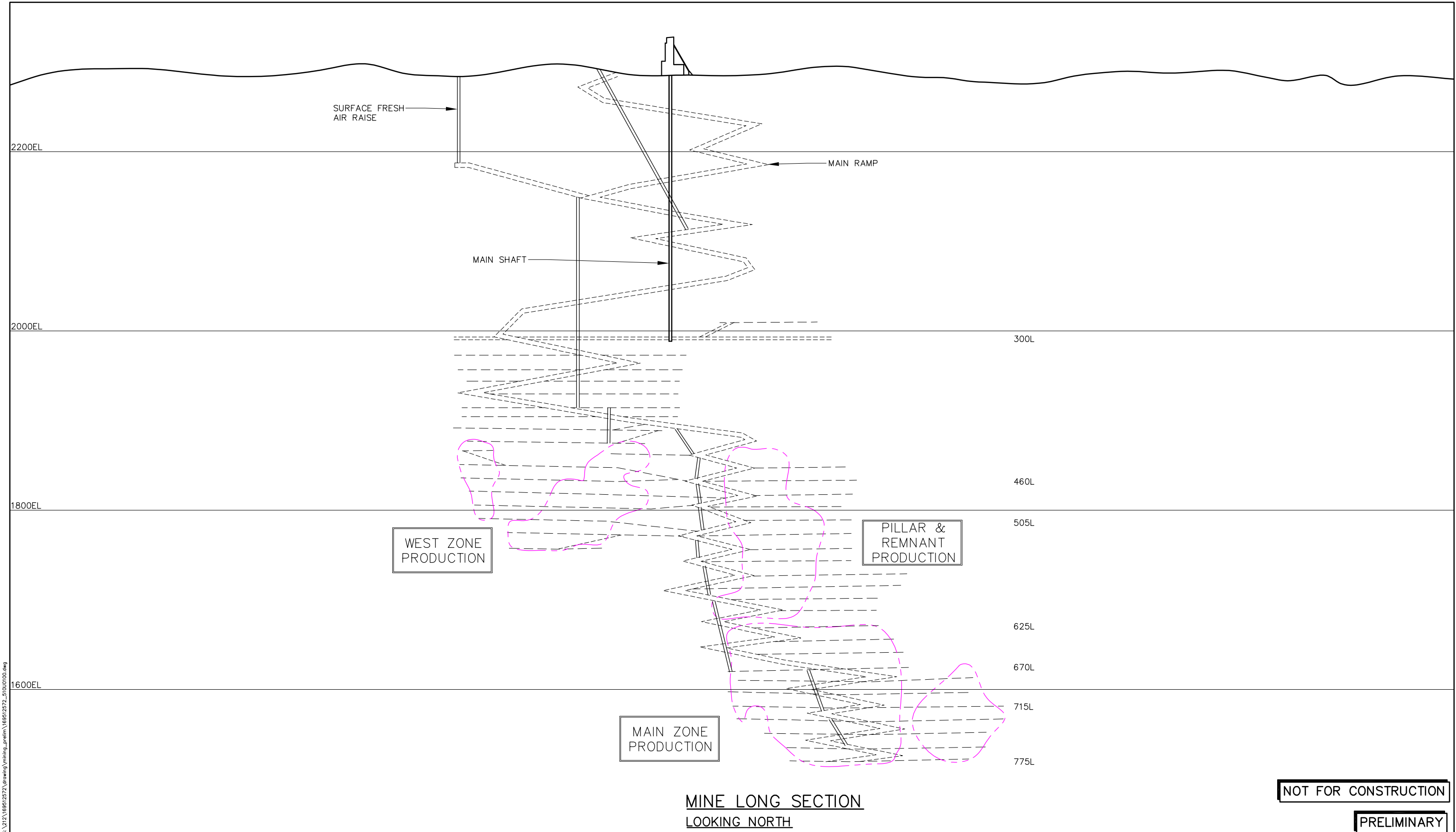


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ORIGINAL DRAWN BY: MDL  
DATE: 2013.03.20



CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE SURFACE GENERAL ARRANGEMENT
PLAN	
SCALE:	NTS
PROJ. NO.	169512572
DWG. NO.	500-U0100
REV. NO.	A



Mar 22, 2013 - 1:15pm \\001212-H01S\212\169512572\drawing\mining\prelim\169512572\_510U0100.dwg

PROJ. NO.	169512572	REV. NO.	A
DWG. NO.	520-U0100		

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	PREPARED
A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	MDL			



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ORIGINAL DRAWN BY: MDL  
DATE: 2013.03.15

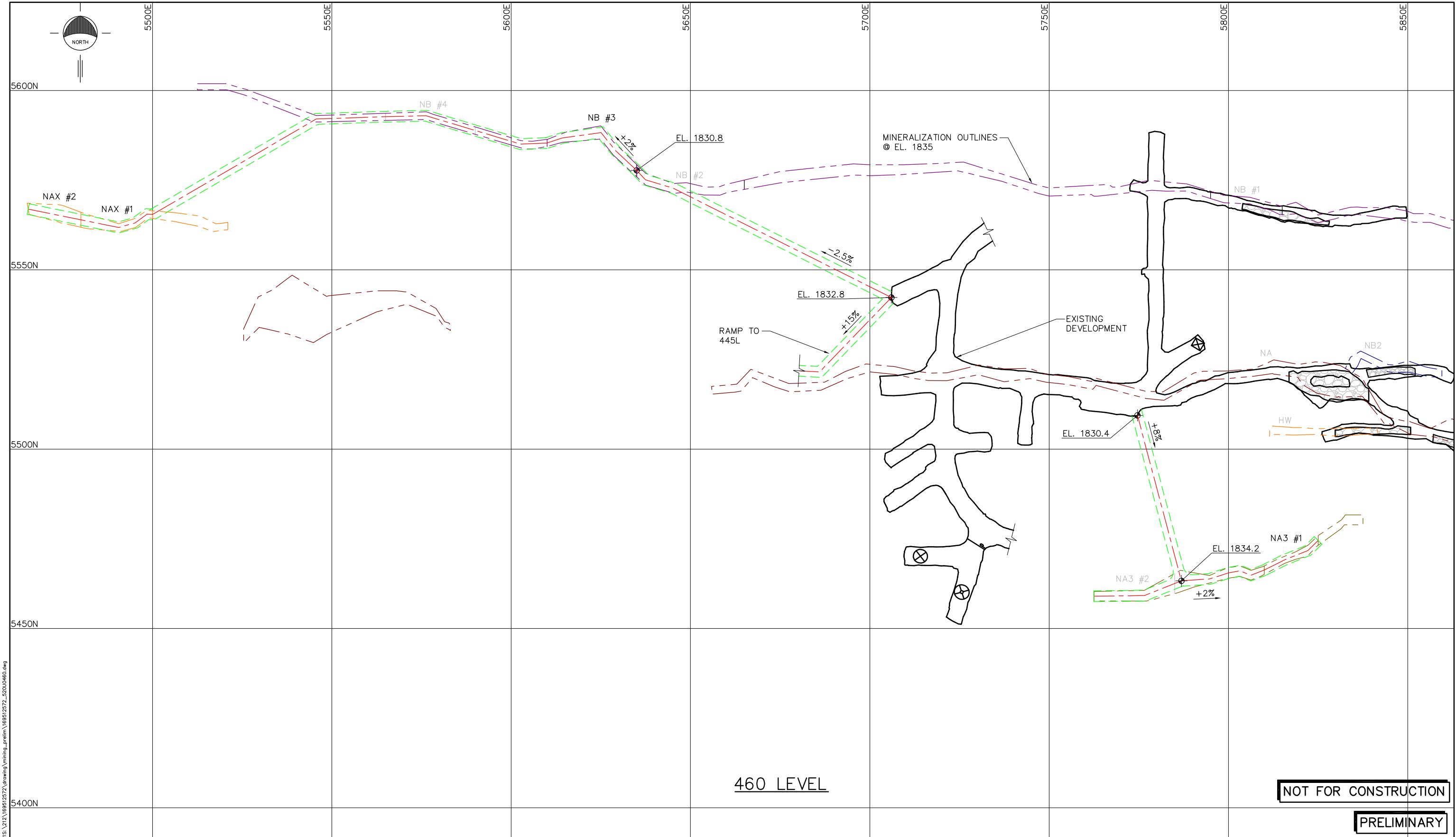


CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE LONGITUDINAL MINE LONG SECTION LOOKING NORTH SECTION
SCALE:	NTS
PROJ. NO.	169512572
DWG. NO.	510-U0100
REV. NO.	A









Mar 22, 2013 - 1:15pm \\001212-H01S\212\169512572\Drawing\mining\prelim\169512572\_520\U0460.dwg

REQ. NO.	169512572	REV. NO.	A
DWG. NO.	520-U0460		
REF. DWG. NO.		REFERENCE DRAWING TITLE	
REV.	A	DESCRIPTION	PRELIMINARY - ISSUED FOR NI 43-101
		DATE	13.03.22
		BY	ASG
		CHECK	
		DESIGN	
		PREPARE	



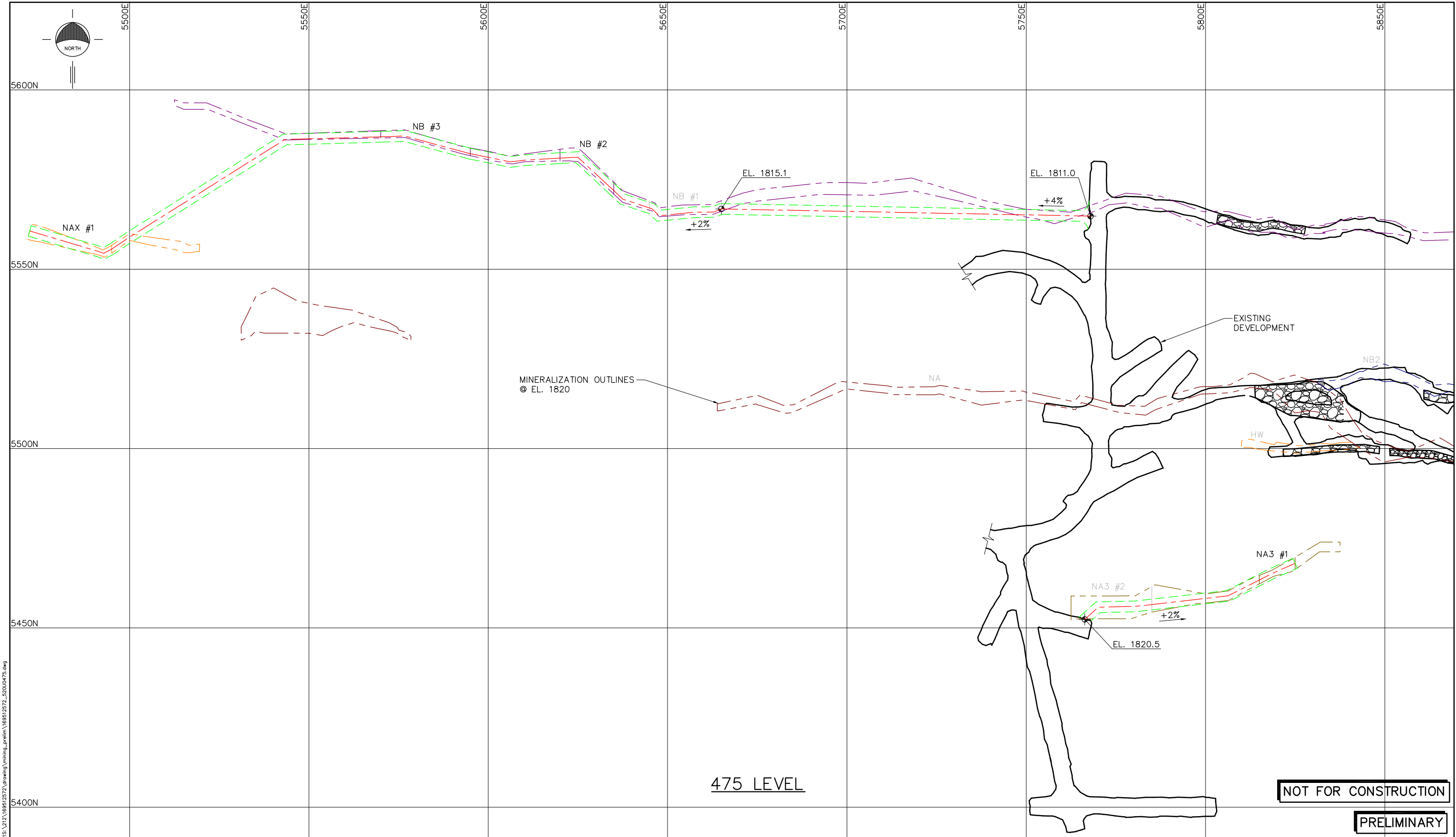
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ORIGINAL DRAWN BY:	ASG
DATE:	2013.03.01



CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE
	LEVEL PLANS
	460 LEVEL
	PLAN
SCALE:	1:1000
PROJ. NO.	169512572
DWG. NO.	520-U0460
REV. NO.	A



Mar 22, 2013 - 1:15pm \\001212-1011S\212\169512572\Drawing\mining\prelim\169512572\_520\U0475.dwg

PROJ. NO. 169512572	REV. NO. A										
DWG. NO. 520-U0475	NO.										
REF. DWG. NO.	REFERENCE DRAWING TITLE	REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	DATE	BY	CHECK	DESIGN
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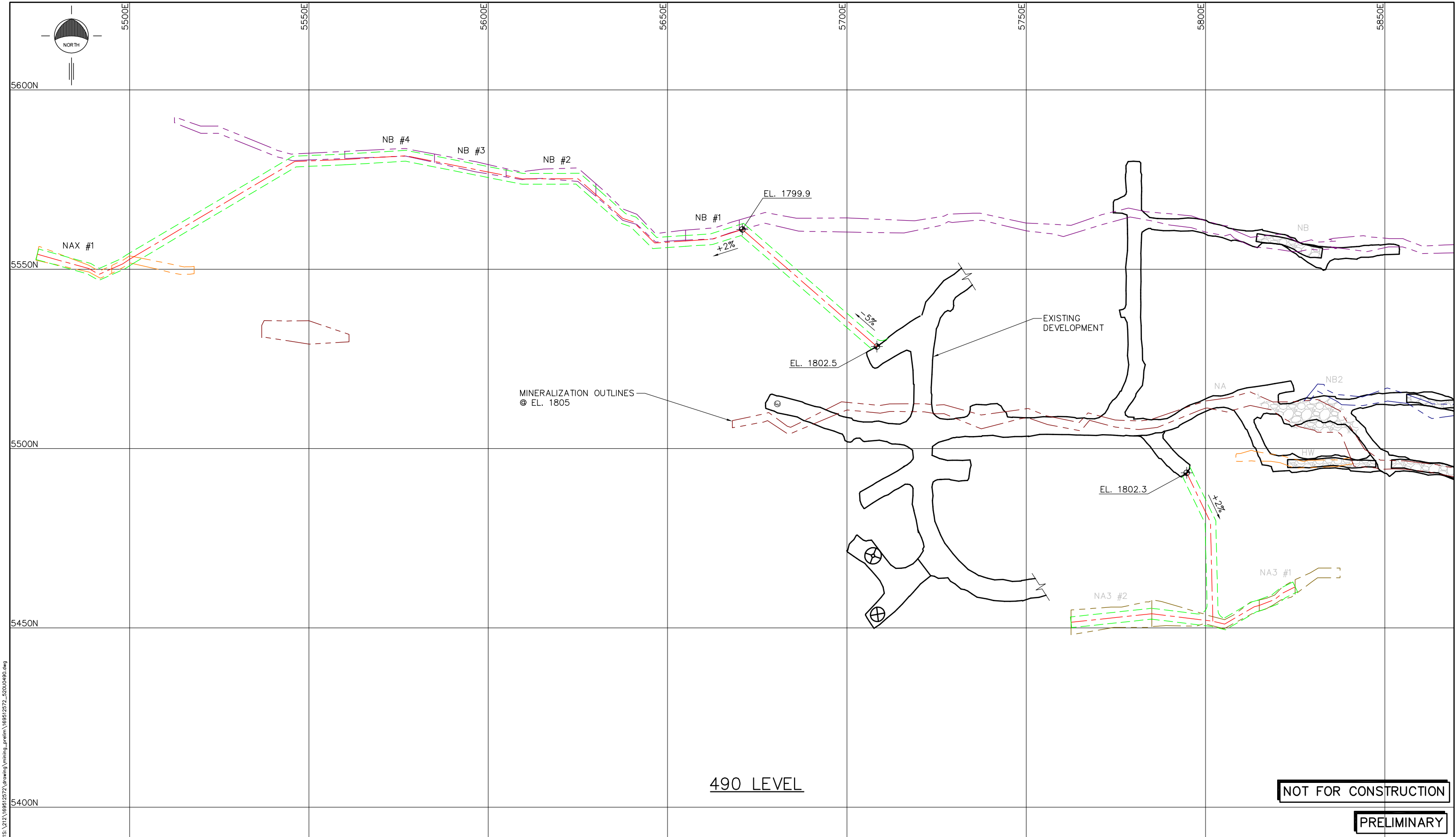


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ORIGINAL DRAWN BY: ASG	DATE: 2013.03.01



CLIENT: LAKE SHORE GOLD CORP.			
PROPERTY: BELL CREEK MINE			
PROJECT: NI 43-101 MINEABLE RESERVE			
LEVEL PLANS			
475 LEVEL			
PLAN			
SCALE: 1:1000	PROJ. NO. 169512572	DWG. NO. 520-U0475	REV. NO. A



Mar 22, 2013 - 1:15pm \\001212-H01S\212\169512572\Drawing\Mining\prelim\169512572\_520\U0490.dwg

PROJ. NO. 169512572	REV. NO. A								
DWG. NO. 520-U0490	NO.								
REF. DWG. NO.	REFERENCE DRAWING TITLE	REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	DATE	BY
		A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	ASG				
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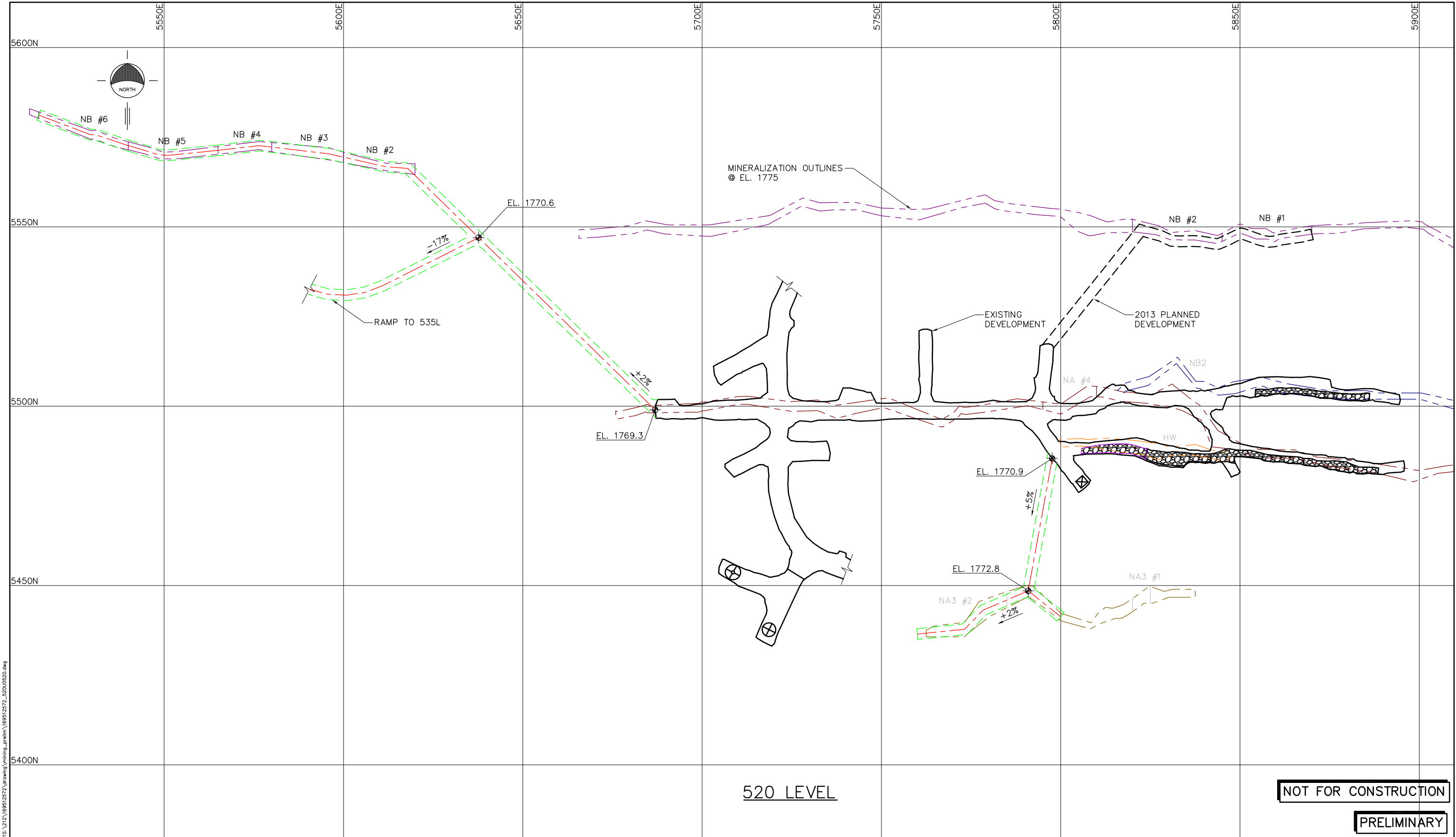
ORIGINAL DRAWN BY: ASG

DATE: 2013.03.01



CLIENT: LAKE SHORE GOLD CORP.			
PROPERTY: BELL CREEK MINE			
PROJECT: NI 43-101 MINEABLE RESERVE			
LEVEL PLANS			
490 LEVEL			
PLAN			
SCALE: 1:1000	PROJ. NO. 169512572	DWG. NO. 520-U0490	REV. NO. A





Mar 22, 2013 - 1:16pm \\001212-101S-1212\169512572\drawing\mining\prelim\169512572\_520U0520.dwg

PROJ. NO. 169512572	REV. NO. A										
DWG. NO. 520-U0520	NO.										
REF. DWG. NO.	REFERENCE DRAWING TITLE	REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	DATE	BY	CHECK	DESIGN
		A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	ASG						
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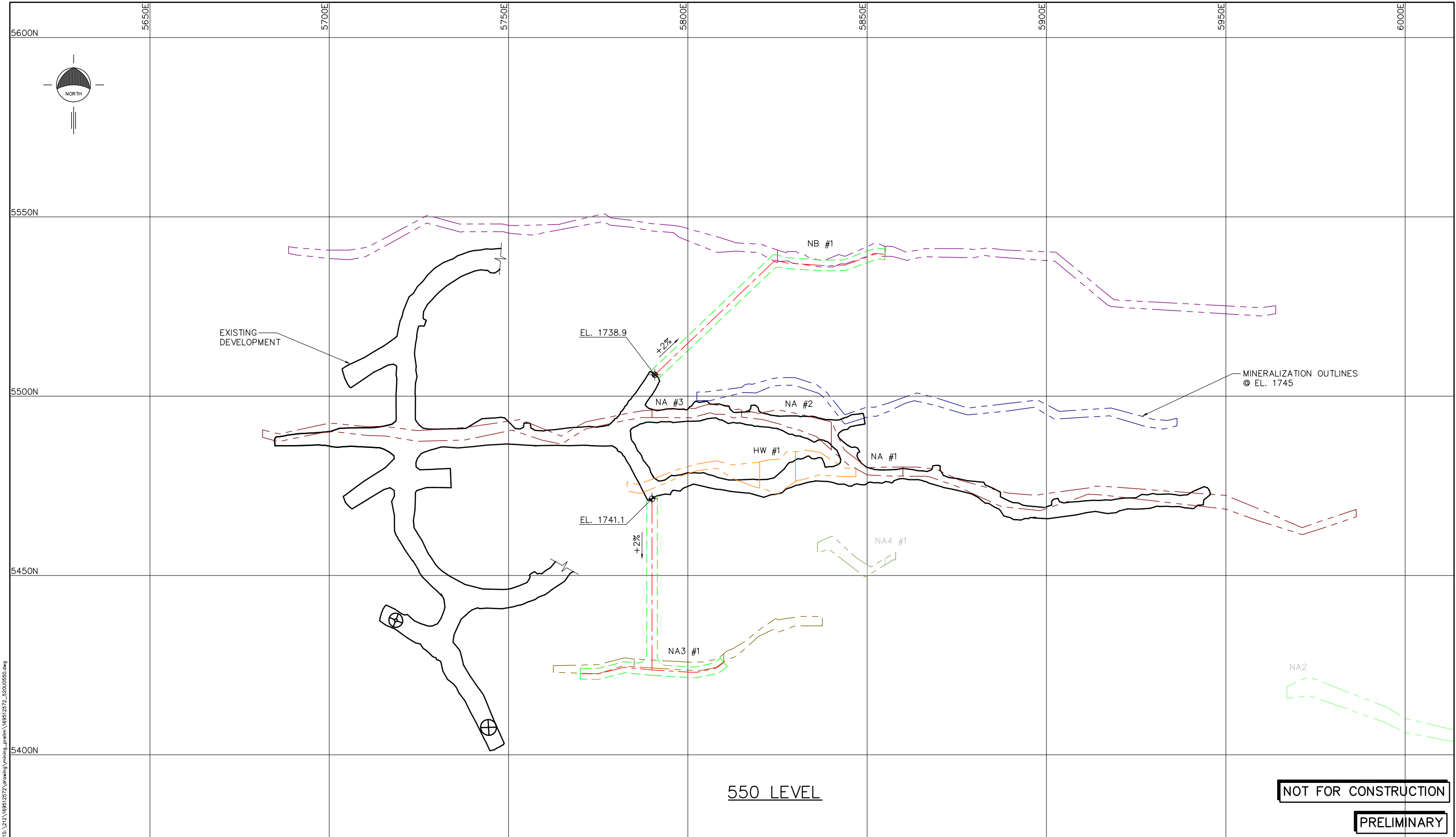
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ORIGINAL DRAWN BY: ASG	DATE: 2013.03.01



CLIENT: LAKE SHORE GOLD CORP.			
PROPERTY: BELL CREEK MINE			
PROJECT: NI 43-101 MINEABLE RESERVE			
LEVEL PLANS			
520 LEVEL			
PLAN			
SCALE: 1:1000	PROJ. NO. 169512572	DWG. NO. 520-U0520	REV. NO. A





Mar 22, 2013 - 1:16pm \\001212-101S-1212\169512572\Drawing\mining\prelim\169512572\_520U0550.dwg

PROJ. NO. 169512572	REV. NO. A												
DWG. NO. 520-U0550	NO.												
REF. DWG. NO.	REFERENCE DRAWING TITLE	REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	DATE	BY	CHECK	DESIGN	DATE	BY
		A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	ASG								
THIS DRAWING IS NOT VALID UNLESS THE LAST REVISION IS HAND SIGNED													



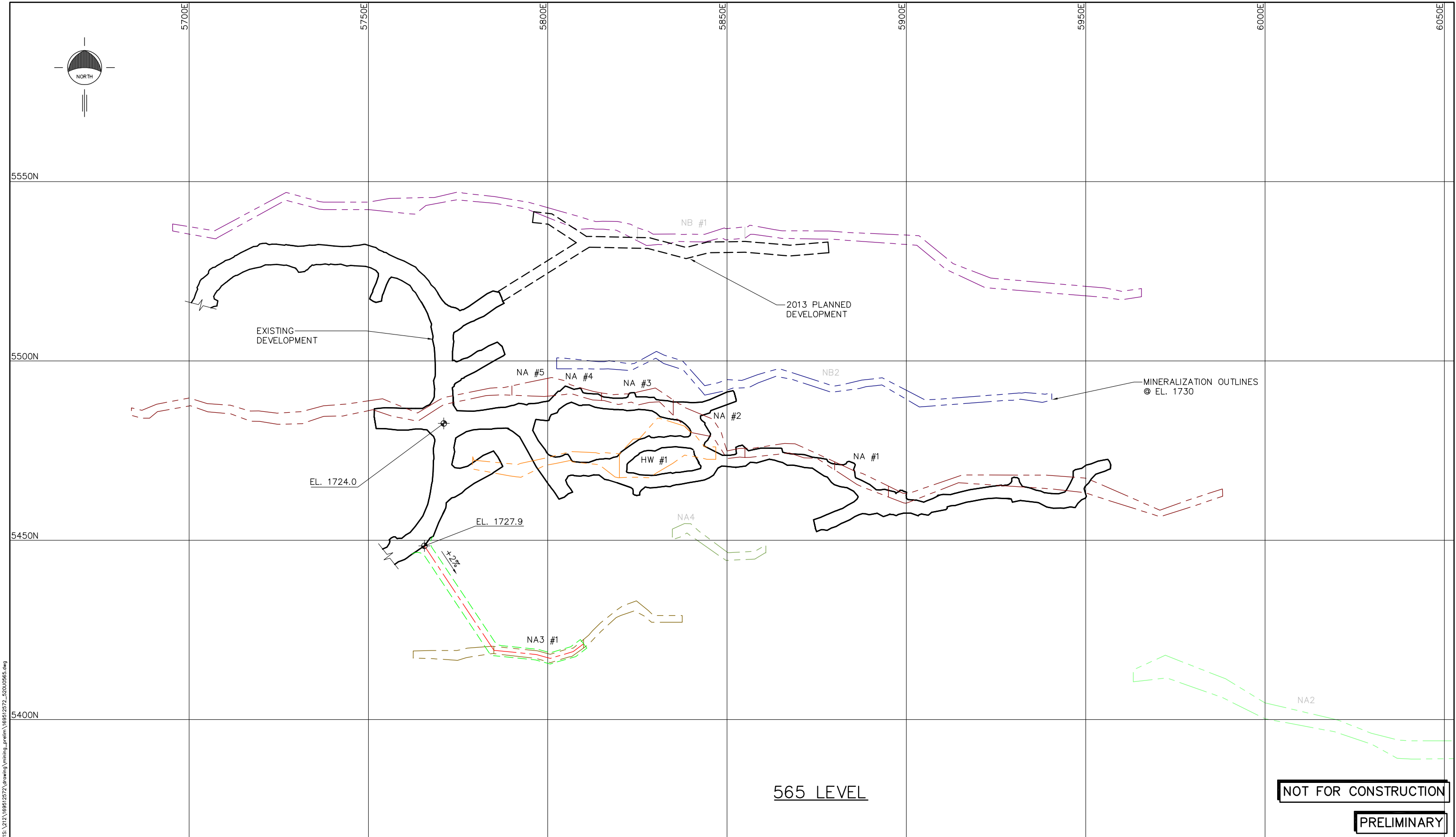
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ORIGINAL DRAWN BY: ASG  
DATE: 2013.03.01



CLIENT: LAKE SHORE GOLD CORP.			
PROPERTY: BELL CREEK MINE			
PROJECT: NI 43-101 MINEABLE RESERVE			
LEVEL PLANS			
550 LEVEL			
PLAN			
SCALE: 1:1000	PROJ. NO. 169512572	DWG. NO. 520-U0550	REV. NO. A



565 LEVEL

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PRELIMINARY

Mar 22, 2013 - 1:16pm \\001212-101S-1212\169512572\working\mining\prelim\169512572\_520U0565.dwg

PROJ. NO. 169512572  
DWG. NO. 520-U0565  
REV. NO. A

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	PREPARED
A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	MDL			



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ORIGINAL DRAWN BY: MDL  
DATE: 2013.03.18

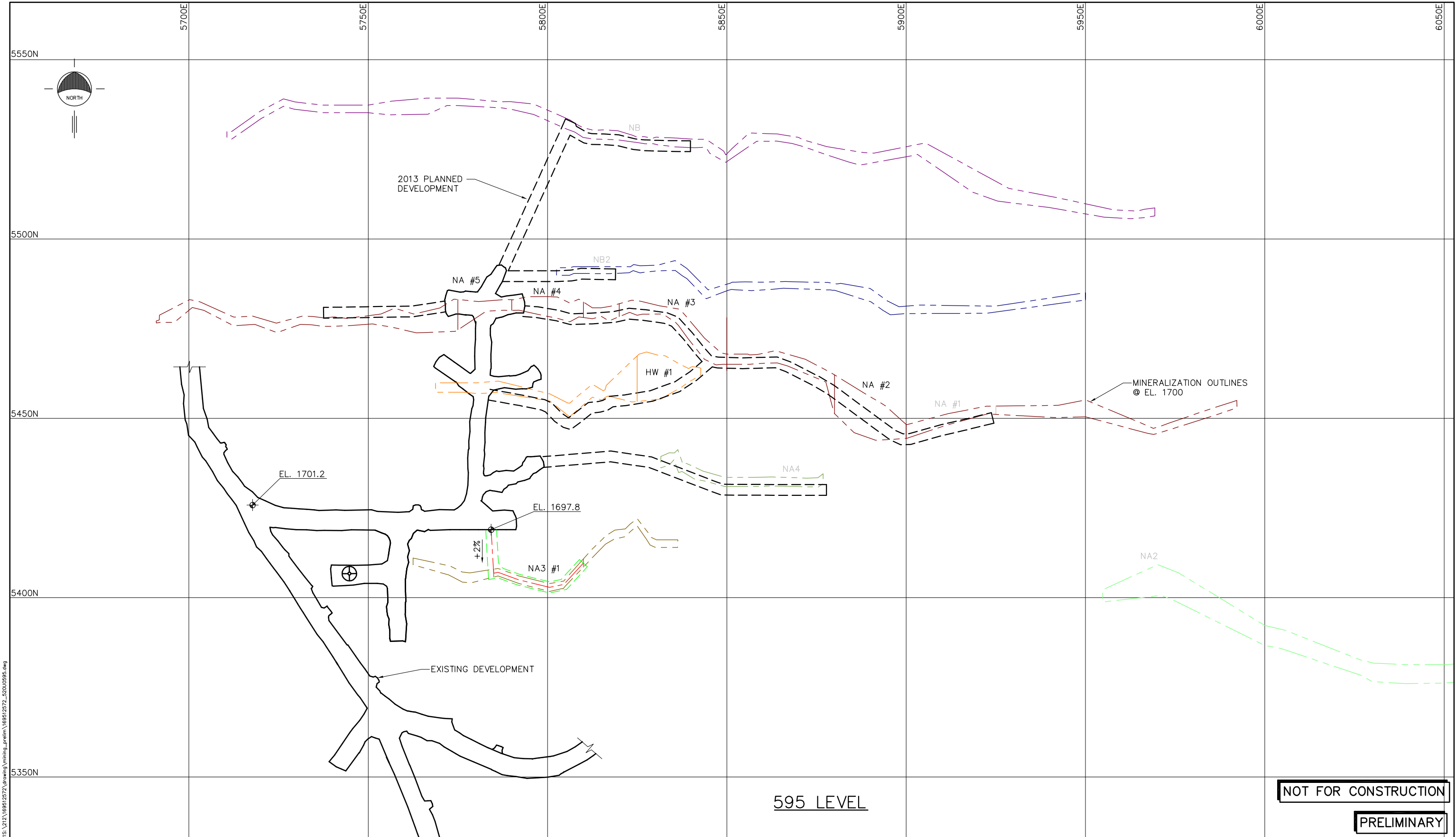


CLIENT: LAKE SHORE GOLD CORP.

PROPERTY: BELL CREEK MINE  
PROJECT: NI 43-101 MINEABLE RESERVE  
LEVEL PLANS  
565 LEVEL  
PLAN

SCALE: 1:1000  
PROJ. NO. 169512572  
DWG. NO. 520-U0565  
REV. NO. A





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PRELIMINARY

Mar 22, 2013 - 1:16pm \\001212-101S-121\169512572\Drawing\mining\prelim\169512572\_520U0595.dwg

REQ. NO. 169512572  
DWG. NO. 520-U0595  
REV. NO. A

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	PREP
A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	ASG			



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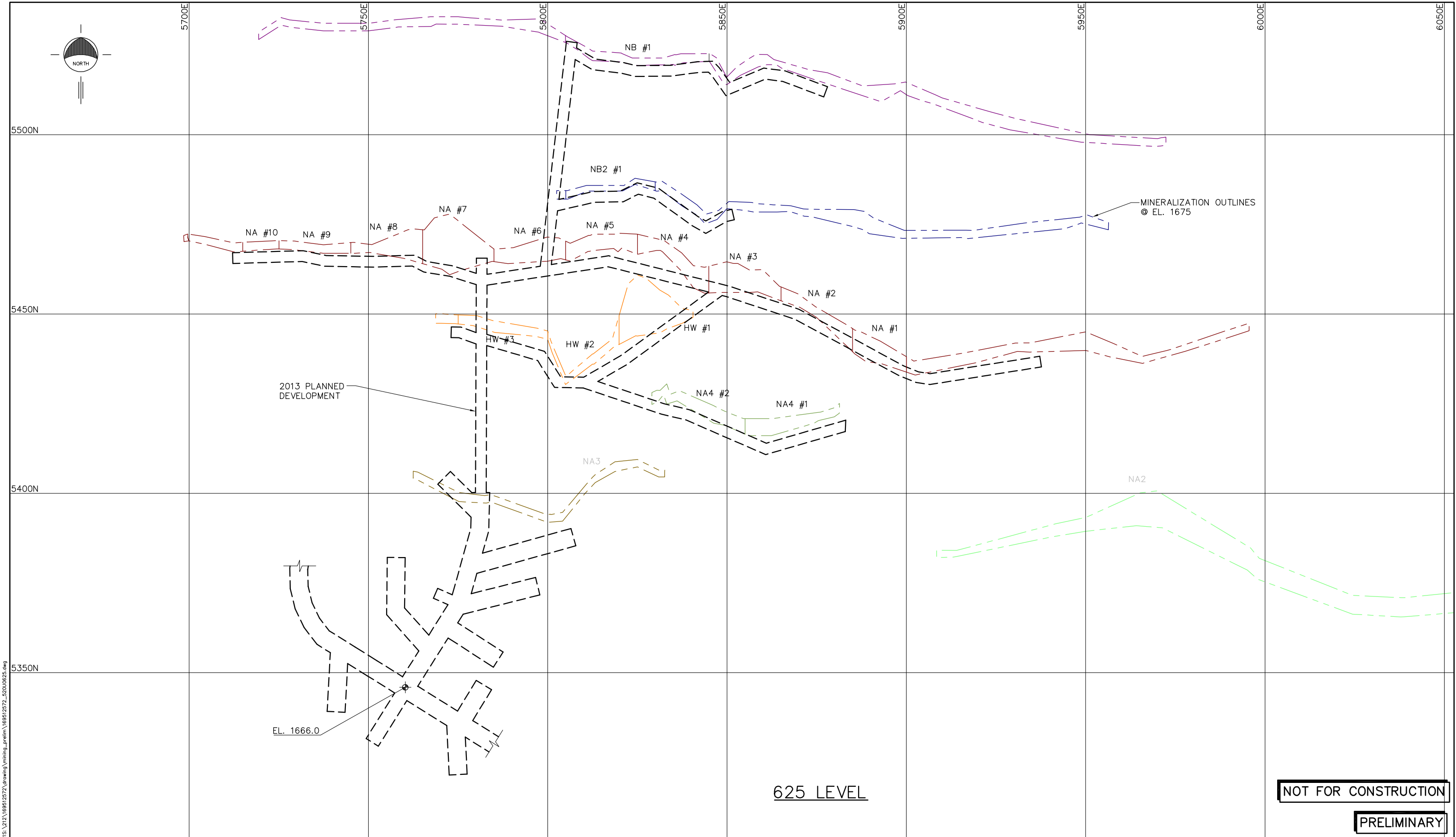
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ASG	2013.03.01



CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE
	LEVEL PLANS
	595 LEVEL
	PLAN
SCALE:	1:1000
PROJ. NO.	169512572
DWG. NO.	520-U0595
REV. NO.	A





Mar 22, 2013 - 1:16pm \\001212-H01S\212\169512572\Drawing\mining\prelim\169512572\_520U0625.dwg

PROJ. NO.	169512572	REV. NO.	A
DWG. NO.	520-U0625		

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	APPROVE
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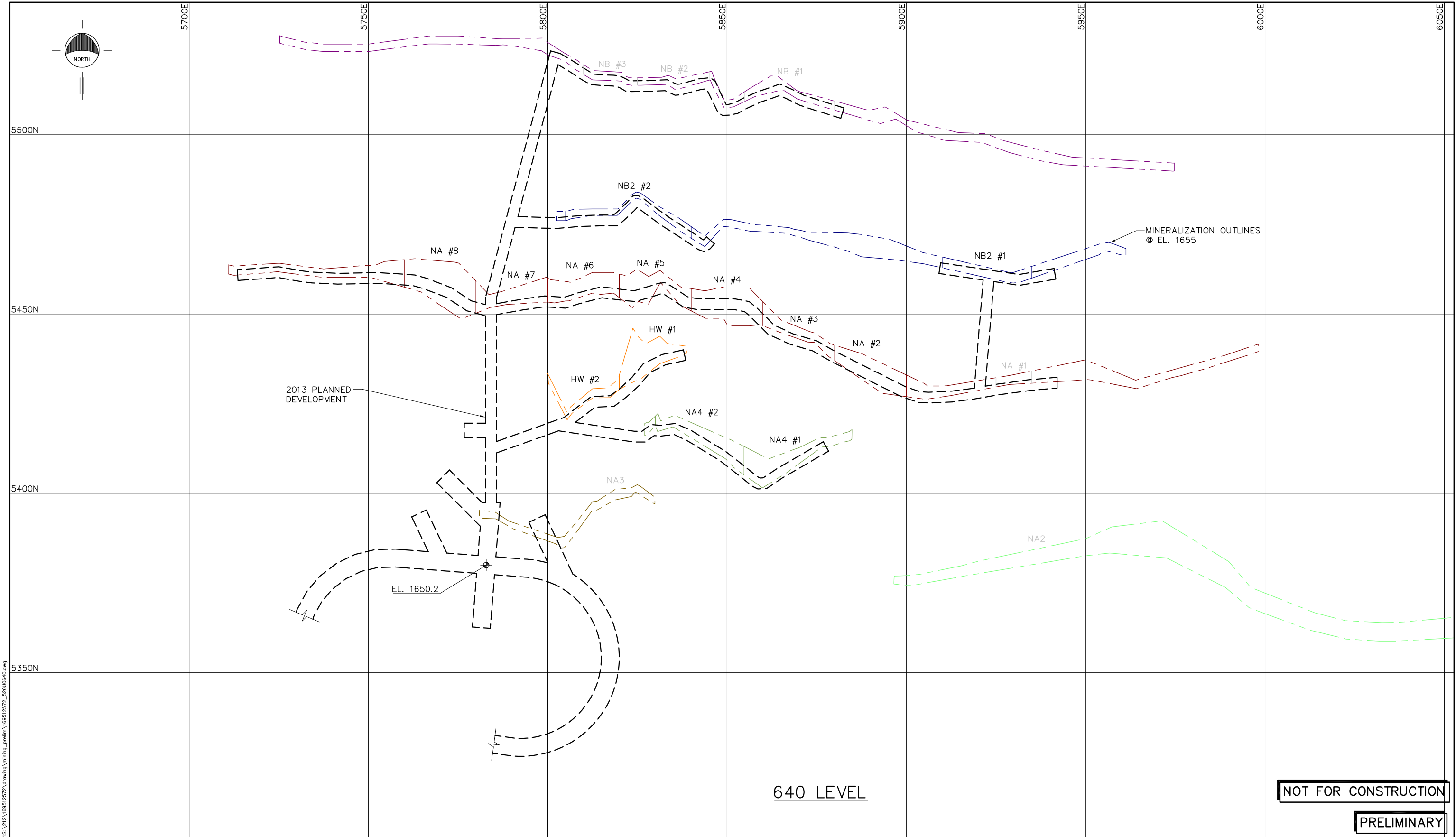
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MDL	2013.03.18



CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE
	LEVEL PLANS
	625 LEVEL
	PLAN
SCALE:	1:1000
PROJ. NO.	169512572
DWG. NO.	520-U0625
REV. NO.	A



Mar 22, 2013 - 1:16pm \\001212-H01S\212\169512572\drawing\mining\prelim\169512572\_520U0640.dwg

PROJ. NO.	169512572	REV. NO.	A
DWG. NO.	520-U0640		
NO.			

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	PREPARED
A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	MDL			



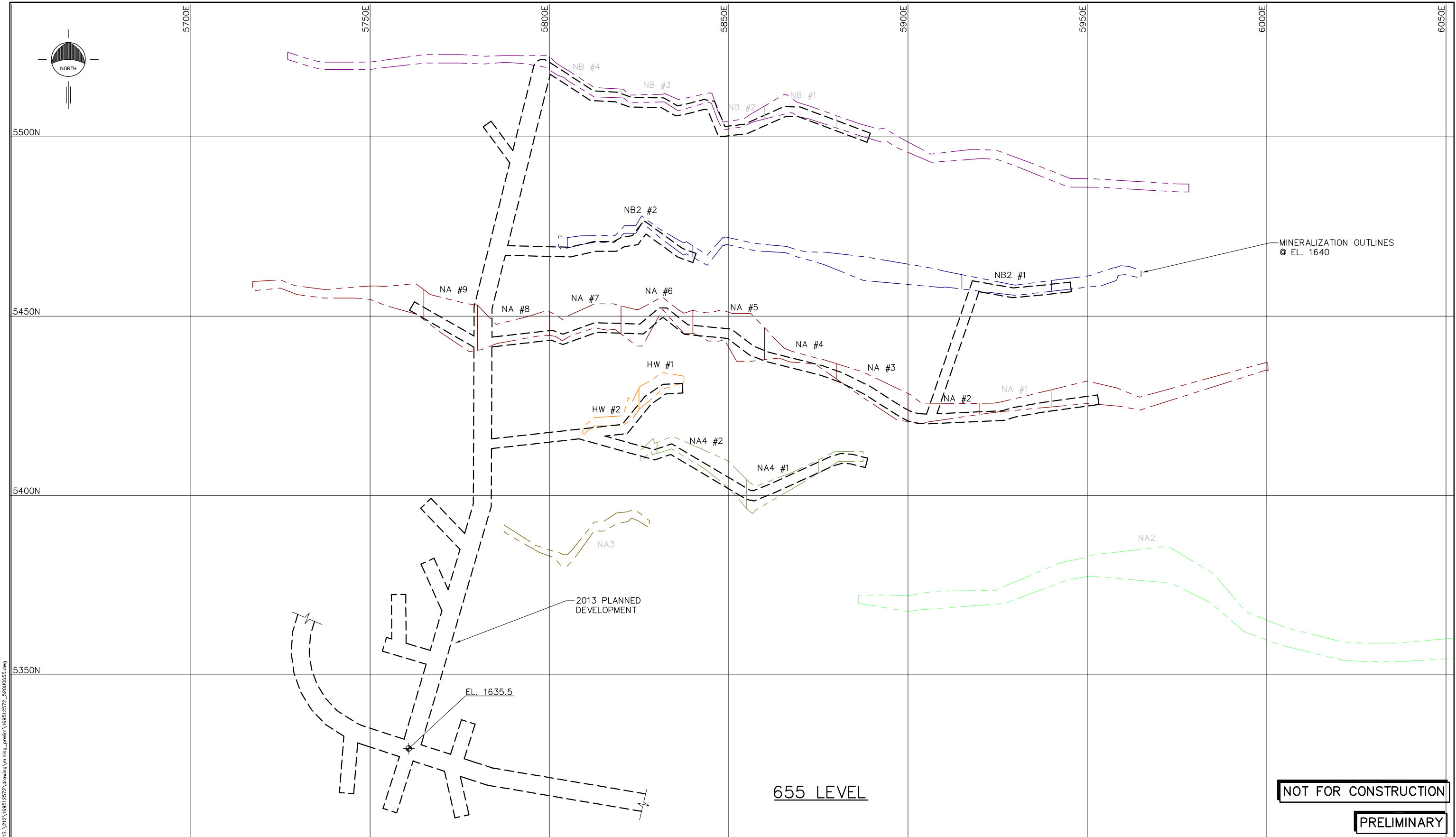
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CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE
	LEVEL PLANS
	640 LEVEL
	PLAN
SCALE:	1:1000
PROJ. NO.	169512572
DWG. NO.	520-U0640
REV. NO.	A



655 LEVEL

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Mar 22, 2013 - 1:16pm \\001212-H01S\212\169512572\Drawing\mining\prelim\169512572\_520U0655.dwg

PROJ. NO. 169512572  
DWG. NO. 520-U0655  
REV. NO. A

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN
A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	MDL		



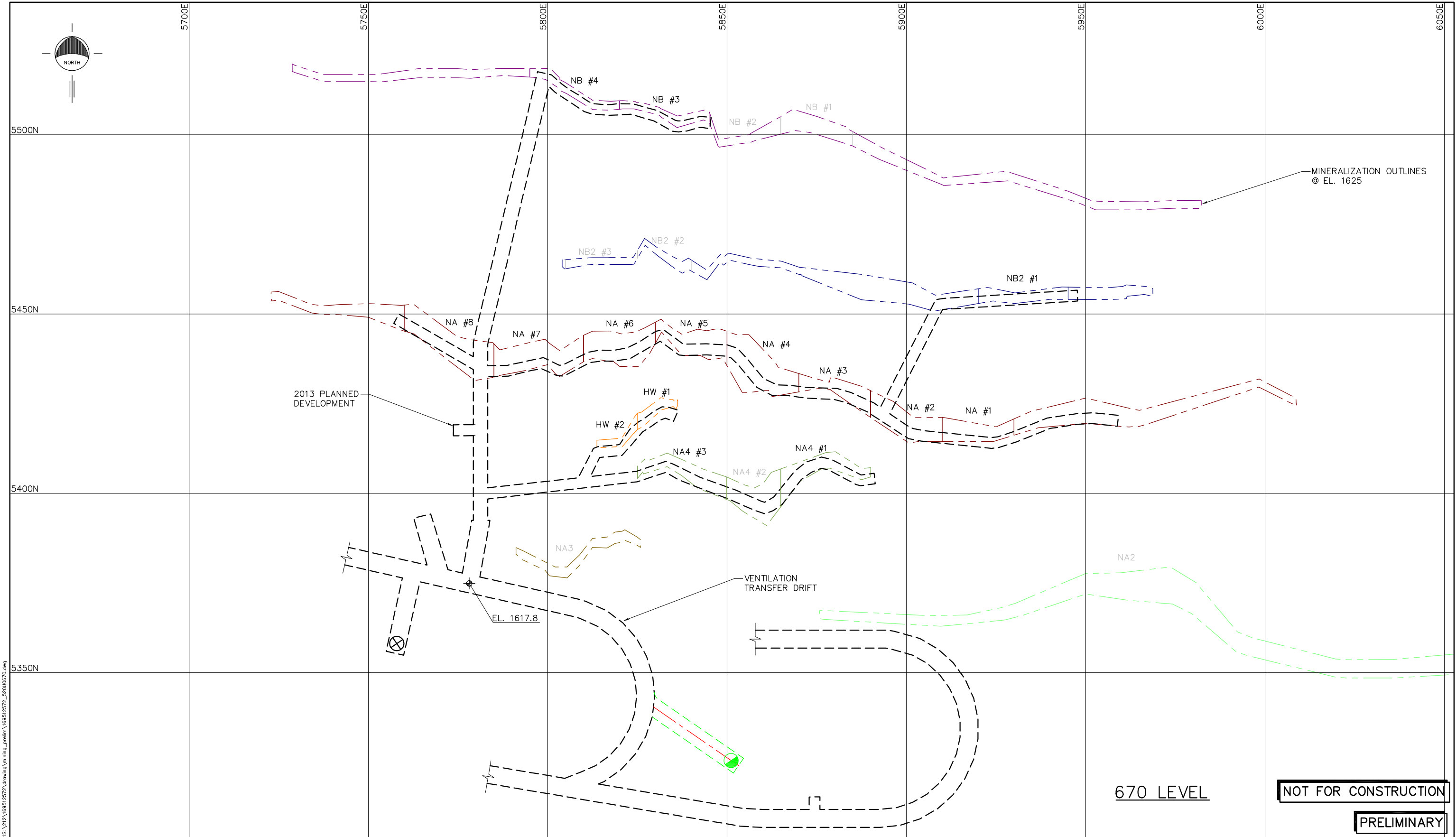
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MDL	2013.03.18



CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE
	LEVEL PLANS
	655 LEVEL
	PLAN
SCALE:	1:1000
PROJ. NO.	169512572
DWG. NO.	520-U0655
REV. NO.	A



670 LEVEL

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PRELIMINARY

Mar 22, 2013 - 1:16pm \\001212-H01S\212\169512572\Drawing\Mining\prelim\169512572\_520U0670.dwg

PROJ. NO. 169512572  
DWG. NO. 520-U0670  
REV. NO. A

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	APPROVED
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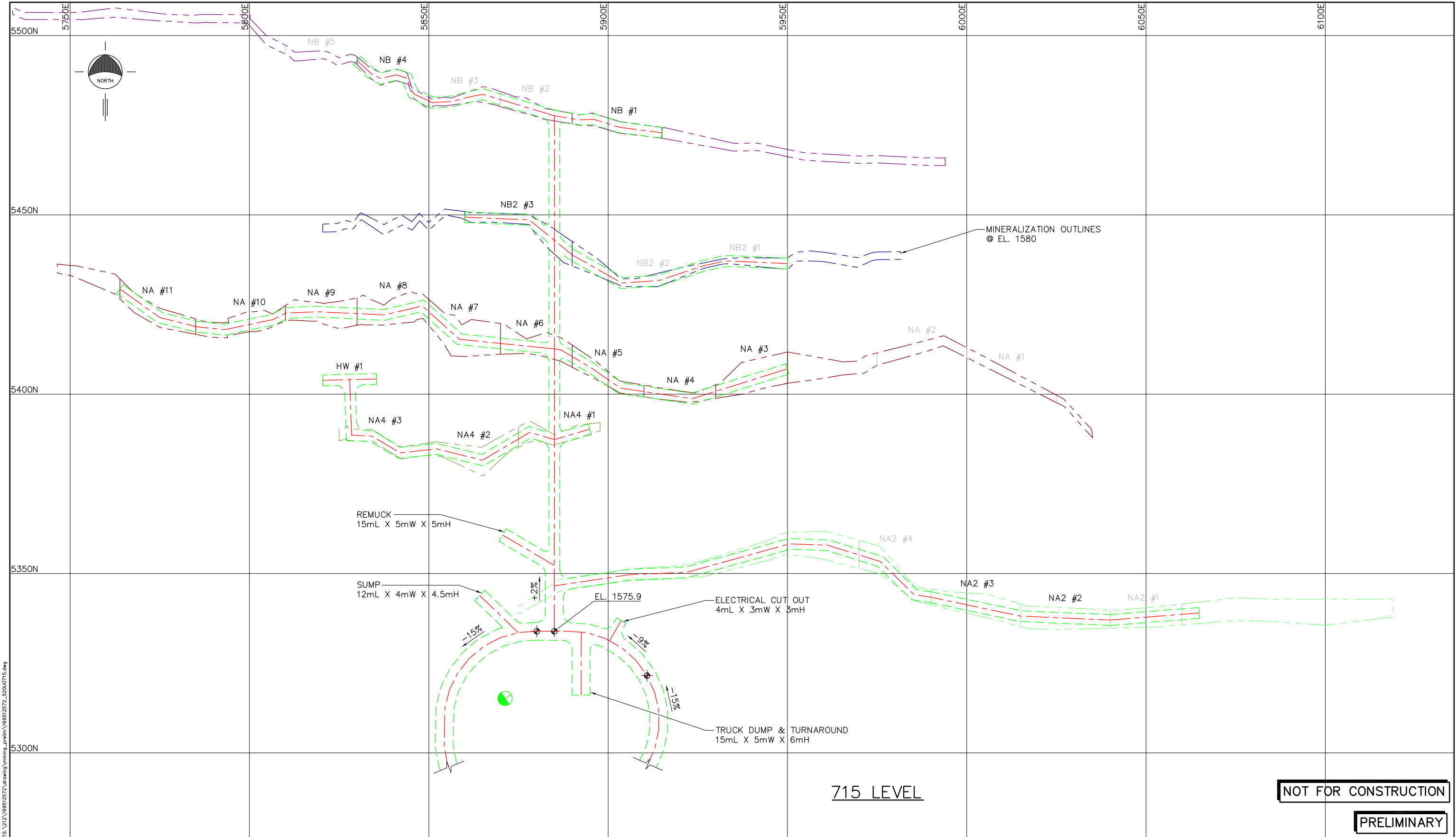
ORIGINAL DRAWN BY: MDL  
DATE: 2013.03.19



CLIENT: LAKE SHORE GOLD CORP.			
PROPERTY: BELL CREEK MINE			
PROJECT: NI 43-101 MINEABLE RESERVE			
LEVEL PLANS			
670 LEVEL			
PLAN			
SCALE: 1:1000	PROJ. NO. 169512572	DWG. NO. 520-U0670	REV. NO. A







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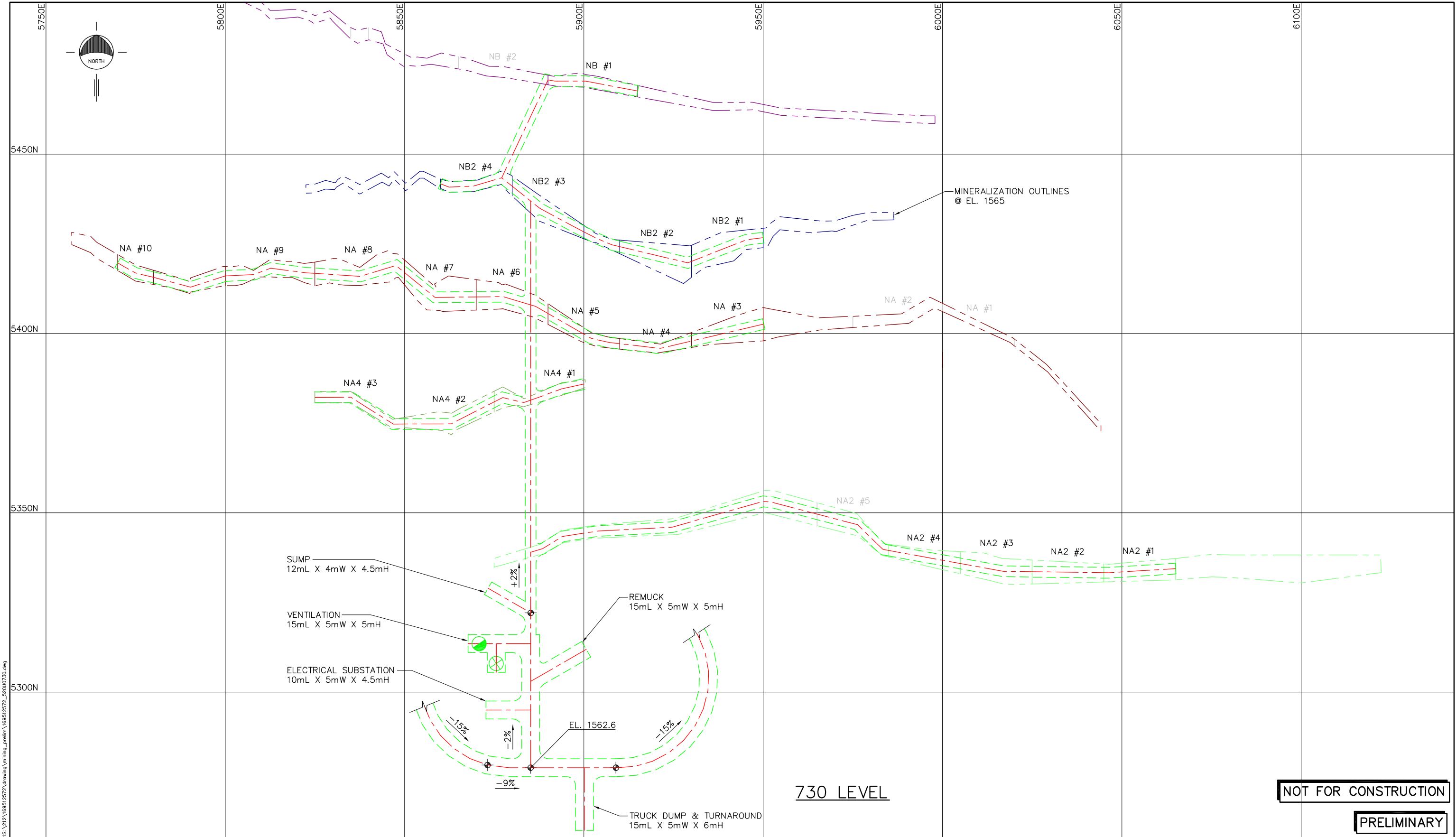
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ORIGINAL DRAWN BY:	DATE:
ASG	2013.03.01



CLIENT: LAKE SHORE GOLD CORP.			
PROPERTY: BELL CREEK MINE			
PROJECT: NI 43-101 MINEABLE RESERVE			
LEVEL PLANS			
715 LEVEL			
PLAN			
SCALE:	PROJ. NO.	DWG. NO.	REV. NO.
1:1000	169512572	520-U0715	A



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Mar 22, 2013 - 1:17pm \\001212-H01S\212\169512572\drawing\mining\prelim\169512572\_520-U0730.dwg

PROJ. NO. 169512572  
DWG. NO. 520-U0730  
REV. NO. A

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN
A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	ASG		

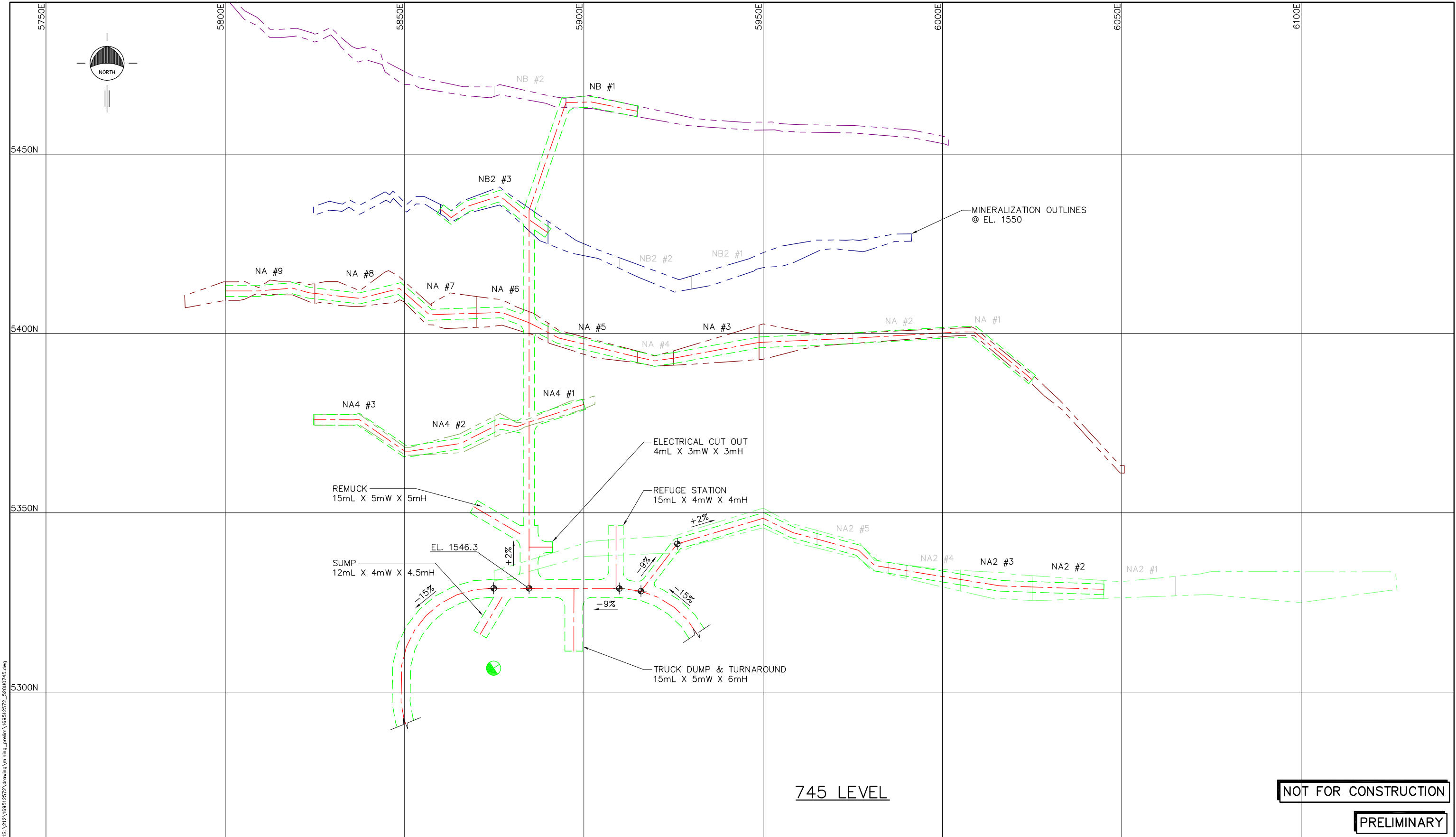


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CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE
	LEVEL PLANS
	730 LEVEL
	PLAN
SCALE:	1:1000
PROJ. NO.	169512572
DWG. NO.	520-U0730
REV. NO.	A



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Mar 22, 2013 - 1:17pm \\001212-101S\212\169512572\drawing\mining\prelim\169512572\_520\U0745.dwg

PROJ. NO. 169512572  
DWG. NO. 520-U0745  
REV. NO. A

REF. DWG. NO.	REFERENCE DRAWING TITLE	REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN	APPROVED
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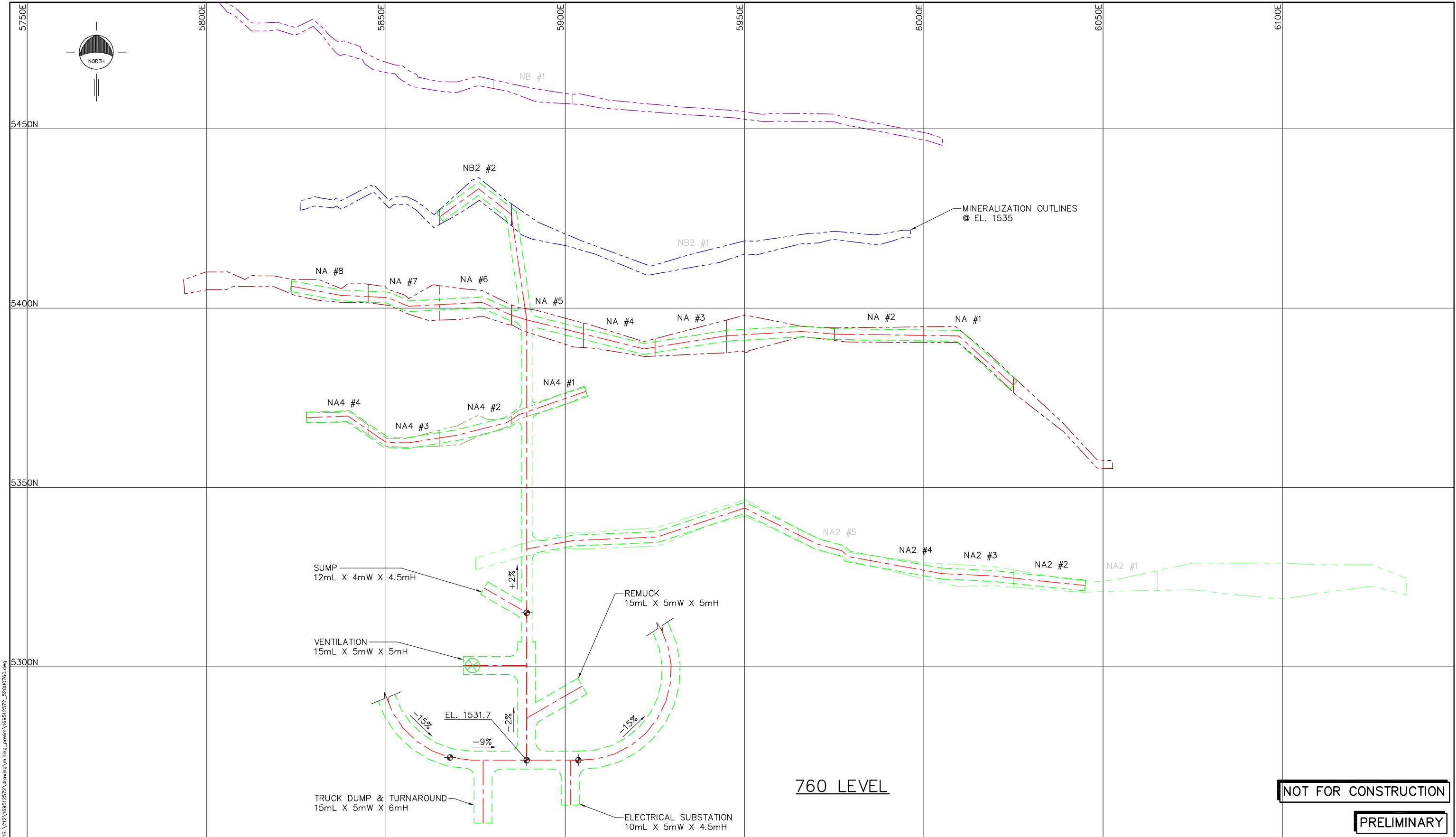
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ORIGINAL DRAWN BY:	DATE:
ASG	2013.03.01



CLIENT: LAKE SHORE GOLD CORP.			
PROPERTY: BELL CREEK MINE			
PROJECT: NI 43-101 MINEABLE RESERVE			
LEVEL PLANS			
745 LEVEL			
PLAN			
SCALE: 1:1000	PROJ. NO. 169512572	DWG. NO. 520-U0745	REV. NO. A



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PRELIMINARY

Mar 22, 2013 - 1:17pm \\001212-H01S\212\169512572\Drawing\mining\prelim\169512572\_520\U0760.dwg

REQ. NO. 169512572  
DWG. NO. 520-U0760  
REV. NO. A

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN
A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	ASG		



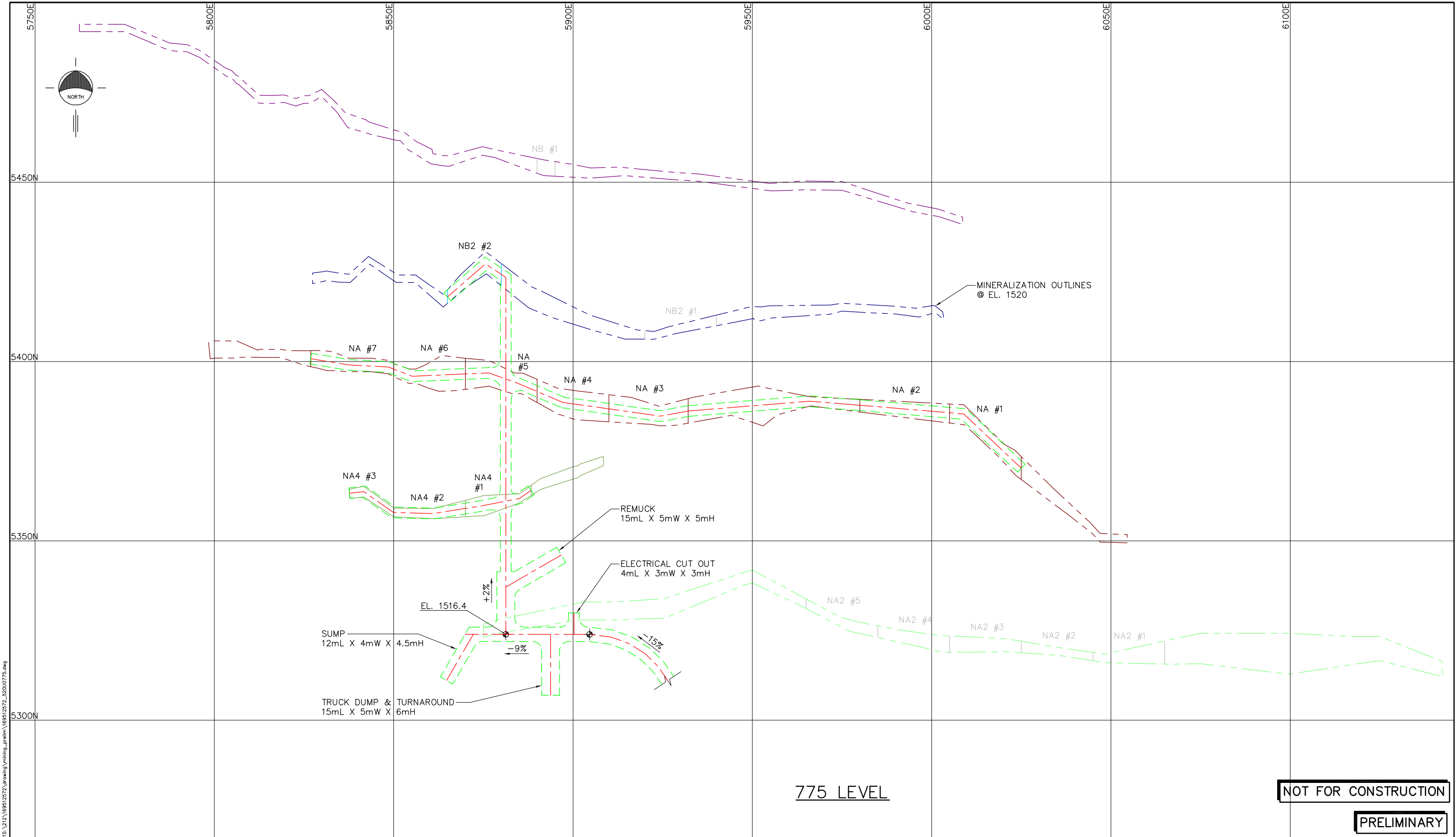
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ORIGINAL DRAWN BY:	DATE:
ASG	2013.03.01



CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE
	LEVEL PLANS
	760 LEVEL
	PLAN
SCALE:	1:1000
PROJ. NO.	169512572
DWG. NO.	520-U0760
REV. NO.	A



Mar 22, 2013 - 1:17pm \\001212-H01S\212\169512572\Drawing\mining\prelim\169512572\_520\U0775.dwg

PROJ. NO.	169512572	REV. NO.	A
DWG. NO.	520-U0775		
NO.			

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN
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ORIGINAL DRAWN BY:	DATE:
ASG	2013.03.01



CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE
	LEVEL PLANS
	775 LEVEL
	PLAN
SCALE:	1:1000
PROJ. NO.	169512572
DWG. NO.	520-U0775
REV. NO.	A

Mar 22, 2013 - 1:17pm \\001212-H01S\212\169512572\working\mining\prelim\169512572\_530U0100.dwg

PROJ. NO. 169512572  
DWG. NO. 530-U0100  
REV. NO. A

REF. DWG. NO.	REFERENCE DRAWING TITLE
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REV.	DESCRIPTION	DATE	BY	CHECK	DESIGN
A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	ASG		



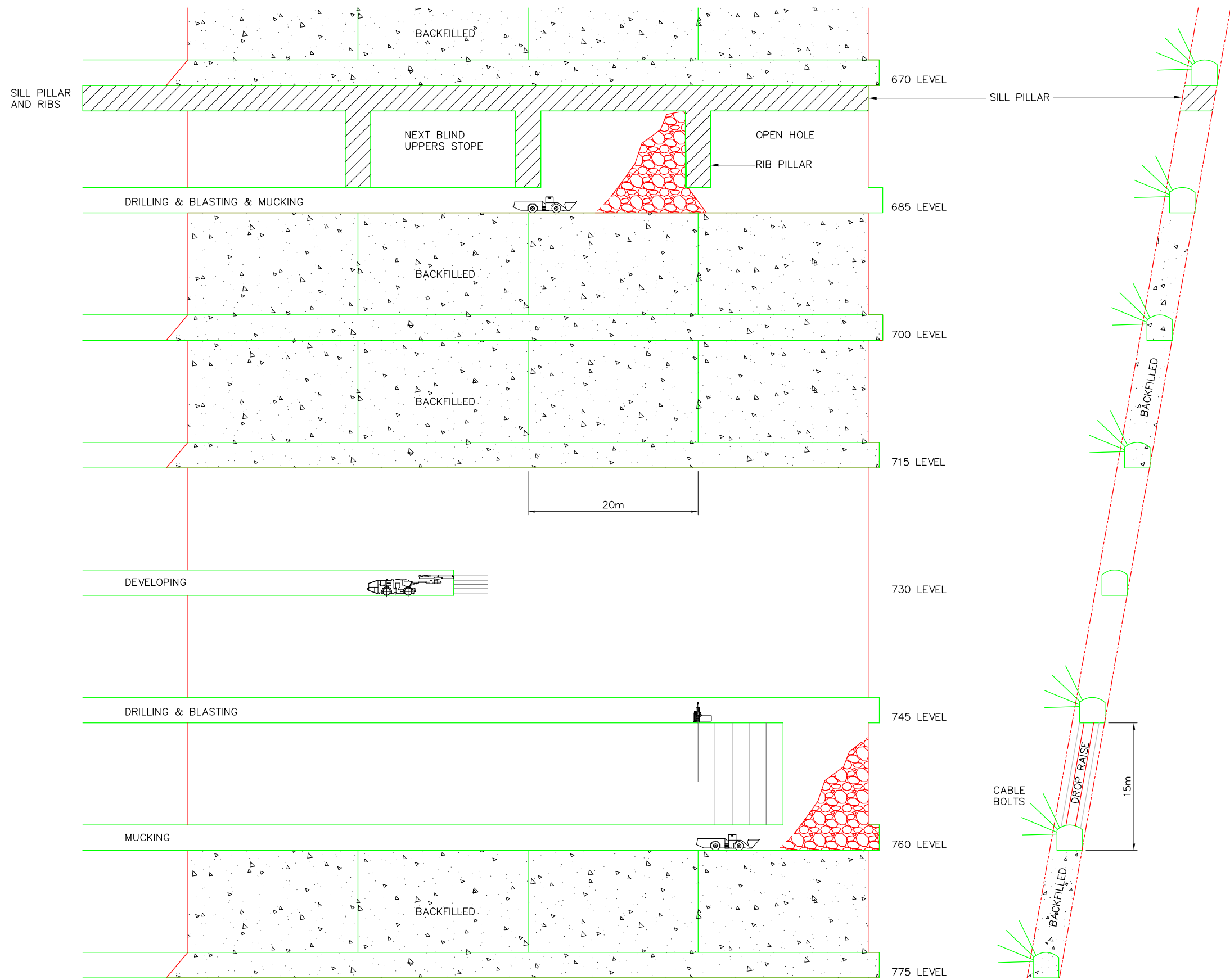
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ASG	2013.03.01



CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE MINING METHODS LONGITUDINAL MINING SECTIONS
SCALE:	1:500
PROJ. NO.	169512572
DWG. NO.	530-U0100
REV. NO.	A



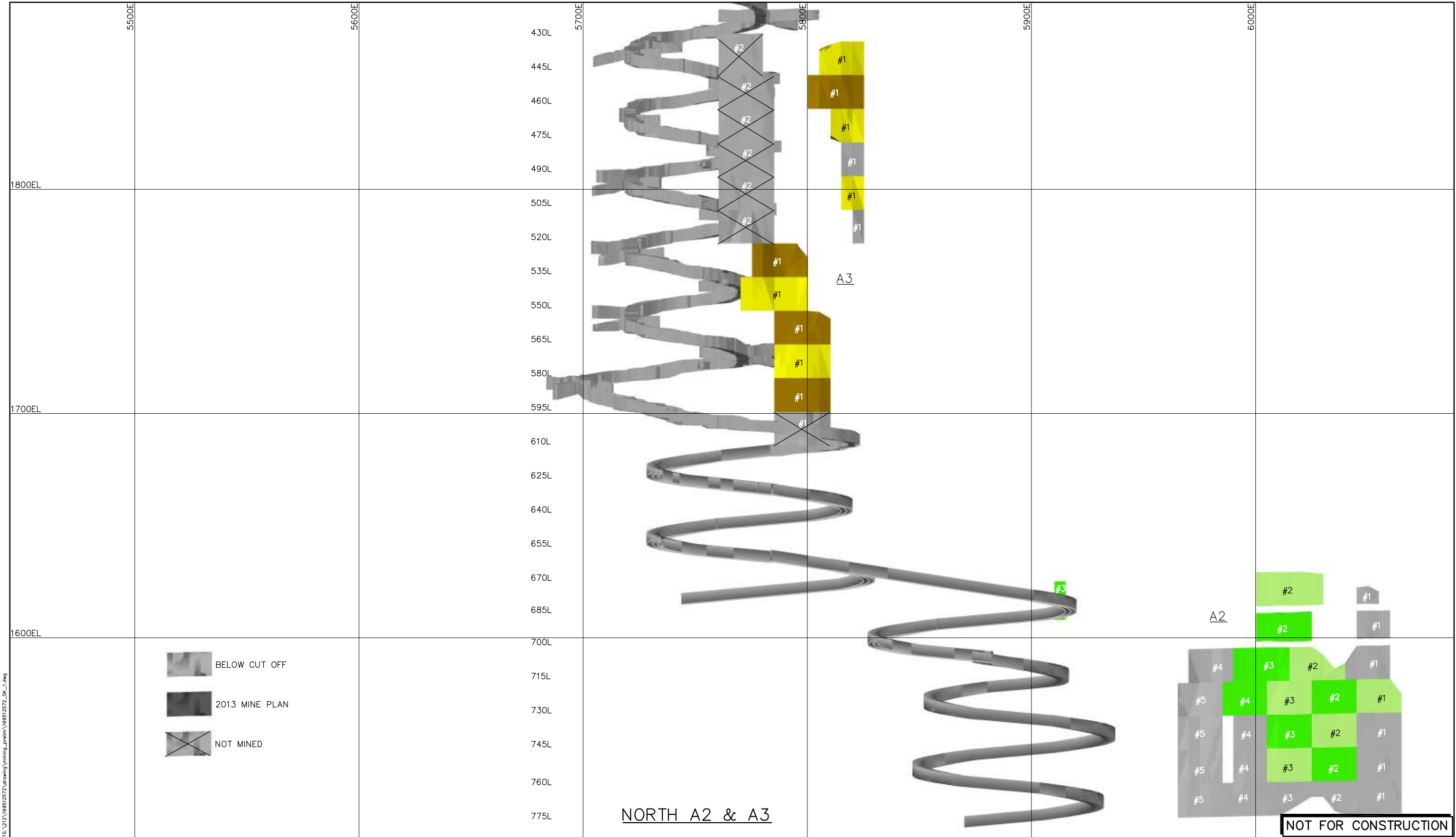
LONGITUDINAL MINING

NOT FOR CONSTRUCTION

PRELIMINARY







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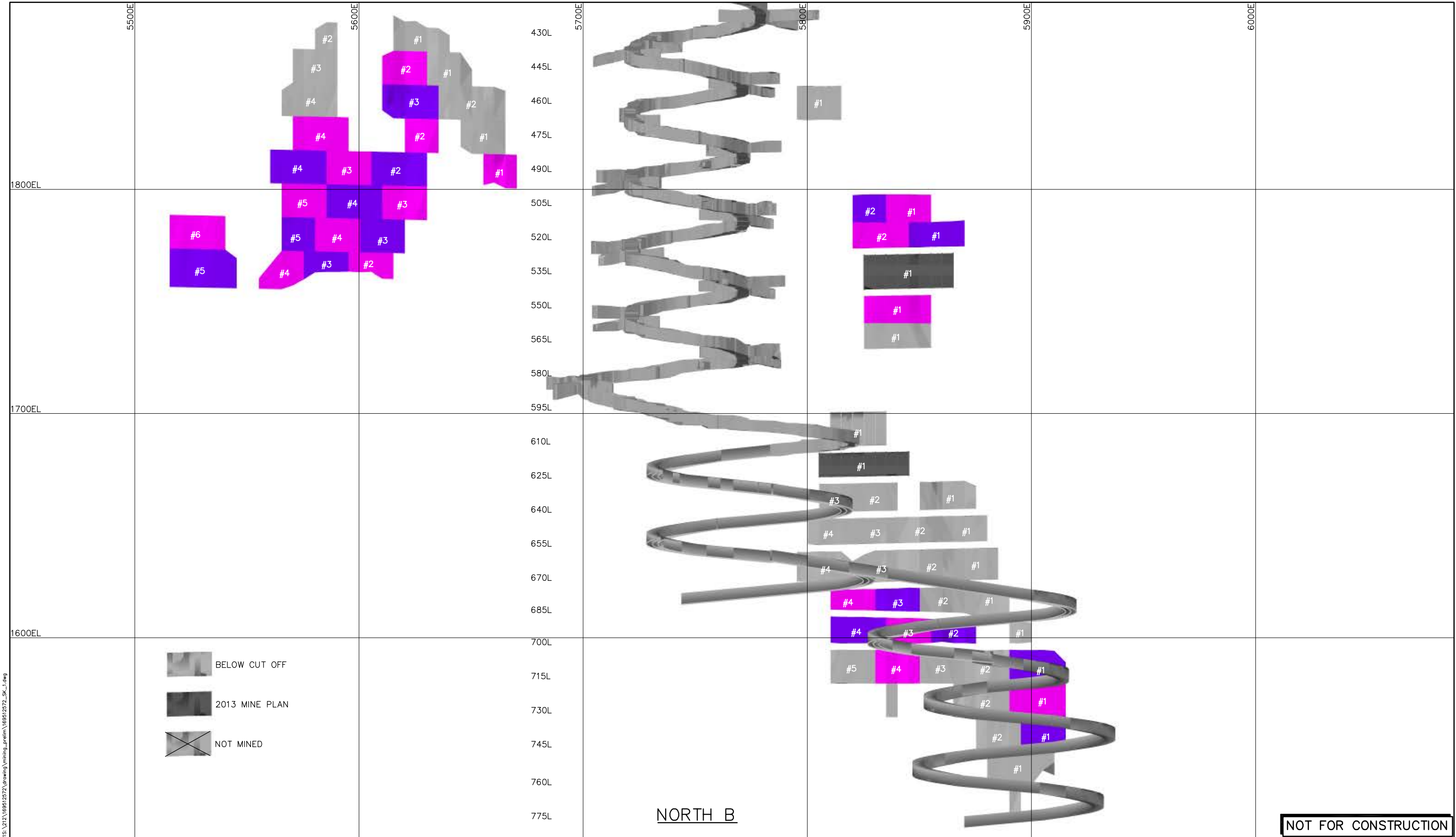


CLIENT: LAKE SHORE GOLD CORP.

PROPERTY: BELL CREEK MINE  
PROJECT: NI 43-101 MINEABLE RESERVE  
MINING LONGITUDINAL  
NORTH A2 & A3  
SECTION

SCALE: NTS  
PROJ. NO. 169512572  
DWG. NO. SK-3  
REV. NO. A





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PROJ. NO. 169512572 DWG. NO. SK-5 REV. NO. A	---	---	A	PRELIMINARY - ISSUED FOR NI 43-101	13.03.22	MDL	<div><div>DATE</div><div>BY</div><div>CHKD</div><div>APPD</div></div>	<div><div>DATE</div><div>BY</div><div>CHKD</div><div>APPD</div></div>	<div><div>DATE</div><div>BY</div><div>CHKD</div><div>APPD</div></div>
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PROJECT: NI 43-101 MINEABLE RESERVE  
MINING LONGITUDINAL  
NORTH B  
SECTION

SCALE: NTS  
PROJ. NO. 169512572  
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CLIENT:

LAKE SHORE GOLD CORP.

PROPERTY:

BELL CREEK MINE

PROJECT: NI 43-101 MINEABLE RESERVE

ELECTRICAL

U/G EXPANSION

### SINGLE LINE DIAGRAM

SCALE:

NTS

PROJ No	10054
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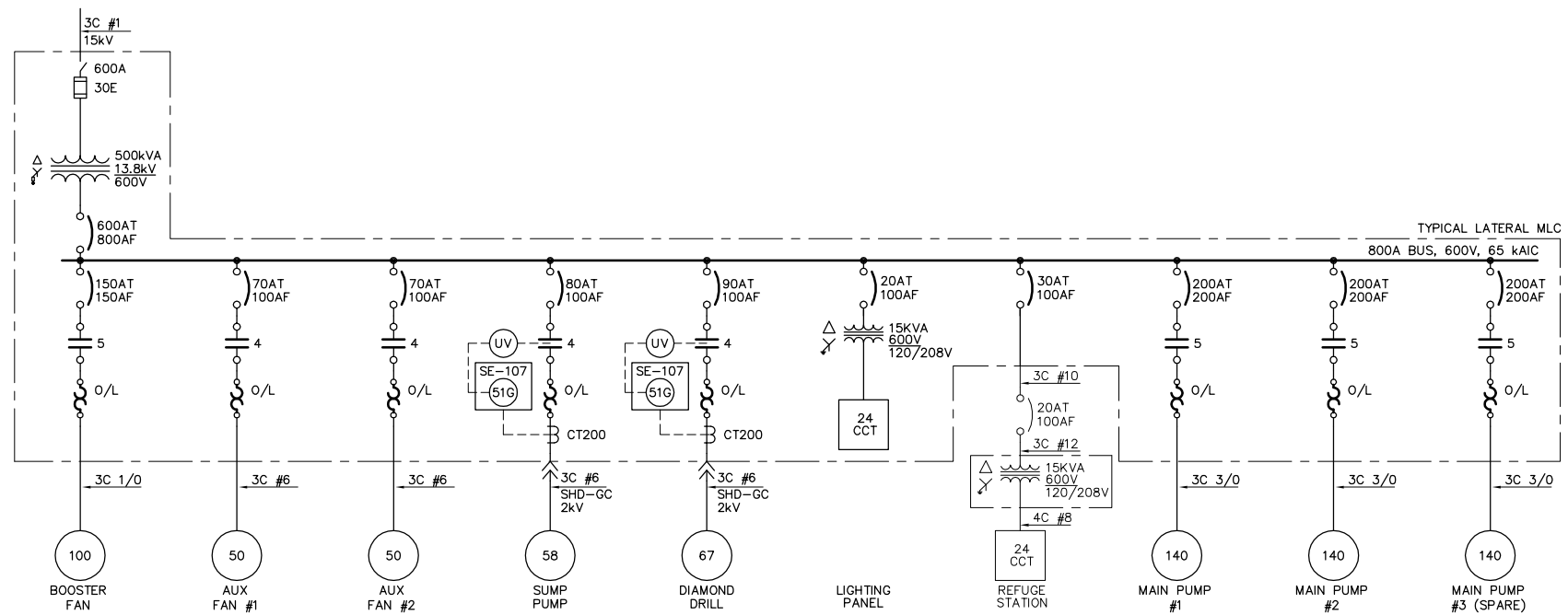
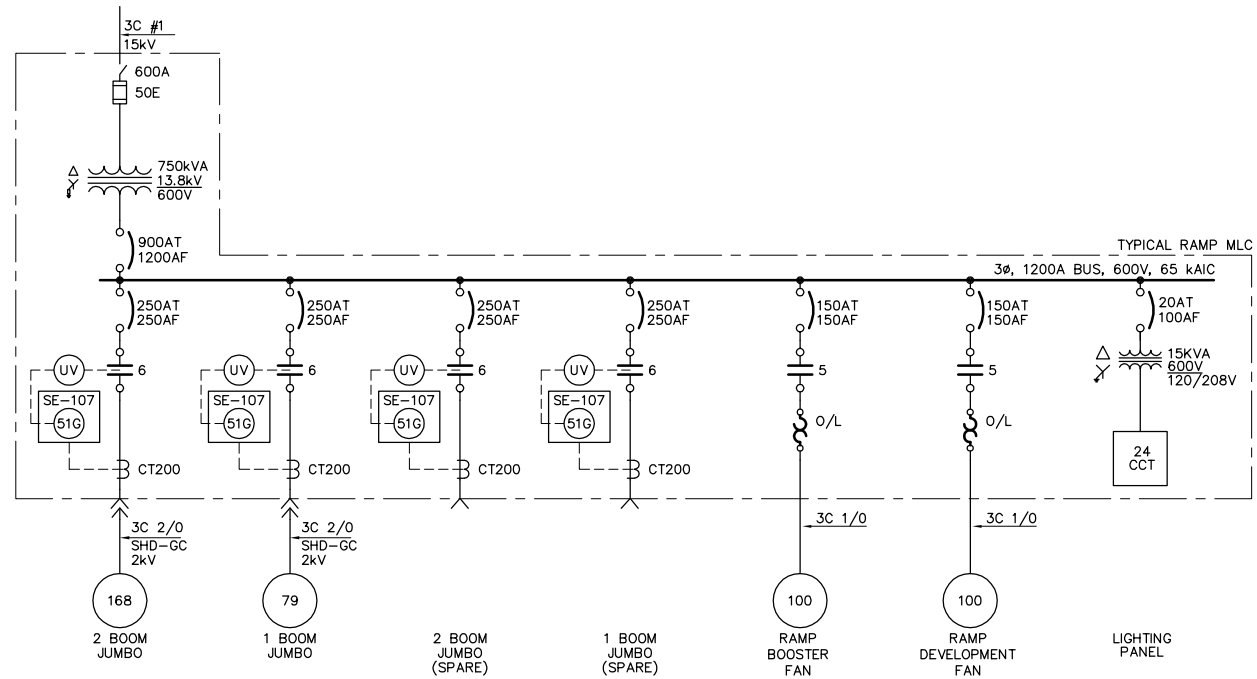
DWG No 200-E1100A

REV No

C

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**NOTES:**  
TRANSFORMER AND LIGHTING PANEL  
TO BE USED WHEN REQUIRED.

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REV	REV	C	REF DWG No	REFERENCE DRAWING TITLE	REV	DESCRIPTION	THIS DRAWING IS NOT VALID UNLESS THE LAST REVISION IS HAND SIGNED	YY.MM.DD	BY	CHECK	DATE	BY	CHECK	DATE	BY	CHECK	DATE
1	169512572	C	200-E1101A														
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CLIENT:	LAKE SHORE GOLD CORP.
PROPERTY:	BELL CREEK MINE
PROJECT:	NI 43-101 MINEABLE RESERVE
ELECTRICAL	TYPICAL EQUIPMENT
SINGLE LINE DIAGRAM	
SCALE:	NTS
PROJ No	169512572
DWG No	200-E1101A
REV No	C

# **APPENDIX E**

## **DEVELOPMENT AND PRODUCTION SCHEDULES**

Page 1

Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish	2014					2015				2016				2017				2018			
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
53	445L Sill Access NB	12 days	May 11 '15	May 23 '15						🗑️ Waste Operating[64 Metres]															
54	445L Sill Ore NB	7 days	May 23 '15	May 30 '15						🗑️ Ore Sill[36 Metres],Production Ore Sill[907 Tonnes]															
55	445L Sill Waste NB	24 days	May 30 '15	Jun 23 '15						🗑️ Waste Operating[127 Metres]															
56	445L Sill Ore NAX	8 days	Jun 23 '15	Jul 1 '15						🗑️ Ore Sill[43 Metres],Production Ore Sill[1,084 Tonnes]															
57	430L Sill Waste NA	7 days	Apr 1 '15	Apr 8 '15						🗑️ Waste Operating[36 Metres]															
58	430L Sill Ore NA	8 days	Apr 8 '15	Apr 16 '15						🗑️ Ore Sill[44 Metres],Production Ore Sill[1,109 Tonnes]															
59	430L Sill Waste NA	24 days	Apr 16 '15	May 10 '15						🗑️ Waste Operating[127 Metres]															
60	430L Sill Ore NAX	6 days	May 10 '15	May 16 '15						🗑️ Ore Sill[35 Metres],Production Ore Sill[882 Tonnes]															
61																									
62	Remnant Development (445L to 595L)	168 days	May 27 '15	Nov 11 '15	📊																				
63	595L Sill Waste NA3	3 days	May 27 '15	May 30 '15						🗑️ Waste Operating[14 Metres]															
64	595L Sill Ore NA3	5 days	May 30 '15	Jun 4 '15						🗑️ Ore Sill[26 Metres],Production Ore Sill[655 Tonnes]															
65	580L Sill Waste NA3	11 days	Jun 4 '15	Jun 15 '15						🗑️ Waste Operating[57 Metres]															
66	580L Sill Ore NA3	5 days	Jun 15 '15	Jun 20 '15						🗑️ Ore Sill[26 Metres],Production Ore Sill[655 Tonnes]															
67	565L Sill Waste NA3	7 days	Jun 20 '15	Jun 27 '15						🗑️ Waste Operating[39 Metres]															
68	565L Sill Ore NA3	5 days	Jun 27 '15	Jul 2 '15						🗑️ Ore Sill[25 Metres],Production Ore Sill[630 Tonnes]															
69	550L Sill Waste NA3	9 days	Jul 2 '15	Jul 11 '15						🗑️ Waste Operating[50 Metres]															
70	550L Sill Ore NA3	7 days	Jul 11 '15	Jul 18 '15						🗑️ Ore Sill[40 Metres],Production Ore Sill[1,008 Tonnes]															
71	535L Sill Waste NA3	3 days	Jul 18 '15	Jul 21 '15						🗑️ Waste Operating[14 Metres]															
72	535L Sill Ore NA3	6 days	Jul 21 '15	Jul 27 '15						🗑️ Ore Sill[31 Metres],Production Ore Sill[781 Tonnes]															
73	520L Sill Waste NA3	9 days	Jul 27 '15	Aug 5 '15						🗑️ Waste Operating[46 Metres]															
74	520L Sill Ore NA3	8 days	Aug 5 '15	Aug 13 '15						🗑️ Ore Sill[42 Metres],Production Ore Sill[1,058 Tonnes]															
75	505L Sill Waste NA3	12 days	Aug 13 '15	Aug 25 '15						🗑️ Waste Operating[66 Metres]															
76	505L Sill Ore NA3	6 days	Aug 25 '15	Aug 31 '15						🗑️ Ore Sill[35 Metres],Production Ore Sill[882 Tonnes]															
77	490L Sill Waste NA3	15 days	Aug 31 '15	Sep 15 '15						🗑️ Waste Operating[79 Metres]															
78	490L Sill Ore NA3	6 days	Sep 15 '15	Sep 21 '15						🗑️ Ore Sill[35 Metres],Production Ore Sill[882 Tonnes]															
79	475L Sill Waste NA3	6 days	Sep 21 '15	Sep 27 '15						🗑️ Waste Operating[30 Metres]															
80	475L Sill Ore NA3	6 days	Sep 27 '15	Oct 3 '15						🗑️ Ore Sill[33 Metres],Production Ore Sill[832 Tonnes]															
81	460L Sill Waste NA3	13 days	Oct 3 '15	Oct 16 '15						🗑️ Waste Operating[72 Metres]															
82	460L Sill Ore NA3	9 days	Oct 16 '15	Oct 25 '15						🗑️ Ore Sill[50 Metres],Production Ore Sill[1,260 Tonnes]															
83	445L Sill Waste NA3	7 days	Oct 25 '15	Nov 1 '15						🗑️ Waste Operating[37 Metres]															
84	445L Sill Ore NA3	10 days	Nov 1 '15	Nov 11 '15						🗑️ Ore Sill[52 Metres],Production Ore Sill[1,310 Tonnes]															
85																									
86	Level Development (670L to 775L)	509 days	Jan 1 '14	May 27 '15		📊																			
87	Above 685 Level	32 days	Jan 1 '14	Feb 2 '14	📊																				
88	670L Sill Ore NAHW	2 days	Jan 1 '14	Jan 3 '14						🗑️ Ore Sill[12 Metres],Production Ore Sill[302 Tonnes]															
89	550L Sill Access NB	10 days	Jan 3 '14	Jan 13 '14						🗑️ Waste Operating[52 Metres]															
90	550L Sill Ore NB	6 days	Jan 13 '14	Jan 19 '14						🗑️ Ore Sill[30 Metres],Production Ore Sill[756 Tonnes]															
91	505L Sill Waste NB	8 days	Jan 19 '14	Jan 27 '14						🗑️ Waste Operating[43 Metres]															
92	505L Sill Ore NB	6 days	Jan 27 '14	Feb 2 '14						🗑️ Ore Sill[35 Metres],Production Ore Sill[882 Tonnes]															
93	685 Level	51 days	Jan 1 '14	Feb 21 '14						📊															
94	685L Electrical Cut out	1 day	Jan 1 '14	Jan 2 '14						🗑️ Waste Capital[4 Metres]															
95	685L Sill Ore NA	8 days	Jan 2 '14	Jan 10 '14						🗑️ Ore Sill[44 Metres],Production Ore Sill[1,109 Tonnes]															
96	685L Main X-Cut NB2	5 days	Jan 10 '14	Jan 15 '14						🗑️ Waste Capital[26 Metres]															
97	685L Sill Waste NB2	9 days	Jan 15 '14	Jan 24 '14						🗑️ Waste Operating[48 Metres]															
98	685L Sill Ore NB2	5 days	Jan 24 '14	Jan 29 '14						🗑️ Ore Sill[26 Metres],Production Ore Sill[655 Tonnes]															
99	685L Main X-Cut NB	8 days	Jan 29 '14	Feb 6 '14						🗑️ Waste Capital[44 Metres]															
100	685L Sill Waste NB	6 days	Feb 6 '14	Feb 12 '14						🗑️ Waste Operating[31 Metres]															
101	685L Sill Ore NB	9 days	Feb 12 '14	Feb 21 '14						🗑️ Ore Sill[49 Metres],Production Ore Sill[1,235 Tonnes]															
102	700 Level	169 days	Feb 2 '14	Jul 21 '14						📊															
103	700L Remuck	3 days	Feb 2 '14	Feb 5 '14						🗑️ Waste Capital[17 Metres]															
104	700L Truck Turnaround	3 days	Feb 5 '14	Feb 8 '14					🗑️ Waste Capital[17 Metres]																

Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish	2014				2015				2016				2017				2018				
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
105	700L Sump	2 days	Feb 8 '14	Feb 10 '14	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	<div><div></div> Waste Capital[13 Metres]</div>																			
106	700L Electrical Cut out	2 days	Feb 10 '14	Feb 12 '14		<div><div></div> Waste Capital[11 Metres]</div>																			
107	700L Ventilation X-Cut	4 days	Feb 12 '14	Feb 16 '14		<div><div></div> Waste Capital[22 Metres]</div>																			
108	700L Main X-Cut NA	21 days	Feb 16 '14	Mar 9 '14		<div><div></div> Waste Capital[111 Metres]</div>																			
109	700L Sill Ore NA West	23 days	Mar 9 '14	Apr 1 '14		<div><div></div> Ore Sill[122 Metres],Production Ore Sill[3,074 Tonnes]</div>																			
110	700L Sill Ore NA East	13 days	Apr 1 '14	Apr 14 '14		<div><div></div> Ore Sill[70 Metres],Production Ore Sill[1,764 Tonnes]</div>																			
111	700L Main X-Cut NB2	6 days	Apr 14 '14	Apr 20 '14		<div><div></div> Waste Capital[33 Metres]</div>																			
112	700L Main X-Cut NB	8 days	Apr 20 '14	Apr 28 '14		<div><div></div> Waste Capital[42 Metres]</div>																			
113	700L Sill Waste NB	6 days	Apr 28 '14	May 4 '14		<div><div></div> Waste Operating[33 Metres]</div>																			
114	700L Sill Ore NB	14 days	May 4 '14	May 18 '14		<div><div></div> Ore Sill[78 Metres],Production Ore Sill[1,966 Tonnes]</div>																			
115	700L Sill Waste NB2	12 days	May 18 '14	May 30 '14	<div><div></div> Waste Operating[66 Metres]</div>																				
116	700L Sill Ore NB2	7 days	May 30 '14	Jun 6 '14	<div><div></div> Ore Sill[37 Metres],Production Ore Sill[932 Tonnes]</div>																				
117	700L Sill Ore NA4	9 days	Jun 6 '14	Jun 15 '14	<div><div></div> Ore Sill[48 Metres],Production Ore Sill[1,210 Tonnes]</div>																				
118	700L Sill Access NAHW	3 days	Jun 15 '14	Jun 18 '14	<div><div></div> Waste Operating[15 Metres]</div>																				
119	700L Sill Ore NAHW	4 days	Jun 18 '14	Jun 22 '14	<div><div></div> Ore Sill[20 Metres],Production Ore Sill[504 Tonnes]</div>																				
120	700L Sill Waste NA2	24 days	Jun 22 '14	Jul 16 '14	<div><div></div> Waste Operating[132 Metres]</div>																				
121	700L Sill Ore NA2	5 days	Jul 16 '14	Jul 21 '14	<div><div></div> Ore Sill[28 Metres],Production Ore Sill[706 Tonnes]</div>																				
122	715 Level	162 days	Mar 1 '14	Aug 10 '14	<div><div></div></div>																				
123	715L Remuck	3 days	Mar 1 '14	Mar 4 '14	<div><div></div> Waste Capital[17 Metres]</div>																				
124	715L Truck Turnaround	3 days	Mar 4 '14	Mar 7 '14	<div><div></div> Waste Capital[17 Metres]</div>																				
125	715L Sump	2 days	Mar 7 '14	Mar 9 '14	<div><div></div> Waste Capital[13 Metres]</div>																				
126	715L Electrical Cut out	1 day	Mar 9 '14	Mar 10 '14	<div><div></div> Waste Capital[4 Metres]</div>																				
127	715L Main X-Cut NA	13 days	Mar 10 '14	Mar 23 '14	<div><div></div> Waste Capital[69 Metres]</div>																				
128	715L Sill Ore NA West	24 days	Mar 23 '14	Apr 16 '14	<div><div></div> Ore Sill[131 Metres],Production Ore Sill[3,301 Tonnes]</div>																				
129	715L Sill Ore NA East	12 days	Apr 16 '14	Apr 28 '14	<div><div></div> Ore Sill[63 Metres],Production Ore Sill[1,588 Tonnes]</div>																				
130	715L Main X-Cut NB2	6 days	Apr 28 '14	May 4 '14	<div><div></div> Waste Capital[32 Metres]</div>																				
131	715L Main X-Cut NB	8 days	May 4 '14	May 12 '14	<div><div></div> Waste Capital[41 Metres]</div>																				
132	715L Sill Waste NB	8 days	May 12 '14	May 20 '14	<div><div></div> Waste Operating[45 Metres]</div>																				
133	715L Sill Ore NB	9 days	May 20 '14	May 29 '14	<div><div></div> Ore Sill[49 Metres],Production Ore Sill[1,235 Tonnes]</div>																				
134	715L Sill Waste NB2	13 days	May 29 '14	Jun 11 '14	<div><div></div> Waste Operating[69 Metres]</div>																				
135	715L Sill Ore NB2	6 days	Jun 11 '14	Jun 17 '14	<div><div></div> Ore Sill[33 Metres],Production Ore Sill[832 Tonnes]</div>																				
136	715L Sill Ore NA4	13 days	Jun 17 '14	Jun 30 '14	<div><div></div> Ore Sill[68 Metres],Production Ore Sill[1,714 Tonnes]</div>																				
137	715L Sill Access NAHW	3 days	Jun 30 '14	Jul 3 '14	<div><div></div> Waste Operating[17 Metres]</div>																				
138	715L Sill Ore NAHW	3 days	Jul 3 '14	Jul 6 '14	<div><div></div> Ore Sill[15 Metres],Production Ore Sill[378 Tonnes]</div>																				
139	715L Sill Waste NA2	21 days	Jul 6 '14	Jul 27 '14	<div><div></div> Waste Operating[116 Metres]</div>																				
140	715L Sill Ore NA2	9 days	Jul 27 '14	Aug 5 '14	<div><div></div> Ore Sill[51 Metres],Production Ore Sill[1,285 Tonnes]</div>																				
141	715L Sill Waste NA2	5 days	Aug 5 '14	Aug 10 '14	<div><div></div> Waste Operating[28 Metres]</div>																				
142	730 Level	150 days	Dec 28 '14	May 27 '15	<div><div></div></div>																				
143	730L Remuck	3 days	Dec 28 '14	Dec 31 '14	<div><div></div> Waste Capital[17 Metres]</div>																				
144	730L Truck Turnaround	3 days	Dec 31 '14	Jan 3 '15	<div><div></div> Waste Capital[17 Metres]</div>																				
145	730L Sump	2 days	Jan 3 '15	Jan 5 '15	<div><div></div> Waste Capital[13 Metres]</div>																				
146	730L Electrical Cut out	2 days	Jan 5 '15	Jan 7 '15	<div><div></div> Waste Capital[11 Metres]</div>																				
147	730L Ventilation X-Cut	3 days	Jan 7 '15	Jan 10 '15	<div><div></div> Waste Capital[17 Metres]</div>																				
148	730L Main X-Cut NA	19 days	Jan 10 '15	Jan 29 '15	<div><div></div> Waste Capital[103 Metres]</div>																				
149	730L Sill Waste NA2	20 days	Jan 29 '15	Feb 18 '15	<div><div></div> Waste Operating[106 Metres]</div>																				
150	730L Sill Ore NA2	15 days	Feb 18 '15	Mar 5 '15	<div><div></div> Ore Sill[81 Metres],Production Ore Sill[2,041 Tonnes]</div>																				
151	730L Sill Ore NA West	18 days	Mar 5 '15	Mar 23 '15	<div><div></div> Ore Sill[95 Metres],Production Ore Sill[2,394 Tonnes]</div>																				
152	730L Sill Waste NA West	4 days	Mar 23 '15	Mar 27 '15	<div><div></div> Waste Operating[23 Metres]</div>																				
153	730L Sill Ore NA West	2 days	Mar 27 '15	Mar 29 '15	<div><div></div> Ore Sill[10 Metres],Production Ore Sill[252 Tonnes]</div>																				
154	730L Sill Ore NA East	11 days	Mar 29 '15	Apr 9 '15	<div><div></div> Ore Sill[62 Metres],Production Ore Sill[1,562 Tonnes]</div>																				
155	730L Sill Ore NA4	14 days	Apr 9 '15	Apr 23 '15	<div><div></div> Ore Sill[78 Metres],Production Ore Sill[1,966 Tonnes]</div>																				
156	730L Main X-Cut NB2	5 days	Apr 23 '15	Apr 28 '15	<div><div></div> Waste Capital[29 Metres]</div>																				

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Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish	2014				2015				2016				2017				2018				
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
209	700L-670L Vent Raise	20 days	Feb 16 '14	Mar 8 '14		Waste Vertical[27 Metres]				Waste Vertical[27 Metres]															
210	730L-700L Vent Raise	20 days	Jan 10 '15	Jan 30 '15																					
211	760L-730L Vent Raise	20 days	Aug 2 '14	Aug 22 '14						Waste Vertical[27 Metres]															
212	685L-595L E/W Raise	42 days	Feb 21 '14	Apr 4 '14		Waste Vertical[100 Metres]																			
213	760L-685L E/W Raise	33 days	Oct 8 '14	Nov 10 '14		Waste Vertical[80 Metres]																			
214																									
215	Production	1539 days	Jan 1 '14	Mar 28 '18																					
216	300L Production	71 days	Nov 16 '17	Jan 28 '18																					
217	300 NAE HW 1 Drilling	7 days	Nov 16 '17	Nov 23 '17														Drilling[756 Metres]				Production Tonnes[2,267 Tonnes]			
218	300 NAE HW 1 Mucking	7 days	Nov 23 '17	Nov 30 '17														Backfill Tonnes[1,609 Tonnes]				Drilling[899 Metres]			
219	300 NAE HW 1 Filling	8 days	Nov 30 '17	Dec 8 '17														Production Tonnes[2,697 Tonnes]							
220	300 NAE HW 2 Drilling	8 days	Dec 31 '17	Jan 8 '18																		Drilling[720 Metres]			
221	300 NAE HW 2 Mucking	8 days	Jan 8 '18	Jan 16 '18														Production Tonnes[2,160 Tonnes]							
222	300 NAE HW 2 Filling	0 days	Jan 16 '18	Jan 16 '18																					
223	300 NAE FW 1 Drilling	7 days	Dec 8 '17	Dec 15 '17														Backfill Tonnes[1,534 Tonnes]				Drilling[692 Metres]			
224	300 NAE FW 1 Mucking	7 days	Dec 15 '17	Dec 22 '17														Production Tonnes[2,077 Tonnes]							
225	300 NAE FW 1 Filling	7 days	Dec 22 '17	Dec 31 '17																		Drilling[398 Metres]			
226	300 NAE FW 2 Drilling	6 days	Jan 16 '18	Jan 22 '18														Production Tonnes[1,195 Tonnes]							
227	300 NAE FW 2 Mucking	6 days	Jan 22 '18	Jan 28 '18																		Drilling[388 Metres]			
228	300 NAE FW 2 Filling	0 days	Jan 28 '18	Jan 28 '18																					
229	West of Shaft Production Block	564 days	Apr 29 '16	Nov 16 '17																					
230	430 NA 1 Drilling	4 days	Oct 31 '17	Nov 4 '17														Production Tonnes[1,163 Tonnes]				Drilling[554 Metres]			
231	430 NA 1 Mucking	4 days	Nov 4 '17	Nov 8 '17														Production Tonnes[1,663 Tonnes]							
232	430 NA 1 Filling	0 days	Nov 8 '17	Nov 8 '17																		Drilling[247 Metres]			
233	430 NA 2 Drilling	4 days	Nov 8 '17	Nov 12 '17														Production Tonnes[742 Tonnes]							
234	430 NA 2 Mucking	4 days	Nov 12 '17	Nov 16 '17																		Drilling[680 Metres]			
235	430 NA 2 Filling	0 days	Nov 16 '17	Nov 16 '17																					
236	430 NAX 1 Drilling	5 days	Oct 15 '17	Oct 20 '17														Production Tonnes[2,040 Tonnes]				Backfill Tonnes[1,449 Tonnes]			
237	430 NAX 1 Mucking	5 days	Oct 20 '17	Oct 25 '17														Drilling[773 Metres]				Production Tonnes[2,320 Tonnes]			
238	430 NAX 1 Filling	0 days	Oct 25 '17	Oct 25 '17														Backfill Tonnes[1,647 Tonnes]							
239	430 NAX 2 Drilling	3 days	Oct 25 '17	Oct 28 '17														Drilling[854 Metres]				Production Tonnes[2,561 Tonnes]			
240	430 NAX 2 Mucking	3 days	Oct 28 '17	Oct 31 '17														Backfill Tonnes[1,819 Tonnes]				Drilling[255 Metres]			
241	430 NAX 2 Filling	0 days	Oct 31 '17	Oct 31 '17																					
242	445 NA 1 Drilling	6 days	Sep 4 '17	Sep 10 '17														Production Tonnes[766 Tonnes]				Backfill Tonnes[544 Tonnes]			
243	445 NA 1 Mucking	6 days	Sep 10 '17	Sep 16 '17														Drilling[523 Metres]				Production Tonnes[1,569 Tonnes]			
244	445 NA 1 Filling	7 days	Sep 16 '17	Sep 23 '17																		Drilling[649 Metres]			
245	445 NA 2 Drilling	7 days	Sep 23 '17	Sep 30 '17														Production Tonnes[1,947 Tonnes]				Backfill Tonnes[1,382 Tonnes]			
246	445 NA 2 Mucking	7 days	Sep 30 '17	Oct 7 '17														Drilling[475 Metres]							
247	445 NA 2 Filling	8 days	Oct 7 '17	Oct 15 '17																					
248	445 NAX 1 Drilling	8 days	Jul 22 '17	Jul 30 '17																					
249	445 NAX 1 Mucking	8 days	Jul 30 '17	Aug 7 '17																					
250	445 NAX 1 Filling	9 days	Aug 7 '17	Aug 16 '17																					
251	445 NAX 2 Drilling	3 days	Aug 16 '17	Aug 19 '17																					
252	445 NAX 2 Mucking	3 days	Aug 19 '17	Aug 22 '17																					
253	445 NAX 2 Filling	3 days	Aug 22 '17	Aug 25 '17																					
254	445 NB 2 Drilling	5 days	Aug 25 '17	Aug 30 '17																					
255	445 NB 2 Mucking	5 days	Aug 30 '17	Sep 4 '17																					
256	445 NB 2 Filling	0 days	Sep 4 '17	Sep 4 '17																					
257	460 NAX 1 Drilling	8 days	May 12 '17	May 20 '17																					
258	460 NAX 1 Mucking	8 days	May 20 '17	May 28 '17																					
259	460 NAX 1 Filling	9 days	May 28 '17	Jun 6 '17																					
260	460 NAX 2 Drilling	5 days	Jun 6 '17	Jun 11 '17																					

Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish		2014					2015				2016				2017				2018			
						Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
261	460 NAX 2 Mucking	5 days	Jun 11 '17	Jun 16 '17																						
262	460 NAX 2 Filling	6 days	Jun 16 '17	Jun 22 '17																						
263	460 NB 3 Drilling	8 days	Jun 22 '17	Jun 30 '17																						
264	460 NB 3 Mucking	10 days	Jun 30 '17	Jul 10 '17																						
265	460 NB 3 Filling	12 days	Jul 10 '17	Jul 22 '17																						
266	475 NAX 1 Drilling	9 days	Mar 16 '17	Mar 25 '17																						
267	475 NAX 1 Mucking	9 days	Mar 25 '17	Apr 3 '17																						
268	475 NAX 1 Filling	10 days	Apr 3 '17	Apr 13 '17																						
269	475 NB 2 Drilling	6 days	Apr 23 '17	Apr 29 '17																						
270	475 NB 2 Mucking	6 days	Apr 29 '17	May 5 '17																						
271	475 NB 2 Filling	7 days	May 5 '17	May 12 '17																						
272	475 NB 3 Drilling	5 days	Apr 13 '17	Apr 18 '17																						
273	475 NB 3 Mucking	5 days	Apr 18 '17	Apr 23 '17																						
274	475 NB 3 Filling	0 days	Apr 23 '17	Apr 23 '17																						
275	490 NAX 1 Drilling	8 days	Dec 17 '16	Dec 27 '16																						
276	490 NAX 1 Mucking	8 days	Dec 27 '16	Jan 4 '17																						
277	490 NAX 1 Filling	9 days	Jan 4 '17	Jan 13 '17																						
278	490 NB 1 Drilling	4 days	Mar 16 '17	Mar 20 '17																						
279	490 NB 1 Mucking	4 days	Mar 20 '17	Mar 24 '17																						
280	490 NB 1 Filling	4 days	Mar 24 '17	Mar 28 '17																						
281	490 NB 2 Drilling	8 days	Feb 19 '17	Feb 27 '17																						
282	490 NB 2 Mucking	8 days	Feb 27 '17	Mar 7 '17																						
283	490 NB 2 Filling	9 days	Mar 7 '17	Mar 16 '17																						
284	490 NB 3 Drilling	6 days	Feb 1 '17	Feb 7 '17																						
285	490 NB 3 Mucking	6 days	Feb 7 '17	Feb 13 '17																						
286	490 NB 3 Filling	6 days	Feb 13 '17	Feb 19 '17																						
287	490 NB 4 Drilling	6 days	Jan 13 '17	Jan 19 '17																						
288	490 NB 4 Mucking	6 days	Jan 19 '17	Jan 25 '17																						
289	490 NB 4 Filling	7 days	Jan 25 '17	Feb 1 '17																						
290	505 NAX 1 Drilling	5 days	Jun 25 '16	Jun 30 '16																						
291	505 NAX 1 Mucking	5 days	Jun 30 '16	Jul 5 '16																						
292	505 NAX 1 Filling	6 days	Jul 5 '16	Jul 11 '16																						
293	505 NB 3 Drilling	8 days	Nov 22 '16	Nov 30 '16																						
294	505 NB 3 Mucking	8 days	Nov 30 '16	Dec 8 '16																						
295	505 NB 3 Filling	9 days	Dec 8 '16	Dec 17 '16																						
296	505 NB 4 Drilling	8 days	Oct 24 '16	Nov 1 '16																						
297	505 NB 4 Mucking	10 days	Nov 1 '16	Nov 11 '16																						
298	505 NB 4 Filling	11 days	Nov 11 '16	Nov 22 '16																						
299	505 NB 5 Drilling	7 days	Oct 2 '16	Oct 9 '16																						
300	505 NB 5 Mucking	7 days	Oct 9 '16	Oct 16 '16																						
301	505 NB 5 Filling	8 days	Oct 16 '16	Oct 24 '16																						
302	520 NB 3 Drilling	6 days	Sep 13 '16	Sep 19 '16																						
303	520 NB 3 Mucking	6 days	Sep 19 '16	Sep 25 '16																						
304	520 NB 3 Filling	7 days	Sep 25 '16	Oct 2 '16																						
305	520 NB 4 Drilling	7 days	Aug 22 '16	Aug 29 '16																						
306	520 NB 4 Mucking	7 days	Aug 29 '16	Sep 5 '16																						
307	520 NB 4 Filling	8 days	Sep 5 '16	Sep 13 '16																						
308	520 NB 5 Drilling	4 days	Aug 10 '16	Aug 14 '16																						
309	520 NB 5 Mucking	4 days	Aug 14 '16	Aug 18 '16																						
310	520 NB 5 Filling	4 days	Aug 18 '16	Aug 22 '16																						
311	520 NB 6 Drilling	6 days	Jul 23 '16	Jul 29 '16																						
312	520 NB 6 Mucking	6 days	Jul 29 '16	Aug 4 '16																						

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































Development and Production Schedule to 775L




















































ID	Task Name	Duration	Start	Finish		2014					2015				2016				2017				2018			
						Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
365	595 NA3 1 Filling	9 days	Dec 2 '17	Dec 11 '17																	Backfill Tonnes[1,426 Tonnes]					
366	Pillar Production	793 days	Jan 1 '16	Mar 8 '18																						
367	505 HW 2 Drilling	4 days	Feb 28 '18	Mar 4 '18																						
368	505 HW 2 Mucking	4 days	Mar 4 '18	Mar 8 '18																						
369	505 HW 2 Filling	0 days	Mar 8 '18	Mar 8 '18																						
370	505 NA 1 Drilling	6 days	Dec 2 '17	Dec 8 '17																						
371	505 NA 1 Mucking	6 days	Dec 8 '17	Dec 14 '17																						
372	505 NA 1 Filling	0 days	Dec 14 '17	Dec 14 '17																						
373	505 NA 2 Drilling	7 days	Jan 15 '18	Jan 22 '18																						
374	505 NA 2 Mucking	7 days	Jan 22 '18	Jan 29 '18																						
375	505 NA 2 Filling	0 days	Jan 29 '18	Jan 29 '18																						
376	505 NB 1 Drilling	3 days	Sep 21 '17	Sep 24 '17																						
377	505 NB 1 Mucking	3 days	Sep 24 '17	Sep 27 '17																						
378	505 NB 1 Filling	0 days	Sep 27 '17	Sep 27 '17																						
379	505 NB 2 Drilling	3 days	Oct 27 '17	Oct 30 '17																						
380	505 NB 2 Mucking	3 days	Oct 30 '17	Nov 2 '17																						
381	505 NB 2 Filling	0 days	Nov 2 '17	Nov 2 '17																						
382	550 HW 1 Drilling	5 days	Jan 9 '18	Jan 14 '18																						
383	550 HW 1 Mucking	5 days	Jan 14 '18	Jan 19 '18																						
384	550 HW 1 Filling	0 days	Jan 19 '18	Jan 19 '18																						
385	550 NA 2 Drilling	3 days	Dec 2 '17	Dec 5 '17																						
386	550 NA 2 Mucking	3 days	Dec 5 '17	Dec 8 '17																						
387	550 NA 2 Filling	0 days	Dec 8 '17	Dec 8 '17																						
388	550 NA 3 Drilling	6 days	Oct 21 '17	Oct 27 '17																						
389	550 NA 3 Mucking	6 days	Oct 27 '17	Nov 2 '17																						
390	550 NA 3 Filling	0 days	Nov 2 '17	Nov 2 '17																						
391	550 NB 1 Drilling	5 days	Sep 11 '17	Sep 16 '17																						
392	550 NB 1 Mucking	5 days	Sep 16 '17	Sep 21 '17																						
393	550 NB 1 Filling	0 days	Sep 21 '17	Sep 21 '17																						
394	595 HW 1 Drilling	4 days	Sep 3 '17	Sep 7 '17																						
395	595 HW 1 Mucking	4 days	Sep 7 '17	Sep 11 '17																						
396	595 HW 1 Filling	0 days	Sep 11 '17	Sep 11 '17																						
397	595 NA 2 Drilling	8 days	Mar 17 '17	Mar 25 '17																						
398	595 NA 2 Mucking	12 days	Mar 25 '17	Apr 6 '17																						
399	595 NA 2 Filling	0 days	Apr 6 '17	Apr 6 '17																						
400	595 NA 3 Drilling	6 days	May 6 '17	May 12 '17																						
401	595 NA 3 Mucking	6 days	May 12 '17	May 18 '17																						
402	595 NA 3 Filling	0 days	May 18 '17	May 18 '17																						
403	595 NA 4 Drilling	6 days	Jun 17 '17	Jun 23 '17																						
404	595 NA 4 Mucking	6 days	Jun 23 '17	Jun 29 '17																						
405	595 NA 4 Filling	0 days	Jun 29 '17	Jun 29 '17																						
406	595 NA 5 Drilling	3 days	Jul 29 '17	Aug 1 '17																						
407	595 NA 5 Mucking	3 days	Aug 1 '17	Aug 4 '17																						
408	595 NA 5 Filling	0 days	Aug 4 '17	Aug 4 '17																						
409	640 HW 1 Drilling	9 days	Dec 9 '16	Dec 18 '16																						
410	640 HW 1 Mucking	13 days	Dec 18 '16	Jan 2 '17																						
411	640 HW 1 Filling	0 days	Jan 2 '17	Jan 2 '17																						
412	640 HW 2 Drilling	5 days	Feb 1 '17	Feb 6 '17																						
413	640 HW 2 Mucking	5 days	Feb 6 '17	Feb 11 '17																						
414	640 HW 2 Filling	0 days	Feb 11 '17	Feb 11 '17																						
415	640 HW 3 Drilling	2 days	Mar 13 '17	Mar 15 '17																						
416	640 HW 3 Mucking	2 days	Mar 15 '17	Mar 17 '17																						

Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish		2014				2015				2016				2017				2018			
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
417	640 HW 3 Filling	0 days	Mar 17 '17	Mar 17 '17																					
418	640 NA 2 Drilling	7 days	Jan 11 '16	Jan 18 '16																					Drilling[826 Metres]
419	640 NA 2 Mucking	9 days	Jan 18 '16	Jan 27 '16																					Production Tonnes[3,221 Tonnes]
420	640 NA 2 Filling	0 days	Jan 27 '16	Jan 27 '16																					
421	640 NA 3 Drilling	6 days	Feb 26 '16	Mar 3 '16																					Drilling[694 Metres]
422	640 NA 3 Mucking	6 days	Mar 3 '16	Mar 9 '16																					Production Tonnes[2,083 Tonnes]
423	640 NA 3 Filling	0 days	Mar 9 '16	Mar 9 '16																					
424	640 NA 4 Drilling	9 days	Apr 8 '16	Apr 17 '16																					Drilling[1,008 Metres]
425	640 NA 4 Mucking	11 days	Apr 17 '16	Apr 28 '16																					Production Tonnes[3,932 Tonnes]
426	640 NA 4 Filling	0 days	Apr 28 '16	Apr 28 '16																					
427	640 NA 5 Drilling	8 days	May 28 '16	Jun 5 '16																					Drilling[938 Metres]
428	640 NA 5 Mucking	8 days	Jun 5 '16	Jun 13 '16																					Production Tonnes[2,814 Tonnes]
429	640 NA 5 Filling	0 days	Jun 13 '16	Jun 13 '16																					
430	640 NA 6 Drilling	8 days	Jul 13 '16	Jul 21 '16	Drilling[936 Metres]																				
431	640 NA 6 Mucking	8 days	Jul 21 '16	Jul 29 '16	Production Tonnes[2,807 Tonnes]																				
432	640 NA 6 Filling	0 days	Jul 29 '16	Jul 29 '16																					
433	640 NA 7 Drilling	8 days	Aug 28 '16	Sep 5 '16	Drilling[925 Metres]																				
434	640 NA 7 Mucking	8 days	Sep 5 '16	Sep 13 '16	Production Tonnes[2,775 Tonnes]																				
435	640 NA 7 Filling	0 days	Sep 13 '16	Sep 13 '16																					
436	640 NA 8 Drilling	11 days	Oct 13 '16	Oct 24 '16	Drilling[1,251 Metres]																				
437	640 NA 8 Mucking	16 days	Oct 24 '16	Nov 9 '16	Production Tonnes[5,630 Tonnes]																				
438	640 NA 8 Filling	0 days	Nov 9 '16	Nov 9 '16																					
439	640 NA4 1 Drilling	8 days	Mar 25 '16	Apr 2 '16	Drilling[946 Metres]																				
440	640 NA4 1 Mucking	11 days	Apr 2 '16	Apr 13 '16	Production Tonnes[3,688 Tonnes]																				
441	640 NA4 1 Filling	0 days	Apr 13 '16	Apr 13 '16																					
442	640 NA4 2 Drilling	7 days	May 13 '16	May 20 '16	Drilling[722 Metres]																				
443	640 NA4 2 Mucking	7 days	May 20 '16	May 27 '16	Production Tonnes[2,166 Tonnes]																				
444	640 NA4 2 Filling	0 days	May 27 '16	May 27 '16																					
445	640 NB2 1 Drilling	5 days	Jan 1 '16	Jan 6 '16	Drilling[597 Metres]																				
446	640 NB2 1 Mucking	5 days	Jan 6 '16	Jan 11 '16	Production Tonnes[1,791 Tonnes]																				
447	640 NB2 1 Filling	0 days	Jan 11 '16	Jan 11 '16																					
448	640 NB2 2 Drilling	7 days	Feb 10 '16	Feb 17 '16	Drilling[739 Metres]																				
449	640 NB2 2 Mucking	7 days	Feb 17 '16	Feb 24 '16	Production Tonnes[2,218 Tonnes]																				
450	640 NB2 2 Filling	0 days	Feb 24 '16	Feb 24 '16																					
451	520L Production	35 days	Feb 2 '14	Mar 9 '14	Drilling[586 Metres]																				
452	520 NB 1 Drilling	5 days	Feb 2 '14	Feb 7 '14	Production Tonnes[1,758 Tonnes]																				
453	520 NB 1 Mucking	5 days	Feb 7 '14	Feb 12 '14	Backfill Tonnes[1,248 Tonnes]																				
454	520 NB 1 Filling	6 days	Feb 12 '14	Feb 18 '14	Drilling[667 Metres]																				
455	520 NB 2 Drilling	6 days	Feb 18 '14	Feb 24 '14	Production Tonnes[2,001 Tonnes]																				
456	520 NB 2 Mucking	6 days	Feb 24 '14	Mar 2 '14	Backfill Tonnes[1,421 Tonnes]																				
457	520 NB 2 Filling	7 days	Mar 2 '14	Mar 9 '14																					
458	625L & 610L Production Block	322 days	Jan 1 '14	Nov 19 '14																					
459	610 NA 3 Drilling	8 days	May 7 '14	May 15 '14	Drilling[884 Metres]																				
460	610 NA 3 Mucking	10 days	May 15 '14	May 25 '14	Production Tonnes[3,448 Tonnes]																				
461	610 NA 3 Filling	11 days	May 25 '14	Jun 5 '14	Backfill Tonnes[2,448 Tonnes]																				
462	610 NA 4 Drilling	8 days	Jun 5 '14	Jun 13 '14	Drilling[852 Metres]																				
463	610 NA 4 Mucking	10 days	Jun 13 '14	Jun 23 '14	Production Tonnes[3,321 Tonnes]																				
464	610 NA 4 Filling	11 days	Jun 23 '14	Jul 4 '14	Backfill Tonnes[2,358 Tonnes]																				
465	610 NA 5 Drilling	17 days	Jul 4 '14	Jul 21 '14	Drilling[1,932 Metres]																				
466	610 NA 5 Mucking	25 days	Jul 21 '14	Aug 15 '14	Production Tonnes[8,693 Tonnes]																				
467	610 NA 5 Filling	28 days	Aug 15 '14	Sep 12 '14	Backfill Tonnes[6,172 Tonnes]																				
468	610 NA 6 Drilling	9 days	Sep 12 '14	Sep 21 '14	Drilling[1,070 Metres]																				

Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish	2014					2015				2016				2017				2018				
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
469	610 NA 6 Mucking	14 days	Sep 21 '14	Oct 5 '14		 Production Tonnes[4,815 Tonnes]																				
470	610 NA 6 Filling	16 days	Oct 5 '14	Oct 21 '14		 Backfill Tonnes[3,419 Tonnes]																				
471	610 HW 3 Drilling	8 days	Oct 21 '14	Oct 29 '14		 Drilling[872 Metres]																				
472	610 HW 3 Mucking	10 days	Oct 29 '14	Nov 8 '14		 Production Tonnes[3,402 Tonnes]																				
473	610 HW 3 Filling	11 days	Nov 8 '14	Nov 19 '14		 Backfill Tonnes[2,415 Tonnes]																				
474	625 NA 6 Drilling	8 days	Jan 1 '14	Jan 9 '14		 Drilling[924 Metres]																				
475	625 NA 6 Mucking	11 days	Jan 9 '14	Jan 20 '14		 Production Tonnes[3,605 Tonnes]																				
476	625 NA 6 Filling	12 days	Jan 20 '14	Feb 1 '14		 Backfill Tonnes[2,559 Tonnes]																				
477	625 NA 7 Drilling	12 days	Feb 1 '14	Feb 13 '14		 Drilling[1,418 Metres]																				
478	625 NA 7 Mucking	18 days	Feb 13 '14	Mar 3 '14		 Production Tonnes[6,379 Tonnes]																				
479	625 NA 7 Filling	21 days	Mar 3 '14	Mar 24 '14		 Backfill Tonnes[4,529 Tonnes]																				
480	625 HW 2 Drilling	7 days	Mar 24 '14	Mar 31 '14		 Drilling[804 Metres]																				
481	625 HW 2 Mucking	7 days	Mar 31 '14	Apr 7 '14		 Production Tonnes[2,413 Tonnes]																				
482	625 HW 2 Filling	8 days	Apr 7 '14	Apr 15 '14		 Backfill Tonnes[1,714 Tonnes]																				
483	625 HW 3 Drilling	7 days	Apr 15 '14	Apr 22 '14		 Drilling[820 Metres]																				
484	625 HW 3 Mucking	7 days	Apr 22 '14	Apr 29 '14	 Production Tonnes[2,460 Tonnes]																					
485	625 HW 3 Filling	8 days	Apr 29 '14	May 7 '14	 Backfill Tonnes[1,746 Tonnes]																					
486	670L & 655L Production Block	631 days	Jan 1 '14	Sep 26 '15																						
487	655 HW 1 Drilling	7 days	Jul 23 '14	Jul 30 '14		 Drilling[813 Metres]																				
488	655 HW 1 Mucking	7 days	Jul 30 '14	Aug 6 '14		 Production Tonnes[2,438 Tonnes]																				
489	655 HW 1 Filling	8 days	Aug 6 '14	Aug 14 '14		 Backfill Tonnes[1,731 Tonnes]																				
490	655 HW 2 Drilling	7 days	Aug 14 '14	Aug 21 '14		 Drilling[839 Metres]																				
491	655 HW 2 Mucking	7 days	Aug 21 '14	Aug 28 '14		 Production Tonnes[2,517 Tonnes]																				
492	655 HW 2 Filling	8 days	Aug 28 '14	Sep 5 '14		 Backfill Tonnes[1,787 Tonnes]																				
493	655 NA 2 Drilling	7 days	Dec 31 '14	Jan 7 '15		 Drilling[771 Metres]																				
494	655 NA 2 Mucking	7 days	Jan 7 '15	Jan 14 '15		 Production Tonnes[2,313 Tonnes]																				
495	655 NA 2 Filling	8 days	Jan 14 '15	Jan 22 '15		 Backfill Tonnes[1,643 Tonnes]																				
496	655 NA 3 Drilling	9 days	Jan 22 '15	Jan 31 '15		 Drilling[969 Metres]																				
497	655 NA 3 Mucking	11 days	Jan 31 '15	Feb 11 '15		 Production Tonnes[3,779 Tonnes]																				
498	655 NA 3 Filling	12 days	Feb 11 '15	Feb 23 '15		 Backfill Tonnes[2,683 Tonnes]																				
499	655 NA 4 Drilling	6 days	Feb 23 '15	Mar 1 '15		 Drilling[686 Metres]																				
500	655 NA 4 Mucking	6 days	Mar 1 '15	Mar 7 '15		 Production Tonnes[2,057 Tonnes]																				
501	655 NA 4 Filling	7 days	Mar 7 '15	Mar 14 '15		 Backfill Tonnes[1,460 Tonnes]																				
502	655 NA 5 Drilling	11 days	Mar 14 '15	Mar 25 '15		 Drilling[1,286 Metres]																				
503	655 NA 5 Mucking	17 days	Mar 25 '15	Apr 11 '15		 Production Tonnes[5,787 Tonnes]																				
504	655 NA 5 Filling	19 days	Apr 11 '15	Apr 30 '15		 Backfill Tonnes[4,109 Tonnes]																				
505	655 NA 6 Drilling	9 days	Apr 30 '15	May 9 '15		 Drilling[1,003 Metres]																				
506	655 NA 6 Mucking	13 days	May 9 '15	May 22 '15		 Production Tonnes[4,516 Tonnes]																				
507	655 NA 6 Filling	15 days	May 22 '15	Jun 6 '15	 Backfill Tonnes[3,206 Tonnes]																					
508	655 NA 7 Drilling	8 days	Jun 6 '15	Jun 14 '15	 Drilling[956 Metres]																					
509	655 NA 7 Mucking	12 days	Jun 14 '15	Jun 26 '15	 Production Tonnes[4,304 Tonnes]																					
510	655 NA 7 Filling	14 days	Jun 26 '15	Jul 10 '15	 Backfill Tonnes[3,056 Tonnes]																					
511	655 NA 8 Drilling	8 days	Jul 10 '15	Jul 18 '15	 Drilling[911 Metres]																					
512	655 NA 8 Mucking	12 days	Jul 18 '15	Jul 30 '15	 Production Tonnes[4,100 Tonnes]																					
513	655 NA 8 Filling	13 days	Jul 30 '15	Aug 12 '15	 Backfill Tonnes[2,911 Tonnes]																					
514	655 NA 9 Drilling	11 days	Aug 12 '15	Aug 23 '15	 Drilling[1,229 Metres]																					
515	655 NA 9 Mucking	16 days	Aug 23 '15	Sep 8 '15	 Production Tonnes[5,530 Tonnes]																					
516	655 NA 9 Filling	18 days	Sep 8 '15	Sep 26 '15	 Backfill Tonnes[3,926 Tonnes]																					
517	655 NA4 1 Drilling	8 days	May 18 '14	May 26 '14		 Drilling[886 Metres]																				
518	655 NA4 1 Mucking	10 days	May 26 '14	Jun 5 '14		 Production Tonnes[3,457 Tonnes]																				
519	655 NA4 1 Filling	11 days	Jun 5 '14	Jun 16 '14		 Backfill Tonnes[2,454 Tonnes]																				
520	655 NA4 2 Drilling	9 days	Jun 16 '14	Jun 25 '14		 Drilling[989 Metres]																				

ID	Task Name	Duration	Start	Finish	2014				2015				2016				2017				2018			
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
521	655 NA4 2 Mucking	13 days	Jun 25 '14	Jul 8 '14	 Production Tonnes[4,449 Tonnes]  Backfill Tonnes[3,159 Tonnes]  Drilling[870 Metres]  Production Tonnes[2,610 Tonnes]  Backfill Tonnes[1,853 Tonnes]  Drilling[782 Metres]  Production Tonnes[3,051 Tonnes]  Backfill Tonnes[2,166 Tonnes]																			
522	655 NA4 2 Filling	15 days	Jul 8 '14	Jul 23 '14																				
523	655 NB2 1 Drilling	8 days	Mar 28 '14	Apr 5 '14																				
524	655 NB2 1 Mucking	8 days	Apr 5 '14	Apr 13 '14																				
525	655 NB2 1 Filling	9 days	Apr 13 '14	Apr 22 '14																				
526	655 NB2 2 Drilling	7 days	Apr 22 '14	Apr 29 '14																				
527	655 NB2 2 Mucking	9 days	Apr 29 '14	May 8 '14																				
528	655 NB2 2 Filling	10 days	May 8 '14	May 18 '14																				
529	670 HW 1 Drilling	5 days	Feb 28 '14	Mar 5 '14	 Drilling[488 Metres]  Production Tonnes[1,463 Tonnes]  Backfill Tonnes[1,039 Tonnes]  Drilling[437 Metres]  Production Tonnes[1,310 Tonnes]  Backfill Tonnes[930 Tonnes]  Backfill Tonnes[3,245 Tonnes]  Drilling[941 Metres]																			
530	670 HW 1 Mucking	5 days	Mar 5 '14	Mar 10 '14																				
531	670 HW 1 Filling	5 days	Mar 10 '14	Mar 15 '14																				
532	670 HW 2 Drilling	4 days	Mar 15 '14	Mar 19 '14																				
533	670 HW 2 Mucking	4 days	Mar 19 '14	Mar 23 '14																				
534	670 HW 2 Filling	5 days	Mar 23 '14	Mar 28 '14																				
535	670 NA 1 Filling	15 days	Jan 1 '14	Jan 16 '14																				
536	670 NA 2 Drilling	8 days	Jan 16 '14	Jan 24 '14																				
537	670 NA 2 Mucking	11 days	Jan 24 '14	Feb 4 '14	 Production Tonnes[3,671 Tonnes]  Backfill Tonnes[2,606 Tonnes]  Drilling[1,298 Metres]  Production Tonnes[5,840 Tonnes]  Backfill Tonnes[4,146 Tonnes]  Drilling[969 Metres]  Production Tonnes[3,780 Tonnes]  Backfill Tonnes[2,683 Tonnes]																			
538	670 NA 2 Filling	12 days	Feb 4 '14	Feb 16 '14																				
539	670 NA 3 Drilling	11 days	Feb 16 '14	Feb 27 '14																				
540	670 NA 3 Mucking	17 days	Feb 27 '14	Mar 16 '14																				
541	670 NA 3 Filling	19 days	Mar 16 '14	Apr 4 '14																				
542	670 NA 4 Drilling	9 days	Apr 4 '14	Apr 13 '14																				
543	670 NA 4 Mucking	11 days	Apr 13 '14	Apr 24 '14																				
544	670 NA 4 Filling	12 days	Apr 24 '14	May 6 '14																				
545	670 NA 5 Drilling	14 days	May 6 '14	May 20 '14	 Drilling[1,659 Metres]  Production Tonnes[7,467 Tonnes]  Backfill Tonnes[5,302 Tonnes]  Drilling[896 Metres]  Production Tonnes[4,032 Tonnes]  Backfill Tonnes[2,863 Tonnes]  Drilling[1,028 Metres]  Production Tonnes[4,627 Tonnes]  Backfill Tonnes[3,285 Tonnes]  Drilling[1,281 Metres]  Production Tonnes[5,762 Tonnes]  Backfill Tonnes[4,091 Tonnes]  Drilling[1,681 Metres]  Production Tonnes[7,563 Tonnes]  Backfill Tonnes[5,370 Tonnes]																			
546	670 NA 5 Mucking	21 days	May 20 '14	Jun 10 '14																				
547	670 NA 5 Filling	24 days	Jun 10 '14	Jul 4 '14																				
548	670 NA 6 Drilling	8 days	Jul 4 '14	Jul 12 '14																				
549	670 NA 6 Mucking	12 days	Jul 12 '14	Jul 24 '14																				
550	670 NA 6 Filling	13 days	Jul 24 '14	Aug 6 '14																				
551	670 NA 7 Drilling	9 days	Aug 6 '14	Aug 15 '14																				
552	670 NA 7 Mucking	13 days	Aug 15 '14	Aug 28 '14																				
553	670 NA 7 Filling	15 days	Aug 28 '14	Sep 12 '14	 Backfill Tonnes[2,564 Tonnes]																			
554	670 NA 8 Drilling	11 days	Sep 12 '14	Sep 23 '14																				
555	670 NA 8 Mucking	17 days	Sep 23 '14	Oct 10 '14																				
556	670 NA 8 Filling	19 days	Oct 10 '14	Oct 29 '14																				
557	670 NA 9 Drilling	15 days	Oct 29 '14	Nov 13 '14																				
558	670 NA 9 Mucking	22 days	Nov 13 '14	Dec 5 '14																				
559	670 NA 9 Filling	24 days	Dec 5 '14	Dec 31 '14																				
560	670 NA4 1 Drilling	7 days	Jan 3 '14	Jan 10 '14																				
561	670 NA4 1 Mucking	9 days	Jan 10 '14	Jan 19 '14	 Drilling[812 Metres]  Production Tonnes[3,167 Tonnes]  Backfill Tonnes[2,248 Tonnes]  Drilling[922 Metres]  Production Tonnes[3,596 Tonnes]  Backfill Tonnes[2,553 Tonnes]  Backfill Tonnes[2,564 Tonnes]																			
562	670 NA4 1 Filling	10 days	Jan 19 '14	Jan 29 '14																				
563	670 NA4 3 Drilling	8 days	Jan 29 '14	Feb 6 '14																				
564	670 NA4 3 Mucking	10 days	Feb 6 '14	Feb 16 '14																				
565	670 NA4 3 Filling	12 days	Feb 16 '14	Feb 28 '14																				
566	670 NB2 1 Filling	12 days	Jan 16 '14	Jan 28 '14																				
567	715L to 685L Production Block	782 days	Nov 19 '14	Jan 15 '17																				
568	685 HW 1 Drilling	4 days	Aug 23 '16	Aug 27 '16		 Drilling[417 Metres]  Production Tonnes[1,250 Tonnes]  Drilling[948 Metres]  Production Tonnes[2,845 Tonnes]																		
569	685 HW 1 Mucking	4 days	Aug 27 '16	Aug 31 '16																				
570	685 HW 1 Filling	0 days	Aug 31 '16	Aug 31 '16																				
571	685 NA 1 Drilling	8 days	Jul 27 '16	Aug 4 '16																				
572	685 NA 1 Mucking	8 days	Aug 4 '16	Aug 12 '16																				

Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish		2014					2015				2016				2017				2018			
						Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
573	685 NA 1 Filling	0 days	Aug 12 '16	Aug 12 '16																						
574	685 NA 2 Drilling	8 days	Sep 11 '16	Sep 19 '16																						
575	685 NA 2 Mucking	8 days	Sep 19 '16	Sep 27 '16																						
576	685 NA 2 Filling	0 days	Sep 27 '16	Sep 27 '16																						
577	685 NA 3 Drilling	8 days	Oct 27 '16	Nov 4 '16																						
578	685 NA 3 Mucking	10 days	Nov 4 '16	Nov 14 '16																						
579	685 NA 3 Filling	0 days	Nov 14 '16	Nov 14 '16																						
580	685 NA 4 Drilling	7 days	Dec 14 '16	Dec 21 '16																						
581	685 NA 4 Mucking	7 days	Dec 21 '16	Dec 30 '16																						
582	685 NA 4 Filling	0 days	Dec 30 '16	Dec 30 '16																						
583	685 NA 5 Drilling	10 days	Oct 30 '16	Nov 9 '16																						
584	685 NA 5 Mucking	15 days	Nov 9 '16	Nov 24 '16																						
585	685 NA 5 Filling	0 days	Nov 24 '16	Nov 24 '16																						
586	685 NA 6 Drilling	8 days	Sep 14 '16	Sep 22 '16																						
587	685 NA 6 Mucking	8 days	Sep 22 '16	Sep 30 '16																						
588	685 NA 6 Filling	0 days	Sep 30 '16	Sep 30 '16																						
589	685 NA 7 Drilling	7 days	Jul 30 '16	Aug 6 '16																						
590	685 NA 7 Mucking	9 days	Aug 6 '16	Aug 15 '16																						
591	685 NA 7 Filling	0 days	Aug 15 '16	Aug 15 '16																						
592	685 NA 8 Drilling	8 days	Jun 14 '16	Jun 22 '16																						
593	685 NA 8 Mucking	8 days	Jun 22 '16	Jun 30 '16																						
594	685 NA 8 Filling	0 days	Jun 30 '16	Jun 30 '16																						
595	685 NA 9 Drilling	8 days	Apr 29 '16	May 7 '16																						
596	685 NA 9 Mucking	8 days	May 7 '16	May 15 '16																						
597	685 NA 9 Filling	0 days	May 15 '16	May 15 '16																						
598	685 NA2 2 Drilling	10 days	Apr 29 '16	May 9 '16																						
599	685 NA2 2 Mucking	15 days	May 9 '16	May 24 '16																						
600	685 NA2 2 Filling	0 days	May 24 '16	May 24 '16																						
601	685 NA2 3 Drilling	2 days	Jun 23 '16	Jun 25 '16																						
602	685 NA2 3 Mucking	2 days	Jun 25 '16	Jun 27 '16																						
603	685 NA2 3 Filling	0 days	Jun 27 '16	Jun 27 '16																						
604	685 NA4 1 Drilling	8 days	Dec 30 '16	Jan 7 '17																						
605	685 NA4 1 Mucking	8 days	Jan 7 '17	Jan 15 '17																						
606	685 NA4 1 Filling	0 days	Jan 15 '17	Jan 15 '17																						
607	685 NA4 2 Drilling	7 days	Nov 13 '16	Nov 20 '16																						
608	685 NA4 2 Mucking	7 days	Nov 20 '16	Nov 27 '16																						
609	685 NA4 2 Filling	0 days	Nov 27 '16	Nov 27 '16																						
610	685 NA4 3 Drilling	7 days	Sep 30 '16	Oct 7 '16																						
611	685 NA4 3 Mucking	7 days	Oct 7 '16	Oct 14 '16																						
612	685 NA4 3 Filling	0 days	Oct 14 '16	Oct 14 '16																						
613	685 NB 3 Drilling	4 days	Jun 4 '16	Jun 8 '16																						
614	685 NB 3 Mucking	4 days	Jun 8 '16	Jun 12 '16																						
615	685 NB 3 Filling	0 days	Jun 12 '16	Jun 12 '16																						
616	685 NB 4 Drilling	3 days	Apr 29 '16	May 2 '16																						
617	685 NB 4 Mucking	3 days	May 2 '16	May 5 '16																						
618	685 NB 4 Filling	0 days	May 5 '16	May 5 '16																						
619	685 NB2 1 Drilling	6 days	Jul 12 '16	Jul 18 '16																						
620	685 NB2 1 Mucking	6 days	Jul 18 '16	Jul 24 '16																						
621	685 NB2 1 Filling	0 days	Jul 24 '16	Jul 24 '16																						
622	700 HW 1 Drilling	4 days	Mar 16 '15	Mar 20 '15																						
623	700 HW 1 Mucking	4 days	Mar 20 '15	Mar 24 '15																						
624	700 HW 1 Filling	5 days	Mar 24 '15	Mar 29 '15																						

Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish	Qtr 4	2014				2015				2016				2017				2018				
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
625	700 NA 1 Drilling	8 days	Sep 14 '15	Sep 22 '15									Drilling[906 Metres]													
626	700 NA 1 Mucking	12 days	Sep 22 '15	Oct 4 '15																					Production Tonnes[4,078 Tonnes]	
627	700 NA 1 Filling	13 days	Oct 4 '15	Oct 17 '15																						Backfill Tonnes[2,895 Tonnes]
628	700 NA 2 Drilling	8 days	Oct 17 '15	Oct 25 '15																						
629	700 NA 2 Mucking	11 days	Oct 25 '15	Nov 5 '15	Production Tonnes[3,630 Tonnes]																					
630	700 NA 2 Filling	12 days	Nov 5 '15	Nov 17 '15		Backfill Tonnes[2,578 Tonnes]																				
631	700 NA 3 Drilling	7 days	Nov 17 '15	Nov 24 '15	Drilling[829 Metres]																					
632	700 NA 3 Mucking	9 days	Nov 24 '15	Dec 3 '15		Production Tonnes[3,232 Tonnes]																				
633	700 NA 3 Filling	11 days	Dec 3 '15	Dec 14 '15			Backfill Tonnes[2,294 Tonnes]																			
634	700 NA 4 Drilling	8 days	Dec 14 '15	Dec 22 '15	Drilling[935 Metres]																					
635	700 NA 4 Mucking	8 days	Dec 22 '15	Jan 1 '16		Production Tonnes[2,806 Tonnes]																				
636	700 NA 4 Filling	9 days	Jan 1 '16	Jan 10 '16	Backfill Tonnes[1,992 Tonnes]																					
637	700 NA 5 Drilling	12 days	Feb 10 '16	Feb 22 '16		Drilling[1,404 Metres]																				
638	700 NA 5 Mucking	18 days	Feb 22 '16	Mar 11 '16			Production Tonnes[6,319 Tonnes]																			
639	700 NA 5 Filling	20 days	Mar 11 '16	Mar 31 '16	Backfill Tonnes[4,487 Tonnes]																					
640	700 NA 6 Drilling	9 days	Jan 8 '16	Jan 17 '16		Drilling[992 Metres]																				
641	700 NA 6 Mucking	11 days	Jan 17 '16	Jan 28 '16			Production Tonnes[3,868 Tonnes]																			
642	700 NA 6 Filling	13 days	Jan 28 '16	Feb 10 '16	Backfill Tonnes[2,747 Tonnes]																					
643	700 NA 7 Drilling	8 days	Dec 3 '15	Dec 11 '15		Drilling[931 Metres]																				
644	700 NA 7 Mucking	12 days	Dec 11 '15	Dec 23 '15	Production Tonnes[4,188 Tonnes]																					
645	700 NA 7 Filling	14 days	Dec 23 '15	Jan 8 '16			Backfill Tonnes[2,974 Tonnes]																			
646	700 NA 8 Drilling	9 days	Oct 26 '15	Nov 4 '15	Drilling[1,056 Metres]																					
647	700 NA 8 Mucking	14 days	Nov 4 '15	Nov 18 '15		Production Tonnes[4,753 Tonnes]																				
648	700 NA 8 Filling	15 days	Nov 18 '15	Dec 3 '15	Backfill Tonnes[3,375 Tonnes]																					
649	700 NA 9 Drilling	10 days	Sep 14 '15	Sep 24 '15		Drilling[1,139 Metres]																				
650	700 NA 9 Mucking	15 days	Sep 24 '15	Oct 9 '15			Production Tonnes[5,125 Tonnes]																			
651	700 NA 9 Filling	17 days	Oct 9 '15	Oct 26 '15	Backfill Tonnes[3,639 Tonnes]																					
652	700 NA2 2 Drilling	9 days	May 27 '15	Jun 5 '15		Drilling[1,011 Metres]																				
653	700 NA2 2 Mucking	11 days	Jun 5 '15	Jun 16 '15			Production Tonnes[3,941 Tonnes]																			
654	700 NA2 2 Filling	13 days	Jun 16 '15	Jun 29 '15	Backfill Tonnes[2,798 Tonnes]																					
655	700 NA4 1 Drilling	8 days	Mar 31 '16	Apr 8 '16		Drilling[845 Metres]																				
656	700 NA4 1 Mucking	10 days	Apr 8 '16	Apr 18 '16	Production Tonnes[3,296 Tonnes]																					
657	700 NA4 1 Filling	11 days	Apr 18 '16	Apr 29 '16			Backfill Tonnes[2,340 Tonnes]																			
658	700 NA4 2 Drilling	9 days	Oct 10 '15	Oct 19 '15	Drilling[968 Metres]																					
659	700 NA4 2 Mucking	11 days	Oct 19 '15	Oct 30 '15		Production Tonnes[3,773 Tonnes]																				
660	700 NA4 2 Filling	12 days	Oct 30 '15	Nov 11 '15	Backfill Tonnes[2,679 Tonnes]																					
661	700 NA4 3 Drilling	8 days	Sep 14 '15	Sep 22 '15			Drilling[958 Metres]																			
662	700 NA4 3 Mucking	8 days	Sep 22 '15	Sep 30 '15	Production Tonnes[2,874 Tonnes]																					
663	700 NA4 3 Filling	10 days	Sep 30 '15	Oct 10 '15		Backfill Tonnes[2,040 Tonnes]																				
664	700 NB 2 Drilling	7 days	Mar 16 '15	Mar 23 '15	Drilling[813 Metres]																					
665	700 NB 2 Mucking	9 days	Mar 23 '15	Apr 1 '15			Production Tonnes[3,171 Tonnes]																			
666	700 NB 2 Filling	11 days	Apr 1 '15	Apr 12 '15	Backfill Tonnes[2,251 Tonnes]																					
667	700 NB 3 Drilling	5 days	Feb 28 '15	Mar 5 '15		Drilling[595 Metres]																				
668	700 NB 3 Mucking	5 days	Mar 5 '15	Mar 10 '15	Production Tonnes[1,785 Tonnes]																					
669	700 NB 3 Filling	6 days	Mar 10 '15	Mar 16 '15			Backfill Tonnes[1,268 Tonnes]																			
670	700 NB 4 Drilling	6 days	Feb 9 '15	Feb 15 '15	Drilling[672 Metres]																					
671	700 NB 4 Mucking	6 days	Feb 15 '15	Feb 21 '15		Production Tonnes[2,016 Tonnes]																				
672	700 NB 4 Filling	7 days	Feb 21 '15	Feb 28 '15	Backfill Tonnes[1,431 Tonnes]																					
673	700 NB2 1 Drilling	8 days	Apr 12 '15	Apr 20 '15			Drilling[864 Metres]																			
674	700 NB2 1 Mucking	10 days	Apr 20 '15	Apr 30 '15	Production Tonnes[3,370 Tonnes]																					
675	700 NB2 1 Filling	11 days	Apr 30 '15	May 11 '15		Backfill Tonnes[2,392 Tonnes]																				
676	715 HW 1 Drilling	2 days	Feb 9 '15	Feb 11 '15	Drilling[181 Metres]																					

Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish	2014					2015				2016				2017				2018			
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
677	715 HW 1 Mucking	2 days	Feb 11 '15	Feb 13 '15						🔧 Production Tonnes[543 Tonnes]															
678	715 HW 1 Filling	2 days	Feb 13 '15	Feb 15 '15						🔧 Backfill Tonnes[385 Tonnes]															
679	715 NA 3 Drilling	12 days	Nov 19 '14	Dec 1 '14						🔧 Drilling[1,439 Metres]															
680	715 NA 3 Mucking	18 days	Dec 1 '14	Dec 19 '14						🔧 Production Tonnes[6,477 Tonnes]															
681	715 NA 3 Filling	21 days	Dec 19 '14	Jan 11 '15						🔧 Backfill Tonnes[4,599 Tonnes]															
682	715 NA 4 Drilling	8 days	Jan 11 '15	Jan 19 '15						🔧 Drilling[870 Metres]															
683	715 NA 4 Mucking	10 days	Jan 19 '15	Jan 29 '15						🔧 Production Tonnes[3,394 Tonnes]															
684	715 NA 4 Filling	11 days	Jan 29 '15	Feb 9 '15						🔧 Backfill Tonnes[2,410 Tonnes]															
685	715 NA 5 Drilling	8 days	Feb 9 '15	Feb 17 '15						🔧 Drilling[848 Metres]															
686	715 NA 5 Mucking	10 days	Feb 17 '15	Feb 27 '15						🔧 Production Tonnes[3,306 Tonnes]															
687	715 NA 5 Filling	11 days	Feb 27 '15	Mar 10 '15						🔧 Backfill Tonnes[2,347 Tonnes]															
688	715 NA 6 Drilling	9 days	Jul 13 '15	Jul 22 '15						🔧 Drilling[989 Metres]															
689	715 NA 6 Mucking	13 days	Jul 22 '15	Aug 4 '15						🔧 Production Tonnes[4,449 Tonnes]															
690	715 NA 6 Filling	15 days	Aug 4 '15	Aug 19 '15						🔧 Backfill Tonnes[3,159 Tonnes]															
691	715 NA 7 Drilling	15 days	May 12 '15	May 27 '15						🔧 Drilling[1,759 Metres]															
692	715 NA 7 Mucking	22 days	May 27 '15	Jun 18 '15						🔧 Production Tonnes[7,916 Tonnes]															
693	715 NA 7 Filling	25 days	Jun 18 '15	Jul 13 '15						🔧 Backfill Tonnes[5,621 Tonnes]															
694	715 NA 8 Drilling	11 days	Mar 27 '15	Apr 7 '15						🔧 Drilling[1,276 Metres]															
695	715 NA 8 Mucking	16 days	Apr 7 '15	Apr 23 '15						🔧 Production Tonnes[5,742 Tonnes]															
696	715 NA 8 Filling	19 days	Apr 23 '15	May 12 '15						🔧 Backfill Tonnes[4,077 Tonnes]															
697	715 NA 9 Drilling	10 days	Feb 13 '15	Feb 23 '15						🔧 Drilling[1,164 Metres]															
698	715 NA 9 Mucking	15 days	Feb 23 '15	Mar 10 '15						🔧 Production Tonnes[5,237 Tonnes]															
699	715 NA 9 Filling	17 days	Mar 10 '15	Mar 27 '15						🔧 Backfill Tonnes[3,719 Tonnes]															
700	715 NA 10 Drilling	10 days	Jan 2 '15	Jan 12 '15						🔧 Drilling[1,137 Metres]															
701	715 NA 10 Mucking	15 days	Jan 12 '15	Jan 27 '15						🔧 Production Tonnes[5,118 Tonnes]															
702	715 NA 10 Filling	17 days	Jan 27 '15	Feb 13 '15						🔧 Backfill Tonnes[3,634 Tonnes]															
703	715 NA 11 Drilling	10 days	Nov 19 '14	Nov 29 '14						🔧 Drilling[1,148 Metres]															
704	715 NA 11 Mucking	15 days	Nov 29 '14	Dec 14 '14						🔧 Production Tonnes[5,168 Tonnes]															
705	715 NA 11 Filling	17 days	Dec 14 '14	Jan 2 '15						🔧 Backfill Tonnes[3,669 Tonnes]															
706	715 NA2 2 Drilling	9 days	Mar 10 '15	Mar 19 '15						🔧 Drilling[986 Metres]															
707	715 NA2 2 Mucking	11 days	Mar 19 '15	Mar 30 '15						🔧 Production Tonnes[3,847 Tonnes]															
708	715 NA2 2 Filling	13 days	Mar 30 '15	Apr 12 '15						🔧 Backfill Tonnes[2,731 Tonnes]															
709	715 NA2 3 Drilling	11 days	Apr 12 '15	Apr 23 '15						🔧 Drilling[1,233 Metres]															
710	715 NA2 3 Mucking	16 days	Apr 23 '15	May 9 '15						🔧 Production Tonnes[5,549 Tonnes]															
711	715 NA2 3 Filling	18 days	May 9 '15	May 27 '15						🔧 Backfill Tonnes[3,940 Tonnes]															
712	715 NA4 1 Drilling	7 days	Aug 19 '15	Aug 26 '15						🔧 Drilling[801 Metres]															
713	715 NA4 1 Mucking	9 days	Aug 26 '15	Sep 4 '15						🔧 Production Tonnes[3,123 Tonnes]															
714	715 NA4 1 Filling	10 days	Sep 4 '15	Sep 14 '15						🔧 Backfill Tonnes[2,217 Tonnes]															
715	715 NA4 2 Drilling	11 days	Mar 16 '15	Mar 27 '15						🔧 Drilling[1,298 Metres]															
716	715 NA4 2 Mucking	17 days	Mar 27 '15	Apr 13 '15						🔧 Production Tonnes[5,841 Tonnes]															
717	715 NA4 2 Filling	19 days	Apr 13 '15	May 2 '15						🔧 Backfill Tonnes[4,147 Tonnes]															
718	715 NA4 3 Drilling	8 days	Feb 15 '15	Feb 23 '15						🔧 Drilling[876 Metres]															
719	715 NA4 3 Mucking	10 days	Feb 23 '15	Mar 5 '15						🔧 Production Tonnes[3,418 Tonnes]															
720	715 NA4 3 Filling	11 days	Mar 5 '15	Mar 16 '15						🔧 Backfill Tonnes[2,427 Tonnes]															
721	715 NB 1 Drilling	8 days	Dec 10 '14	Dec 18 '14						🔧 Drilling[925 Metres]															
722	715 NB 1 Mucking	8 days	Dec 18 '14	Dec 28 '14						🔧 Production Tonnes[2,776 Tonnes]															
723	715 NB 1 Filling	9 days	Dec 28 '14	Jan 6 '15						🔧 Backfill Tonnes[1,971 Tonnes]															
724	715 NB 4 Drilling	7 days	Nov 19 '14	Nov 26 '14						🔧 Drilling[723 Metres]															
725	715 NB 4 Mucking	7 days	Nov 26 '14	Dec 3 '14						🔧 Production Tonnes[2,168 Tonnes]															
726	715 NB 4 Filling	7 days	Dec 3 '14	Dec 10 '14						🔧 Backfill Tonnes[1,540 Tonnes]															
727	715 NB2 3 Drilling	8 days	Jan 6 '15	Jan 14 '15						🔧 Drilling[930 Metres]															
728	715 NB2 3 Mucking	12 days	Jan 14 '15	Jan 26 '15						🔧 Production Tonnes[4,187 Tonnes]															

Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish	2014					2015				2016				2017				2018				
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
729	715 NB2 3 Filling	14 days	Jan 26 '15	Feb 9 '15						Backfill Tonnes[2,973 Tonnes]																
730	775L to 730L Production Block	849 days	Sep 26 '15	Jan 28 '18																						
731	730 NA 3 Drilling	9 days	Sep 16 '17	Sep 25 '17																						
732	730 NA 3 Mucking	11 days	Sep 25 '17	Oct 6 '17																						
733	730 NA 3 Filling	0 days	Oct 6 '17	Oct 6 '17																						
734	730 NA 4 Drilling	5 days	Nov 5 '17	Nov 10 '17																						
735	730 NA 4 Mucking	5 days	Nov 10 '17	Nov 15 '17																						
736	730 NA 4 Filling	0 days	Nov 15 '17	Nov 15 '17																						
737	730 NA 5 Drilling	7 days	Dec 15 '17	Dec 22 '17																						
738	730 NA 5 Mucking	7 days	Dec 22 '17	Dec 31 '17																						
739	730 NA 5 Filling	0 days	Dec 31 '17	Dec 31 '17																						
740	730 NA 6 Drilling	9 days	Sep 21 '17	Sep 30 '17																						
741	730 NA 6 Mucking	11 days	Sep 30 '17	Oct 11 '17																						
742	730 NA 6 Filling	0 days	Oct 11 '17	Oct 11 '17																						
743	730 NA 7 Drilling	10 days	Jul 28 '17	Aug 7 '17																						
744	730 NA 7 Mucking	15 days	Aug 7 '17	Aug 22 '17																						
745	730 NA 7 Filling	0 days	Aug 22 '17	Aug 22 '17																						
746	730 NA 8 Drilling	10 days	Jun 3 '17	Jun 13 '17																						
747	730 NA 8 Mucking	15 days	Jun 13 '17	Jun 28 '17																						
748	730 NA 8 Filling	0 days	Jun 28 '17	Jun 28 '17																						
749	730 NA 9 Drilling	8 days	Apr 15 '17	Apr 23 '17																						
750	730 NA 9 Mucking	11 days	Apr 23 '17	May 4 '17																						
751	730 NA 9 Filling	0 days	May 4 '17	May 4 '17																						
752	730 NA 10 Drilling	4 days	Mar 8 '17	Mar 12 '17																						
753	730 NA 10 Mucking	4 days	Mar 12 '17	Mar 16 '17																						
754	730 NA 10 Filling	0 days	Mar 16 '17	Mar 16 '17																						
755	730 NA2 1 Drilling	9 days	Mar 8 '17	Mar 17 '17																						
756	730 NA2 1 Mucking	9 days	Mar 17 '17	Mar 26 '17																						
757	730 NA2 1 Filling	0 days	Mar 26 '17	Mar 26 '17																						
758	730 NA2 2 Drilling	8 days	Apr 25 '17	May 3 '17																						
759	730 NA2 2 Mucking	10 days	May 3 '17	May 13 '17																						
760	730 NA2 2 Filling	0 days	May 13 '17	May 13 '17																						
761	730 NA2 3 Drilling	9 days	Jun 12 '17	Jun 21 '17																						
762	730 NA2 3 Mucking	11 days	Jun 21 '17	Jul 2 '17																						
763	730 NA2 3 Filling	0 days	Jul 2 '17	Jul 2 '17																						
764	730 NA2 4 Drilling	8 days	Aug 1 '17	Aug 9 '17																						
765	730 NA2 4 Mucking	8 days	Aug 9 '17	Aug 17 '17																						
766	730 NA2 4 Filling	0 days	Aug 17 '17	Aug 17 '17																						
767	730 NA4 1 Drilling	5 days	Jan 18 '18	Jan 23 '18																						
768	730 NA4 1 Mucking	5 days	Jan 23 '18	Jan 28 '18																						
769	730 NA4 1 Filling	0 days	Jan 28 '18	Jan 28 '18																						
770	730 NA4 2 Drilling	7 days	Dec 1 '17	Dec 8 '17																						
771	730 NA4 2 Mucking	9 days	Dec 8 '17	Dec 17 '17																						
772	730 NA4 2 Filling	0 days	Dec 17 '17	Dec 17 '17																						
773	730 NA4 3 Drilling	6 days	Oct 20 '17	Oct 26 '17																						
774	730 NA4 3 Mucking	6 days	Oct 26 '17	Nov 1 '17																						
775	730 NA4 3 Filling	0 days	Nov 1 '17	Nov 1 '17																						
776	730 NB 1 Drilling	7 days	Mar 8 '17	Mar 15 '17																						
777	730 NB 1 Mucking	7 days	Mar 15 '17	Mar 22 '17																						
778	730 NB 1 Filling	0 days	Mar 22 '17	Mar 22 '17																						
779	730 NB2 1 Drilling	8 days	May 31 '17	Jun 8 '17																						
780	730 NB2 1 Mucking	8 days	Jun 8 '17	Jun 16 '17																						

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Development and Production Schedule to 775L

ID	Task Name	Duration	Start	Finish		2014					2015				2016				2017				2018				
						Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
885	775 NA 4 Mucking	17 days	Mar 15 '16	Apr 1 '16																							
886	775 NA 4 Filling	20 days	Apr 1 '16	Apr 21 '16																							
887	775 NA 5 Drilling	11 days	Jan 18 '16	Jan 29 '16																							
888	775 NA 5 Mucking	16 days	Jan 29 '16	Feb 14 '16																							
889	775 NA 5 Filling	18 days	Feb 14 '16	Mar 3 '16																							
890	775 NA 6 Drilling	11 days	Nov 23 '15	Dec 4 '15																							
891	775 NA 6 Mucking	16 days	Dec 4 '15	Dec 20 '15																							
892	775 NA 6 Filling	18 days	Dec 20 '15	Jan 9 '16																							
893	775 NA 7 Drilling	9 days	Oct 21 '15	Oct 30 '15																							
894	775 NA 7 Mucking	11 days	Oct 30 '15	Nov 10 '15																							
895	775 NA 7 Filling	13 days	Nov 10 '15	Nov 23 '15																							
896	775 NA4 1 Drilling	7 days	Feb 28 '16	Mar 6 '16																							
897	775 NA4 1 Mucking	10 days	Mar 6 '16	Mar 16 '16																							
898	775 NA4 1 Filling	11 days	Mar 16 '16	Mar 27 '16																							
899	775 NA4 2 Drilling	8 days	Feb 3 '16	Feb 11 '16																							
900	775 NA4 2 Mucking	8 days	Feb 11 '16	Feb 19 '16																							
901	775 NA4 2 Filling	9 days	Feb 19 '16	Feb 28 '16																							
902	775 NA4 3 Drilling	5 days	Jan 18 '16	Jan 23 '16																							
903	775 NA4 3 Mucking	5 days	Jan 23 '16	Jan 28 '16																							
904	775 NA4 3 Filling	6 days	Jan 28 '16	Feb 3 '16																							
905	775 NB2 2 Drilling	8 days	Sep 26 '15	Oct 4 '15																							
906	775 NB2 2 Mucking	8 days	Oct 4 '15	Oct 12 '15																							
907	775 NB2 2 Filling	9 days	Oct 12 '15	Oct 21 '15																							

169512572 Lake Shore Gold - Bell Creek 43-101 Study  
Production Profile  
February 28, 2013.

Bell Creek 43-101 - Production Profile

Sublevel	Resource Mined to Surface			2014 (t)	2015 (t)	2016 (t)	2017 (t)	2018 (t)	Total (t)
	Tonnes	Grade (g/t)	Ounces						
Development	87,594	4.05	11,397	51,509	36,085				87,594
300 NAE FW 1	2,160	3.47	241				2,160		2,160
300 NAE FW 2	2,077	4.38	292					2,077	2,077
300 NAE HW 1	2,267	4.56	332				2,267		2,267
300 NAE HW 2	2,697	5.14	446					2,697	2,697
430 NA 1	1,195	5.34	205				1,195		1,195
430 NA 2	1,163	3.80	142				1,163		1,163
430 NAX 1	1,663	4.65	249				1,663		1,663
430 NAX 2	742	4.89	117				742		742
445 NA 1	2,040	4.71	309				2,040		2,040
445 NA 2	2,320	3.93	293				2,320		2,320
445 NA3 1	1,064	3.70	126					1,064	1,064
445 NA3 2	0	3.17	0						0
445 NAX 1	2,561	5.59	461				2,561		2,561
445 NAX 2	766	5.65	139				766		766
445 NB 2	1,569	3.74	189				1,569		1,569
460 NA3 1	1,958	3.28	206					1,958	1,958
460 NA3 2	0	4.02	0						0
460 NAX 1	1,947	4.38	274				1,947		1,947
460 NAX 2	1,425	5.45	250				1,425		1,425
460 NB 3	2,826	3.61	328				2,826		2,826
475 NA3 1	1,346	3.68	159					1,346	1,346
475 NA3 2	0	3.35	0						0
475 NAX 1	2,898	5.48	510				2,898		2,898
475 NB 2	1,941	3.01	188				1,941		1,941
475 NB 3	1,751	3.48	196				1,751		1,751
490 NA3 2	0	3.07	0						0
490 NAX 1	2,742	4.39	387			1,600	1,143		2,742
490 NB 1	1,165	3.38	127				1,165		1,165
490 NB 2	2,579	3.06	254				2,579		2,579
490 NB 3	1,891	4.87	296				1,891		1,891
490 NB 4	2,139	3.83	264				2,139		2,139
505 HW 2	1,156	3.07	114					1,156	1,156
505 NA 1	1,972	3.09	196				1,972		1,972
505 NA 2	2,386	4.34	333					2,386	2,386
505 NA3 1	1,017	3.58	117					1,017	1,017
505 NA3 2	0	3.48	0						0
505 NAX 1	1,333	3.07	131			1,333			1,333
505 NB 1	1,069	3.88	133				1,069		1,069
505 NB 2	907	3.16	92				907		907
505 NB 3	2,202	3.36	238			2,202			2,202
505 NB 4	2,778	6.70	598			2,778			2,778
505 NB 5	1,720	4.89	270			1,720			1,720
520 NA3 2	0	3.05	0						0
520 NB 1	1,758	3.94	223	1,758					1,758
520 NB 2	2,001	3.51	226	2,001					2,001
520 NB 3	1,941	4.35	272			1,941			1,941
520 NB 4	2,417	7.26	564			2,417			2,417
520 NB 5	1,197	4.19	161			1,197			1,197
520 NB 6	1,887	3.19	194			1,887			1,887
535 NA 4	2,062	3.58	238					2,062	2,062

169512572 Lake Shore Gold - Bell Creek 43-101 Study  
Production Profile  
February 28, 2013.

Bell Creek 43-101 - Production Profile

Sublevel	Resource Mined to Surface			2014 (t)	2015 (t)	2016 (t)	2017 (t)	2018 (t)	Total (t)
	Tonnes	Grade (g/t)	Ounces						
535 NA3 1	2,707	3.48	302					2,707	2,707
535 NB 2	1,254	3.93	158			1,254			1,254
535 NB 3	1,364	5.28	231			1,364			1,364
535 NB 4	1,553	3.26	163			1,553			1,553
535 NB 5	3,406	3.84	421			3,406			3,406
550 HW 1	1,555	3.73	186					1,555	1,555
550 NA 2	1,037	3.91	130				1,037		1,037
550 NA 3	1,931	5.40	335				1,931		1,931
550 NA 4	1,554	3.56	178					1,554	1,554
550 NA3 1	2,516	3.06	248					2,516	2,516
550 NB 1	1,478	3.65	174				1,478		1,478
565 NA 5	1,402	3.76	170					1,402	1,402
565 NA3 1	1,485	3.20	153					1,485	1,485
580 NA 4	2,089	4.18	281					2,089	2,089
580 NA3 1	1,976	4.63	294				1,976		1,976
595 HW 1	1,381	3.30	146				1,381		1,381
595 NA 2	4,099	3.26	430				4,099		4,099
595 NA 3	1,909	3.21	197				1,909		1,909
595 NA 4	2,115	4.33	295				2,115		2,115
595 NA 5	1,059	4.64	158				1,059		1,059
595 NA3 1	2,009	4.34	280				2,009		2,009
610 HW 3	3,402	3.25	355	3,402					3,402
610 NA 3	3,448	4.24	470	3,448					3,448
610 NA 4	3,321	5.86	625	3,321					3,321
610 NA 5	8,693	4.47	1,250	8,693					8,693
610 NA 6	4,815	3.32	514	4,815					4,815
625 HW 2	2,413	3.42	265	2,413					2,413
625 HW 3	2,460	3.10	246	2,460					2,460
625 NA 6	3,605	6.02	697	3,605					3,605
625 NA 7	6,379	5.16	1,058	6,379					6,379
640 HW 1	4,627	4.55	676			4,152	475		4,627
640 HW 2	1,762	4.09	232				1,762		1,762
640 HW 3	584	3.05	57				584		584
640 NA 2	3,221	3.66	379			3,221			3,221
640 NA 3	2,083	3.75	251			2,083			2,083
640 NA 4	3,932	3.57	452			3,932			3,932
640 NA 5	2,814	4.50	407			2,814			2,814
640 NA 6	2,807	6.81	615			2,807			2,807
640 NA 7	2,775	6.23	556			2,775			2,775
640 NA 8	5,630	4.57	827			5,630			5,630
640 NA4 1	3,688	3.09	367			3,688			3,688
640 NA4 2	2,166	3.49	243			2,166			2,166
640 NB2 1	1,791	3.19	183			1,791			1,791
640 NB2 2	2,218	3.22	230			2,218			2,218
655 HW 1	2,438	5.43	426	2,438					2,438
655 HW 2	2,517	7.51	607	2,517					2,517
655 NA 2	2,313	3.01	224		2,313				2,313
655 NA 3	3,779	3.90	474		3,779				3,779
655 NA 4	2,057	3.14	208		2,057				2,057
655 NA 5	5,787	3.61	672		5,787				5,787
655 NA 6	4,516	3.86	560		4,516				4,516

169512572 Lake Shore Gold - Bell Creek 43-101 Study  
Production Profile  
February 28, 2013.

Bell Creek 43-101 - Production Profile

Sublevel	Resource Mined to Surface			2014 (t)	2015 (t)	2016 (t)	2017 (t)	2018 (t)	Total (t)
	Tonnes	Grade (g/t)	Ounces						
655 NA 7	4,304	7.48	1,035		4,304				4,304
655 NA 8	4,100	7.11	937		4,100				4,100
655 NA 9	5,530	4.93	877		5,530				5,530
655 NA4 1	3,457	3.03	337	3,457					3,457
655 NA4 2	4,449	3.11	444	4,449					4,449
655 NB2 1	2,610	3.58	301	2,610					2,610
655 NB2 2	3,051	4.01	393	3,051					3,051
670 HW 1	1,463	6.92	325	1,463					1,463
670 HW 2	1,310	9.74	410	1,310					1,310
670 NA 2	3,671	4.24	500	3,671					3,671
670 NA 3	5,840	5.61	1,054	5,840					5,840
670 NA 4	3,780	4.37	531	3,780					3,780
670 NA 5	7,467	4.15	996	7,467					7,467
670 NA 6	4,032	3.64	472	4,032					4,032
670 NA 7	4,627	3.44	512	4,627					4,627
670 NA 8	5,762	5.34	990	5,762					5,762
670 NA 9	7,563	4.53	1,102	7,563					7,563
670 NA4 1	3,167	3.06	311	3,167					3,167
670 NA4 3	3,596	3.73	431	3,596					3,596
685 HW 1	1,250	7.30	293			1,250			1,250
685 NA 1	2,845	3.69	338			2,845			2,845
685 NA 2	2,594	4.23	353			2,594			2,594
685 NA 3	3,381	5.41	588			3,381			3,381
685 NA 4	2,410	4.53	351			2,410			2,410
685 NA 5	5,232	4.74	797			5,232			5,232
685 NA 6	2,862	3.86	355			2,862			2,862
685 NA 7	3,225	3.02	313			3,225			3,225
685 NA 8	2,608	4.35	365			2,608			2,608
685 NA 9	2,776	4.73	422			2,776			2,776
685 NA2 2	5,066	4.56	742			5,066			5,066
685 NA2 3	378	3.62	44			378			378
685 NA4 1	2,757	4.73	419				2,757		2,757
685 NA4 2	2,380	3.41	261			2,380			2,380
685 NA4 3	2,387	4.32	332			2,387			2,387
685 NB 3	1,172	3.13	118			1,172			1,172
685 NB 4	1,045	3.07	103			1,045			1,045
685 NB2 1	1,959	3.62	228			1,959			1,959
700 HW 1	1,361	5.58	244		1,361				1,361
700 NA 1	4,078	3.82	501		4,078				4,078
700 NA 2	3,630	4.15	485		3,630				3,630
700 NA 3	3,232	4.07	423		3,232				3,232
700 NA 4	2,806	4.09	369		2,689	117			2,806
700 NA 5	6,319	4.71	958			6,319			6,319
700 NA 6	3,868	3.82	475			3,868			3,868
700 NA 7	4,188	3.44	464		4,188				4,188
700 NA 8	4,753	5.92	904		4,753				4,753
700 NA 9	5,125	4.71	777		5,125				5,125
700 NA2 2	3,941	4.26	539		3,941				3,941
700 NA4 1	3,296	5.10	540			3,296			3,296
700 NA4 2	3,773	3.35	407		3,773				3,773
700 NA4 3	2,874	4.92	455		2,874				2,874

169512572 Lake Shore Gold - Bell Creek 43-101 Study  
Production Profile  
February 28, 2013.

Bell Creek 43-101 - Production Profile

Sublevel	Resource Mined to Surface			2014 (t)	2015 (t)	2016 (t)	2017 (t)	2018 (t)	Total (t)
	Tonnes	Grade (g/t)	Ounces						
700 NB 2	3,171	3.00	306		3,171				3,171
700 NB 3	1,785	3.09	178		1,785				1,785
700 NB 4	2,016	3.09	200		2,016				2,016
700 NB2 1	3,370	3.03	328		3,370				3,370
715 HW 1	543	4.47	78		543				543
715 NA 3	6,477	3.93	819	6,477					6,477
715 NA 4	3,394	3.65	398		3,394				3,394
715 NA 5	3,306	3.37	359		3,306				3,306
715 NA 6	4,449	3.97	567		4,449				4,449
715 NA 7	7,916	4.99	1,270		7,916				7,916
715 NA 8	5,742	4.16	769		5,742				5,742
715 NA 9	5,237	4.09	689		5,237				5,237
715 NA 10	5,118	4.86	800		5,118				5,118
715 NA 11	5,168	4.19	696	5,168					5,168
715 NA2 2	3,847	3.72	460		3,847				3,847
715 NA2 3	5,549	3.72	663		5,549				5,549
715 NA4 1	3,123	3.92	393		3,123				3,123
715 NA4 2	5,841	4.35	817		5,841				5,841
715 NA4 3	3,418	5.25	577		3,418				3,418
715 NB 1	2,776	3.05	272	2,776					2,776
715 NB 4	2,168	3.00	209	2,168					2,168
715 NB2 3	4,187	3.93	529		4,187				4,187
730 NA 3	3,876	3.65	455				3,876		3,876
730 NA 4	1,638	3.07	162				1,638		1,638
730 NA 5	2,430	3.01	235				2,430		2,430
730 NA 6	3,865	3.66	455				3,865		3,865
730 NA 7	5,066	4.90	798				5,066		5,066
730 NA 8	5,151	5.93	982				5,151		5,151
730 NA 9	3,617	3.95	459				3,617		3,617
730 NA 10	1,401	3.34	150				1,401		1,401
730 NA2 1	2,972	3.11	298				2,972		2,972
730 NA2 2	3,282	3.10	327				3,282		3,282
730 NA2 3	3,881	4.05	505				3,881		3,881
730 NA2 4	2,811	3.11	281				2,811		2,811
730 NA4 1	1,491	4.20	202					1,491	1,491
730 NA4 2	3,206	4.32	445				3,206		3,206
730 NA4 3	2,014	5.25	340				2,014		2,014
730 NB 1	2,329	3.26	244				2,329		2,329
730 NB2 1	2,689	3.02	261				2,689		2,689
730 NB2 2	2,981	3.04	291				2,981		2,981
730 NB2 3	3,368	3.83	415				3,368		3,368
730 NB2 4	1,689	4.03	219				1,689		1,689
745 NA 3	4,584	3.11	458			4,584			4,584
745 NA 5	2,943	3.42	324			2,834	109		2,943
745 NA 6	4,176	3.60	483				4,176		4,176
745 NA 7	4,839	5.25	817			4,839			4,839
745 NA 8	4,940	7.69	1,221			4,940			4,940
745 NA 9	3,173	3.82	389			3,173			3,173
745 NA2 2	4,383	3.13	442		4,383				4,383
745 NA2 3	3,680	3.54	419			3,680			3,680
745 NA4 1	2,306	4.66	346				2,306		2,306

169512572 Lake Shore Gold - Bell Creek 43-101 Study  
Production Profile  
February 28, 2013.

Bell Creek 43-101 - Production Profile

Sublevel	Resource Mined to Surface			2014 (t)	2015 (t)	2016 (t)	2017 (t)	2018 (t)	Total (t)
	Tonnes	Grade (g/t)	Ounces						
745 NA4 2	3,401	4.48	490			3,401			3,401
745 NA4 3	1,892	5.02	305			1,892			1,892
745 NB 1	1,933	3.06	190			1,933			1,933
745 NB2 3	3,953	3.44	437			3,953			3,953
760 NA 1	2,389	3.45	265			2,389			2,389
760 NA 2	2,442	3.07	241			2,442			2,442
760 NA 3	4,114	3.07	406			4,114			4,114
760 NA 4	2,678	3.18	274			2,678			2,678
760 NA 5	3,379	4.02	437			3,379			3,379
760 NA 6	4,533	4.34	633			4,533			4,533
760 NA 7	4,267	6.41	879			4,267			4,267
760 NA 8	3,898	7.16	897			3,898			3,898
760 NA2 2	3,102	3.02	301		3,102				3,102
760 NA2 3	3,975	3.25	415		3,975				3,975
760 NA4 1	2,009	4.53	292			2,009			2,009
760 NA4 2	3,490	4.48	503			3,490			3,490
760 NA4 3	2,026	4.49	292			2,026			2,026
760 NA4 4	1,615	4.79	249			1,615			1,615
760 NB2 2	3,346	3.45	371			3,346			3,346
775 NA 1	3,451	4.62	513		3,451				3,451
775 NA 2	4,425	3.73	531		4,425				4,425
775 NA 3	5,836	3.36	631		5,836				5,836
775 NA 4	6,046	4.38	851			6,046			6,046
775 NA 5	5,483	4.59	808			5,483			5,483
775 NA 6	5,519	4.35	772		5,519				5,519
775 NA 7	3,930	6.78	856		3,930				3,930
775 NA4 1	3,244	4.18	435			3,244			3,244
775 NA4 2	2,613	3.89	326			2,613			2,613
775 NA4 3	1,681	4.44	240			1,681			1,681
775 NB2 2	2,780	3.41	305		2,780				2,780
Total Tonnes	776,391			181,193	217,528	213,581	133,527	30,562	776,391
Average Grade	4.22			4.25	4.20	4.39	4.04	3.82	4.22
Total Ounces	105,400			24,770	29,379	30,174	17,326	3,751	105,400
Tonnes per Day				499	599	588	368	340	

# **APPENDIX F**

## **COST ESTIMATE AND CASH FLOW ANALYSIS**

169512572 - Lake Shore Gold  
Bell Creek NI 43-101  
March 27, 2013.

Cost Summary	Total Cost (millions)	\$/tonne	\$/ounce Sold
Total Estimated Capital Cost	\$31.92	\$33.2	\$259.8
Total Estimated LOM Operating Cost	\$132.6	\$138.1	\$1,079.6

Cost Estimate and Cash Flow Summary

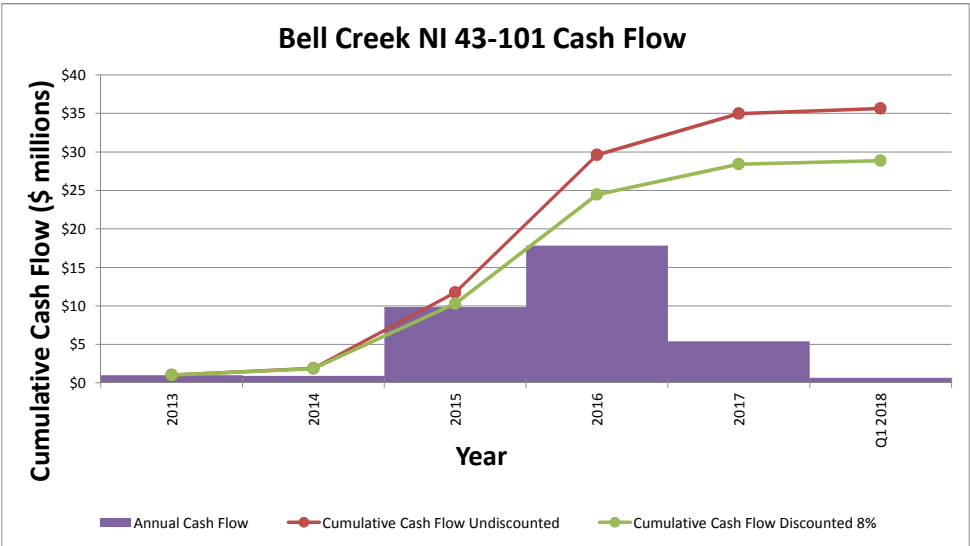
Description	Estimated Quantity	Unit	Unit Cost	Total Cost	LOM					
					2013 Cost \$CAN	2014 Cost \$CAN	2015 Cost \$CAN	2016 Cost \$CAN	2017 Cost \$CAN	Q1 2018 Cost \$CAN
Capital and Operating Cost - Grand Total				\$164,547,472	\$36,825,200	\$38,180,595	\$36,464,898	\$28,331,108	\$20,071,271	\$4,674,400
Capital Cost (including contingency)				\$31,916,802	\$15,254,000	\$11,513,224	\$3,876,177	\$653,310	\$620,090	\$0
Contingency on Capital	0%			\$0	\$0	\$0	\$0	\$0	\$0	\$0
Capital Cost Subtotal (before contingency)				\$31,916,802	\$15,254,000	\$11,513,224	\$3,876,177	\$653,310	\$620,090	\$0
Bell Creek Mine 2013 Capital Budget				\$15,254,000	\$15,254,000					
Purchases				\$5,476,600	\$0	\$1,318,820	\$2,931,420	\$629,790	\$596,570	\$0
Mobile Equipment Rebuilds (1x6yd LHD, 1x42t Truck, 2x2yd LHD)				\$1,612,600			\$1,612,600			
Underground Electrical Infrastructure				\$3,525,000		\$1,200,000	\$1,200,000	\$562,500	\$562,500	
Auxiliary Fans Purchase - Allowance				\$199,320		\$66,440	\$66,440	\$49,830	\$16,610	
Dewatering Pumps Purchase - Allowance				\$139,680		\$52,380	\$52,380	\$17,460	\$17,460	
Development				\$6,121,555	\$0	\$5,628,792	\$492,763	\$0	\$0	\$0
Ramp Development				\$2,053,590		\$2,053,590				
Lateral Waste Rock Infrastructure Development				\$3,206,665		\$2,749,002	\$457,663			
Raise Development				\$861,300		\$826,200	\$35,100			
Underground Construction				\$460,544	\$0	\$371,780	\$41,724	\$23,520	\$23,520	\$0
Ventilation Walls				\$52,200		\$43,500	\$8,700			
Refuge Stations (construction and equipping/supplies)				\$134,000		\$134,000				
Explosives and Detonators Storage				\$25,000		\$25,000				
Fuel Bay				\$122,000		\$122,000				
Service Holes				\$33,264		\$23,760	\$9,504			
Waste Pass Drop Raise (for backfilling) - Allowance				\$94,080		\$23,520	\$23,520	\$23,520	\$23,520	
Waste Rock Haulage (used for backfill)				\$252,095	\$0	\$233,055	\$19,040	\$0	\$0	\$0
Ramp Development Waste Rock Haulage				\$112,014		\$112,014				
Lateral Development Waste Rock Haulage				\$126,364		\$109,864	\$16,500			
Raise Development Waste Rock Haulage				\$13,717		\$11,177	\$2,540			
Capital Geology Supplies and Diamond Drilling				\$0	\$0	\$0	\$0	\$0	\$0	\$0
Capital Geology and Diamond Drilling				\$0		\$0	\$0	\$0	\$0	\$0
Indirect Costs Allocated to Capital				\$4,352,008	\$0	\$3,960,777	\$391,231	\$0	\$0	\$0
Lake Shore Indirect Labour				\$2,244,922		\$2,040,754	\$204,167	\$0	\$0	\$0
Lake Shore Timmins Administration				\$0		\$0	\$0			
Indirect Mobile Equipment Operating Cost				\$390,840		\$355,610	\$35,230	\$0	\$0	\$0
Indirect Site Costs				\$1,124,621		\$1,023,250	\$101,371	\$0	\$0	\$0
Power				\$591,625		\$541,163	\$50,462	\$0	\$0	\$0
Operating Cost				\$132,630,671	\$21,571,200	\$26,667,370	\$32,588,721	\$27,677,798	\$19,451,181	\$4,674,400
Bell Creek Mine 2013 Budget Mine Operating Cost				\$16,902,900	\$16,902,900					
Operating Development				\$13,007,400	\$0	\$6,799,416	\$6,207,984	\$0	\$0	\$0
Operating Waste Rock Development				\$6,403,000		\$2,915,816	\$3,487,184			
Operating Ore Development				\$6,604,400		\$3,883,600	\$2,720,800			
Stope Production				\$21,449,139	\$0	\$4,038,360	\$5,650,138	\$6,650,908	\$4,158,033	\$951,701
Longhole Stope Production				\$21,449,139		\$4,038,360	\$5,650,138	\$6,650,908	\$4,158,033	\$951,701
Ore and Waste Rock Haulage				\$10,044,602	\$0	\$2,394,343	\$2,926,167	\$2,796,433	\$1,607,735	\$319,924
Waste Rock Haulage (used for backfill)				\$178,340		\$81,213	\$97,127			
Ore Development Haulage				\$1,090,173		\$688,104	\$402,069			
Longhole Stope Ore Haulage				\$8,776,089		\$1,625,025	\$2,426,971	\$2,796,433	\$1,607,735	\$319,924
Surface Waste Backfill Supply				\$1,559,513	\$0	\$0	\$469,853	\$753,390	\$250,179	\$86,091
Surface Waste Rock Backfill Supply (trucked to site)				\$1,559,513		\$0	\$469,853	\$753,390	\$250,179	\$86,091
Operating Geology Supplies and Diamond Drilling				\$1,646,093	\$0	\$506,490	\$506,490	\$379,868	\$253,245	\$0
Geology and Diamond Drilling				\$1,646,093		\$506,490	\$506,490	\$379,868	\$253,245	\$0
Milling				\$22,590,080	\$4,668,300	\$4,529,825	\$4,894,380	\$4,805,573	\$3,004,358	\$687,645
Bell Creek Budgeted 2013 Milling Cost				\$4,668,300	\$4,668,300	\$0	\$0	\$0	\$0	\$0
Milling (2014 to 2018)				\$17,921,780		\$4,529,825	\$4,894,380	\$4,805,573	\$3,004,358	\$687,645
Indirect Operating Costs (2014 - 2019)				\$45,430,944	\$0	\$8,398,937	\$11,933,710	\$12,291,627	\$10,177,632	\$2,629,039
Lake Shore Indirect Labour				\$22,733,710		\$4,043,063	\$5,939,650	\$6,278,805	\$5,233,049	\$1,239,142
Lake Shore Timmins Administration				\$2,346,000		\$552,000	\$552,000	\$552,000	\$552,000	\$138,000
Indirect Mobile Equipment Operating Cost				\$3,841,933		\$704,521	\$1,024,901	\$1,060,131	\$841,905	\$210,476
Indirect Site Costs				\$11,147,087		\$2,027,223	\$2,949,102	\$2,990,773	\$2,384,721	\$795,267
Power				\$5,362,215		\$1,072,130	\$1,468,056	\$1,409,918	\$1,165,958	\$246,153

Production Profile	Total Tonnes Mined to Surface	960,052	183,661	181,193	217,528	213,581	133,527	30,562
	Average Grade	4.19	4.1	4.3	4.2	4.4	4.0	3.8
	Ounces Delivered to the Mill	129,318	23,918	24,770	29,379	30,174	17,326	3,751
	Tonnes per Day		506	499	599	588	368	340
	Operating Cost (\$/tonne)		\$117	\$147	\$150	\$130	\$146	\$153

Cash Flow							
	Total Discount Period	2013 Principal	2014 1	2015 2	2016 3	2017 4	Q1 2018 5
Mill Recovery		95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Ounces Sold	122,853	22,722	23,532	27,910	28,665	16,460	3,564
Gold Price \$US		\$1,665	\$1,644	\$1,627	\$1,549	\$1,473	\$1,400
\$CAN/\$US		1.00	1.01	1.02	1.04	1.05	1.07
Gold Price \$CAN		\$1,665	\$1,660	\$1,660	\$1,611	\$1,547	\$1,498
Total Revenue	\$200,197,613	\$37,832,297	\$39,072,754	\$46,318,497	\$46,178,011	\$25,457,864	\$5,338,190
Royalty to Goldcorp 2.0%		-\$756,646	-\$781,455	-\$926,370	-\$923,560	-\$509,157	-\$106,764
Goldcorp Credit to Bell Creek \$5,291,689		\$4,535,043	\$3,753,588	\$2,827,218	\$1,903,658	\$1,394,501	\$1,287,737
Royalty Paid to Goldcorp		\$0	\$0	\$0	\$0	\$0	\$0
Gross Revenue after Royalties		\$37,832,297	\$39,072,754	\$46,318,497	\$46,178,011	\$25,457,864	\$5,338,190
Operating Expenses	-\$132,630,671	-\$21,571,200	-\$26,667,370	-\$32,588,721	-\$27,677,798	-\$19,451,181	-\$4,674,400
Net Operating Earnings	\$67,566,942	\$16,261,097	\$12,405,384	\$13,729,777	\$18,500,212	\$6,006,682	\$663,790
Sustaining Capital Costs	-\$31,916,802	-\$15,254,000	-\$11,513,224	-\$3,876,177	-\$653,310	-\$620,090	\$0
Net Cash Flow	\$35,650,140	\$1,007,097	\$892,159	\$9,853,600	\$17,846,902	\$5,386,592	\$663,790
Undiscounted Cash Flow Cumul.		\$1,007,097	\$1,899,256	\$11,752,855	\$29,599,758	\$34,986,350	\$35,650,140

Discounted Cash Flow							
Discount Factor	8.0%	1.000	0.926	0.857	0.794	0.735	0.681
Discounted Cash Flow		\$1,007,097	\$826,073	\$8,447,873	\$14,167,447	\$3,959,306	\$451,765
Discounted Cash Flow Cumul.		\$1,007,097	\$1,833,170	\$10,281,043	\$24,448,490	\$28,407,796	\$28,859,560

Chart Data			
Year	Net Cashflow	Undiscounted	Discounted 8%
2013	\$1.01	\$1.01	\$1.01
2014	\$0.89	\$1.90	\$1.83
2015	\$9.85	\$11.75	\$10.28
2016	\$17.85	\$29.60	\$24.45
2017	\$5.39	\$34.99	\$28.41
Q1 2018	\$0.66	\$35.65	\$28.86



169512572 LSG - Bell Creek NI 43-101 Study  
Ramp Development - Data Dump from MS Project Schedule  
February 28, 2013.

Ramp metres			Ramp Development Costs					
Heading	2014 (m)	2015 (m)	Total (m)	Advance Rate	Unit Cost \$/Meter	2014	2015	Total
685-700L Ramp	127		127	5.4	\$2,695	\$342,265		\$342,265
700-715L Ramp	127		127	5.4	\$2,695	\$342,265		\$342,265
715-730L Ramp	127		127	5.4	\$2,695	\$342,265		\$342,265
730-745L Ramp	127		127	5.4	\$2,695	\$342,265		\$342,265
745-760L Ramp	127		127	5.4	\$2,695	\$342,265		\$342,265
760-775L Ramp	127		127	5.4	\$2,695	\$342,265		\$342,265
<b>Total</b>	<b>762</b>	<b>0</b>	<b>762</b>			<b>\$2,053,590</b>	<b>\$0</b>	<b>\$2,053,590</b>

Ramp tonnes				Waste tonnes to surface			Waste tonnes for Backfill			Ramp Waste Rock Haulage Cost				
Heading	2014 (t)	2015 (t)	Total (t)	2014 0%	2015 0%	Total (t)	2014 100%	2015 100%	Total (t)	To Surface (\$/t)	For BF (\$/t)	2014	2015	Total
685-700L Ramp	8,890		8,890	0		0	8,890		8,890	\$14.76	\$2.10	\$18,669		\$18,669
700-715L Ramp	8,890		8,890	0		0	8,890		8,890	\$15.02	\$2.10	\$18,669		\$18,669
715-730L Ramp	8,890		8,890	0		0	8,890		8,890	\$15.27	\$2.10	\$18,669		\$18,669
730-745L Ramp	8,890		8,890	0		0	8,890		8,890	\$15.53	\$2.10	\$18,669		\$18,669
745-760L Ramp	8,890		8,890	0		0	8,890		8,890	\$15.78	\$2.10	\$18,669		\$18,669
760-775L Ramp	8,890		8,890	0		0	8,890		8,890	\$16.04	\$2.10	\$18,669		\$18,669
Total	53,340	0	53,340	0	0	0	53,340	0	53,340			\$112,014	\$0	\$112,014

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Capital Waste metres				Capital Waste tonnes			Capital Waste to Surface			Capital Waste for Backfill		
Heading	2014 (m)	2015 (m)	Total (m)	2014 (t)	2015 (t)	Total (t)	2014 0%	2015 0%	Total (t)	2014 100%	2015 100%	Total (t)
685L Electrical Cut out	4		4	101	0	101	0	0	0	101	0	101
685L Main X-Cut NB	44		44	1,109	0	1,109	0	0	0	1,109	0	1,109
685L Main X-Cut NB2	26		26	655	0	655	0	0	0	655	0	655
685L Sump	13		13	655	0	655	0	0	0	655	0	655
700L Electrical Cut out	11		11	693	0	693	0	0	0	693	0	693
700L Level Access	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
700L Main X-Cut NA	111		111	2,797	0	2,797	0	0	0	2,797	0	2,797
700L Main X-Cut NB	42		42	1,058	0	1,058	0	0	0	1,058	0	1,058
700L Main X-Cut NB2	33		33	832	0	832	0	0	0	832	0	832
700L Remuck	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
700L Sump	13		13	655	0	655	0	0	0	655	0	655
700L Truck Turnaround	17		17	1,428	0	1,428	0	0	0	1,428	0	1,428
700L Ventilation X-Cut	22		22	1,540	0	1,540	0	0	0	1,540	0	1,540
715L Electrical Cut out	4		4	101	0	101	0	0	0	101	0	101
715L Level Access	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
715L Main X-Cut NA	69		69	1,739	0	1,739	0	0	0	1,739	0	1,739
715L Main X-Cut NB	41		41	1,033	0	1,033	0	0	0	1,033	0	1,033
715L Main X-Cut NB2	32		32	806	0	806	0	0	0	806	0	806
715L Remuck	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
715L Sump	13		13	655	0	655	0	0	0	655	0	655
715L Truck Turnaround	17		17	1,428	0	1,428	0	0	0	1,428	0	1,428
730L Electrical Cut out		11	11	0	693	693	0	0	0	0	693	693
730L Level Access	39		39	2,730	0	2,730	0	0	0	2,730	0	2,730
730L Main X-Cut NA		103	103	0	2,596	2,596	0	0	0	0	2,596	2,596
730L Main X-Cut NB		35	35	0	882	882	0	0	0	0	882	882
730L Main X-Cut NB2		29	29	0	731	731	0	0	0	0	731	731
730L Remuck	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
730L Sump		13	13	0	655	655	0	0	0	0	655	655
730L Truck Turnaround	4	13	17	318	1,110	1,428	0	0	0	318	1,110	1,428
730L Ventilation X-Cut		17	17	0	1,190	1,190	0	0	0	0	1,190	1,190
745L Electrical Cut out	4		4	101	0	101	0	0	0	101	0	101
745L Level Access	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
745L Main X-Cut NA	69		69	1,739	0	1,739	0	0	0	1,739	0	1,739
745L Main X-Cut NB	35		35	882	0	882	0	0	0	882	0	882
745L Main X-Cut NB2	31		31	781	0	781	0	0	0	781	0	781
745L Refuge Station	17		17	762	0	762	0	0	0	762	0	762
745L Remuck	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
745L Sump	13		13	655	0	655	0	0	0	655	0	655
745L Truck Turnaround	17		17	1,428	0	1,428	0	0	0	1,428	0	1,428
760L Electrical Cut out	11		11	693	0	693	0	0	0	693	0	693
760L Level Access	33		33	2,310	0	2,310	0	0	0	2,310	0	2,310
760L Main X-Cut NA	108		108	2,722	0	2,722	0	0	0	2,722	0	2,722
760L Main X-Cut NB2	28		28	706	0	706	0	0	0	706	0	706
760L Remuck	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
760L Sump	13		13	655	0	655	0	0	0	655	0	655
760L Truck Turnaround	17		17	1,428	0	1,428	0	0	0	1,428	0	1,428
760L Ventilation X-Cut	11		11	770	0	770	0	0	0	770	0	770
775L Electrical Cut out	4		4	101	0	101	0	0	0	101	0	101
775L Level Access	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
775L Main X-Cut NA	58		58	1,462	0	1,462	0	0	0	1,462	0	1,462
775L Main X-Cut NB2	32		32	806	0	806	0	0	0	806	0	806
775L Remuck	17		17	1,190	0	1,190	0	0	0	1,190	0	1,190
775L Sump	13		13	655	0	655	0	0	0	655	0	655
775L Truck Turnaround	17		17	1,428	0	1,428	0	0	0	1,428	0	1,428
<b>Total</b>	<b>1,256</b>	<b>221</b>	<b>1,477</b>	<b>52,316</b>	<b>7,857</b>	<b>60,173</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>52,316</b>	<b>7,857</b>	<b>60,173</b>

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Capital Waste Haulage Costs

Heading	Surface (\$/t)	B/F (\$/t)	2014	2015	Total (t)
685L Electrical Cut out	\$14.51	\$2.10	\$212	\$0	\$212
685L Main X-Cut NB	\$14.51	\$2.10	\$2,328	\$0	\$2,328
685L Main X-Cut NB2	\$14.51	\$2.10	\$1,376	\$0	\$1,376
685L Sump	\$14.51	\$2.10	\$1,376	\$0	\$1,376
700L Electrical Cut out	\$14.76	\$2.10	\$1,455	\$0	\$1,455
700L Level Access	\$14.76	\$2.10	\$2,499	\$0	\$2,499
700L Main X-Cut NA	\$14.76	\$2.10	\$5,874	\$0	\$5,874
700L Main X-Cut NB	\$14.76	\$2.10	\$2,223	\$0	\$2,223
700L Main X-Cut NB2	\$14.76	\$2.10	\$1,746	\$0	\$1,746
700L Remuck	\$14.76	\$2.10	\$2,499	\$0	\$2,499
700L Sump	\$14.76	\$2.10	\$1,376	\$0	\$1,376
700L Truck Turnaround	\$14.76	\$2.10	\$2,999	\$0	\$2,999
700L Ventilation X-Cut	\$14.76	\$2.10	\$3,234	\$0	\$3,234
715L Electrical Cut out	\$15.02	\$2.10	\$212	\$0	\$212
715L Level Access	\$15.02	\$2.10	\$2,499	\$0	\$2,499
715L Main X-Cut NA	\$15.02	\$2.10	\$3,651	\$0	\$3,651
715L Main X-Cut NB	\$15.02	\$2.10	\$2,170	\$0	\$2,170
715L Main X-Cut NB2	\$15.02	\$2.10	\$1,693	\$0	\$1,693
715L Remuck	\$15.02	\$2.10	\$2,499	\$0	\$2,499
715L Sump	\$15.02	\$2.10	\$1,376	\$0	\$1,376
715L Truck Turnaround	\$15.02	\$2.10	\$2,999	\$0	\$2,999
730L Electrical Cut out	\$15.27	\$2.10	\$0	\$1,455	\$1,455
730L Level Access	\$15.27	\$2.10	\$5,733	\$0	\$5,733
730L Main X-Cut NA	\$15.27	\$2.10	\$0	\$5,451	\$5,451
730L Main X-Cut NB	\$15.27	\$2.10	\$0	\$1,852	\$1,852
730L Main X-Cut NB2	\$15.27	\$2.10	\$0	\$1,535	\$1,535
730L Remuck	\$15.27	\$2.10	\$2,499	\$0	\$2,499
730L Sump	\$15.27	\$2.10	\$0	\$1,376	\$1,376
730L Truck Turnaround	\$15.27	\$2.10	\$667	\$2,332	\$2,999
730L Ventilation X-Cut	\$15.27	\$2.10	\$0	\$2,499	\$2,499
745L Electrical Cut out	\$15.53	\$2.10	\$212	\$0	\$212
745L Level Access	\$15.53	\$2.10	\$2,499	\$0	\$2,499
745L Main X-Cut NA	\$15.53	\$2.10	\$3,651	\$0	\$3,651
745L Main X-Cut NB	\$15.53	\$2.10	\$1,852	\$0	\$1,852
745L Main X-Cut NB2	\$15.53	\$2.10	\$1,641	\$0	\$1,641
745L Refuge Station	\$15.53	\$2.10	\$1,599	\$0	\$1,599
745L Remuck	\$15.53	\$2.10	\$2,499	\$0	\$2,499
745L Sump	\$15.53	\$2.10	\$1,376	\$0	\$1,376
745L Truck Turnaround	\$15.53	\$2.10	\$2,999	\$0	\$2,999
760L Electrical Cut out	\$15.78	\$2.10	\$1,455	\$0	\$1,455
760L Level Access	\$15.78	\$2.10	\$4,851	\$0	\$4,851
760L Main X-Cut NA	\$15.78	\$2.10	\$5,715	\$0	\$5,715
760L Main X-Cut NB2	\$15.78	\$2.10	\$1,482	\$0	\$1,482
760L Remuck	\$15.78	\$2.10	\$2,499	\$0	\$2,499
760L Sump	\$15.78	\$2.10	\$1,376	\$0	\$1,376
760L Truck Turnaround	\$15.78	\$2.10	\$2,999	\$0	\$2,999
760L Ventilation X-Cut	\$15.78	\$2.10	\$1,617	\$0	\$1,617
775L Electrical Cut out	\$16.04	\$2.10	\$212	\$0	\$212
775L Level Access	\$16.04	\$2.10	\$2,499	\$0	\$2,499
775L Main X-Cut NA	\$16.04	\$2.10	\$3,069	\$0	\$3,069
775L Main X-Cut NB2	\$16.04	\$2.10	\$1,693	\$0	\$1,693
775L Remuck	\$16.04	\$2.10	\$2,499	\$0	\$2,499
775L Sump	\$16.04	\$2.10	\$1,376	\$0	\$1,376
775L Truck Turnaround	\$16.04	\$2.10	\$2,999	\$0	\$2,999
<b>Total</b>			<b>\$109,864</b>	<b>\$16,500</b>	<b>\$126,364</b>

Capital Waste Development Costs

Advance Rate	Unit Cost \$/Meter	2014	2015	Total (t)
5.40	\$2,455	\$9,820		\$9,820
5.40	\$1,900	\$83,600		\$83,600
5.40	\$1,900	\$49,400		\$49,400
5.40	\$2,455	\$31,915		\$31,915
5.40	\$2,455	\$27,005		\$27,005
5.40	\$2,695	\$45,815		\$45,815
5.40	\$1,900	\$210,900		\$210,900
5.40	\$1,900	\$79,800		\$79,800
5.40	\$1,900	\$62,700		\$62,700
5.40	\$2,695	\$45,815		\$45,815
5.40	\$2,455	\$31,915		\$31,915
5.40	\$2,695	\$45,815		\$45,815
5.40	\$2,695	\$59,290		\$59,290
5.40	\$2,455	\$9,820		\$9,820
5.40	\$2,695	\$45,815		\$45,815
5.40	\$1,900	\$131,100		\$131,100
5.40	\$1,900	\$77,900		\$77,900
5.40	\$1,900	\$60,800		\$60,800
5.40	\$2,695	\$45,815		\$45,815
5.40	\$2,455	\$31,915		\$31,915
5.40	\$2,695	\$45,815		\$45,815
5.40	\$2,455		\$27,005	\$27,005
5.40	\$2,695	\$105,105		\$105,105
5.40	\$1,900		\$195,700	\$195,700
5.40	\$1,900		\$66,500	\$66,500
5.40	\$1,900		\$55,100	\$55,100
5.40	\$2,695	\$45,815		\$45,815
5.40	\$2,455		\$31,915	\$31,915
5.40	\$2,695	\$10,187		\$35,628
5.40	\$2,695		\$45,815	\$45,815
5.40	\$2,455	\$9,820		\$9,820
5.40	\$2,695	\$45,815		\$45,815
5.40	\$1,900	\$131,100		\$131,100
5.40	\$1,900	\$66,500		\$66,500
5.40	\$1,900	\$58,900		\$58,900
6.40	\$2,455	\$41,735		\$41,735
7.40	\$2,695	\$45,815		\$45,815
8.40	\$2,455	\$31,915		\$31,915
9.40	\$2,695	\$45,815		\$45,815
10.40	\$2,455	\$27,005		\$27,005
11.40	\$2,695	\$88,935		\$88,935
12.40	\$1,900	\$205,200		\$205,200
13.40	\$1,900	\$53,200		\$53,200
14.40	\$2,695	\$45,815		\$45,815
15.40	\$2,455	\$31,915		\$31,915
16.40	\$2,695	\$45,815		\$45,815
17.40	\$2,695	\$29,645		\$29,645
18.40	\$2,455	\$9,820		\$9,820
19.40	\$2,695	\$45,815		\$45,815
20.40	\$1,900	\$110,200		\$110,200
21.40	\$1,900	\$60,800		\$60,800
22.40	\$2,695	\$45,815		\$45,815
23.40	\$2,455	\$31,915		\$31,915
5.40	\$2,695	\$45,815		\$45,815
		<b>\$2,749,002</b>	<b>\$457,663</b>	<b>\$3,206,665</b>

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Operating Waste metres				Operating Waste tonnes			Operating Waste to Surface			Operating Waste for Backfill		
Heading	2014 (m)	2015 (m)	Total (m)	2014 (t)	2015 (t)	Total (t)	2014 0%	2015 0%	Total (t)	2014 100%	2015 100%	Total (t)
430L Sill Waste NA		36	36		907	907		0	0		907	907
430L Sill Waste NA		127	127		3,200	3,200		0	0		3,200	3,200
445L Sill Access NB		64	64		1,613	1,613		0	0		1,613	1,613
445L Sill Waste NA		66	66		1,663	1,663		0	0		1,663	1,663
445L Sill Waste NA3		37	37		932	932		0	0		932	932
445L Sill Waste NB		127	127		3,200	3,200		0	0		3,200	3,200
460L Sill Access NB		87	87		2,192	2,192		0	0		2,192	2,192
460L Sill Waste NA3		72	72		1,814	1,814		0	0		1,814	1,814
460L Sill Waste NB		130	130		3,276	3,276		0	0		3,276	3,276
475L Sill Access NB	20	85	105	511	2,135	2,646	0	0	0	511	2,135	2,646
475L Sill Waste NA3		30	30		756	756		0	0		756	756
475L Sill Waste NB		44	44		1,109	1,109		0	0		1,109	1,109
475L Sill Waste NB		28	28		706	706		0	0		706	706
475L Sill Waste NB		90	90		2,268	2,268		0	0		2,268	2,268
490L Sill Access NB		53	53		1,336	1,336		0	0		1,336	1,336
490L Sill Waste NA3		79	79		1,991	1,991		0	0		1,991	1,991
490L Sill Waste NB		48	48		1,210	1,210		0	0		1,210	1,210
490L Sill Waste NB		77	77		1,940	1,940		0	0		1,940	1,940
505L Sill Access NB	93	18	111	2,353	444	2,797	0	0	0	2,353	444	2,797
505L Sill Waste NA3		66	66		1,663	1,663		0	0		1,663	1,663
505L Sill Waste NB		111	111		2,797	2,797		0	0		2,797	2,797
505L Sill Waste NB	43		43	1,084		1,084	0		0	1,084		1,084
520L Sill Access NB	105		105	2,646		2,646	0		0	2,646		2,646
520L Sill Waste NA3		46	46		1,159	1,159		0	0		1,159	1,159
520L Sill Waste NB	15		15	378		378	0		0	378		378
535L Sill Access NB	102		102	2,570		2,570	0		0	2,570		2,570
535L Sill Waste NA3		14	14		353	353		0	0		353	353
535L Sill Waste NB	56		56	1,411		1,411	0		0	1,411		1,411
550L Sill Access NB	52		52	1,310		1,310	0		0	1,310		1,310
550L Sill Waste NA3		50	50		1,260	1,260		0	0		1,260	1,260
565L Sill Waste NA3		39	39		983	983		0	0		983	983
580L Sill Waste NA3		57	57		1,436	1,436		0	0		1,436	1,436
595L Sill Waste NA3		14	14		353	353		0	0		353	353
685L Sill Waste NB	31		31	781		781	0		0	781		781
685L Sill Waste NB2	48		48	1,210		1,210	0		0	1,210		1,210
700L Sill Access NAHW	15		15	378		378	0		0	378		378
700L Sill Waste NA2	132		132	3,326		3,326	0		0	3,326		3,326
700L Sill Waste NB	33		33	832		832	0		0	832		832
700L Sill Waste NB2	66		66	1,663		1,663	0		0	1,663		1,663
715L Sill Access NAHW	17		17	428		428	0		0	428		428
715L Sill Waste NA2	116		116	2,923		2,923	0		0	2,923		2,923
715L Sill Waste NA2	28		28	706		706	0		0	706		706
715L Sill Waste NB	45		45	1,134		1,134	0		0	1,134		1,134
715L Sill Waste NB2	69		69	1,739		1,739	0		0	1,739		1,739
730L Sill Waste NA West		23	23		580	580		0	0		580	580
730L Sill Waste NA2		106	106		2,671	2,671		0	0		2,671	2,671
730L Sill Waste NB2		12	12		302	302		0	0		302	302
745L Sill Waste NA East	89		89	2,243		2,243	0		0	2,243		2,243
745L Sill Waste NA2	135		135	3,402		3,402	0		0	3,402		3,402
760L Sill Waste NA East	33		33	832		832	0		0	832		832
760L Sill Waste NA2	138		138	3,478		3,478	0		0	3,478		3,478
775L Sill Waste NA East	53		53	1,336		1,336	0		0	1,336		1,336
<b>Total</b>	<b>1,535</b>	<b>1,835</b>	<b>3,370</b>	<b>38,673</b>	<b>46,251</b>	<b>84,924</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38,673</b>	<b>46,251</b>	<b>84,924</b>

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Operating Waste Haulage Cost

Heading	Surface (\$/t)	B/F (\$/t)	2014	2015	Total (t)
430L Sill Waste NA	\$10.49	\$2.10		\$1,905	\$1,905
430L Sill Waste NA	\$10.49	\$2.10		\$6,721	\$6,721
445L Sill Access NB	\$10.72	\$2.10		\$3,387	\$3,387
445L Sill Waste NA	\$10.72	\$2.10		\$3,493	\$3,493
445L Sill Waste NA3	\$10.72	\$2.10		\$1,958	\$1,958
445L Sill Waste NB	\$10.72	\$2.10		\$6,721	\$6,721
460L Sill Access NB	\$10.95	\$2.10		\$4,604	\$4,604
460L Sill Waste NA3	\$10.95	\$2.10		\$3,810	\$3,810
460L Sill Waste NB	\$10.95	\$2.10		\$6,880	\$6,880
475L Sill Access NB	\$11.18	\$2.10	\$1,072	\$4,484	\$5,557
475L Sill Waste NA3	\$11.18	\$2.10		\$1,588	\$1,588
475L Sill Waste NB	\$11.18	\$2.10		\$2,328	\$2,328
475L Sill Waste NB	\$11.18	\$2.10		\$1,482	\$1,482
475L Sill Waste NB	\$11.18	\$2.10		\$4,763	\$4,763
490L Sill Access NB	\$11.41	\$2.10		\$2,805	\$2,805
490L Sill Waste NA3	\$11.41	\$2.10		\$4,181	\$4,181
490L Sill Waste NB	\$11.41	\$2.10		\$2,540	\$2,540
490L Sill Waste NB	\$11.41	\$2.10		\$4,075	\$4,075
505L Sill Access NB	\$11.64	\$2.10	\$4,942	\$932	\$5,874
505L Sill Waste NA3	\$11.64	\$2.10		\$3,493	\$3,493
505L Sill Waste NB	\$11.64	\$2.10		\$5,874	\$5,874
505L Sill Waste NB	\$11.64	\$2.10	\$2,276		\$2,276
520L Sill Access NB	\$11.87	\$2.10	\$5,557		\$5,557
520L Sill Waste NA3	\$11.87	\$2.10		\$2,434	\$2,434
520L Sill Waste NB	\$11.87	\$2.10	\$794		\$794
535L Sill Access NB	\$12.10	\$2.10	\$5,398		\$5,398
535L Sill Waste NA3	\$12.10	\$2.10		\$741	\$741
535L Sill Waste NB	\$12.10	\$2.10	\$2,964		\$2,964
550L Sill Access NB	\$12.34	\$2.10	\$2,752		\$2,752
550L Sill Waste NA3	\$12.34	\$2.10		\$2,646	\$2,646
565L Sill Waste NA3	\$12.57	\$2.10		\$2,064	\$2,064
580L Sill Waste NA3	\$12.80	\$2.10		\$3,016	\$3,016
595L Sill Waste NA3	\$13.03	\$2.10		\$741	\$741
685L Sill Waste NB	\$14.51	\$2.10	\$1,641		\$1,641
685L Sill Waste NB2	\$14.51	\$2.10	\$2,540		\$2,540
700L Sill Access NAHW	\$14.76	\$2.10	\$794		\$794
700L Sill Waste NA2	\$14.76	\$2.10	\$6,985		\$6,985
700L Sill Waste NB	\$14.76	\$2.10	\$1,746		\$1,746
700L Sill Waste NB2	\$14.76	\$2.10	\$3,493		\$3,493
715L Sill Access NAHW	\$15.02	\$2.10	\$900		\$900
715L Sill Waste NA2	\$15.02	\$2.10	\$6,139		\$6,139
715L Sill Waste NA2	\$15.02	\$2.10	\$1,482		\$1,482
715L Sill Waste NB	\$15.02	\$2.10	\$2,381		\$2,381
715L Sill Waste NB2	\$15.02	\$2.10	\$3,651		\$3,651
730L Sill Waste NA West	\$15.27	\$2.10		\$1,217	\$1,217
730L Sill Waste NA2	\$15.27	\$2.10		\$5,610	\$5,610
730L Sill Waste NB2	\$15.27	\$2.10		\$635	\$635
745L Sill Waste NA East	\$15.53	\$2.10	\$4,710		\$4,710
745L Sill Waste NA2	\$15.53	\$2.10	\$7,144		\$7,144
760L Sill Waste NA East	\$15.78	\$2.10	\$1,746		\$1,746
760L Sill Waste NA2	\$15.78	\$2.10	\$7,303		\$7,303
775L Sill Waste NA East	\$16.04	\$2.10	\$2,805		\$2,805
<b>Total</b>			<b>\$81,213</b>	<b>\$97,127</b>	<b>\$178,340</b>

Operating Waste Development Costs

Advance Rate	Unit Cost \$/Meter	2014	2015	Total (t)
5.40	\$1,900		\$68,400	\$68,400
5.40	\$1,900		\$241,300	\$241,300
5.40	\$1,900		\$121,600	\$121,600
5.40	\$1,900		\$125,400	\$125,400
5.40	\$1,900		\$70,300	\$70,300
5.40	\$1,900		\$241,300	\$241,300
5.40	\$1,900		\$165,300	\$165,300
5.40	\$1,900		\$136,800	\$136,800
5.40	\$1,900		\$247,000	\$247,000
5.40	\$1,900	\$38,494	\$161,006	\$199,500
5.40	\$1,900		\$57,000	\$57,000
5.40	\$1,900		\$83,600	\$83,600
5.40	\$1,900		\$53,200	\$53,200
5.40	\$1,900		\$171,000	\$171,000
5.40	\$1,900		\$100,700	\$100,700
5.40	\$1,900		\$150,100	\$150,100
5.40	\$1,900		\$91,200	\$91,200
5.40	\$1,900		\$146,300	\$146,300
5.40	\$1,900	\$177,422	\$33,478	\$210,900
5.40	\$1,900		\$125,400	\$125,400
5.40	\$1,900		\$210,900	\$210,900
5.40	\$1,900	\$81,700		\$81,700
5.40	\$1,900	\$199,500		\$199,500
5.40	\$1,900		\$87,400	\$87,400
5.40	\$1,900	\$28,500		\$28,500
5.40	\$1,900	\$193,800		\$193,800
5.40	\$1,900		\$26,600	\$26,600
5.40	\$1,900	\$106,400		\$106,400
5.40	\$1,900	\$98,800		\$98,800
5.40	\$1,900		\$95,000	\$95,000
5.40	\$1,900		\$74,100	\$74,100
5.40	\$1,900		\$108,300	\$108,300
5.40	\$1,900		\$26,600	\$26,600
5.40	\$1,900	\$58,900		\$58,900
5.40	\$1,900	\$91,200		\$91,200
5.40	\$1,900	\$28,500		\$28,500
5.40	\$1,900	\$250,800		\$250,800
5.40	\$1,900	\$62,700		\$62,700
5.40	\$1,900	\$125,400		\$125,400
5.40	\$1,900	\$32,300		\$32,300
5.40	\$1,900	\$220,400		\$220,400
5.40	\$1,900	\$53,200		\$53,200
5.40	\$1,900	\$85,500		\$85,500
5.40	\$1,900	\$131,100		\$131,100
5.40	\$1,900		\$43,700	\$43,700
5.40	\$1,900		\$201,400	\$201,400
5.40	\$1,900		\$22,800	\$22,800
5.40	\$1,900	\$169,100		\$169,100
5.40	\$1,900	\$256,500		\$256,500
5.40	\$1,900	\$62,700		\$62,700
5.40	\$1,900	\$262,200		\$262,200
5.40	\$1,900	\$100,700		\$100,700
		<b>\$2,915,816</b>	<b>\$3,487,184</b>	<b>\$6,403,000</b>

169512572 LSG - Bell Creek NI 43-101 Study  
Ore Development - Data Dump from MS Project Schedule  
February 28, 2013. MKM

Ore metres				Ore tonnes			Ore Development Haulage Cost				Ore Development Cost				
Heading	2014 (m)	2015 (m)	Total (m)	2014 (t)	2015 (t)	Total (t)	Surface (\$/t)	2014 (\$/t)	2015 (\$/t)	Total (\$/t)	Advance Rate	\$/meter	2014 (\$/t)	2015 (\$/t)	Total (\$/t)
285L Sill Ore NAFW		15	15		378	378	\$7.77		\$2,937	\$2,937	5.4	\$1,900		\$28,500	\$28,500
285L Sill Ore NAHW		70	70		1,764	1,764	\$7.77		\$13,706	\$13,706	5.4	\$1,900		\$133,000	\$133,000
430L Sill Ore NA		44	44		1,109	1,109	\$9.51		\$10,545	\$10,545	5.4	\$1,900		\$83,600	\$83,600
430L Sill Ore NAX		35	35		882	882	\$9.51		\$8,388	\$8,388	5.4	\$1,900		\$66,500	\$66,500
445L Sill Ore NA		27	27		680	680	\$9.71		\$6,607	\$6,607	5.4	\$1,900		\$51,300	\$51,300
445L Sill Ore NA3		52	52		1,310	1,310	\$9.71		\$12,724	\$12,724	5.4	\$1,900		\$98,800	\$98,800
445L Sill Ore NAX		43	43		1,084	1,084	\$9.71		\$10,522	\$10,522	5.4	\$1,900		\$81,700	\$81,700
445L Sill Ore NB		36	36		907	907	\$9.71		\$8,809	\$8,809	5.4	\$1,900		\$68,400	\$68,400
460L Sill Ore NA3		50	50		1,260	1,260	\$9.91		\$12,487	\$12,487	5.4	\$1,900		\$95,000	\$95,000
460L Sill Ore NAX		43	43		1,084	1,084	\$9.91		\$10,738	\$10,738	5.4	\$1,900		\$81,700	\$81,700
460L Sill Ore NB		28	28		706	706	\$9.91		\$6,992	\$6,992	5.4	\$1,900		\$53,200	\$53,200
475L Sill Ore NA3		33	33		832	832	\$10.11		\$8,407	\$8,407	5.4	\$1,900		\$62,700	\$62,700
475L Sill Ore NAX		27	27		680	680	\$10.11		\$6,879	\$6,879	5.4	\$1,900		\$51,300	\$51,300
475L Sill Ore NB		20	20		504	504	\$10.11		\$5,095	\$5,095	5.4	\$1,900		\$38,000	\$38,000
475L Sill Ore NB		35	35		882	882	\$10.11		\$8,917	\$8,917	5.4	\$1,900		\$66,500	\$66,500
490L Sill Ore NA3		35	35		882	882	\$10.31		\$9,093	\$9,093	5.4	\$1,900		\$66,500	\$66,500
490L Sill Ore NAX		21	21		529	529	\$10.31		\$5,456	\$5,456	5.4	\$1,900		\$39,900	\$39,900
490L Sill Ore NB		75	75		1,890	1,890	\$10.31		\$19,486	\$19,486	5.4	\$1,900		\$142,500	\$142,500
505L Sill Ore NA3		35	35		882	882	\$10.51		\$9,270	\$9,270	5.4	\$1,900		\$66,500	\$66,500
505L Sill Ore NAX		17	17		428	428	\$10.51		\$4,502	\$4,502	5.4	\$1,900		\$32,300	\$32,300
505L Sill Ore NB	35		35	882		882	\$10.51	\$9,270		\$9,270	5.4	\$1,900	\$66,500		\$66,500
505L Sill Ore NB		66	66		1,663	1,663	\$10.51		\$17,480	\$17,480	5.4	\$1,900		\$125,400	\$125,400
520L Sill Ore NA3		42	42		1,058	1,058	\$10.71		\$11,335	\$11,335	5.4	\$1,900		\$79,800	\$79,800
520L Sill Ore NB	60		60	1,512		1,512	\$10.71	\$16,194		\$16,194	5.4	\$1,900	\$114,000		\$114,000
520L Sill Ore NB	33		33	832		832	\$10.71	\$8,906		\$8,906	5.4	\$1,900	\$62,700		\$62,700
535L Sill Ore NA3		31	31		781	781	\$10.91		\$8,523	\$8,523	5.4	\$1,900		\$58,900	\$58,900
535L Sill Ore NB	55		55	1,386		1,386	\$10.91	\$15,121		\$15,121	5.4	\$1,900	\$104,500		\$104,500
550L Sill Ore NA3		40	40		1,008	1,008	\$11.11		\$11,199	\$11,199	5.4	\$1,900		\$76,000	\$76,000
550L Sill Ore NB	30		30	756		756	\$11.11	\$8,399		\$8,399	5.4	\$1,900	\$57,000		\$57,000
565L Sill Ore NA3		25	25		630	630	\$11.31		\$7,125	\$7,125	5.4	\$1,900		\$47,500	\$47,500
580L Sill Ore NA3		26	26		655	655	\$11.51		\$7,541	\$7,541	5.4	\$1,900		\$49,400	\$49,400
595L Sill Ore NA3		26	26		655	655	\$11.71		\$7,672	\$7,672	5.4	\$1,900		\$49,400	\$49,400
670L Sill Ore NAHW	12		12	302		302	\$12.77	\$3,862		\$3,862	5.4	\$1,900	\$22,800		\$22,800
685L Sill Ore NA	44		44	1,109		1,109	\$12.99	\$14,403		\$14,403	5.4	\$1,900	\$83,600		\$83,600
685L Sill Ore NB	49		49	1,235		1,235	\$12.99	\$16,040		\$16,040	5.4	\$1,900	\$93,100		\$93,100
685L Sill Ore NB2	26		26	655		655	\$12.99	\$8,511		\$8,511	5.4	\$1,900	\$49,400		\$49,400
700L Sill Ore NA East	70		70	1,764		1,764	\$13.21	\$23,302		\$23,302	5.4	\$1,900	\$133,000		\$133,000
700L Sill Ore NA West	122		122	3,074		3,074	\$13.21	\$40,613		\$40,613	5.4	\$1,900	\$231,800		\$231,800
700L Sill Ore NA2	28		28	706		706	\$13.21	\$9,321		\$9,321	5.4	\$1,900	\$53,200		\$53,200
700L Sill Ore NA4	48		48	1,210		1,210	\$13.21	\$15,979		\$15,979	5.4	\$1,900	\$91,200		\$91,200
700L Sill Ore NAHW	20		20	504		504	\$13.21	\$6,658		\$6,658	5.4	\$1,900	\$38,000		\$38,000
700L Sill Ore NB	78		78	1,966		1,966	\$13.21	\$25,966		\$25,966	5.4	\$1,900	\$148,200		\$148,200
700L Sill Ore NB2	37		37	932		932	\$13.21	\$12,317		\$12,317	5.4	\$1,900	\$70,300		\$70,300
715L Sill Ore NA East	63		63	1,588		1,588	\$13.43	\$21,321		\$21,321	5.4	\$1,900	\$119,700		\$119,700
715L Sill Ore NA West	131		131	3,301		3,301	\$13.43	\$44,335		\$44,335	5.4	\$1,900	\$248,900		\$248,900
715L Sill Ore NA2	51		51	1,285		1,285	\$13.43	\$17,260		\$17,260	5.4	\$1,900	\$96,900		\$96,900
715L Sill Ore NA4	68		68	1,714		1,714	\$13.43	\$23,014		\$23,014	5.4	\$1,900	\$129,200		\$129,200
715L Sill Ore NAHW	15		15	378		378	\$13.43	\$5,077		\$5,077	5.4	\$1,900	\$28,500		\$28,500
715L Sill Ore NB	49		49	1,235		1,235	\$13.43	\$16,583		\$16,583	5.4	\$1,900	\$93,100		\$93,100
715L Sill Ore NB2	33		33	832		832	\$13.43	\$11,168		\$11,168	5.4	\$1,900	\$62,700		\$62,700
730L Sill Ore NA East		62	62		1,562	1,562	\$13.65		\$21,327	\$21,327	5.4	\$1,900		\$117,800	\$117,800
730L Sill Ore NA West		95	95		2,394	2,394	\$13.65		\$32,678	\$32,678	5.4	\$1,900		\$180,500	\$180,500
730L Sill Ore NA West		10	10		252	252	\$13.65		\$3,440	\$3,440	5.4	\$1,900		\$19,000	\$19,000
730L Sill Ore NA2		81	81		2,041	2,041	\$13.65		\$27,862	\$27,862	5.4	\$1,900		\$153,900	\$153,900
730L Sill Ore NA4		78	78		1,966	1,966	\$13.65		\$26,830	\$26,830	5.4	\$1,900		\$148,200	\$148,200
730L Sill Ore NB		25	25		630	630	\$13.65		\$8,600	\$8,600	5.4	\$1,900		\$47,500	\$47,500
730L Sill Ore NB2		84	84		2,117	2,117	\$13.65		\$28,894	\$28,894	5.4	\$1,900		\$159,600	\$159,600
745L Sill Ore NA East	65		65	1,638		1,638	\$13.87	\$22,719		\$22,719	5.4	\$1,900	\$123,500		\$123,500
745L Sill Ore NA West	89		89	2,243		2,243	\$13.87	\$31,108		\$31,108	5.4	\$1,900	\$169,100		\$169,100
745L Sill Ore NA2	40		40	1,008		1,008	\$13.87	\$13,981		\$13,981	5.4	\$1,900	\$76,000		\$76,000
745L Sill Ore NA4	81		81	2,041		2,041	\$13.87	\$28,311		\$28,311	5.4	\$1,900	\$153,900		\$153,900
745L Sill Ore NB	20		20	504		504	\$13.87	\$6,990		\$6,990	5.4	\$1,900	\$38,000		\$38,000
745L Sill Ore NB2	34		34	857		857	\$13.87	\$11,884		\$11,884	5.4	\$1,900	\$64,600		\$64,600
760L Sill Ore NA East	62		62	1,562		1,562	\$14.09	\$22,014		\$22,014	5.4	\$1,900	\$117,800		\$117,800
760L Sill Ore NA East	55		55	1,386		1,386	\$14.09	\$19,529		\$19,529	5.4	\$1,900	\$104,500		\$104,500
760L Sill Ore NA West	62		62	1,562		1,562	\$14.09	\$22,014		\$22,014	5.4	\$1,900	\$117,800		\$117,800
760L Sill Ore NA2	40		40	1,008		1,008	\$14.09	\$14,203		\$14,203	5.4	\$1,900	\$76,000		\$76,000
760L Sill Ore NA4	84		84	2,117		2,117	\$14.09	\$29,826		\$29,826	5.4	\$1,900	\$159,600		\$159,600
760L Sill Ore NB2	20		20	504		504	\$14.09	\$7,101		\$7,101	5.4	\$1,900	\$38,000		\$38,000
775L Sill Ore NA East	42		42	1,058		1,058	\$14.32	\$15,156		\$15,156	5.4	\$1,900	\$79,800		\$79,800
775L Sill Ore NA East	51		51	1,285		1,285	\$14.32	\$18,404		\$18,404	5.4	\$1,900	\$96,900		\$96,900
775L Sill Ore NA West	65		65	1,638		1,638	\$14.32	\$23,456		\$23,456	5.4	\$1,900	\$123,500		\$123,500
775L Sill Ore NA4	57		57	1,436		1,436	\$14.32	\$20,569		\$20,569	5.4	\$1,900	\$108,300		\$108,300
775L Sill Ore NB2	20		20	504		504	\$14.32	\$7,217		\$7,217	5.4	\$1,900	\$38,000		\$38,000
<b>Total</b>	<b>2,044</b>	<b>1,432</b>	<b>3,476</b>	<b>51,509</b>	<b>36,086</b>	<b>87,595</b>		<b>\$688,104</b>	<b>\$402,069</b>	<b>\$1,090,173</b>			<b>\$ 3,883,600</b>	<b>\$ 2,720,800</b>	<b>\$ 6,604,400</b>

**169512572 LSG - Bell Creek NI 43-101 Study**

**Vertical Development - Data Dump from MS Project Schedule**

**February 28, 2013. MKM**

Raise Metres				Raise Tonnes			Raise Waste to Surface			Raise Waste for Backfill		
Heading	2014 (m)	2015 (m)	Total (m)	2014 (t)	2015 (t)	Total (t)	2014 0%	2015 0%	Total (t)	2015 100%	2016 100%	Total (t)
685L-595L E/W Raise (Alimak)	100		100	1,613		1,613	0		0	1612.8		1612.8
700L-670L Vent Raise (DR)	27		27	1,210		1,210	0		0	1209.6		1209.6
730L-700L Vent Raise (DR)		27	27		1,210	1,210		0	0		1209.6	1209.6
760L-685L E/W Raise (Alimak)	80		80	1,290		1,290	0		0	1290.24		1290.24
760L-730L Vent Raise (DR)	27		27	1,210		1,210	0		0	1209.6		1209.6
<b>Total</b>	<b>234</b>	<b>27</b>	<b>261</b>	<b>5,322</b>	<b>1,210</b>	<b>6,532</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,322</b>	<b>1,210</b>	<b>6,532</b>

Ventilation Raise	<b>44.8</b>	tonnes/metre
Escapeway Raise	<b>16.1</b>	tonnes/metre

**Raise Waste Haulage Costs**

Heading	Surface (\$/t)	B/F (\$/t)	2014 100%	2015 100%	Total (t)
685L-595L E/W Raise (Alimak)	\$14.51	\$2.10	\$3,387		\$3,387
700L-670L Vent Raise (DR)	\$14.25	\$2.10	\$2,540		\$2,540
730L-700L Vent Raise (DR)	\$15.27	\$2.10		\$2,540	\$2,540
760L-685L E/W Raise (Alimak)	\$15.78	\$2.10	\$2,710		\$2,710
760L-730L Vent Raise (DR)	\$15.78	\$2.10	\$2,540		\$2,540
<b>Total</b>			<b>\$11,177</b>	<b>\$2,540</b>	<b>\$13,717</b>

**Raise Development Costs**

Heading	Cost/Meter	2014 100%	2015 100%	Total (t)
685L-595L E/W Raise (Alimak)	\$4,200	\$420,000		\$420,000
700L-670L Vent Raise (DR)	\$1,300	\$35,100		\$35,100
730L-700L Vent Raise (DR)	\$1,300		\$35,100	\$35,100
760L-685L E/W Raise (Alimak)	\$4,200	\$336,000		\$336,000
760L-730L Vent Raise (DR)	\$1,300	\$35,100		\$35,100
<b>Total</b>		<b>\$826,200</b>	<b>\$35,100</b>	<b>\$861,300</b>

**169512572 Lake Shore Gold - Bell Creek Mine 43-101**  
**Indirect Labour - Staff Levels**  
**March 11, 2013.**

Staff Classification	Total Cost  (Annual)	2013 Budget	LOM				
		2013	2014	2015	2016	2017	Q1 2018
		No.	No.	No.	No.	No.	No.
<b><i>Indirect Labour</i></b>							
<b><i>Mine Management</i></b>							
Mine Superintendent	\$182,500	1	1	1	1	1	0.25
Mine General Foreman	\$161,840	1	1	1	1	1	0.25
<b><i>Engineering Staff</i></b>							
Chief Engineer	\$169,785	1	1	1	1	1	0.25
Senior Mine Planning Engineer	\$135,828	1	1	1	1	0	0
Mine Planner/Technician	\$101,871	2	2	2	2	2	0.5
EIT	\$88,288	1	1	1	1	0	0
Surveyor	\$81,497	1	1	1	1	1	0.25
<b><i>Geology Staff</i></b>							
Chief Geologist	\$166,503	1	1	1	1	1	0.25
Senior Geologist	\$117,531	1	1	1	1	0	0
Resource Geologist	\$137,120	0.5	0.5	0.5	0.5	0	0
Mine Geologist	\$107,737	2	2	2	2	2	0.5
Geology Technician	\$88,149	4	3	3	3	2	0.5
Core Shack Technician	\$58,766	1	1	1	1	0	0
<b><i>Environmental</i></b>							
Environmental Coordinator	\$100,735	0.5	0.5	0.5	0.5	0.5	0.125
Environmental Technician	\$67,157	0.5	0.5	0.5	0.5	0.5	0.125
<b><i>Health and Safety</i></b>							
Safety Coordinator	\$148,104	0.5	0.5	0.5	0.5	0.5	0.125
Trainer	\$127,369	0.5	0.5	0.5	0.5	0.5	0.125
OH&S Nurse	\$103,673	0.1	0.1	0.1	0.1	0.1	0.025
<b><i>Admin Support Staff</i></b>							
Purchaser	\$83,754	1	1	1	1	1	0.25
Warehouse Shipper/Receiver	\$73,602	1	1	1	1	1	0.25
Reception/Office Administrator	\$48,222	1	1	1	1	1	0.25
HR Clerk	\$48,222	1	1	1	1	1	0.25
Student	\$52,800	3	3	3	3	3	0.75
<b><i>Mining Operations Staff</i></b>							
UG Shift Supervisor	\$137,976	4	4	4	4	4	1
<b><i>Maintenance Staff</i></b>							
Electrical Superintendent	\$161,924	0.5	0.5	0.5	0.5	0.5	0.125
Electrical Foreman	\$132,484	0.5	0.5	0.5	0.5	0	0
Maintenance Foreman	\$136,711	1	1	1	1	1	0.25
Maintenance Planner	\$103,133	1	1	1	1	0	0
		33.6	32.6	32.6	32.6	25.6	6.4
<b>Hourly Classification</b>							
<b><i>Mine Construction &amp; Services - Hourly</i></b>							
UG Construction Miner / Rehab Crew	\$103,668	1	1	1	3	3	0.75
Support Worker - Underground	\$63,456	4	4	4	4	2	0.50
Support Worker - Surface	\$60,000	0	0	1	2	1	0.25
Dryman	\$57,420	0	0	0	0	0	0.00
Toolcrib/Caplamps	\$73,512	0	0	0	0	0	0.00
<b><i>Maintenance - Hourly</i></b>							
Lead Mechanic	\$138,240	0	2	2	2	2	0.00
Mechanic	\$132,348	8	8	8	8	8	2.00
Lead Electrician	\$138,240	0	0	0	0	0	0.00
Electrician	\$132,348	6	6	6	5	4	1.00
Instrumentation Technician	\$129,384	0	0	0	0	0	0.00
Millwright	\$99,012	1	1	1	1	1	0.25
Welder	\$132,348	0	0	0	0	0	0.00
		20	22	23	25	21	4.75
		53.6	54.6	55.6	57.6	46.6	11.15

**169512572 Lake Shore Gold - Bell Creek Mine 43-101**  
**Indirect Labour - Annual Costs**  
**March 11, 2013.**

Staff Classification	2013 Budget	LOM				
	2013 Cost	2014 Cost	2015 Cost	2016 Cost	2017 Cost	Q1 2018 Cost
<b><u>Indirect Labour</u></b>						
<b><u>Mine Management</u></b>						
Mine Superintendent	\$182,500.20	\$182,500	\$182,500	\$182,500	\$182,500	\$45,625
Mine General Foreman	\$161,839.80	\$161,840	\$161,840	\$161,840	\$161,840	\$40,460
<b><u>Engineering Staff</u></b>						
Chief Engineer	\$169,785.00	\$169,785	\$169,785	\$169,785	\$169,785	\$42,446
Senior Mine Planning Engineer	\$135,828.00	\$135,828	\$135,828	\$135,828	\$0	\$0
Mine Planner/Technician	\$203,742.00	\$203,742	\$203,742	\$203,742	\$203,742	\$50,936
EIT	\$88,288.20	\$88,288	\$88,288	\$88,288	\$0	\$0
Surveyor	\$81,496.80	\$81,497	\$81,497	\$81,497	\$81,497	\$20,374
<b><u>Geology Staff</u></b>						
Chief Geologist	\$166,502.76	\$166,503	\$166,503	\$166,503	\$166,503	\$41,626
Senior Geologist	\$117,531.36	\$117,531	\$117,531	\$117,531	\$0	\$0
Resource Geologist	\$68,559.96	\$68,560	\$68,560	\$68,560	\$0	\$0
Mine Geologist	\$215,474.16	\$215,474	\$215,474	\$215,474	\$215,474	\$53,869
Geology Technician	\$352,594.08	\$264,446	\$264,446	\$264,446	\$176,297	\$44,074
Core Shack Technician	\$58,765.68	\$58,766	\$58,766	\$58,766	\$0	\$0
<b><u>Environmental</u></b>						
Environmental Coordinator	\$50,367.60	\$50,368	\$50,368	\$50,368	\$50,368	\$12,592
Environmental Technician	\$33,578.40	\$33,578	\$33,578	\$33,578	\$33,578	\$8,395
<b><u>Health and Safety</u></b>						
Safety Coordinator	\$74,052.00	\$74,052	\$74,052	\$74,052	\$74,052	\$18,513
Trainer	\$63,684.72	\$63,685	\$63,685	\$63,685	\$63,685	\$15,921
OH&S Nurse	\$10,367.28	\$10,367	\$10,367	\$10,367	\$10,367	\$2,592
<b><u>Admin Support Staff</u></b>						
Purchaser	\$83,754.00	\$83,754	\$83,754	\$83,754	\$83,754	\$20,939
Warehouse Shipper/Receiver	\$73,602.00	\$73,602	\$73,602	\$73,602	\$73,602	\$18,401
Reception/Office Administrator	\$48,222.00	\$48,222	\$48,222	\$48,222	\$48,222	\$12,056
HR Clerk	\$48,222.00	\$48,222	\$48,222	\$48,222	\$48,222	\$12,056
Student	\$158,400.00	\$158,400	\$158,400	\$158,400	\$158,400	\$39,600
<b><u>Mining Operations Staff</u></b>						
UG Shift Supervisor	\$551,904.00	\$551,904	\$551,904	\$551,904	\$551,904	\$137,976
<b><u>Maintenance Staff</u></b>						
Electrical Superintendent	\$80,962.20	\$80,962	\$80,962	\$80,962	\$80,962	\$20,241
Electrical Foreman	\$66,241.80	\$66,242	\$66,242	\$66,242	\$0	\$0
Maintenance Foreman	\$136,711.08	\$136,711	\$136,711	\$136,711	\$136,711	\$34,178
Maintenance Planner	\$103,132.92	\$103,133	\$103,133	\$103,133	\$0	\$0
	\$3,586,110	\$3,497,961	\$3,497,961	\$3,497,961	\$2,771,465	\$692,866
<b><u>Hourly Classification</u></b>						
<b><u>Mine Construction &amp; Services - Hourly</u></b>						
UG Construction Miner	\$103,668.00	\$103,668	\$103,668	\$311,004	\$311,004	\$77,751
Support Worker - Underground	\$253,824.00	\$253,824	\$253,824	\$253,824	\$126,912	\$31,728
Support Worker - Surface	\$0.00	\$0	\$60,000	\$120,000	\$60,000	\$15,000
Dryman	\$0.00	\$0	\$0	\$0	\$0	\$0
Toolcrib/Caplamps	\$0.00	\$0	\$0	\$0	\$0	\$0
<b><u>Maintenance - Hourly</u></b>						
Lead Mechanic	\$0.00	\$276,480	\$276,480	\$276,480	\$276,480	\$0
Mechanic	\$1,058,784.00	\$1,058,784	\$1,058,784	\$1,058,784	\$1,058,784	\$264,696
Lead Electrician	\$0.00	\$0	\$0	\$0	\$0	\$0
Electrician	\$794,088.00	\$794,088	\$794,088	\$661,740	\$529,392	\$132,348
Instrumentation Technician	\$0.00	\$0	\$0	\$0	\$0	\$0
Millwright	\$99,012.00	\$99,012	\$99,012	\$99,012	\$99,012	\$24,753
Welder	\$0.00	\$0	\$0	\$0	\$0	\$0
	\$2,309,376	\$2,585,856	\$2,645,856	\$2,780,844	\$2,461,584	\$546,276
	\$5,895,486	\$6,083,817	\$6,143,817	\$6,278,805	\$5,233,049	\$1,239,142

Allocation to Capital %  
Allocation to Capital \$  
Remaining in Operating

33.5%	3.3%	0.0%	0.0%	0.0%
\$2,040,754	\$204,167	\$0	\$0	\$0
\$4,043,063	\$5,939,650	\$6,278,805	\$5,233,049	\$1,239,142

Item	2013 Bell Creek Complex Budget	Mine Portion (Split with Mill)	Total Mine 2013	2014		2015		2016		2017		Q1 2018	
				% of 2013	Cost	% of 2013	Cost	% of 2013	Cost	% of 2013	Cost	% of 2013	Cost
<b>Financing Costs</b>	<b>\$310,000</b>		<b>\$285,000</b>		<b>\$285,000</b>		<b>\$285,000</b>		<b>\$285,000</b>		<b>\$233,000</b>		<b>\$58,250</b>
Financing Costs (split with mill)	\$50,000	50%	\$25,000	100%	\$25,000	100%	\$25,000	100%	\$25,000	100%	\$25,000	25%	\$6,250
Financing Costs (100% mine)	\$260,000	100%	\$260,000	100%	\$260,000	100%	\$260,000	100%	\$260,000	100%	\$208,000	20%	\$52,000
<b>Site Carrying Costs</b>	<b>\$1,561,515</b>		<b>\$780,758</b>		<b>\$819,795</b>		<b>\$819,795</b>		<b>\$819,795</b>		<b>\$668,306</b>		<b>\$167,077</b>
Safety & Training Costs (Supervisory Training, Coveralls & Mat Service)	\$190,000	50%	\$95,000	105%	\$99,750	105%	\$99,750	105%	\$99,750	80%	\$76,000	20%	\$19,000
Dry Supplies & Janitorial	\$250,800	50%	\$125,400	105%	\$131,670	105%	\$131,670	105%	\$131,670	80%	\$100,320	20%	\$25,080
Freight/Courier/Postage	\$131,100	50%	\$65,550	105%	\$68,828	105%	\$68,828	105%	\$68,828	80%	\$52,440	20%	\$13,110
Security	\$437,000	50%	\$218,500	105%	\$229,425	105%	\$229,425	105%	\$229,425	100%	\$218,500	25%	\$54,625
Licenses, Permits & Fees	\$0	50%	\$0	105%	\$0	105%	\$0	105%	\$0	80%	\$0	20%	\$0
Vehicle Expenses/Leases	\$38,000	50%	\$19,000	105%	\$19,950	105%	\$19,950	105%	\$19,950	80%	\$15,200	20%	\$3,800
Mileage/Vehicle Allowance (KM's reimbursement)	\$2,850	50%	\$1,425	105%	\$1,496	105%	\$1,496	105%	\$1,496	80%	\$1,140	20%	\$285
Travel including Airfare & Accommodations	\$4,750	50%	\$2,375	105%	\$2,494	105%	\$2,494	105%	\$2,494	80%	\$1,900	20%	\$475
Meals & Entertainment (Including Office & Travel Related)	\$6,650	50%	\$3,325	105%	\$3,491	105%	\$3,491	105%	\$3,491	80%	\$2,660	20%	\$665
Seminar Courses/Fees	\$14,250	50%	\$7,125	105%	\$7,481	105%	\$7,481	105%	\$7,481	80%	\$5,700	20%	\$1,425
Office Supplies	\$147,250	50%	\$73,625	105%	\$77,306	105%	\$77,306	105%	\$77,306	80%	\$58,900	20%	\$14,725
Property Taxes	\$239,400	50%	\$119,700	105%	\$125,685	105%	\$125,685	105%	\$125,685	80%	\$95,760	20%	\$23,940
Insurance	\$99,465	50%	\$49,733	105%	\$52,219	105%	\$52,219	105%	\$52,219	80%	\$39,786	20%	\$9,947
<b>Leases/Rentals</b>	<b>\$145,800</b>		<b>\$102,900</b>		<b>\$102,900</b>		<b>\$102,900</b>		<b>\$65,700</b>		<b>\$0</b>		<b>\$0</b>
Drys (Trailers) x 2	\$71,400	50%	\$35,700	100%	\$35,700	100%	\$35,700	100%	\$35,700	0%	\$0	0%	\$0
Core Trailer Lease	\$60,000	100%	\$60,000	100%	\$60,000	100%	\$60,000	50%	\$30,000	0%	\$0	0%	\$0
Photocopier	\$14,400	50%	\$7,200	100%	\$7,200	100%	\$7,200	0%	\$0	0%	\$0	0%	\$0
<b>Surface Maintenance</b>	<b>\$192,375</b>		<b>\$96,188</b>		<b>\$100,997</b>		<b>\$100,997</b>		<b>\$100,997</b>		<b>\$100,997</b>		<b>\$15,898</b>
Road grading - William Day	\$38,000	50%	\$19,000	105%	\$19,950	105%	\$19,950	105%	\$19,950	105%	\$19,950	26%	\$4,988
Road grading - Gold Corp Halnor Rd	\$71,250	50%	\$35,625	105%	\$37,406	105%	\$37,406	105%	\$37,406	105%	\$37,406	0%	\$0
Snow Removal - William Day/LPL Contracting	\$57,000	50%	\$28,500	105%	\$29,925	105%	\$29,925	105%	\$29,925	105%	\$29,925	0%	\$7,481
Dry Repairs/Maintenance	\$9,025	50%	\$4,513	105%	\$4,738	105%	\$4,738	105%	\$4,738	105%	\$4,738	26%	\$1,185
Maintenance General Buildings	\$17,100	50%	\$8,550	105%	\$8,978	105%	\$8,978	105%	\$8,978	105%	\$8,978	26%	\$2,244
<b>Health and Safety</b>	<b>\$342,223</b>		<b>\$171,112</b>		<b>\$179,667</b>		<b>\$179,667</b>		<b>\$179,667</b>		<b>\$136,889</b>		<b>\$34,222</b>
First Aid Supplies - Mileage/Vehicle related	\$13,760	50%	\$6,880	105%	\$7,224	105%	\$7,224	105%	\$7,224	80%	\$5,504	20%	\$1,376
Safety Supplies - Direct Hourly	\$68,400	50%	\$34,200	105%	\$35,910	105%	\$35,910	105%	\$35,910	80%	\$27,360	20%	\$6,840
Safety Supplies - Indirect Staff	\$14,773	50%	\$7,387	105%	\$7,756	105%	\$7,756	105%	\$7,756	80%	\$5,909	20%	\$1,477
Mgmt Safety Training	\$68,400	50%	\$34,200	105%	\$35,910	105%	\$35,910	105%	\$35,910	80%	\$27,360	20%	\$6,840
Mgmt workshop / conference, Porcupine safety group	\$11,495	50%	\$5,748	105%	\$6,035	105%	\$6,035	105%	\$6,035	80%	\$4,598	20%	\$1,150
Mine Rescue Incentive/Competition	\$71,250	50%	\$35,625	105%	\$37,406	105%	\$37,406	105%	\$37,406	80%	\$28,500	20%	\$7,125
Mine Rescue Gear	\$24,700	50%	\$12,350	105%	\$12,968	105%	\$12,968	105%	\$12,968	80%	\$9,880	20%	\$2,470
Gas Testing underground and mill	\$6,650	50%	\$3,325	105%	\$3,491	105%	\$3,491	105%	\$3,491	80%	\$2,660	20%	\$665
Safety Awards	\$22,800	50%	\$11,400	105%	\$11,970	105%	\$11,970	105%	\$11,970	80%	\$9,120	20%	\$2,280
Coverall service	\$7,980	50%	\$3,990	105%	\$4,190	105%	\$4,190	105%	\$4,190	80%	\$3,192	20%	\$798
Consultants	\$9,975	50%	\$4,988	105%	\$5,237	105%	\$5,237	105%	\$5,237	80%	\$3,990	20%	\$998
Safety Software	\$7,600	50%	\$3,800	105%	\$3,990	105%	\$3,990	105%	\$3,990	80%	\$3,040	20%	\$760
OH&S Committee Certification Training	\$2,755	50%	\$1,378	105%	\$1,446	105%	\$1,446	105%	\$1,446	80%	\$1,102	20%	\$276
Safety signs	\$7,790	50%	\$3,895	105%	\$4,090	105%	\$4,090	105%	\$4,090	80%	\$3,116	20%	\$779
First Aid Supplies	\$3,895	50%	\$1,948	105%	\$2,045	105%	\$2,045	105%	\$2,045	80%	\$1,558	20%	\$390
<b>First Nations Consultations/Reviews</b>	<b>\$44,000</b>		<b>\$22,000</b>		<b>\$22,000</b>		<b>\$22,000</b>		<b>\$22,000</b>		<b>\$22,000</b>		<b>\$5,500</b>
First Nations Consultations/Reviews	\$44,000	50%	\$22,000	100%	\$22,000	100%	\$22,000	100%	\$22,000	100%	\$22,000	25%	\$5,500
<b>Environmental</b>	<b>\$941,512</b>		<b>\$470,756</b>		<b>\$494,294</b>		<b>\$494,294</b>		<b>\$494,294</b>		<b>\$494,294</b>		<b>\$123,573</b>
Assay & Sampling	\$145,702	50%	\$72,851	105%	\$76,494	105%	\$76,494	105%	\$76,494	105%	\$76,494	26%	\$19,123
Contractors	\$39,900	50%	\$19,950	105%	\$20,948	105%	\$20,948	105%	\$20,948	105%	\$20,948	26%	\$5,237
Waste Management	\$119,700	50%	\$59,850	105%	\$62,843	105%	\$62,843	105%	\$62,843	105%	\$62,843	26%	\$15,711
Consultants	\$288,325	50%	\$144,163	105%	\$151,371	105%	\$151,371	105%	\$151,371	105%	\$151,371	26%	\$37,843
Travel/Vehicle Expenses	\$11,115	50%	\$5,558	105%	\$5,835	105%	\$5,835	105%	\$5,835	105%	\$5,835	26%	\$1,459
Operating Supplies	\$42,275	50%	\$21,138	105%	\$22,194	105%	\$22,194	105%	\$22,194	105%	\$22,194	26%	\$5,549
Rentals	\$285,000	50%	\$142,500	105%	\$149,625	105%	\$149,625	105%	\$149,625	105%	\$149,625	26%	\$37,406
General & Admin (Lic, Permits, Fees)	\$9,495	50%	\$4,748	105%	\$4,985	105%	\$4,985	105%	\$4,985	105%	\$4,985	26%	\$1,246
<b>Mine Engineering</b>	<b>\$150,000</b>		<b>\$150,000</b>		<b>\$157,500</b>		<b>\$157,500</b>		<b>\$135,000</b>		<b>\$75,000</b>		<b>\$7,500</b>
Engineering Instrumentation	\$30,000	100%	\$30,000	105%	\$31,500	105%	\$31,500	90%	\$27,000	50%	\$15,000	13%	\$3,750
Survey Consumables	\$30,000	100%	\$30,000	105%	\$31,500	105%	\$31,500	90%	\$27,000	50%	\$15,000	13%	\$3,750
Engineering Consulting	\$80,000	100%	\$80,000	105%	\$84,000	105%	\$84,000	90%	\$72,000	50%	\$40,000	0%	\$0
Engineering Training	\$10,000	100%	\$10,000	105%	\$10,500	105%	\$10,500	90%	\$9,000	50%	\$5,000	0%	\$0
<b>Ventilation and Dewatering</b>	<b>\$0</b>		<b>\$0</b>		<b>\$220,000</b>		<b>\$220,000</b>		<b>\$220,000</b>		<b>\$110,000</b>		<b>\$27,500</b>
Fan Maintenance Consumables/Parts Allowance			\$0		\$100,000		\$100,000		\$100,000		\$50,000		\$12,500
Pump Maintenance Consumable/Parts Allowance			\$0		\$100,000		\$100,000		\$100,000		\$50,000		\$12,500
Mine Air Heater Maintenance Consumables/Parts Allowance			\$0		\$20,000		\$20,000		\$20,000		\$10,000		\$2,500
<b>Mine Air Heating - Propane</b>	<b>\$900,000</b>		<b>\$501,942</b>		<b>\$668,320</b>		<b>\$668,320</b>		<b>\$668,320</b>		<b>\$544,235</b>		<b>\$355,747</b>
Propane	\$900,000	100%	\$501,942		\$668,320		\$668,320		\$668,320		\$544,235		\$355,747
<b>Total Cost</b>	<b>\$3,687,425</b>		<b>\$2,580,655</b>		<b>\$3,050,473</b>		<b>\$3,050,473</b>		<b>\$2,990,773</b>		<b>\$2,384,721</b>		<b>\$795,267</b>

	2014	2015	2016	2017	Q1 2018
Total Cost	\$3,050,473	\$3,050,473	\$2,990,773	\$2,384,721	\$795,267
Allocation to Capital (%)	33.5%	3.3%	0.0%	0.0%	0.0%
Allocation to Capital (\$)	\$1,023,250	\$101,371	\$0	\$0	\$0
Remain in Operating (\$)	\$2,027,223	\$2,949,102	\$2,990,773	\$2,384,721	\$795,267

169512572 Lake Shore Gold - Bell Creek 43-101

Indirect Mobile Equipment Operating Cost

February 28, 2013.

Equipment Type	Purpose	Annual Operating Cost	LOM									
			2014		2015		2016		2017		Q1 2018	
			No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost
LHD 2yd	Services	\$137,626	1	\$137,626	1	\$137,626	1.00	\$137,626	1.0	\$137,626	0.25	\$34,406
LHD 1.5yd	Services	\$71,633	1	\$71,633	1	\$71,633	1.00	\$71,633	0.5	\$35,817	0.13	\$8,954
Scissor Lift	Services	\$37,310	1	\$37,310	1	\$37,310	1.00	\$37,310	1.0	\$37,310	0.25	\$9,328
Minecat	Personnel	\$55,468	4	\$221,872	4	\$221,872	4.00	\$221,872	3.0	\$166,404	0.75	\$41,601
Kubota RTV	Personnel	\$23,667	4	\$94,668	4	\$94,668	4.00	\$94,668	2.0	\$47,334	0.50	\$11,834
Toyota Mancarrier	Personnel	\$46,779	3	\$140,336	3	\$140,336	3.00	\$140,336	2.0	\$93,557	0.50	\$23,389
Mine Mule	Personnel	\$25,839	1	\$25,839	1	\$25,839	1.00	\$25,839	0.0	\$0	0.00	\$0
Boom Truck	Services/Construction	\$79,240	1	\$79,240	1	\$79,240	1.00	\$79,240	1.0	\$79,240	0.25	\$19,810
Grader	Ramp Maintenance	\$27,956	1	\$27,956	1	\$27,956	1.00	\$27,956	0.8	\$20,967	0.19	\$5,242
Suface Loader	Material Handling	\$223,650	1	\$223,650	1	\$223,650	1.00	\$223,650	1.0	\$223,650	0.25	\$55,913
			18	\$1,060,131	18	\$1,060,131	18	\$1,060,131	12	\$841,905	3	\$210,476

	2014	2015	2016	2017	Q1 2018
Total	\$1,060,131	\$1,060,131	\$1,060,131	\$841,905	\$210,476
Allocation to Capital (%)	33.5%	3.3%	0.0%	0.0%	0.0%
Allocation to Capital (\$)	\$355,610	\$35,230	\$0	\$0	\$0
Remain in Operating (\$)	\$704,521	\$1,024,901	\$1,060,131	\$841,905	\$210,476

Longhole Stope Production						
Resource Name	2014 (t)	2015 (t)	2016 (t)	2017 (t)	2018 (t)	Total (t)
300 NAE FW 1				2,160		2,160
300 NAE FW 2					2,077	2,077
300 NAE HW 1				2,267		2,267
300 NAE HW 2					2,697	2,697
430 NA 1				1,195		1,195
430 NA 2				1,163		1,163
430 NAX 1				1,663		1,663
430 NAX 2				742		742
445 NA 1				2,040		2,040
445 NA 2				2,320		2,320
445 NA3 1					1,064	1,064
445 NAX 1				2,561		2,561
445 NAX 2				766		766
445 NB 2				1,569		1,569
460 NA3 1					1,958	1,958
460 NAX 1				1,947		1,947
460 NAX 2				1,425		1,425
460 NB 3				2,826		2,826
475 NA3 1					1,346	1,346
475 NAX 1				2,898		2,898
475 NB 2				1,941		1,941
475 NB 3				1,751		1,751
490 NAX 1			1,600	1,143		2,742
490 NB 1				1,165		1,165
490 NB 2				2,579		2,579
490 NB 3				1,891		1,891
490 NB 4				2,139		2,139
505 HW 2					1,156	1,156
505 NA 1				1,972		1,972
505 NA 2					2,386	2,386
505 NA3 1					1,017	1,017
505 NAX 1			1,333			1,333
505 NB 1				1,069		1,069
505 NB 2				907		907
505 NB 3			2,202			2,202
505 NB 4			2,778			2,778
505 NB 5			1,720			1,720
520 NB 1	1,758					1,758
520 NB 2	2,001					2,001
520 NB 3			1,941			1,941
520 NB 4			2,417			2,417
520 NB 5			1,197			1,197
520 NB 6			1,887			1,887
535 NA 4					2,062	2,062
535 NA3 1					2,707	2,707
535 NB 2			1,254			1,254
535 NB 3			1,364			1,364
535 NB 4			1,553			1,553
535 NB 5			3,406			3,406
550 HW 1					1,555	1,555
550 NA 2				1,037		1,037
550 NA 3				1,931		1,931
550 NA 4					1,554	1,554
550 NA3 1					2,516	2,516
550 NB 1				1,478		1,478
565 NA 5					1,402	1,402
565 NA3 1					1,485	1,485
580 NA 4					2,089	2,089
580 NA3 1				1,976		1,976
595 HW 1				1,381		1,381
595 NA 2				4,099		4,099
595 NA 3				1,909		1,909
595 NA 4				2,115		2,115
595 NA 5				1,059		1,059
595 NA3 1				2,009		2,009
610 HW 3	3,402					3,402
610 NA 3	3,448					3,448
610 NA 4	3,321					3,321
610 NA 5	8,693					8,693
610 NA 6	4,815					4,815
625 HW 2	2,413					2,413
625 HW 3	2,460					2,460
625 NA 6	3,605					3,605
625 NA 7	6,379					6,379
640 HW 1			4,152	475		4,627
640 HW 2				1,762		1,762
640 HW 3				584		584
640 NA 2			3,221			3,221
640 NA 3			2,083			2,083
640 NA 4			3,932			3,932
640 NA 5			2,814			2,814
640 NA 6			2,807			2,807
640 NA 7			2,775			2,775
640 NA 8			5,630			5,630
640 NA4 1			3,688			3,688
640 NA4 2			2,166			2,166
640 NB2 1			1,791			1,791
640 NB2 2			2,218			2,218
655 HW 1	2,438					2,438
655 HW 2	2,517					2,517
655 NA 2		2,313				2,313
655 NA 3		3,779				3,779
655 NA 4		2,057				2,057

Longhole Stope Ore Haulage							
	Ore Haulage (\$/t)	2014 \$	2015 \$	2016 \$	2017 \$	2018 \$	Total \$
300 NAE FW 1	\$7.77				\$16,783		\$ 16,783
300 NAE FW 2	\$7.77					\$16,138	\$ 16,138
300 NAE HW 1	\$7.77				\$17,615		\$ 17,615
300 NAE HW 2	\$7.77					\$20,956	\$ 20,956
430 NA 1	\$9.51				\$11,364		\$ 11,364
430 NA 2	\$9.51				\$11,060		\$ 11,060
430 NAX 1	\$9.51				\$15,815		\$ 15,815
430 NAX 2	\$9.51				\$7,056		\$ 7,056
445 NA 1	\$9.71				\$19,808		\$ 19,808
445 NA 2	\$9.71				\$22,527		\$ 22,527
445 NA3 1	\$9.71					\$10,331	\$ 10,331
445 NAX 1	\$9.71				\$24,867		\$ 24,867
445 NAX 2	\$9.71				\$7,438		\$ 7,438
445 NB 2	\$9.71				\$15,235		\$ 15,235
460 NA3 1	\$9.91					\$19,404	\$ 19,404
460 NAX 1	\$9.91				\$19,295		\$ 19,295
460 NAX 2	\$9.91				\$14,122		\$ 14,122
460 NB 3	\$9.91				\$28,006		\$ 28,006
475 NA3 1	\$10.11					\$13,608	\$ 13,608
475 NAX 1	\$10.11				\$29,299		\$ 29,299
475 NB 2	\$10.11				\$19,624		\$ 19,624
475 NB 3	\$10.11				\$17,703		\$ 17,703
490 NAX 1	\$10.31			\$16,491	\$11,779		\$ 28,270
490 NB 1	\$10.31				\$12,011		\$ 12,011
490 NB 2	\$10.31				\$26,589		\$ 26,589
490 NB 3	\$10.31				\$19,496		\$ 19,496
490 NB 4	\$10.31				\$22,053		\$ 22,053
505 HW 2	\$10.51					\$12,150	\$ 12,150
505 NA 1	\$10.51				\$20,726		\$ 20,726
505 NA 2	\$10.51					\$25,077	\$ 25,077
505 NA3 1	\$10.51					\$10,689	\$ 10,689
505 NAX 1	\$10.51			\$14,010			\$ 14,010
505 NB 1	\$10.51				\$11,235		\$ 11,235
505 NB 2	\$10.51				\$9,533		\$ 9,533
505 NB 3	\$10.51			\$23,143			\$ 23,143
505 NB 4	\$10.51			\$29,197			\$ 29,197
505 NB 5	\$10.51			\$18,077			\$ 18,077
520 NB 1	\$10.71	\$18,828					\$ 18,828
520 NB 2	\$10.71	\$21,431					\$ 21,431
520 NB 3	\$10.71			\$20,788			\$ 20,788
520 NB 4	\$10.71			\$25,886			\$ 25,886
520 NB 5	\$10.71			\$12,820			\$ 12,820
520 NB 6	\$10.71			\$20,210			\$ 20,210
535 NA 4	\$10.91					\$22,496	\$ 22,496
535 NA3 1	\$10.91					\$29,533	\$ 29,533
535 NB 2	\$10.91			\$13,681			\$ 13,681
535 NB 3	\$10.91			\$14,881			\$ 14,881
535 NB 4	\$10.91			\$16,943			\$ 16,943
535 NB 5	\$10.91			\$37,159			\$ 37,159
550 HW 1	\$11.11					\$17,276	\$ 17,276
550 NA 2	\$11.11				\$11,521		\$ 11,521
550 NA 3	\$11.11				\$21,453		\$ 21,453
550 NA 4	\$11.11					\$17,265	\$ 17,265
550 NA3 1	\$11.11					\$27,953	\$ 27,953
550 NB 1	\$11.11				\$16,421		\$ 16,421
565 NA 5	\$11.31					\$15,857	\$ 15,857
565 NA3 1	\$11.31					\$16,795	\$ 16,795
580 NA 4	\$11.51					\$24,044	\$ 24,044
580 NA3 1	\$11.51				\$22,744		\$ 22,744
595 HW 1	\$11.71				\$16,172		\$ 16,172
595 NA 2	\$11.71				\$47,999		\$ 47,999
595 NA 3	\$11.71				\$22,354		\$ 22,354
595 NA 4	\$11.71				\$24,767		\$ 24,767
595 NA 5	\$11.71				\$12,401		\$ 12,401
595 NA3 1	\$11.71				\$23,525		\$ 23,525
610 HW 3	\$11.91	\$40,518					\$ 40,518
610 NA 3	\$11.91	\$41,066					\$ 41,066
610 NA 4	\$11.91	\$39,553					\$ 39,553
610 NA 5	\$11.91	\$103,534					\$ 103,534
610 NA 6	\$11.91	\$57,347					\$ 57,347
625 HW 2	\$12.11	\$29,221					\$ 29,221
625 HW 3	\$12.11	\$29,791					\$ 29,791
625 NA 6	\$12.11	\$43,657					\$ 43,657
625 NA 7	\$12.11	\$77,250					\$ 77,250
640 HW 1	\$12.33			\$51,200	\$5,851		\$ 57,051
640 HW 2	\$12.33				\$21,725		\$ 21,725
640 HW 3	\$12.33				\$7,201		\$ 7,201
640 NA 2	\$12.33			\$39,715			\$ 39,715
640 NA 3	\$12.33			\$25,683			\$ 25,683
640 NA 4	\$12.33			\$48,482			\$ 48,482
640 NA 5	\$12.33			\$34,697			\$ 34,697
640 NA 6	\$12.33			\$34,610			\$ 34,610
640 NA 7	\$12.33			\$34,216			\$ 34,216
640 NA 8	\$12.33			\$69,418			\$ 69,418
640 NA4 1	\$12.33			\$45,473			\$ 45,473
640 NA4 2	\$12.33			\$26,707			\$ 26,707
640 NB2 1	\$12.33			\$22,083			\$ 22,083
640 NB2 2	\$12.33			\$27,348			\$ 27,348
655 HW 1	\$12.55	\$30,597					\$ 30,597
655 HW 2	\$12.55	\$31,588					\$ 31,588
655 NA 2	\$12.55		\$29,028				\$ 29,028
655 NA 3	\$12.55		\$47,426				\$ 47,426
655 NA 4	\$12.55		\$25,815				\$ 25,815

## 169512572 Lake Shore Gold - Bell Creek 43-101 Study

## Stope Production - Dump from MS Project

February 28, 2013.

Longhole Stope Production						
Resource Name	2014 (t)	2015 (t)	2016 (t)	2017 (t)	2018 (t)	Total (t)
655 NA 5		5,787				5,787
655 NA 6		4,516				4,516
655 NA 7		4,304				4,304
655 NA 8		4,100				4,100
655 NA 9		5,530				5,530
655 NA4 1	3,457					3,457
655 NA4 2	4,449					4,449
655 NB2 1	2,610					2,610
655 NB2 2	3,051					3,051
670 HW 1	1,463					1,463
670 HW 2	1,310					1,310
670 NA 2	3,671					3,671
670 NA 3	5,840					5,840
670 NA 4	3,780					3,780
670 NA 5	7,467					7,467
670 NA 6	4,032					4,032
670 NA 7	4,627					4,627
670 NA 8	5,762					5,762
670 NA 9	7,563					7,563
670 NA4 1	3,167					3,167
670 NA4 3	3,596					3,596
685 HW 1			1,250			1,250
685 NA 1			2,845			2,845
685 NA 2			2,594			2,594
685 NA 3			3,381			3,381
685 NA 4			2,410			2,410
685 NA 5			5,232			5,232
685 NA 6			2,862			2,862
685 NA 7			3,225			3,225
685 NA 8			2,608			2,608
685 NA 9			2,776			2,776
685 NA2 2			5,066			5,066
685 NA2 3			378			378
685 NA4 1				2,757		2,757
685 NA4 2			2,380			2,380
685 NA4 3			2,387			2,387
685 NB 3			1,172			1,172
685 NB 4			1,045			1,045
685 NB2 1			1,959			1,959
700 HW 1		1,361				1,361
700 NA 1		4,078				4,078
700 NA 2		3,630				3,630
700 NA 3		3,232				3,232
700 NA 4		2,689	117			2,806
700 NA 5			6,319			6,319
700 NA 6			3,868			3,868
700 NA 7		4,188				4,188
700 NA 8		4,753				4,753
700 NA 9		5,125				5,125
700 NA2 2		3,941				3,941
700 NA4 1			3,296			3,296
700 NA4 2		3,773				3,773
700 NA4 3		2,874				2,874
700 NB 2		3,171				3,171
700 NB 3		1,785				1,785
700 NB 4		2,016				2,016
700 NB2 1		3,370				3,370
715 HW 1		543				543
715 NA 3	6,477					6,477
715 NA 4		3,394				3,394
715 NA 5		3,306				3,306
715 NA 6		4,449				4,449
715 NA 7		7,916				7,916
715 NA 8		5,742				5,742
715 NA 9		5,237				5,237
715 NA 10		5,118				5,118
715 NA 11	5,168					5,168
715 NA2 2		3,847				3,847
715 NA2 3		5,549				5,549
715 NA4 1		3,123				3,123
715 NA4 2		5,841				5,841
715 NA4 3		3,418				3,418
715 NB 1	2,776					2,776
715 NB 4	2,168					2,168
715 NB2 3		4,187				4,187
730 NA 3				3,876		3,876
730 NA 4				1,638		1,638
730 NA 5				2,430		2,430
730 NA 6				3,865		3,865
730 NA 7				5,066		5,066
730 NA 8				5,151		5,151
730 NA 9				3,617		3,617
730 NA 10				1,401		1,401
730 NA2 1				2,972		2,972
730 NA2 2				3,282		3,282
730 NA2 3				3,881		3,881
730 NA2 4				2,811		2,811
730 NA4 1					1,491	1,491
730 NA4 2				3,206		3,206
730 NA4 3				2,014		2,014
730 NB 1				2,329		2,329
730 NB2 1				2,689		2,689
730 NB2 2				2,981		2,981

Longhole Stope Ore Haulage							
	Ore Haulage (\$/t)	2014 \$	2015 \$	2016 \$	2017 \$	2018 \$	Total \$
655 NA 5	\$12.55		\$72,627				\$ 72,627
655 NA 6	\$12.55		\$56,676				\$ 56,676
655 NA 7	\$12.55		\$54,015				\$ 54,015
655 NA 8	\$12.55		\$51,455				\$ 51,455
655 NA 9	\$12.55		\$69,402				\$ 69,402
655 NA4 1	\$12.55	\$43,385					\$ 43,385
655 NA4 2	\$12.55	\$55,835					\$ 55,835
655 NB2 1	\$12.55	\$32,756					\$ 32,756
655 NB2 2	\$12.55	\$38,290					\$ 38,290
670 HW 1	\$12.77	\$18,683					\$ 18,683
670 HW 2	\$12.77	\$16,729					\$ 16,729
670 NA 2	\$12.77	\$46,879					\$ 46,879
670 NA 3	\$12.77	\$74,577					\$ 74,577
670 NA 4	\$12.77	\$48,271					\$ 48,271
670 NA 5	\$12.77	\$95,354					\$ 95,354
670 NA 6	\$12.77	\$51,489					\$ 51,489
670 NA 7	\$12.77	\$59,087					\$ 59,087
670 NA 8	\$12.77	\$73,581					\$ 73,581
670 NA 9	\$12.77	\$96,580					\$ 96,580
670 NA4 1	\$12.77	\$40,443					\$ 40,443
670 NA4 3	\$12.77	\$45,921					\$ 45,921
685 HW 1	\$12.99			\$16,238			\$ 16,238
685 NA 1	\$12.99			\$36,957			\$ 36,957
685 NA 2	\$12.99			\$33,696			\$ 33,696
685 NA 3	\$12.99			\$43,919			\$ 43,919
685 NA 4	\$12.99			\$31,306			\$ 31,306
685 NA 5	\$12.99			\$67,964			\$ 67,964
685 NA 6	\$12.99			\$37,177			\$ 37,177
685 NA 7	\$12.99			\$41,893			\$ 41,893
685 NA 8	\$12.99			\$33,878			\$ 33,878
685 NA 9	\$12.99			\$36,060			\$ 36,060
685 NA2 2	\$12.99			\$65,807			\$ 65,807
685 NA2 3	\$12.99			\$4,910			\$ 4,910
685 NA4 1	\$12.99				\$35,813		\$ 35,813
685 NA4 2	\$12.99			\$30,916			\$ 30,916
685 NA4 3	\$12.99			\$31,007			\$ 31,007
685 NB 3	\$12.99			\$15,224			\$ 15,224
685 NB 4	\$12.99			\$13,575			\$ 13,575
685 NB2 1	\$12.99			\$25,447			\$ 25,447
700 HW 1	\$13.21		\$17,979				\$ 17,979
700 NA 1	\$13.21		\$53,870				\$ 53,870
700 NA 2	\$13.21		\$47,952				\$ 47,952
700 NA 3	\$13.21		\$42,695				\$ 42,695
700 NA 4	\$13.21		\$35,523	\$1,545			\$ 37,067
700 NA 5	\$13.21			\$83,474			\$ 83,474
700 NA 6	\$13.21			\$51,096			\$ 51,096
700 NA 7	\$13.21		\$55,323				\$ 55,323
700 NA 8	\$13.21		\$62,787				\$ 62,787
700 NA 9	\$13.21		\$67,701				\$ 67,701
700 NA2 2	\$13.21		\$52,061				\$ 52,061
700 NA4 1	\$13.21			\$43,540			\$ 43,540
700 NA4 2	\$13.21		\$49,841				\$ 49,841
700 NA4 3	\$13.21		\$37,966				\$ 37,966
700 NB 2	\$13.21		\$41,889				\$ 41,889
700 NB 3	\$13.21		\$23,580				\$ 23,580
700 NB 4	\$13.21		\$26,631				\$ 26,631
700 NB2 1	\$13.21		\$44,518				\$ 44,518
715 HW 1	\$13.43		\$7,292				\$ 7,292
715 NA 3	\$13.43	\$86,986					\$ 86,986
715 NA 4	\$13.43		\$45,581				\$ 45,581
715 NA 5	\$13.43		\$44,400				\$ 44,400
715 NA 6	\$13.43		\$59,750				\$ 59,750
715 NA 7	\$13.43		\$106,312				\$ 106,312
715 NA 8	\$13.43		\$77,115				\$ 77,115
715 NA 9	\$13.43		\$70,333				\$ 70,333
715 NA 10	\$13.43		\$68,735				\$ 68,735
715 NA 11	\$13.43	\$69,406					\$ 69,406
715 NA2 2	\$13.43		\$51,665				\$ 51,665
715 NA2 3	\$13.43		\$74,523				\$ 74,523
715 NA4 1	\$13.43		\$41,942				\$ 41,942
715 NA4 2	\$13.43		\$78,445				\$ 78,445
715 NA4 3	\$13.43		\$45,904				\$ 45,904
715 NB 1	\$13.43	\$37,282					\$ 37,282
715 NB 4	\$13.43	\$29,116					\$ 29,116
715 NB2 3	\$13.43		\$56,231				\$ 56,231
730 NA 3	\$13.65				\$52,907		\$ 52,907
730 NA 4	\$13.65				\$22,359		\$ 22,359
730 NA 5	\$13.65				\$33,170		\$ 33,170
730 NA 6	\$13.65				\$52,757		\$ 52,757
730 NA 7	\$13.65				\$69,151		\$ 69,151
730 NA 8	\$13.65				\$70,311		\$ 70,311
730 NA 9	\$13.65				\$49,372		\$ 49,372
730 NA 10	\$13.65				\$19,124		\$ 19,124
730 NA2 1	\$13.65				\$40,568		\$ 40,568
730 NA2 2	\$13.65				\$44,799		\$ 44,799
730 NA2 3	\$13.65				\$52,976		\$ 52,976
730 NA2 4	\$13.65				\$38,370		\$ 38,370
730 NA4 1	\$13.65					\$20,352	\$ 20,352
730 NA4 2	\$13.65				\$43,762		\$ 43,762
730 NA4 3	\$13.65				\$27,491		\$ 27,491
730 NB 1	\$13.65				\$31,791		\$ 31,791
730 NB2 1	\$13.65				\$36,705		\$ 36,705
730 NB2 2	\$13.65				\$40,691		\$ 40,691

Longhole Stope Production						
Resource Name	2014 (t)	2015 (t)	2016 (t)	2017 (t)	2018 (t)	Total (t)
730 NB2 3				3,368		3,368
730 NB2 4				1,689		1,689
745 NA 3			4,584			4,584
745 NA 5			2,834	109		2,943
745 NA 6				4,176		4,176
745 NA 7			4,839			4,839
745 NA 8			4,940			4,940
745 NA 9			3,173			3,173
745 NA2 2		4,383				4,383
745 NA2 3			3,680			3,680
745 NA4 1				2,306		2,306
745 NA4 2			3,401			3,401
745 NA4 3			1,892			1,892
745 NB 1			1,933			1,933
745 NB2 3			3,953			3,953
760 NA 1			2,389			2,389
760 NA 2			2,442			2,442
760 NA 3			4,114			4,114
760 NA 4			2,678			2,678
760 NA 5			3,379			3,379
760 NA 6			4,533			4,533
760 NA 7			4,267			4,267
760 NA 8			3,898			3,898
760 NA2 2		3,102				3,102
760 NA2 3		3,975				3,975
760 NA4 1			2,009			2,009
760 NA4 2			3,490			3,490
760 NA4 3			2,026			2,026
760 NA4 4			1,615			1,615
760 NB2 2			3,346			3,346
775 NA 1		3,451				3,451
775 NA 2		4,425				4,425
775 NA 3		5,836				5,836
775 NA 4			6,046			6,046
775 NA 5			5,483			5,483
775 NA 6		5,519				5,519
775 NA 7		3,930				3,930
775 NA4 1			3,244			3,244
775 NA4 2			2,613			2,613
775 NA4 3			1,681			1,681
775 NB2 2		2,780				2,780
<b>Total</b>	<b>129,684</b>	<b>181,443</b>	<b>213,581</b>	<b>133,527</b>	<b>30,562</b>	<b>688,797</b>
Tonnes per Day	357	500	588	368	84	

Longhole Stope Ore Haulage							
	Ore Haulage (\$/t)	2014 \$	2015 \$	2016 \$	2017 \$	2018 \$	Total \$
730 NB2 3	\$13.65				\$45,973		\$ 45,973
730 NB2 4	\$13.65				\$23,055		\$ 23,055
745 NA 3	\$13.87			\$63,580			\$ 63,580
745 NA 5	\$13.87			\$39,308	\$1,512		\$ 40,819
745 NA 6	\$13.87				\$57,921		\$ 57,921
745 NA 7	\$13.87			\$67,117			\$ 67,117
745 NA 8	\$13.87			\$68,518			\$ 68,518
745 NA 9	\$13.87			\$44,010			\$ 44,010
745 NA2 2	\$13.87		\$60,792				\$ 60,792
745 NA2 3	\$13.87			\$51,042			\$ 51,042
745 NA4 1	\$13.87				\$31,984		\$ 31,984
745 NA4 2	\$13.87			\$47,172			\$ 47,172
745 NA4 3	\$13.87			\$26,242			\$ 26,242
745 NB 1	\$13.87			\$26,811			\$ 26,811
745 NB2 3	\$13.87			\$54,828			\$ 54,828
760 NA 1	\$14.09			\$33,661			\$ 33,661
760 NA 2	\$14.09			\$34,408			\$ 34,408
760 NA 3	\$14.09			\$57,966			\$ 57,966
760 NA 4	\$14.09			\$37,733			\$ 37,733
760 NA 5	\$14.09			\$47,610			\$ 47,610
760 NA 6	\$14.09			\$63,870			\$ 63,870
760 NA 7	\$14.09			\$60,122			\$ 60,122
760 NA 8	\$14.09			\$54,923			\$ 54,923
760 NA2 2	\$14.09		\$43,707				\$ 43,707
760 NA2 3	\$14.09		\$56,008				\$ 56,008
760 NA4 1	\$14.09			\$28,307			\$ 28,307
760 NA4 2	\$14.09			\$49,174			\$ 49,174
760 NA4 3	\$14.09			\$28,546			\$ 28,546
760 NA4 4	\$14.09			\$22,755			\$ 22,755
760 NB2 2	\$14.09			\$47,145			\$ 47,145
775 NA 1	\$14.32		\$49,418				\$ 49,418
775 NA 2	\$14.32		\$63,366				\$ 63,366
775 NA 3	\$14.32		\$83,572				\$ 83,572
775 NA 4	\$14.32			\$86,579			\$ 86,579
775 NA 5	\$14.32			\$78,517			\$ 78,517
775 NA 6	\$14.32		\$79,032				\$ 79,032
775 NA 7	\$14.32		\$56,278				\$ 56,278
775 NA4 1	\$14.32			\$46,454			\$ 46,454
775 NA4 2	\$14.32			\$37,418			\$ 37,418
775 NA4 3	\$14.32			\$24,072			\$ 24,072
775 NB2 2	\$14.32		\$39,810				\$ 39,810
<b>Total</b>		<b>\$ 1,625,025</b>	<b>\$ 2,426,971</b>	<b>\$ 2,796,433</b>	<b>\$ 1,607,735</b>	<b>\$ 319,924</b>	<b>\$8,776,089</b>
Production Tonnes Ore		129,684	181,443	213,581	133,527	30,562	688,797
\$/tonnes Hauled to surface		\$12.53	\$13.38	\$13.09	\$12.04	\$10.47	\$12.74

**169512572 Lake Shore Gold - Bell Creek 43-101 Study**

**Stope Production - Dump from MS Project**

**February 28, 2013.**

**Longhole Stope Ore Direct Costs (Cable Bolt / Drill / Blast / Muck to Remuck / Backfill from Remuck)**

	Stoping Cost (\$/t)	2014 \$	2015 \$	2016 \$	2017 \$	2018 \$	Total \$
300 NAE FW 1	\$31.14				\$67,262		\$ 67,262
300 NAE FW 2	\$31.14					\$64,678	\$ 64,678
300 NAE HW 1	\$31.14				\$70,594		\$ 70,594
300 NAE HW 2	\$31.14					\$83,985	\$ 83,985
430 NA 1	\$31.14				\$37,212		\$ 37,212
430 NA 2	\$31.14				\$36,216		\$ 36,216
430 NAX 1	\$31.14				\$51,786		\$ 51,786
430 NAX 2	\$31.14				\$23,106		\$ 23,106
445 NA 1	\$31.14				\$63,526		\$ 63,526
445 NA 2	\$31.14				\$72,245		\$ 72,245
445 NA3 1	\$31.14					\$33,133	\$ 33,133
445 NAX 1	\$31.14				\$79,750		\$ 79,750
445 NAX 2	\$31.14				\$23,853		\$ 23,853
445 NB 2	\$31.14				\$48,859		\$ 48,859
460 NA3 1	\$31.14					\$60,972	\$ 60,972
460 NAX 1	\$31.14				\$60,630		\$ 60,630
460 NAX 2	\$31.14				\$44,375		\$ 44,375
460 NB 3	\$31.14				\$88,002		\$ 88,002
475 NA3 1	\$31.14					\$41,914	\$ 41,914
475 NAX 1	\$31.14				\$90,244		\$ 90,244
475 NB 2	\$31.14				\$60,443		\$ 60,443
475 NB 3	\$31.14				\$54,526		\$ 54,526
490 NAX 1	\$31.14			\$49,808	\$35,577		\$ 85,386
490 NB 1	\$31.14				\$36,278		\$ 36,278
490 NB 2	\$31.14				\$80,310		\$ 80,310
490 NB 3	\$31.14				\$58,886		\$ 58,886
490 NB 4	\$31.14				\$66,608		\$ 66,608
505 HW 2	\$31.14					\$35,998	\$ 35,998
505 NA 1	\$31.14				\$61,408		\$ 61,408
505 NA 2	\$31.14					\$74,300	\$ 74,300
505 NA3 1	\$31.14					\$31,669	\$ 31,669
505 NAX 1	\$31.14			\$41,510			\$ 41,510
505 NB 1	\$31.14				\$33,289		\$ 33,289
505 NB 2	\$31.14				\$28,244		\$ 28,244
505 NB 3	\$31.14			\$68,570			\$ 68,570
505 NB 4	\$31.14			\$86,507			\$ 86,507
505 NB 5	\$31.14			\$53,561			\$ 53,561
520 NB 1	\$31.14	\$54,744					\$ 54,744
520 NB 2	\$31.14	\$62,311					\$ 62,311
520 NB 3	\$31.14			\$60,443			\$ 60,443
520 NB 4	\$31.14			\$75,265			\$ 75,265
520 NB 5	\$31.14			\$37,275			\$ 37,275
520 NB 6	\$31.14			\$58,761			\$ 58,761
535 NA 4	\$31.14					\$64,211	\$ 64,211
535 NA3 1	\$31.14					\$84,296	\$ 84,296
535 NB 2	\$31.14			\$39,050			\$ 39,050
535 NB 3	\$31.14			\$42,475			\$ 42,475
535 NB 4	\$31.14			\$48,360			\$ 48,360
535 NB 5	\$31.14			\$106,063			\$ 106,063
550 HW 1	\$31.14					\$48,423	\$ 48,423
550 NA 2	\$31.14				\$32,292		\$ 32,292
550 NA 3	\$31.14				\$60,131		\$ 60,131
550 NA 4	\$31.14					\$48,392	\$ 48,392
550 NA3 1	\$31.14					\$78,348	\$ 78,348
550 NB 1	\$31.14				\$46,025		\$ 46,025
565 NA 5	\$31.14					\$43,658	\$ 43,658
565 NA3 1	\$31.14					\$46,243	\$ 46,243
580 NA 4	\$31.14					\$65,051	\$ 65,051
580 NA3 1	\$31.14				\$61,533		\$ 61,533

169512572 Lake Shore Gold - Bell Creek 43-101 Study

Stope Production - Dump from MS Project

February 28, 2013.

Longhole Stope Ore Direct Costs (Cable Bolt / Drill / Blast / Muck to Remuck / Backfill from Remuck)

	Stoping Cost (\$/t)	2014 \$	2015 \$	2016 \$	2017 \$	2018 \$	Total \$
595 HW 1	\$31.14				\$43,004		\$ 43,004
595 NA 2	\$31.14				\$127,643		\$ 127,643
595 NA 3	\$31.14				\$59,446		\$ 59,446
595 NA 4	\$31.14				\$65,861		\$ 65,861
595 NA 5	\$31.14				\$32,977		\$ 32,977
595 NA3 1	\$31.14				\$62,560		\$ 62,560
610 HW 3	\$31.14	\$105,938					\$ 105,938
610 NA 3	\$31.14	\$107,371					\$ 107,371
610 NA 4	\$31.14	\$103,416					\$ 103,416
610 NA 5	\$31.14	\$270,700					\$ 270,700
610 NA 6	\$31.14	\$149,939					\$ 149,939
625 HW 2	\$31.14	\$75,141					\$ 75,141
625 HW 3	\$31.14	\$76,604					\$ 76,604
625 NA 6	\$31.14	\$112,260					\$ 112,260
625 NA 7	\$31.14	\$198,642					\$ 198,642
640 HW 1	\$31.14			\$129,307	\$14,778		\$ 144,085
640 HW 2	\$31.14				\$54,869		\$ 54,869
640 HW 3	\$31.14				\$18,186		\$ 18,186
640 NA 2	\$31.14			\$100,302			\$ 100,302
640 NA 3	\$31.14			\$64,865			\$ 64,865
640 NA 4	\$31.14			\$122,442			\$ 122,442
640 NA 5	\$31.14			\$87,628			\$ 87,628
640 NA 6	\$31.14			\$87,410			\$ 87,410
640 NA 7	\$31.14			\$86,414			\$ 86,414
640 NA 8	\$31.14			\$175,318			\$ 175,318
640 NA4 1	\$31.14			\$114,844			\$ 114,844
640 NA4 2	\$31.14			\$67,449			\$ 67,449
640 NB2 1	\$31.14			\$55,772			\$ 55,772
640 NB2 2	\$31.14			\$69,069			\$ 69,069
655 HW 1	\$31.14	\$75,919					\$ 75,919
655 HW 2	\$31.14	\$78,379					\$ 78,379
655 NA 2	\$31.14		\$72,027				\$ 72,027
655 NA 3	\$31.14		\$117,678				\$ 117,678
655 NA 4	\$31.14		\$64,055				\$ 64,055
655 NA 5	\$31.14		\$180,207				\$ 180,207
655 NA 6	\$31.14		\$140,628				\$ 140,628
655 NA 7	\$31.14		\$134,027				\$ 134,027
655 NA 8	\$31.14		\$127,674				\$ 127,674
655 NA 9	\$31.14		\$172,204				\$ 172,204
655 NA4 1	\$31.14	\$107,651					\$ 107,651
655 NA4 2	\$31.14	\$138,542					\$ 138,542
655 NB2 1	\$31.14	\$81,275					\$ 81,275
655 NB2 2	\$31.14	\$95,008					\$ 95,008
670 HW 1	\$31.14	\$45,558					\$ 45,558
670 HW 2	\$31.14	\$40,793					\$ 40,793
670 NA 2	\$31.14	\$114,315					\$ 114,315
670 NA 3	\$31.14	\$181,858					\$ 181,858
670 NA 4	\$31.14	\$117,709					\$ 117,709
670 NA 5	\$31.14	\$232,522					\$ 232,522
670 NA 6	\$31.14	\$125,556					\$ 125,556
670 NA 7	\$31.14	\$144,085					\$ 144,085
670 NA 8	\$31.14	\$179,429					\$ 179,429
670 NA 9	\$31.14	\$235,512					\$ 235,512
670 NA4 1	\$31.14	\$98,620					\$ 98,620
670 NA4 3	\$31.14	\$111,979					\$ 111,979
685 HW 1	\$31.14			\$38,925			\$ 38,925
685 NA 1	\$31.14			\$88,593			\$ 88,593
685 NA 2	\$31.14			\$80,777			\$ 80,777
685 NA 3	\$31.14			\$105,284			\$ 105,284

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Stope Production - Dump from MS Project

February 28, 2013.

Longhole Stope Ore Direct Costs (Cable Bolt / Drill / Blast / Muck to Remuck / Backfill from Remuck)

	Stoping Cost (\$/t)	2014 \$	2015 \$	2016 \$	2017 \$	2018 \$	Total \$
685 NA 4	\$31.14			\$75,047			\$ 75,047
685 NA 5	\$31.14			\$162,924			\$ 162,924
685 NA 6	\$31.14			\$89,123			\$ 89,123
685 NA 7	\$31.14			\$100,427			\$ 100,427
685 NA 8	\$31.14			\$81,213			\$ 81,213
685 NA 9	\$31.14			\$86,445			\$ 86,445
685 NA2 2	\$31.14			\$157,755			\$ 157,755
685 NA2 3	\$31.14			\$11,771			\$ 11,771
685 NA4 1	\$31.14				\$85,853		\$ 85,853
685 NA4 2	\$31.14			\$74,113			\$ 74,113
685 NA4 3	\$31.14			\$74,331			\$ 74,331
685 NB 3	\$31.14			\$36,496			\$ 36,496
685 NB 4	\$31.14			\$32,541			\$ 32,541
685 NB2 1	\$31.14			\$61,003			\$ 61,003
700 HW 1	\$31.14		\$42,382				\$ 42,382
700 NA 1	\$31.14		\$126,989				\$ 126,989
700 NA 2	\$31.14		\$113,038				\$ 113,038
700 NA 3	\$31.14		\$100,644				\$ 100,644
700 NA 4	\$31.14		\$83,738	\$3,641			\$ 87,379
700 NA 5	\$31.14			\$196,774			\$ 196,774
700 NA 6	\$31.14			\$120,450			\$ 120,450
700 NA 7	\$31.14		\$130,414				\$ 130,414
700 NA 8	\$31.14		\$148,008				\$ 148,008
700 NA 9	\$31.14		\$159,593				\$ 159,593
700 NA2 2	\$31.14		\$122,723				\$ 122,723
700 NA4 1	\$31.14			\$102,637			\$ 102,637
700 NA4 2	\$31.14		\$117,491				\$ 117,491
700 NA4 3	\$31.14		\$89,496				\$ 89,496
700 NB 2	\$31.14		\$98,745				\$ 98,745
700 NB 3	\$31.14		\$55,585				\$ 55,585
700 NB 4	\$31.14		\$62,778				\$ 62,778
700 NB2 1	\$31.14		\$104,942				\$ 104,942
715 HW 1	\$31.14		\$16,909				\$ 16,909
715 NA 3	\$31.14	\$201,694					\$ 201,694
715 NA 4	\$31.14		\$105,689				\$ 105,689
715 NA 5	\$31.14		\$102,949				\$ 102,949
715 NA 6	\$31.14		\$138,542				\$ 138,542
715 NA 7	\$31.14		\$246,504				\$ 246,504
715 NA 8	\$31.14		\$178,806				\$ 178,806
715 NA 9	\$31.14		\$163,080				\$ 163,080
715 NA 10	\$31.14		\$159,375				\$ 159,375
715 NA 11	\$31.14	\$160,932					\$ 160,932
715 NA2 2	\$31.14		\$119,796				\$ 119,796
715 NA2 3	\$31.14		\$172,796				\$ 172,796
715 NA4 1	\$31.14		\$97,250				\$ 97,250
715 NA4 2	\$31.14		\$181,889				\$ 181,889
715 NA4 3	\$31.14		\$106,437				\$ 106,437
715 NB 1	\$31.14	\$86,445					\$ 86,445
715 NB 4	\$31.14	\$67,512					\$ 67,512
715 NB2 3	\$31.14		\$130,383				\$ 130,383
730 NA 3	\$31.14				\$120,699		\$ 120,699
730 NA 4	\$31.14				\$51,007		\$ 51,007
730 NA 5	\$31.14				\$75,670		\$ 75,670
730 NA 6	\$31.14				\$120,356		\$ 120,356
730 NA 7	\$31.14				\$157,755		\$ 157,755
730 NA 8	\$31.14				\$160,402		\$ 160,402
730 NA 9	\$31.14				\$112,633		\$ 112,633
730 NA 10	\$31.14				\$43,627		\$ 43,627
730 NA2 1	\$31.14				\$92,548		\$ 92,548

169512572 Lake Shore Gold - Bell Creek 43-101 Study

Stope Production - Dump from MS Project

February 28, 2013.

Longhole Stope Ore Direct Costs (Cable Bolt / Drill / Blast / Muck to Remuck / Backfill from Remuck)

	Stoping Cost (\$/t)	2014 \$	2015 \$	2016 \$	2017 \$	2018 \$	Total \$
730 NA2 2	\$31.14				\$102,201		\$ 102,201
730 NA2 3	\$31.14				\$120,854		\$ 120,854
730 NA2 4	\$31.14				\$87,535		\$ 87,535
730 NA4 1	\$31.14					\$46,430	\$ 46,430
730 NA4 2	\$31.14				\$99,835		\$ 99,835
730 NA4 3	\$31.14				\$62,716		\$ 62,716
730 NB 1	\$31.14				\$72,525		\$ 72,525
730 NB2 1	\$31.14				\$83,735		\$ 83,735
730 NB2 2	\$31.14				\$92,828		\$ 92,828
730 NB2 3	\$31.14				\$104,880		\$ 104,880
730 NB2 4	\$31.14				\$52,595		\$ 52,595
745 NA 3	\$31.14			\$142,746			\$ 142,746
745 NA 5	\$31.14			\$88,251	\$3,394		\$ 91,645
745 NA 6	\$31.14				\$130,041		\$ 130,041
745 NA 7	\$31.14			\$150,686			\$ 150,686
745 NA 8	\$31.14			\$153,832			\$ 153,832
745 NA 9	\$31.14			\$98,807			\$ 98,807
745 NA2 2	\$31.14		\$136,487				\$ 136,487
745 NA2 3	\$31.14			\$114,595			\$ 114,595
745 NA4 1	\$31.14				\$71,809		\$ 71,809
745 NA4 2	\$31.14			\$105,907			\$ 105,907
745 NA4 3	\$31.14			\$58,917			\$ 58,917
745 NB 1	\$31.14			\$60,194			\$ 60,194
745 NB2 3	\$31.14			\$123,096			\$ 123,096
760 NA 1	\$31.14			\$74,393			\$ 74,393
760 NA 2	\$31.14			\$76,044			\$ 76,044
760 NA 3	\$31.14			\$128,110			\$ 128,110
760 NA 4	\$31.14			\$83,393			\$ 83,393
760 NA 5	\$31.14			\$105,222			\$ 105,222
760 NA 6	\$31.14			\$141,158			\$ 141,158
760 NA 7	\$31.14			\$132,874			\$ 132,874
760 NA 8	\$31.14			\$121,384			\$ 121,384
760 NA2 2	\$31.14		\$96,596				\$ 96,596
760 NA2 3	\$31.14		\$123,782				\$ 123,782
760 NA4 1	\$31.14			\$62,560			\$ 62,560
760 NA4 2	\$31.14			\$108,679			\$ 108,679
760 NA4 3	\$31.14			\$63,090			\$ 63,090
760 NA4 4	\$31.14			\$50,291			\$ 50,291
760 NB2 2	\$31.14			\$104,194			\$ 104,194
775 NA 1	\$31.14		\$107,464				\$ 107,464
775 NA 2	\$31.14		\$137,795				\$ 137,795
775 NA 3	\$31.14		\$181,733				\$ 181,733
775 NA 4	\$31.14			\$188,272			\$ 188,272
775 NA 5	\$31.14			\$170,741			\$ 170,741
775 NA 6	\$31.14		\$171,862				\$ 171,862
775 NA 7	\$31.14		\$122,380				\$ 122,380
775 NA4 1	\$31.14			\$101,018			\$ 101,018
775 NA4 2	\$31.14			\$81,369			\$ 81,369
775 NA4 3	\$31.14			\$52,346			\$ 52,346
775 NB2 2	\$31.14		\$86,569				\$ 86,569
<b>Total</b>		<b>\$ 4,038,360</b>	<b>\$ 5,650,138</b>	<b>\$ 6,650,908</b>	<b>\$ 4,158,033</b>	<b>\$ 951,701</b>	<b>21,449,139</b>
Production Tonnes Ore		129,684	181,443	213,581	133,527	30,562	688,797
\$/tonnes Hauled		\$31.14	\$31.14	\$31.14	\$31.14	\$31.14	\$31.14

# **APPENDIX G**

## **STOPE RESERVE CALCULATIONS**

## Bell Creek Development and Stope Reserve Summary

(300L to 775L)

Stope	Diluted/Recovered Tonnes	Grade	Ounces Mined To Surface
2013 Budget Development	71,474	3.79	8,709
2014-2018 Development	87,594	4.05	11,397
300 NAE FW 1	2,160	3.47	241
300 NAE FW 2	2,077	4.38	292
300 NAE HW 1	2,267	4.56	332
300 NAE HW 2	2,697	5.14	446
430 NA 1	1,195	5.34	205
430 NA 2	1,163	3.80	142
430 NAX 1	1,663	4.65	249
430 NAX 2	742	4.89	117
445 NA 1	2,040	4.71	309
445 NA 2	2,320	3.93	293
445 NA3 1	1,064	3.70	126
445 NAX 1	2,561	5.59	461
445 NAX 2	766	5.65	139
445 NB 2	1,569	3.74	189
460 NA3 1	1,958	3.28	206
460 NAX 1	1,947	4.38	274
460 NAX 2	1,425	5.45	250
460 NB 3	2,826	3.61	328
475 NA3 1	1,346	3.68	159
475 NAX 1	2,898	5.48	510
475 NB 2	1,941	3.01	188
475 NB 3	1,751	3.48	196
490 NAX 1	2,742	4.39	387
490 NB 1	1,165	3.38	127
490 NB 2	2,579	3.06	254
490 NB 3	1,891	4.87	296
490 NB 4	2,139	3.83	264
505 HW 2	1,156	3.07	114
505 NA 1	1,972	3.09	196
505 NA 2	2,386	4.34	333
505 NA3 1	1,017	3.58	117
505 NAX 1	1,333	3.07	131
505 NB 1	1,069	3.88	133
505 NB 2	907	3.16	92
505 NB 3	2,202	3.36	238

Stope	Diluted/Recovered Tonnes	Grade	Ounces Mined To Surface
505 NB 4	2,778	6.70	598
505 NB 5	1,720	4.89	270
520 NA FW 2	847	3.50	95
520 NA FW 1	512	3.60	59
520 NA HW 1	691	3.70	82
520 NA HW 2	1,166	4.00	150
520 NA FW 3	4153	5.30	707
520 NA HW 3	1,953	4.20	263
520 NA HW 4	1,732	4.00	223
520 NB 1	1,758	3.94	223
520 NB 2	2,001	3.51	226
520 NB 3	1,941	4.35	272
520 NB 4	2,417	7.26	564
520 NB 5	1,197	4.19	161
520 NB 6	1,887	3.19	194
535 NA 4	2,062	3.58	238
535 NA3 1	2,707	3.48	302
535 NB 1	3685	4.80	568
535 NB 2	1,254	3.93	158
535 NB 3	1,364	5.28	231
535 NB 4	1,553	3.26	163
535 NB 5	3,406	3.84	421
550 HW 1	1,555	3.73	186
550 NA 2	1,037	3.91	130
550 NA 3	1,931	5.40	335
550 NA 4	1,554	3.56	178
550 NA3 1	2,516	3.06	248
550 NB 1	1,478	3.65	174
565 NA 1	2,243	4.50	324
565 NA HW 1	7,197	4.10	948
565 NA 2	3,372	6.40	694
565 NA 3	2,882	4.40	407
565 NA 4	2,078	4.70	314
565 NA 5	1,402	3.76	170
565 NA3 1	1,485	3.20	153
580 NA 1	1,442	5.50	255
580 NA HW 1	2,228	4.10	293
580 NA 2	1,361	3.90	170
580 NA 3	2,226	4.10	293
580 NA 4	2,089	4.18	281
580 NA3 1	1,976	4.63	294

Stope	Diluted/Recovered Tonnes	Grade	Ounces Mined To Surface
595 HW 1	1,381	3.30	146
595 NA 2	4,099	3.26	430
595 NA 3	1,909	3.21	197
595 NA 4	2,115	4.33	295
595 NA 5	1,059	4.64	158
595 NA3 1	2,009	4.34	280
610 HW 1	8,641	3.50	972
610 NA 1	9,323	4.30	1,288
610 NA 2	4,698	4.40	664
610 NA4 1	3,133	4.50	453
610 HW 3	3,402	3.25	355
610 NA 3	3,448	4.24	470
610 NA 4	3,321	5.86	625
610 NA 5	8,693	4.47	1,250
610 NA 6	4,815	3.32	514
625 HW 1	6,937	4.00	892
625 NA 1	3,163	4.10	417
625 NA 10	821	3.50	92
625 NA 2	2,887	4.10	380
625 NA 3	4,461	3.40	487
625 NA 4	3,592	4.70	542
625 NA 5	3,342	5.80	623
625 NA 8	3,323	3.90	416
625 NA 9	1,813	3.50	204
625 NA4 1	3,241	3.70	385
625 NA4 2	1,121	3.80	137
625 NB 1	2,168	3.50	244
625 NB 2	1,575	3.50	177
625 HW 2	2,413	3.42	265
625 HW 3	2,460	3.10	246
625 NA 6	3,605	6.02	697
625 NA 7	6,379	5.16	1,058
640 HW 1	4,627	4.55	676
640 HW 2	1,762	4.09	232
640 HW 3	584	3.05	57
640 NA 2	3,221	3.66	379
640 NA 3	2,083	3.75	251
640 NA 4	3,932	3.57	452
640 NA 5	2,814	4.50	407
640 NA 6	2,807	6.81	615
640 NA 7	2,775	6.23	556

Stope	Diluted/Recovered Tonnes	Grade	Ounces Mined To Surface
640 NA 8	5,630	4.57	827
640 NA4 1	3,688	3.09	367
640 NA4 2	2,166	3.49	243
640 NB2 1	1,791	3.19	183
640 NB2 2	2,218	3.22	230
655 HW 1	2,438	5.43	426
655 HW 2	2,517	7.51	607
655 NA 2	2,313	3.01	224
655 NA 3	3,779	3.90	474
655 NA 4	2,057	3.14	208
655 NA 5	5,787	3.61	672
655 NA 6	4,516	3.86	560
655 NA 7	4,304	7.48	1,035
655 NA 8	4,100	7.11	937
655 NA 9	5,530	4.93	877
655 NA4 1	3,457	3.03	337
655 NA4 2	4,449	3.11	444
655 NB2 1	2,610	3.58	301
655 NB2 2	3,051	4.01	393
670 NA 1	4,571	3.50	514
670 NB2 1	3,611	4.00	464
670 HW 1	1,463	6.92	325
670 HW 2	1,310	9.74	410
670 NA 2	3,671	4.24	500
670 NA 3	5,840	5.61	1,054
670 NA 4	3,780	4.37	531
670 NA 5	7,467	4.15	996
670 NA 6	4,032	3.64	472
670 NA 7	4,627	3.44	512
670 NA 8	5,762	5.34	990
670 NA 9	7,563	4.53	1,102
670 NA4 1	3,167	3.06	311
670 NA4 3	3,596	3.73	431
685 HW 1	1,250	7.30	293
685 NA 1	2,845	3.69	338
685 NA 2	2,594	4.23	353
685 NA 3	3,381	5.41	588
685 NA 4	2,410	4.53	351
685 NA 5	5,232	4.74	797
685 NA 6	2,862	3.86	355
685 NA 7	3,225	3.02	313

Stope	Diluted/Recovered Tonnes	Grade	Ounces Mined To Surface
685 NA 8	2,608	4.35	365
685 NA 9	2,776	4.73	422
685 NA2 2	5,066	4.56	742
685 NA2 3	378	3.62	44
685 NA4 1	2,757	4.73	419
685 NA4 2	2,380	3.41	261
685 NA4 3	2,387	4.32	332
685 NB 3	1,172	3.13	118
685 NB 4	1,045	3.07	103
685 NB2 1	1,959	3.62	228
700 HW 1	1,361	5.58	244
700 NA 1	4,078	3.82	501
700 NA 2	3,630	4.15	485
700 NA 3	3,232	4.07	423
700 NA 4	2,806	4.09	369
700 NA 5	6,319	4.71	958
700 NA 6	3,868	3.82	475
700 NA 7	4,188	3.44	464
700 NA 8	4,753	5.92	904
700 NA 9	5,125	4.71	777
700 NA2 2	3,941	4.26	539
700 NA4 1	3,296	5.10	540
700 NA4 2	3,773	3.35	407
700 NA4 3	2,874	4.92	455
700 NB 2	3,171	3.00	306
700 NB 3	1,785	3.09	178
700 NB 4	2,016	3.09	200
700 NB2 1	3,370	3.03	328
715 HW 1	543	4.47	78
715 NA 3	6,477	3.93	819
715 NA 4	3,394	3.65	398
715 NA 5	3,306	3.37	359
715 NA 6	4,449	3.97	567
715 NA 7	7,916	4.99	1,270
715 NA 8	5,742	4.16	769
715 NA 9	5,237	4.09	689
715 NA 10	5,118	4.86	800
715 NA 11	5,168	4.19	696
715 NA2 2	3,847	3.72	460
715 NA2 3	5,549	3.72	663
715 NA4 1	3,123	3.92	393

Stope	Diluted/Recovered Tonnes	Grade	Ounces Mined To Surface
715 NA4 2	5,841	4.35	817
715 NA4 3	3,418	5.25	577
715 NB 1	2,776	3.05	272
715 NB 4	2,168	3.00	209
715 NB2 3	4,187	3.93	529
730 NA 3	3,876	3.65	455
730 NA 4	1,638	3.07	162
730 NA 5	2,430	3.01	235
730 NA 6	3,865	3.66	455
730 NA 7	5,066	4.90	798
730 NA 8	5,151	5.93	982
730 NA 9	3,617	3.95	459
730 NA 10	1,401	3.34	150
730 NA2 1	2,972	3.11	298
730 NA2 2	3,282	3.10	327
730 NA2 3	3,881	4.05	505
730 NA2 4	2,811	3.11	281
730 NA4 1	1,491	4.20	202
730 NA4 2	3,206	4.32	445
730 NA4 3	2,014	5.25	340
730 NB 1	2,329	3.26	244
730 NB2 1	2,689	3.02	261
730 NB2 2	2,981	3.04	291
730 NB2 3	3,368	3.83	415
730 NB2 4	1,689	4.03	219
745 NA 3	4,584	3.11	458
745 NA 5	2,943	3.42	324
745 NA 6	4,176	3.60	483
745 NA 7	4,839	5.25	817
745 NA 8	4,940	7.69	1,221
745 NA 9	3,173	3.82	389
745 NA2 2	4,383	3.13	442
745 NA2 3	3,680	3.54	419
745 NA4 1	2,306	4.66	346
745 NA4 2	3,401	4.48	490
745 NA4 3	1,892	5.02	305
745 NB 1	1,933	3.06	190
745 NB2 3	3,953	3.44	437
760 NA 1	2,389	3.45	265
760 NA 2	2,442	3.07	241
760 NA 3	4,114	3.07	406

Stope	Diluted/Recovered Tonnes	Grade	Ounces Mined To Surface
760 NA 4	2,678	3.18	274
760 NA 5	3,379	4.02	437
760 NA 6	4,533	4.34	633
760 NA 7	4,267	6.41	879
760 NA 8	3,898	7.16	897
760 NA2 2	3,102	3.02	301
760 NA2 3	3,975	3.25	415
760 NA4 1	2,009	4.53	292
760 NA4 2	3,490	4.48	503
760 NA4 3	2,026	4.49	292
760 NA4 4	1,615	4.79	249
760 NB2 2	3,346	3.45	371
775 NA 1	3,451	4.62	513
775 NA 2	4,425	3.73	531
775 NA 3	5,836	3.36	631
775 NA 4	6,046	4.38	851
775 NA 5	5,483	4.59	808
775 NA 6	5,519	4.35	772
775 NA 7	3,930	6.78	856
775 NA4 1	3,244	4.18	435
775 NA4 2	2,613	3.89	326
775 NA4 3	1,681	4.44	240
775 NB2 2	2,780	3.41	305
<b>Total</b>	<b>960,052</b>	<b>4.19</b>	<b>129,318</b>

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>300</b>								
	300 NAE HW 1	1,879	5.40	34.0%	2,519	4.56	2,267	332
	300 NAE HW 2	2,304	6.69	30.0%	2,996	5.14	2,697	446
	300 NAE FW 1	1,775	3.91	35.2%	2,400	3.47	2,160	241
	300 NAE FW 2	1,694	5.96	36.2%	2,307	4.38	2,077	292
	Total	7,652	5.57	33.7%	10,222	4.43	9,200	1,312
	Mined Total	7,652	5.57	33.7%	10,222	4.43	9,200	1,312

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>430</b>								
	430 NA 1	1,382	7.51	40.6%	1,943	5.34	1,749	301
	430 NA 2	1,416	5.13	34.8%	1,908	3.80	1,717	210
	430 NAX 1	1,866	6.23	34.1%	2,501	4.65	2,251	337
	430 NAX 2	776	7.26	48.4%	1,151	4.89	1,036	163
	430 NB 1	1,909	3.42	33.6%	2,550	2.56	2,295	189
	430 NB 2	712	3.51	42.8%	1,017	2.46	915	72
	Total	8,060	5.45	37.7%	11,071	3.97	9,964	1,271
	Mined Total	5,439	6.42	38.3%	7,504	4.65	6,754	1,010

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>445</b>								
	445 NA 1	1,993	6.25	32.7%	2,645	4.71	2,381	360
	445 NA 2	2,270	5.12	30.2%	2,956	3.93	2,660	336
	445 NA3 1	1,354	5.22	41.1%	1,910	3.70	1,719	204
	445 NA3 2	1,823	4.27	34.6%	2,452	3.17	2,207	225
	445 NAX 1	2,897	7.04	25.9%	3,649	5.59	3,284	591
	445 NAX 2	858	8.25	46.0%	1,252	5.65	1,127	205
	445 NB 1	2,226	3.33	30.6%	2,907	2.55	2,616	214
	445 NB 2	2,087	4.93	31.8%	2,752	3.74	2,476	298
	445 NB 3	1,790	3.55	34.9%	2,415	2.63	2,174	184
	Total	17,298	5.23	32.9%	22,938	3.94	20,644	2,618
	Mined Total	13,281	5.77	33.1%	17,616	4.35	15,854	2,219

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>460 P</b>								
	460 NA3 1	2,123	4.44	35.5%	2,876	3.28	2,588	273
	460 NA3 2	2,555	5.30	31.7%	3,364	4.02	3,028	392
	460 NAX 1	2,278	5.70	30.2%	2,965	4.38	2,669	376
	460 NAX 2	1,418	7.64	40.0%	1,986	5.45	1,787	313
	460 NB 1	1,770	3.15	35.2%	2,392	2.33	1,615	121
	460 NB 2	3,276	3.14	31.0%	4,290	2.40	3,861	298
	460 NB 3	3,044	4.66	28.9%	3,925	3.61	3,532	410
	460 NB 4	2,145	3.80	35.8%	2,914	2.79	2,622	236
	Total	18,609	4.57	32.9%	24,711	3.44	21,701	2,418
	Mined Total	11,418	5.34	32.6%	15,115	4.03	13,603	1,764

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>4 7 5</b>								
	475 NA3 1	1,459	4.93	34.2%	1,958	3.68	1,762	208
	475 NA3 2	4,649	4.07	21.6%	5,651	3.35	5,086	548
	475 NAX 1	3,107	7.01	28.0%	3,976	5.48	3,579	630
	475 NB 1	2,170	3.75	31.1%	2,845	2.86	2,560	235
	475 NB 2	2,137	3.83	27.2%	2,717	3.01	2,445	237
	475 NB 3	2,167	4.70	35.0%	2,926	3.48	2,633	295
	Total	15,689	4.74	28.2%	20,073	3.71	18,066	2,153
	Mined Total	13,519	4.90	27.8%	17,229	3.85	15,506	1,918

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>4 9 0</b>								
	490 NA3 1	1,214	3.92	31.8%	1,600	2.97	1,440	138
	490 NA3 2	6,160	3.62	18.0%	7,266	3.07	6,540	645
	490 NAX 1	2,797	5.71	29.9%	3,634	4.39	3,271	462
	490 NB 1	1,339	4.60	35.9%	1,820	3.38	1,638	178
	490 NB 2	2,579	4.03	31.5%	3,390	3.06	3,051	300
	490 NB 3	1,976	6.47	32.9%	2,626	4.87	2,363	370
	490 NB 4	2,146	5.18	35.2%	2,902	3.83	2,612	322
	Total	18,209	4.58	28.2%	23,239	3.59	20,915	2,414
	Mined Total	16,996	4.63	27.9%	21,639	3.64	19,475	2,276

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>5 0 5 P</b>								
	505 HW 1	2,156	3.49	35.1%	2,914	2.58	1,967	163
	505 HW 2	1,188	4.43	44.1%	1,713	3.07	1,156	114
	505 NA 1	2,239	4.03	30.5%	2,921	3.09	1,972	196
	505 NA 2	2,794	5.49	26.5%	3,535	4.34	2,386	333
	505 NA 3	1,849	4.41	34.3%	2,482	3.28	1,676	177
	505 NA3 1	1,017	4.84	35.2%	1,374	3.58	1,237	142
	505 NA3 2	4,844	4.23	21.6%	5,888	3.48	5,300	593
	505 NAX 1	1,393	4.31	40.4%	1,956	3.07	1,761	174
	505 NB 1	1,635	5.31	36.9%	2,238	3.88	1,510	188
	505 NB 2	1,506	4.19	32.6%	1,997	3.16	1,348	137
	505 NB 3	2,366	4.35	29.5%	3,062	3.36	2,756	298
	505 NB 4	2,844	8.72	30.2%	3,702	6.70	3,332	717
	505 NB 5	1,889	6.54	33.8%	2,528	4.89	2,275	357
	Total	27,720	5.02	31.5%	36,312	3.83	28,676	3,590
	Mined Total	25,564	5.15	31.1%	33,398	3.94	26,709	3,427

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>5 2 0</b>								
	520 NA 4	1,203	5.41	38.2%	1,663	3.91	1,497	188
	520 NA3 1	780	3.67	33.3%	1,040	2.75	936	83
	520 NA3 2	5,451	3.64	19.4%	6,510	3.05	5,859	575
	520 NB 1	1,337	5.76	46.1%	1,953	3.94	1,758	223
	520 NB 2	1,562	4.99	42.4%	2,223	3.51	2,001	226
	520 NB 3	2,056	5.75	32.1%	2,716	4.35	2,445	342
	520 NB 4	2,531	9.31	28.2%	3,246	7.26	2,921	682
	520 NB 5	1,400	5.66	35.0%	1,890	4.19	1,701	229
	520 NB 6	2,250	4.28	34.2%	3,020	3.19	2,718	279
	Total	18,569	5.26	31.7%	24,262	4.03	21,835	2,826
	Mined Total	17,789	5.33	31.6%	23,222	4.08	20,900	2,743

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>5 3 5</b>								
	535 NA 4	1,681	4.88	36.3%	2,291	3.58	2,062	238
	535 NA3 1	3,016	4.47	28.5%	3,876	3.48	3,488	390
	535 NB 2	1,302	5.36	36.5%	1,778	3.93	1,600	202
	535 NB 3	1,409	7.12	34.9%	1,901	5.28	1,711	290
	535 NB 4	1,594	4.32	32.4%	2,110	3.26	1,899	199
	535 NB 5	3,196	5.01	30.5%	4,170	3.84	3,753	464
	Total	12,197	5.05	32.3%	16,125	3.82	14,512	1,782
	Mined Total	12,197	5.05	32.3%	16,125	3.82	14,512	1,782

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>5 5 0 P</b>								
	550 HW 1	1,841	4.67	25.1%	2,303	3.73	1,555	186
	550 NA 1	829	3.15	46.8%	1,217	2.15	821	57
	550 NA 2	1,044	5.76	47.2%	1,537	3.91	1,037	130
	550 NA 3	2,110	7.32	35.6%	2,861	5.40	1,931	335
	550 NA 4	1,621	5.06	42.1%	2,303	3.56	1,554	178
	550 NA3 1	2,968	4.04	31.9%	3,916	3.06	3,524	347
	550 NA4 1	453	4.92	67.8%	759	2.93	513	48
	550 NB 1	2,412	5.01	37.2%	3,310	3.65	2,234	263
	Total	13,277	5.06	38.6%	18,206	3.69	13,170	1,544
	Mined Total	11,996	5.20	36.0%	16,230	3.84	11,836	1,439

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Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>5 6 5</b>								
	565 NA 5	1,176	4.99	32.4%	1,557	3.76	1,402	170
	565 NA3 1	1,668	4.51	40.8%	2,350	3.20	2,115	218
	565 NB 1	2,248	3.37	38.8%	3,119	2.43	2,807	219
	Total	5,092	4.11	38.3%	7,026	2.98	6,324	606
	Mined Total	2,845	4.70	37.8%	3,907	3.42	3,516	387

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>580</b>								
	580 NA 4	1,645	5.90	41.2%	2,321	4.18	2,089	281
	580 NA3 1	2,164	6.25	35.1%	2,923	4.63	2,631	391
	Total	3,809	6.10	37.8%	5,245	4.43	4,720	672
	Mined Total	3,809	6.10	37.8%	5,245	4.43	4,720	672

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>595 P</b>								
	595 HW 1	1,537	4.39	33.1%	2,046	3.30	1,381	146
	595 NA 1	1,421	4.18	44.6%	2,055	2.89	1,387	129
	595 NA 2	5,144	3.85	18.1%	6,072	3.26	4,099	430
	595 NA 3	2,016	4.50	40.3%	2,828	3.21	1,909	197
	595 NA 4	2,430	5.59	29.0%	3,134	4.33	2,115	295
	595 NA 5	1,131	6.43	38.6%	1,568	4.64	1,059	158
	595 NA3 1	2,186	5.88	35.4%	2,960	4.34	2,664	372
	Total	15,865	4.74	31.5%	20,664	3.64	14,614	1,726
	Mined Total	14,443	4.80	29.9%	18,608	3.73	13,226	1,597

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Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>610</b>								
	610 NA 3	3,062	5.30	25.1%	3,831	4.24	3,448	470
	610 NA 4	2,933	7.37	25.8%	3,690	5.86	3,321	625
	610 NA 5	8,290	5.21	16.5%	9,659	4.47	8,693	1,250
	610 NA 6	4,411	4.03	21.3%	5,350	3.32	4,815	514
	610 HW 2	3,371	3.31	27.2%	4,289	2.60	3,860	323
	610 HW 3	2,911	4.22	29.8%	3,780	3.25	3,402	355
	610 NB 1	846	3.38	34.0%	1,133	2.52	1,020	83
	610 NB2 1	806	3.12	40.1%	1,129	2.23	1,016	73
	610 NA3 1	2,163	4.22	35.1%	2,921	3.12	1,972	198
	Total	28,793	4.75	24.8%	35,783	3.82	31,547	3,891
	Mined Total	23,770	5.06	23.5%	29,231	4.11	25,651	3,413

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Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
<b>625</b>								
	625 NA 6	3,222	7.48	24.3%	4,005	6.02	3,605	697
	625 NA 7	6,094	6.00	16.3%	7,088	5.16	6,379	1,058
	625 HW 2	2,023	4.53	32.6%	2,682	3.42	2,413	265
	625 HW 3	1,996	4.25	36.9%	2,733	3.10	2,460	245
	Total	13,335	5.87	24.6%	16,507	4.74	14,857	2,266
	Mined Total	13,335	5.87	24.6%	16,507	4.74	14,857	2,266

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
6 4 0 P								
	640 HW 1	5,877	5.30	16.6%	6,855	4.55	4,627	676
	640 HW 2	1,891	5.65	38.0%	2,610	4.09	1,762	232
	640 HW 3	601	4.39	43.8%	865	3.05	584	57
	640 NA 1	737	3.09	42.0%	1,046	2.18	706	49
	640 NA 2	3,931	4.44	21.4%	4,771	3.66	3,221	379
	640 NA 3	2,386	4.85	29.3%	3,085	3.75	2,083	251
	640 NA 4	4,912	4.24	18.6%	5,825	3.57	3,932	452
	640 NA 5	3,375	5.56	23.5%	4,169	4.50	2,814	407
	640 NA 6	3,364	8.42	23.6%	4,158	6.81	2,807	615
	640 NA 7	3,322	7.71	23.8%	4,111	6.23	2,775	556
	640 NA 8	7,275	5.24	14.7%	8,341	4.57	5,630	827
	640 NA4 1	4,375	3.86	24.9%	5,463	3.09	3,688	367
	640 NA4 2	2,497	4.48	28.5%	3,208	3.49	2,166	243
	640 NB 1	1,973	3.33	37.0%	2,704	2.43	1,825	142
	640 NB 2	1,510	3.59	38.6%	2,093	2.59	1,413	118
	640 NB 3	1,100	3.52	40.2%	1,542	2.51	1,041	84
	640 NB2 1	1,919	4.40	38.2%	2,653	3.19	1,791	183
	640 NB2 2	2,345	4.51	40.1%	3,285	3.22	2,218	229
	Total	53,392	5.06	26.1%	66,785	4.05	45,080	5,867
	Mined Total	48,072	5.25	24.4%	59,400	4.25	40,095	5,474

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Recovered Tonnes	Ounces to Surface
6 5 5								
	655 HW 1	2,049	7.18	32.2%	2,709	5.43	2,438	426
	655 HW 2	2,127	9.87	31.5%	2,796	7.51	2,517	607
	655 NA 1	1,643	3.48	36.8%	2,247	2.55	2,022	166
	655 NA 2	1,927	4.01	33.4%	2,570	3.01	2,313	224
	655 NA 3	3,402	4.81	23.4%	4,199	3.90	3,779	474
	655 NA 4	1,676	4.29	36.3%	2,285	3.14	2,057	208
	655 NA 5	5,479	4.24	17.4%	6,430	3.61	5,787	672
	655 NA 6	4,160	4.65	20.6%	5,017	3.86	4,516	560
	655 NA 7	3,942	9.07	21.3%	4,782	7.48	4,304	1,035
	655 NA 8	3,731	8.68	22.1%	4,556	7.11	4,100	937
	655 NA 9	5,352	5.67	14.8%	6,145	4.93	5,530	877
	655 NA4 1	3,073	3.79	25.0%	3,841	3.03	3,457	337
	655 NA4 2	3,972	3.86	24.5%	4,944	3.11	4,449	444
	655 NB 1	1,734	3.58	35.6%	2,351	2.64	2,116	180
	655 NB 2	1,314	3.35	41.8%	1,862	2.36	1,676	127
	655 NB 3	1,120	3.28	45.5%	1,630	2.26	1,467	106
	655 NB 4	1,315	3.34	41.7%	1,864	2.35	1,678	127
	655 NB2 1	2,133	4.87	35.9%	2,900	3.58	2,610	301
	655 NB2 2	2,409	5.64	40.7%	3,390	4.01	3,051	393
	Total	52,558	5.39	27.6%	66,518	4.26	59,866	8,200
	Mined Total	45,433	5.70	25.2%	56,564	4.58	50,908	7,495

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Total Recovered Tonnes	Ounces to Surface
670								
	670 HW 1	1,116	10.07	45.6%	1,625	6.92	1,463	325
	670 HW 2	978	14.49	48.8%	1,455	9.74	1,310	410
	670 NA 2	3,291	5.25	23.9%	4,078	4.24	3,671	500
	670 NA 3	5,534	6.58	17.3%	6,489	5.61	5,840	1,054
	670 NA 4	3,403	5.39	23.4%	4,199	4.37	3,780	531
	670 NA 5	7,234	4.76	14.7%	8,297	4.15	7,467	996
	670 NA 6	3,662	4.45	22.4%	4,480	3.64	4,032	472
	670 NA 7	4,275	4.14	20.3%	5,141	3.44	4,627	512
	670 NA 8	5,321	6.43	20.3%	6,403	5.34	5,762	990
	670 NA 9	7,230	5.27	16.2%	8,403	4.53	7,563	1,102
	670 NA4 1	2,779	3.87	26.6%	3,518	3.06	3,167	311
	670 NA4 2	3,326	2.65	20.8%	4,016	2.20	3,615	255
	670 NA4 3	3,108	4.80	28.6%	3,996	3.73	3,596	431
	670 NB 1	2,829	3.48	26.3%	3,574	2.75	3,216	285
	670 NB 2	2,005	3.72	32.6%	2,659	2.80	2,393	216
	670 NB 3	1,990	3.82	32.8%	2,643	2.88	2,378	220
	670 NB 4	2,533	3.80	32.4%	3,354	2.87	3,019	279
	670 NB2 2	1,449	3.93	34.3%	1,947	2.92	1,752	165
	670 NB2 3	1,057	3.95	46.9%	1,553	2.69	1,398	121
	Total	63,120	5.02	24.2%	77,831	4.07	70,048	9,175
	Mined Total	47,931	5.50	21.9%	58,087	4.54	52,278	7,635

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Total Recovered Tonnes	Ounces to Surface
685 P								
	685 HW 1	1,304	10.36	41.9%	1,851	7.30	1,250	293
	685 NA 1	3,416	4.55	23.4%	4,214	3.69	2,845	338
	685 NA 2	3,076	5.29	25.0%	3,843	4.23	2,594	353
	685 NA 3	4,152	6.53	20.6%	5,009	5.41	3,381	588
	685 NA 4	2,826	5.72	26.3%	3,570	4.53	2,410	351
	685 NA 5	6,719	5.47	15.4%	7,750	4.74	5,232	797
	685 NA 6	3,440	4.76	23.3%	4,240	3.86	2,862	355
	685 NA 7	3,937	3.66	21.3%	4,777	3.02	3,225	313
	685 NA 8	3,094	5.43	24.9%	3,864	4.35	2,608	365
	685 NA 9	3,323	5.86	23.8%	4,113	4.73	2,776	422
	685 NA2 1	743	3.55	25.5%	933	2.83	630	57
	685 NA2 2	6,276	5.45	19.6%	7,506	4.56	5,066	742
	685 NA2 3	409	4.95	36.9%	559	3.62	378	44
	685 NA4 1	3,296	5.86	23.9%	4,084	4.73	2,757	419
	685 NA4 2	2,786	4.31	26.6%	3,526	3.41	2,380	261
	685 NA4 3	2,709	5.64	30.5%	3,536	4.32	2,387	332
	685 NB 1	2,624	3.12	27.6%	3,349	2.44	2,260	177
	685 NB 2	2,121	3.68	27.4%	2,703	2.89	1,824	169
	685 NB 3	1,262	4.31	37.6%	1,737	3.13	1,172	118
	685 NB 4	1,100	4.32	40.7%	1,548	3.07	1,045	103
	685 NB2 1	2,135	4.92	35.9%	2,902	3.62	1,959	228
	685 NB2 2	977	3.45	33.1%	1,300	2.59	878	73
	685 NB2 3	1,366	3.79	46.1%	1,996	2.59	1,347	112
	Total	63,092	5.12	25.7%	78,912	4.09	53,266	7,011
	Mined Total	55,261	5.35	24.7%	68,632	4.31	46,326	6,422

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Total Recovered Tonnes	Ounces to Surface
700								
	700 HW 1	1,024	8.25	47.7%	1,512	5.58	1,361	244
	700 NA 1	3,709	4.67	22.2%	4,531	3.82	4,078	501
	700 NA 2	3,250	5.16	24.1%	4,034	4.15	3,630	485
	700 NA 3	2,844	5.14	26.2%	3,591	4.07	3,232	423
	700 NA 4	2,415	5.29	29.1%	3,118	4.09	2,806	369
	700 NA 5	6,033	5.48	16.4%	7,021	4.71	6,319	958
	700 NA 6	3,494	4.70	23.0%	4,298	3.82	3,868	475
	700 NA 7	3,822	4.19	21.8%	4,654	3.44	4,188	464
	700 NA 8	4,283	7.30	23.3%	5,281	5.92	4,753	904
	700 NA 9	4,689	5.72	21.4%	5,695	4.71	5,125	777
	700 NA2 1	2,181	3.42	25.9%	2,745	2.72	2,471	216
	700 NA2 2	3,474	5.36	26.1%	4,379	4.26	3,941	539
	700 NA4 1	2,910	6.42	25.9%	3,663	5.10	3,296	540
	700 NA4 2	3,396	4.14	23.4%	4,193	3.35	3,773	407
	700 NA4 3	2,391	6.58	33.6%	3,193	4.92	2,874	455
	700 NB 1	694	3.30	43.3%	995	2.30	896	66
	700 NB 2	2,783	3.79	26.6%	3,523	3.00	3,171	305
	700 NB 3	1,417	4.33	40.0%	1,984	3.09	1,785	178
	700 NB 4	1,568	4.42	42.8%	2,240	3.09	2,016	200
	700 NB2 1	2,713	4.18	38.0%	3,744	3.03	3,370	328
	700 NB2 2	1,900	3.65	28.2%	2,436	2.84	2,192	200
	Total	60,991	5.12	26.6%	76,829	4.06	69,146	9,036
	Mined Total	56,215	5.26	26.4%	70,652	4.18	63,587	8,553

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Total Recovered Tonnes	Ounces to Surface
715								
	715 HW 1	674	6.79	51.9%	1,023	4.47	921	132
	715 NA 1	2,328	3.83	33.5%	3,109	2.87	2,798	258
	715 NA 2	3,150	3.48	28.3%	4,042	2.71	3,638	317
	715 NA 3	6,751	4.53	15.3%	7,785	3.93	7,006	886
	715 NA 4	3,550	4.48	22.8%	4,359	3.65	3,923	460
	715 NA 5	3,460	4.16	23.2%	4,261	3.37	3,835	416
	715 NA 6	4,660	4.73	19.2%	5,555	3.97	4,999	637
	715 NA 7	8,281	5.67	13.6%	9,407	4.99	8,467	1,358
	715 NA 8	6,005	4.85	16.4%	6,991	4.16	6,292	842
	715 NA 9	5,479	4.80	17.4%	6,431	4.09	5,788	761
	715 NA 10	5,224	5.86	20.6%	6,298	4.86	5,668	886
	715 NA 11	5,304	5.02	19.8%	6,353	4.19	5,718	771
	715 NA2 1	2,533	3.45	28.2%	3,248	2.69	2,923	253
	715 NA2 2	4,132	4.48	20.7%	4,988	3.72	4,489	536
	715 NA2 3	5,766	4.43	19.3%	6,880	3.72	6,192	740
	715 NA2 4	5,000	3.17	18.4%	5,918	2.68	5,327	459
	715 NA4 1	3,315	4.85	23.8%	4,104	3.92	3,694	465
	715 NA4 2	6,026	5.14	18.2%	7,125	4.35	6,412	897
	715 NA4 3	3,523	6.61	25.8%	4,432	5.25	3,989	673
	715 NB 1	3,008	3.82	25.3%	3,770	3.05	3,393	333
	715 NB 2	3,655	3.60	22.4%	4,472	2.94	4,025	381
	715 NB 3	2,652	3.57	27.4%	3,379	2.80	3,041	274
	715 NB 4	2,395	3.88	29.2%	3,095	3.00	2,786	269
	715 NB 5	1,921	3.65	33.5%	2,564	2.73	2,308	203
	715 NB2 1	1,882	3.65	29.3%	2,434	2.82	2,191	199
	715 NB2 2	2,519	3.70	28.3%	3,232	2.88	2,909	270
	715 NB2 3	4,579	4.79	21.8%	5,576	3.93	5,018	634
	Total	107,773	4.59	21.8%	130,834	3.78	117,751	14,311
	Mined Total	82,133	4.92	20.2%	98,434	4.11	88,591	11,697

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Total Recovered Tonnes	Ounces to Surface
<b>7 3 0 P</b>								
	730 NA 1	1,888	3.86	33.8%	2,527	2.88	1,706	158
	730 NA 2	3,411	3.42	26.4%	4,310	2.71	2,909	253
	730 NA 3	5,557	4.28	17.2%	6,514	3.65	4,397	516
	730 NA 4	2,488	3.95	28.5%	3,198	3.07	2,159	213
	730 NA 5	3,562	3.70	22.7%	4,372	3.01	2,951	286
	730 NA 6	5,650	4.29	17.0%	6,613	3.66	4,464	526
	730 NA 7	7,323	5.62	14.6%	8,392	4.90	5,665	893
	730 NA 8	7,339	6.88	16.1%	8,518	5.93	5,750	1,096
	730 NA 9	5,174	4.76	20.7%	6,245	3.95	4,215	535
	730 NA 10	1,972	4.15	24.2%	2,449	3.34	1,653	178
	730 NA2 1	4,291	3.74	20.2%	5,159	3.11	3,482	349
	730 NA2 2	4,719	3.69	19.0%	5,618	3.10	3,792	378
	730 NA2 3	5,549	4.74	17.2%	6,505	4.05	4,391	571
	730 NA2 4	4,070	3.76	20.9%	4,920	3.11	3,321	332
	730 NA2 5	4,754	3.26	19.0%	5,655	2.74	3,817	336
	730 NA4 1	2,390	5.59	33.0%	3,179	4.20	2,146	290
	730 NA4 2	4,688	5.27	22.0%	5,720	4.32	3,861	536
	730 NA4 3	3,086	6.73	28.1%	3,954	5.25	2,669	451
	730 NB 1	3,478	4.11	26.0%	4,383	3.26	2,959	310
	730 NB 2	3,341	3.40	26.7%	4,233	2.68	2,858	246
	730 NB 3	714	3.26	34.7%	962	2.42	650	51
	730 NB2 1	3,950	3.64	20.7%	4,768	3.02	3,219	312
	730 NB2 2	4,354	3.63	19.4%	5,200	3.04	3,510	343
	730 NB2 3	4,891	4.52	18.0%	5,773	3.83	3,897	480
	730 NB2 4	2,582	5.12	27.3%	3,286	4.03	2,218	287
	Total	101,222	4.52	21.3%	122,455	3.73	82,657	9,925
	Mined Total	87,114	4.70	20.5%	104,767	3.91	70,718	8,881

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Total Recovered Tonnes	Ounces to Surface
<b>7 4 5</b>								
	745 NA 1	1,656	3.87	41.0%	2,335	2.75	2,101	185
	745 NA 2	1,843	3.67	38.6%	2,554	2.65	2,298	196
	745 NA 3	4,951	3.77	21.3%	6,004	3.11	5,403	540
	745 NA 4	854	3.18	38.8%	1,186	2.29	1,067	79
	745 NA 5	3,275	4.37	27.6%	4,180	3.42	3,762	414
	745 NA 6	4,389	4.32	19.9%	5,263	3.60	4,737	548
	745 NA 7	5,075	6.20	18.2%	5,999	5.25	5,399	911
	745 NA 8	5,078	9.25	20.4%	6,112	7.69	5,501	1,360
	745 NA 9	3,246	4.88	27.8%	4,148	3.82	3,733	458
	745 NA 10	367	3.56	58.8%	583	2.24	525	38
	745 NA2 1	4,451	3.40	19.8%	5,331	2.84	4,798	438
	745 NA2 2	4,544	3.75	19.5%	5,430	3.13	4,887	493
	745 NA2 3	3,818	4.32	21.8%	4,649	3.54	4,184	477
	745 NA2 4	2,037	3.82	28.0%	2,607	2.98	2,346	225
	745 NA2 5	2,675	3.26	27.3%	3,404	2.56	3,064	252
	745 NA4 1	2,514	6.15	32.0%	3,318	4.66	2,987	448
	745 NA4 2	3,598	5.65	26.0%	4,535	4.48	4,082	588
	745 NA4 3	2,108	6.80	35.6%	2,859	5.02	2,573	415
	745 NB 1	2,049	4.05	32.2%	2,708	3.06	2,437	240
	745 NB 2	1,575	3.10	37.7%	2,169	2.25	1,952	141
	745 NB2 1	2,465	3.71	28.7%	3,172	2.88	2,855	265
	745 NB2 2	2,220	3.61	30.6%	2,901	2.76	2,611	232
	745 NB2 3	4,266	4.31	25.3%	5,345	3.44	4,810	532
	Total	69,054	4.74	26.3%	86,790	3.77	78,111	9,474
	Mined Total	48,911	5.25	24.1%	60,550	4.24	54,495	7,424

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Total Recovered Tonnes	Ounces to Surface
<b>7 6 0</b>								
	760 NA 1	2,609	4.52	31.3%	3,425	3.45	3,082	342
	760 NA 2	2,662	4.01	30.9%	3,483	3.07	3,135	309
	760 NA 3	4,283	3.69	20.2%	5,149	3.07	4,634	457
	760 NA 4	2,811	4.02	26.4%	3,554	3.18	3,199	327
	760 NA 5	3,526	4.94	22.9%	4,333	4.02	3,900	504
	760 NA 6	4,717	5.17	19.1%	5,616	4.34	5,054	706
	760 NA 7	4,441	7.68	19.8%	5,320	6.41	4,788	987
	760 NA 8	4,059	8.66	20.9%	4,909	7.16	4,418	1,017
	760 NA2 1	2,712	3.59	27.0%	3,445	2.82	3,101	281
	760 NA2 2	3,225	3.75	24.2%	4,007	3.02	3,606	350
	760 NA2 3	4,122	3.92	20.7%	4,977	3.25	4,479	467
	760 NA2 4	2,154	3.78	27.0%	2,737	2.97	2,463	235
	760 NA2 5	2,411	3.24	29.1%	3,113	2.51	2,801	226
	760 NA4 1	2,148	5.94	31.3%	2,820	4.53	2,538	369
	760 NA4 2	3,648	5.48	22.4%	4,466	4.48	4,019	579
	760 NA4 3	2,165	5.88	31.1%	2,839	4.49	2,555	368
	760 NA4 4	1,761	6.48	35.3%	2,382	4.79	2,144	330
	760 NB 1	2,539	3.35	31.8%	3,346	2.54	3,011	246
	760 NB2 1	3,730	3.35	27.6%	4,759	2.62	4,283	361
	760 NB2 2	3,475	4.25	23.1%	4,278	3.45	3,850	427
	Total	63,198	4.86	25.2%	78,957	3.89	71,061	8,891
	Mined Total	49,652	5.25	24.3%	61,557	4.23	55,401	7,541

Level	Stope	Stope Design Tonnes	Stope Design Grade	Total Dil'n %	TOTAL DILUTED TONNES	Total Diluted Grade	Total Recovered Tonnes	Ounces to Surface
<b>7 7 5</b>								
	775 NA 1	3,725	5.64	22.1%	4,549	4.62	4,094	608
	775 NA 2	4,630	4.54	21.6%	5,630	3.73	5,067	608
	775 NA 3	5,946	4.00	19.0%	7,073	3.36	6,365	688
	775 NA 4	6,301	5.08	16.0%	7,306	4.38	6,575	926
	775 NA 5	5,731	5.36	16.9%	6,699	4.59	6,029	889
	775 NA 6	5,769	5.08	16.8%	6,739	4.35	6,065	848
	775 NA 7	3,999	8.43	24.4%	4,973	6.78	4,476	975
	775 NA2 1	2,403	3.72	29.2%	3,104	2.88	2,793	259
	775 NA2 2	1,722	3.44	35.8%	2,337	2.54	2,103	171
	775 NA2 3	3,255	3.44	24.1%	4,039	2.77	3,635	324
	775 NA2 4	3,200	3.59	24.3%	3,979	2.89	3,581	333
	775 NA2 5	2,166	3.40	31.1%	2,840	2.59	2,556	213
	775 NA4 1	3,344	5.16	23.7%	4,136	4.18	3,723	500
	775 NA4 2	2,703	4.94	27.1%	3,435	3.89	3,092	386
	775 NA4 3	1,777	6.00	35.1%	2,400	4.44	2,160	308
	775 NB 1	755	3.13	33.8%	1,010	2.34	909	68
	775 NB2 1	2,215	3.14	30.7%	2,895	2.41	2,605	202
	775 NB2 2	2,987	4.16	22.1%	3,648	3.41	3,284	360
	Total	62,627	4.78	23.0%	76,793	3.90	69,114	8,666
	Mined Total	46,912	5.23	20.9%	56,590	4.33	50,931	7,096