National Instrument 43-101 Technical Report, Updated Mineral Resource and Mineral Reserve Estimate for the Bell Creek Mine Property, Hoyle Township, Timmins, Ontario, Canada

NTS: 42-A-11 Southeast

Longitude: 81° 10’ 41” West, Latitude: 48° 33’ 45” North

UTM (NAD 83, Zone17): 486,860.5m East, 5,377,802m North

Effective date: June 30, 2021

Prepared by:

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1 Summary

This technical report ("Technical Report" or "Report") has been prepared by Lake Shore Gold ("LSG") a subsidiary of Pan American Silver Corp. ("Pan American" or the "Company") based on the disclosure requirements of National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("NI 43-101") to disclose current information about the Bell Creek Mine property (the "Property" or "Bell Creek").

1.1 Property Description and Ownership

This Technical Report refers to Bell Creek, an underground gold mine located in Hoyle Township, Timmins, Ontario, Canada. Pan American is the 100% owner of the Property through its wholly owned subsidiary, LSG.

1.2 Geology and Mineralization

The Property is underlain by Archean aged carbonate altered, greenschist facies, metavolcanic and clastic metasedimentary rocks belonging to the Tisdale and Porcupine assemblages. The strike of these rocks is generally east-west to west-northwest, with steep southerly dips.

Gold mineralization on the Property occurs in steep south dipping, sheet like, shear hosted mineralized zones. A series of mineralized zones have been identified. Of these, the bulk of the mineralization occurs within the North A, North A2, North B and North B2 zones. The North A zone has been the major source of production. Mineralization and geological setting of these zones are similar.

The North A Zone consists of a marker quartz vein that varies from 0.1 metre (m) to 2m in width with an associated alteration halo. Adjacent to the quartz marker vein is a grey to buff colored 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 5m from the margin of the core vein (Kent, 1990).

1.3 Status of Exploration, Development, and Operations

Recent exploration at Bell Creek has been focused on near mine exploration that takes place on an annual basis, including testing of the undrilled areas of the deposit at depth and along strike, as well as infill drilling to upgrade the confidence categories of mineral resource and reserve estimates. Drilling at Bell Creek involved testing from both surface and underground locations to evaluate extensions of the deposit below the 1600 m level ("mL").

The existing infrastructure includes the typical components of an operating underground mine, including the mine workings, shaft, hoist room, compressors, workshops, warehouse, offices, water and power lines, access roads, and the water storage and treatment facilities.

Mining at Bell Creek utilizes underground longhole stoping methods. Ore from Bell Creek is processed at the Company's Bell Creek mill facility (the "Bell Creek Mill") at a rate of approximately 1,600 to 1,800 tonnes per day ("tpd") to produce gold-rich doré for sale to bullion banks and metal traders.

LSG reached commercial production at Bell Creek in January 2012.

Through June 30th, 2021, the Bell Creek Mine had produced 599 thousand ounces ("kOz") of gold from approximately 4.6 million tonnes ("Mt") of ore with an average gold grade of 4.2 grams per tonne ("g/t").

This Report provides an update of the Bell Creek mine operations, supports the declaration of mineral resource and mineral reserve estimates, and provides economic parameters from June 30, 2021.

Highlights of this Report for Bell Creek include:

- Measured and indicated mineral resources of 2.41 Mt at an average gold grade of 3.43 g/t containing 266 kOz of gold and 4.17 Mt at an average gold grade of 2.83 g/t containing 376 kOz, of gold respectively.
- Inferred mineral resources of 3.77 Mt at an average gold grade of 3.06 g/t containing 371,600 ounces of gold.
- Proven and probable mineral reserves of 2.44 Mt at an average gold grade of 3.03 g/t containing 237 kOz of gold and 2.69 Mt at an average gold grade of 2.89 g/t containing 249 kOz of gold, respectively.

Mineral resources and mineral reserves stated in this Report have an effective date of June 30, 2021. Unless noted otherwise, mineral resources are reported exclusive of mineral reserves and currency used in this Report is in United States dollars.

1.4 Mineral Resource and Reserve Estimates

Mineral Resources

Pan American has prepared an updated mineral resource estimate for Bell Creek based on historical diamond drilling dating back to 1978 and drilling completed by LSG between 2009 and April 22, 2021. The database used to estimate the mineral resources at Bell Creek includes data from 6,469 diamond drillholes totaling 1,139,749m. The drillhole database has been subjected to verification and is considered to be robust and of adequate quality for the estimation of mineral resources.

The mineral resource statement for Bell Creek contains 266 kOz of gold classified as measured resources, 376 kOz of gold classified as indicated resources, and 372 kOz of gold classified as inferred resources. All resources have been depleted for mining up to the effective date of this Technical Report, June 30, 2021. A summary of the Bell Creek mineral resource estimate is shown in Table 1.1.

Table 1.1: Bell Creek Mineral Resource Statement

In-Situ Mineral Resources Reported Above 1.8 Au g/t Cut-Off Grade				
Deposit	**Classification**	**Tonnes ('000)**	**Au Grade (g/t)**	**Au Ounces**
Bell Creek	Measured	2,408	3.43	266,000
	Indicated	4,174	2.80	376,000
	Measured & Indicated	**6,582**	**3.03**	**641,000**
	Inferred	3,772	3.06	372,000

1. The effective date of the mineral resource estimate is June 30, 2021.

2. Mineral resource estimates have been classified according to CIM Definitions and Guidelines.

3. The mineral resource as at June 30, 2021 was calculated using a block model that was estimated in May 2020 and depleted for mined out areas up to April 2021 and month-end production for May and June 2021.

4. Mineral resources were reported above a 1.8 g/t gold cut-off grade in accordance with the long-term gold price of US$1,450 per ounce and an exchange rate of 1.3 $CAD/$US used for mineral reserve estimation.

5. Tonnes and gold ounces were rounded to the nearest thousand. As a result, totals may not add exactly due to rounding.

6. Mineral resources are reported exclusive of mineral reserves.

The mineral resource estimate for the Property was modelled as 36 individual zones within disseminated pyritic carbonate-sericite alteration with some quartz veining. The mineralized zones occur mainly in mafic volcanics and some minor mineralization in the south ultramafics at the mafic-ultramafic contact.

Estimation was completed using an inverse distance squared ("ID^2") interpolation method with an anisotropic search. All gold assays were capped with capping limits varying by zone between 15 and 44 g/t. A minimum width of 2.2m was modelled for narrow vein zones.

Several steps were taken in order to review and validate the current block model and reported results which included: comparison of solid and block model volumes, comparison of the block model against diamond drill results, and comparisons with recent production data. No significant issues were identified.

Mineral Reserves

The estimated proven and probable mineral reserves (diluted and recovered) at the point of delivery to the Bell Creek Mill are summarized inTable 1.2.

Table 1.2: Bell Creek Proven and Probable Mineral Reserves

Deposit	Classification	Tonnes ('000)	Au Grade (g/t)	Au Ounces
Bell Creek	Proven	2,440	3.03	237,300
	Probable	2,685	2.89	249,200
	Proven & Probable	**5,125**	**2.95**	**486,500**

1. *The effective date of this Technical Report is June 30, 2021.*
2. *Mineral reserves at June 30, 2021 were calculated using a block model that was estimated in May 2021 and depleted for mining activities up to April 2021 and month-end production for May and June 2021.*
3. *The mineral reserve estimates are classified in accordance with the Canadian Institute of Mining Metallurgy and Petroleum's "CIM Standards on Mineral Resources and Reserves, Definition and Guidelines" as per Canadian Securities Administrator's National Instrument 43-101 requirements.*
4. *Mineral reserves are based on a long-term gold price of US$1,450 per ounce and an exchange rate of 1.3 $CAD/$US.*
5. *Mineral reserves are supported by a mine plan that features variable stope thicknesses, depending on zone, and expected cost levels, depending on the mining methods utilized.*
6. *Mineral reserves incorporate a minimum cut-off grade of 2.0 g/t. The cut-off grade includes estimated mining and site G&A costs of US$70.55 per tonne, milling costs of US$19.09 per tonne, mining recovery of 95%, external dilution of 22%, and a metallurgical recovery rate of 94.5%.*
7. *The mineral reserves were prepared under the supervision of, and verified by, Eric Lachapelle, Manager, Technical Services, LSG, who is a QP under NI 43-101.*

To estimate the mineral reserves, the measured and indicated mineral resource areas were isolated from inferred mineral resources and assessments were made of the geometry and continuity of each of the mineralized zones. Geomechanical evaluations were taken into account in the assessment and assignment of appropriate mining methods and stope sizes. Individual stope designs (wireframes) were then created in three dimensions. These stope wireframes were queried against the block models to determine the in-situ mineral resource. This allowed for fair inclusion of internal dilution from both low grade and barren material. Additional factors were assigned for external dilution (with or without grade) dependent on the specific mining method and geometry of each stoping unit being evaluated. Finally, a recovery factor was assigned to the overall reserves to allow for in-stope and mining process losses. Stope cut-off grades were estimated to determine which stopes to include in the mineral reserves. Detailed mine development layouts and construction activities were assigned to provide access to each of the stoping units. A detailed life-of-mine ("LOM") development and production schedule was prepared to estimate the annual tonnes, average grade, and ounces mined to surface. Development, construction, and production costs were estimated to allow an economic assessment to be made comparing the capital and operating expenses required for each area to the expected revenue stream to ensure economic viability.

1.5 Mineral Tenure, Surface Rights, and Royalties

The Property as defined by the current Bell Creek Mine Closure Plan as of the date of this Technical Report is approximately 851 hectares ("ha"). Through patented and leased land, LSG, a subsidiary of Pan American, owns 100% of the surface and mining rights of the entire 851 ha, subject to underlying royalties. The Property is situated in the southwest portion of Hoyle Township in the Porcupine Mining Division in Timmins, Ontario, Canada (Figure 4.2). In addition to hosting the Bell Creek Mine headframe and portal, the Property also contains the Bell Creek Mill, tailings facility and supporting infrastructure.

The Property currently consists of 2 leases and 29 patents with a combination of mining and surface rights collectively (Table 4.1). As of the date of this Report, all leases and patents remain in good standing with concerns to municipal taxes, land tenant tax, and mining rent fees.

Over the history of the Property multiple patents and mining claims have been acquired with several consolidated into leases or patents to facilitate the mining process. Based on the Property as of the date of this Technical Report, Table 4.2 and Figure 4.3 represents the ownership of royalties related to underlying agreements.

1.6 Permits

All of the required provincial, federal and municipal permits, approvals and authorizations have been obtained (and amended from time to time) for Bell Creek to allow for operations and project development. Closure Plan amendments are ongoing relating to changes in the site's infrastructure. All permits are in good standing.

1.7 Environmental Considerations

LSG has implemented a comprehensive environmental management plan to regularly and systematically monitor surface and groundwater quality, air quality, stream sediment geochemistry, waste rock and tailings geochemistry (acid rock drainage ("ARD") monitoring and mitigation), waste disposal practices, reagent handling and storage, and reclamation and reforestation progress. As of January 2021, the operations have attained a level A as per the Mining Association of Canada's Towards Sustainable Mining program.

1.8 Mining Operations

Bell Creek is accessed by a production shaft and portal/ramp system from the surface. Access ramps are driven from the main ramp system to establish sublevels on 20-23 m vertical intervals. Primary level development headings are generally mined 4.0m wide by 4.5m high. Silling development headings are extracted at 3.0m wide by 3.0m high. Primary ramps are typically driven at a maximum declination of 15 percent. Mining is currently being conducted by longhole stoping methods.

Ore is hauled to the surface by skips through the shaft or by truck via the portal/ramp system for ore mined at the 505mL and above, where it is stockpiled on surface prior to being loaded into the crusher located at the Bell Creek Mill.

Development waste is kept underground where it will serve as backfill material for the extracted stopes.

1.9 Processing

All ore mined from Bell Creek is processed on site at the Bell Creek Mill. The Bell Creek Mill is a conventional gold processing plant utilizing cyanidation with gravity and carbon-in-pulp ("CIP") recovery. Current mill throughput is approximately 4,500 tonnes per day ("tpd") (max capacity of 5,359 tpd) and recovery is approximately 94.8% for the Bell Creek ore.

1.10 Conclusions and Recommendations

Proven and probable mineral reserves for the Bell Creek Mine are supported by the feasibility of the operation as demonstrated by the LOM financial model. The costs and productivities used as the basis for estimating the mineral reserves and formulating the LOM plan are based on the actual performance metrics of the operation as experienced from 2012 through 2021. These factors are considered low risk to the mineral reserve estimate. In addition, social, political, and environmental factors are all considered to be low risk factors for the continued operation of Bell Creek and to the mineral reserves estimate.

Based on recent work to complete the mineral resource update, the following recommendations are made for mineral resource estimation and development:

1. Implement definition and exploration drilling to refine shapes and grades for existing mineral resources and to expand the overall mineral resource base for the future. Review this program on an annual basis.
2. Complete exploration drilling at Bell Creek in attempt to further increase the mineral resource base.

Suggested underground diamond drilling programs are outlined as follows:

Underground drilling at Bell Creek for 2022 is proposed to be approximately 53,600m of combined operating, capital, and exploration drilling.

Of this total, approximately 47,300m are for operations and capital drilling to support the 2022 mine plan as well as infill drill for future mining. The remaining 6,300m are planned for near mine exploration, primarily testing the down plunge extents of the deposit.

2 Introduction

This Technical Report has been prepared by LSG for and on behalf of Pan American in compliance with the disclosure requirements of NI 43-101, to disclose current information about Bell Creek.

The effective date of this Technical Report is June 30, 2021. No new material information has become available between this date and the signature date given on the certificate of the qualified persons (“Qualified Persons” or “QPs”).

Pan American is a silver mining and exploration company listed on the Toronto and NASDAQ stock exchanges under the ticker “PAAS”.

The purpose of this Report is to provide a summary of the Bell Creek mineral resources, current mine infrastructure, and estimated mine operating costs to substantiate an updated mineral reserve estimate for Bell Creek. The work completed to support the updated mineral reserve estimate has been conducted with mining parameters, metallurgical recovery, and cost estimation based on actual operating experience at Bell Creek and the Bell Creek Mill.

Historical work in the Bell Creek area was reviewed by referencing assessment reports filed with the Ministry of Northern Development and Mines’ office at the Ontario Government Complex, Highway 101 East, Timmins (Porcupine), Ontario; as well as other internal and public reports. Options and legal agreements were reviewed at the Company’s exploration office.

2.1 List and Responsibilities of Qualified Persons

This Technical Report has been prepared by Al Mainville (P. Geo), Eric Lachapelle (P. Eng.), and Dave Felsher (P. Eng.) on behalf of LSG and complies with the requirements of NI 43-101. These individuals are employees of LSG and are QPs as defined by NI 43-101. They are intimately aware of the work going on at Bell Creek and have visited the site on numerous occasions both prior to and after the effective date of this Technical Report.

Mr. Mainville works full time at LSG’s Exploration office and core shack located at 1515 Government Rd South in Timmins where he reviews and inspects exploration drilling, sampling, and sample security protocols, drill core and the core cutting and storage facilities, the geochemical laboratory performance on a regular (almost daily) basis. He is involved with regular meetings and reviews (weekly, monthly) of operational mine plan, actual mine operation data, operating costs, reconciliation, mining parameters, interpretations of the veins and mineralized structures and the grade estimation process. Mr. Mainville most recently visited and toured the Bell Creek mine on December 13, 2021 and the Bell Creek Mill on December 21, 2021 and inspected operational and general business performance.

Mr. Lachapelle works full time at LSG. He is involved with regular meetings and reviews (weekly, monthly) of operational mine plan, actual mine operation data, operating costs, reconciliation, mining parameters, budgeting plans and reviews the mineral reserves estimation process. Mr. Lachapelle most recently visited and toured the Bell Creek Mine on December 16th, 2021 and the Bell Creek Mill on December 21, 2021 and inspected operational and general business performance.

Mr. Felsher most recently visited and toured the Bell Creek mine on December 13, 2021 and the Bell Creek Mill on February 9, 2022 and inspected operational and general business performance.

Al Mainville (P. Geo), Geology Manager for LSG is responsible for Sections 7, 8, 9, 10, 11, 12, 14, and 23 and parts of Sections 1, 2, 3, 4, 5, 6, 20, 25, 26, and 27.

Eric Lachapelle (P. Eng.), Manager, Technical Services for LSG is responsible for Sections 15, 16, 22 and 23 and parts of Sections 1, 2, 3, 4, 5, 6, 13, 17, 18, 19, 20, 21, 24, 25, 26, and 27.

Dave Felsher (P. Eng.), Mill Manager for LSG is responsible for Sections 13, and 17 and parts of Sections 1, 2, 18, 19, and 21.

3 Reliance on Other Experts

The Qualified Persons responsible for this Technical Report have relied on the following internal expert within the organization for input to certain sections of this report for which they do not have specific expertise and have taken appropriate steps, in their professional judgement, to ensure that the work, information, or advice that they have relied upon is sound:

Marcel Cardinal, Director of Environmental and Sustainability at LSG leads the environmental, permitting and sustainability matters at the Bell Creek mine and has contributed to Sections 1, 4 and 20 by providing information and opinions relating to environmental, permitting and community or social impact details that are described in those sections. The information and opinions are believed to be current, accurate and complete as of the effective date of this Technical Report.

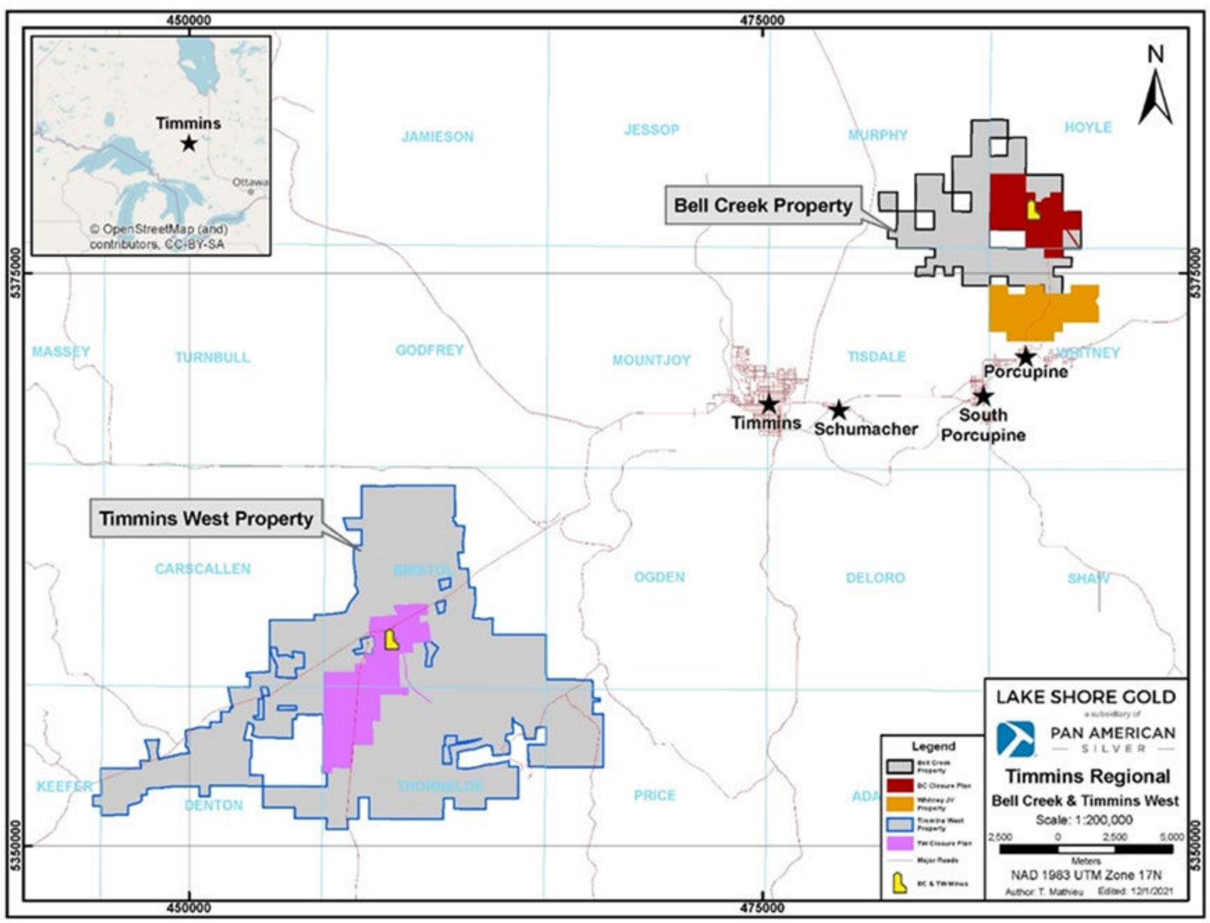
4 Property Description and Location

4.1 Location, Description, Issuer's Interest, Mineral Tenure, and Surface Rights

Bell Creek Property

The Property's main complex which includes the headframe, portal, mill, tailings facility and other supporting infrastructure resides 14km northeast of the City of Timmins and 562km north northwest of Toronto, Ontario, Canada. The Property consists of a combination of crown patents and 21-year term leases containing mining rights, surface rights or both, and cell or boundary cell claims containing mining rights for a combined area of approximately 3497ha. Although the Property is centered on the southwest portion of Hoyle Township, it stretches westward into Murphy Township and south to southwest into Whitney and Tisdale townships in the Porcupine Mining Division (Figure 4.1). Pan American is the 100% owner of the Property through its wholly owned subsidiary, LSG.

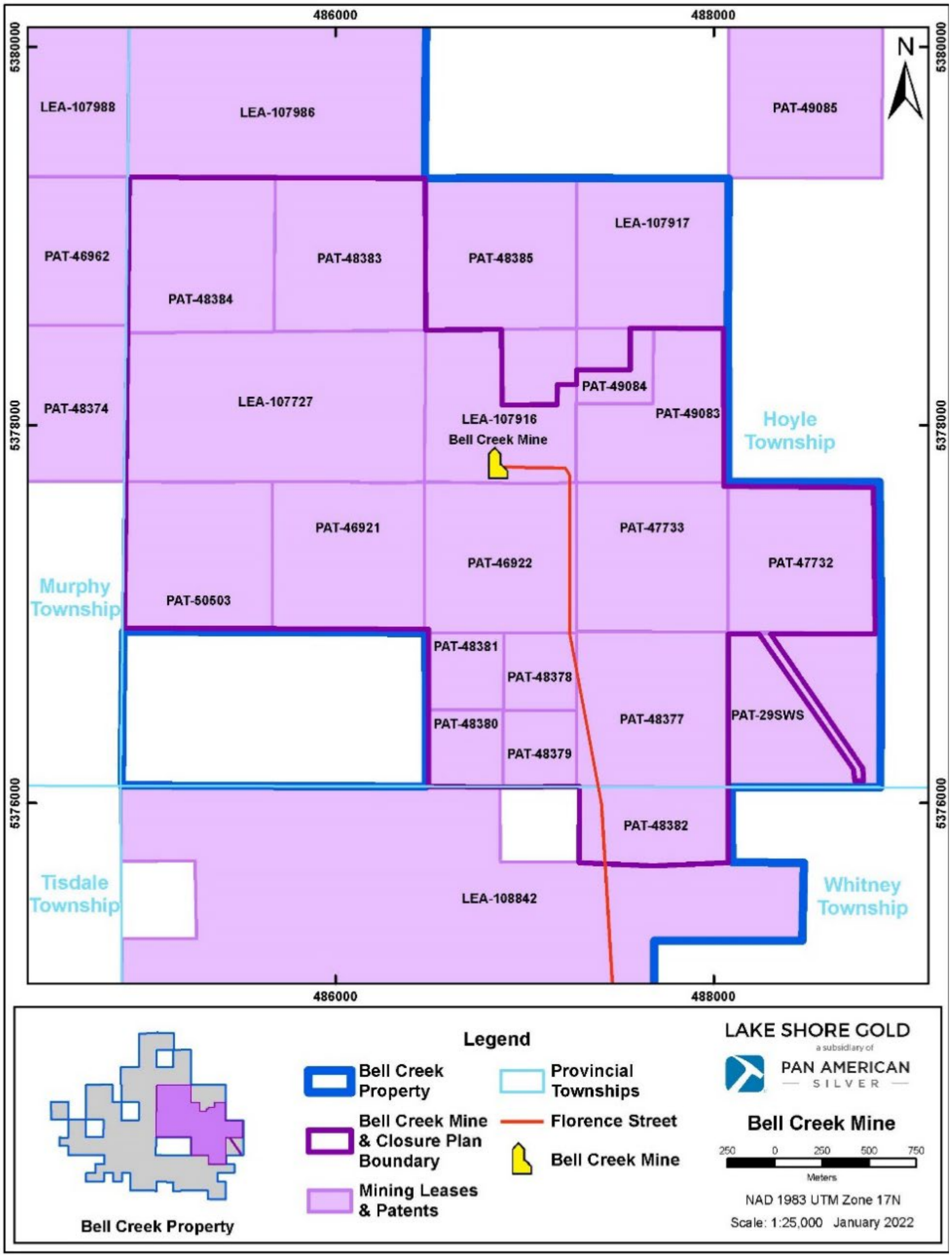
Figure 4.1: Plan of Property Location



Bell Creek Mine Property

The "Bell Creek mine" property as defined by the current Bell Creek Mine Closure Plan as of the date of this Report is approximately 851 ha. Through patented and leased land, LSG owns 100% of the surface and mining rights of the entire 851 ha, subject to underlying royalties. The Property is situated in the southwest portion of Hoyle Township in the Porcupine Mining Division (Figure 4.2). In addition to hosting the Bell Creek headframe and portal, the Property also contains the Bell Creek Mill and tailings facility.

Figure 4.2: Bell Creek Mine Property



The Property currently consists of 2 leases and 29 patents with a combination of mining and surface rights collectively (Table 4.1). As of the date of this Report all leases and patents remain in good standing with concerns to municipal taxes, land tenant tax, and mining rent fees.

Table 4.1: Bell Creek Mine Land Tenure

Bell Creek Mine - Land Tenure										
Property	**Lease/Patent Number**	**Ownership**	**Parcel Number**	**Rights**	**Hectares**	**Township**	**Parcel Division**	**Lot**	**Con**	**Historic Mining Claim#**
Bell Creek Facility	PAT-6522	LSG 100%	11760SEC WAT	SRO	32.071	Whitney	N1/2 of N1/2	9	6	P25242
										P25241
	PAT-48382		8596SEC WAT	MRO	32.071					P25241 & P25242
BC - Hollinsworth	PAT-29SWS	LSG 100%	11657SEC	MR & SR	64.952	Hoyle	S1/2	8	1	-
BC - Vogel	PAT-47732	LSG 100%	20011SEC	MR & SR	64.752	Hoyle	N1/2	8	1	P. 2106
Bell Creek Facility	PAT-6523	LSG 100%	18797SEC	SRO	64.952	Hoyle	S1/2	9	1	25894 to 25897
	PAT-48377		12140SEC	MRO						
BC - Schumacher	PAT-47733	0% owned - Leased	1598SEC	MR & SR	64.954	Hoyle	N 1/2	9	1	P. 1502
Bell Creek Facility	PAT-6534	LSG 100%	18800SEC	SRO	16.238	Hoyle	SE1/4 of S1/2	10	1	P25892
	PAT-48379		12150SEC	MRO						
Bell Creek Facility	PAT-6532	LSG 100%	18798SEC	SRO	16.238	Hoyle	SW1/4 of S1/2	10	1	P25890
	PAT-48380		12148SEC	MRO						
Bell Creek Facility	PAT-6535	LSG 100%	18801SEC	SRO	16.238	Hoyle	NE1/4 of S1/2	10	1	P25893
	PAT-48378		12151SEC	MRO						
Bell Creek Facility	PAT-6533	LSG 100%	18799SEC	SRO	16.238	Hoyle	NW1/4 of S1/2	10	1	P25891
	PAT-48381		12149SEC	MRO						
Bell Creek Facility	PAT-54SWS	LSG 100%	1755SEC	SRO	64.952	Hoyle	N1/2	10	1	-
	PAT-46922		460SND	MRO						
Bell Creek Facility	PAT-91SWS	LSG 100%	15504SEC	SRO	64.75	Hoyle	N1/2	11	1	-
	PAT-46921		24055SEC	MRO						
Bell Creek Facility	PAT-50503	LSG 100%	439SND	MR & SR	63.94	Hoyle	N1/2	12	1	-
BC - Marlhill Mine	PAT-49083	LSG 100%	13436SEC	MR & SR	64.75	Hoyle	NE 1/4, SE 1/4, SW 1/4 of S1/2	9	2	-
Bell Creek Mine/Mill	PAT-1144SWS	LSG 100%	3559SEC	SRO	64.143	Hoyle	S 1/2	10	2	P44696 to P44699
	LEA-107916		155LC	MRO						
Bell Creek Facility	LEA-107727	LSG 100%	1338LC	MR & SR	127.476	Hoyle	S1/2	10 & 11	2	P515775 to P515782
Bell Creek Facility	PAT-50SWS2	LSG 100%	14737SEC	SRO	64.748	Hoyle	SE1/4 of N1/2	11	2	-
	PAT-50SWS1		15420SEC	SRO			SW1/4 of N1/2			
	PAT-50SWS4		15125SEC	SRO			NE1/4 of N1/2			
	PAT-50SWS3		15503SEC	SRO			NW1/4 of N1/2			
	PAT-48383		10568SEC	MRO	64.748		N1/2			
Bell Creek Facility	PAT-48384	LSG 100%	9083SEC	MR & SR	62.726	Hoyle	N1/2	12	2	-
BC - Marlhill Mine	PAT-49084	LSG 100%	24053SEC	MR & SR P1 SRO P2	80.937	Hoyle	NW1/4 of S1/2 of Lot 9, Con 2, (MR & SR) & N1/2 Lot 9, Con2 (SRO)	9	2	-

The Bell Creek headframe is located within National Topography Series Map reference NTS 42-A-11, at longitude 81° 10’ 41” west and latitude 48° 33’ 45” north. Alternately the headframe is situated within UTM NAD83, Zone 17N, at approximately 486860E and 5377802N, on mining lease LEA-107916 and corresponding surface rights patent PAT-1144SWS. The Property is accessed via Florence Street, an all-weather asphalt and gravel road, by heading 7km north from highway 101 and Florence Street intersection within Porcupine, Ontario. (Figure 4.2).

4.2 Ownership History and Underlying Agreements

The Bell Creek Mine was operated by Canamax Resources Inc. (“Canamax”) between 1989 and 1991. Falconbridge Gold Corporation (“Falconbridge”) operated the mine between 1991 and 1992, followed by Kinross Gold (“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”) (now Newmont), a joint venture between Placer Dome Canada Ltd. (“Placer”) and Kinross, was formed and in 2005 the property was reactivated. Goldcorp Inc. (“Goldcorp”) acquired Placer’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.

Schumacher Property:

In November 2005, LSG signed a 20-year lease agreement giving it 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 the east by the Vogel property. LSG achieved commercial production on the property in Q4 2017 and, as per the agreement, production from the property is subject to a 2% Net Smelter Return (“NSR”) royalty payable to the Schumacher Estate (internal company documents).

Bell Creek Claims:

On January 31, 2007, LSG announced that it had entered into a binding letter of agreement with Goldcorp, manager of the PJV, to acquire the Property. 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.

The agreement is subject to a 2% 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 lesser amounts.

Northern Claims:

The two “northern claims” were acquired from Goldcorp in 2009 as part of the “Bell Creek West” acquisition (LSG press release, December 17, 2009). These claims are both Boer War Vet lots, located in a surveyed township and as such have fixed boundaries for an area of approximately 64 ha. These claims are subject to various royalties.

Hollinsworth Property:

Replacing the need for a historic easement and access agreement for the Bell Creek wastewater discharge line to the Porcupine River, in November 2020 the Hollinsworth property, Patent PAT-29SWS, was purchased. The Hollinsworth property contains both mining and surface rights, is approximately 64 ha in size, and is currently subject to a 0.75% NSR royalty.

Over the history of the Property multiple patents and mining claims have been acquired with several consolidated into leases or patents to facilitate the mining process. Based on the Property as of the date of this Report, Table 4.2 describes the current ownership of royalties related to underlying agreements.

Table 4.2: Bell Creek Mine – Underlying Agreements & Royalties

Bell Creek Mine - Underlying Agreements & Royalties									
Property	**Lease/Patent Number**	**Ownership**	**Parcel Number**	**Rights**	**Hectares**	**Township**	**Historic Mining Claim#**	**Underlying Agreements & Royalties**	
Bell Creek Facility	PAT-6522	LSG 100%	11760SEC WAT	SRO	32.071	Whitney	P25242 P25241	Wetmore; 10% NPI	Goldcorp2A-2; 2% NSR
	PAT-48382		8596SEC WAT	MRO	32.071		P25241 & P25242		
BC - Hollinsworth	PAT-29SWS	LSG 100%	11657SEC	MR & SR	64.952	Hoyle	-	Hollinsworth; 0.75% NSR	
BC - Vogel	PAT-47732	LSG 100%	20011SEC	MR & SR	64.752	Hoyle	P. 2106	-	
Bell Creek Facility	PAT-6523	LSG 100%	18797SEC	SRO	64.952	Hoyle	25894 to 25897	Wetmore; 10% NPI	Goldcorp2A-2; 2% NSR
	PAT-48377		12140SEC	MRO					
BC - Schumacher	PAT-47733	0% owned - Leased	1598SEC	MR & SR	64.954	Hoyle	P. 1502	Schumacher; 2% NSR	
Bell Creek Facility	PAT-6534	LSG 100%	18800SEC	SRO	16.238	Hoyle	P25892	Wetmore; 10% NPI	Goldcorp2A-2; 2% NSR
	PAT-48379		12150SEC	MRO					
Bell Creek Facility	PAT-6532	LSG 100%	18798SEC	SRO	16.238	Hoyle	P25890	Wetmore; 10% NPI	Goldcorp2A-2; 2% NSR
	PAT-48380		12148SEC	MRO					
Bell Creek Facility	PAT-6535	LSG 100%	18801SEC	SRO	16.238	Hoyle	P25893	Wetmore; 10% NPI	Goldcorp2A-2; 2% NSR
	PAT-48378		12151SEC	MRO					
Bell Creek Facility	PAT-6533	LSG 100%	18799SEC	SRO	16.238	Hoyle	P25891	Wetmore; 10% NPI	Goldcorp2A-2; 2% NSR
	PAT-48381		12149SEC	MRO					
Bell Creek Facility	PAT-54SWS	LSG 100%	1755SEC	SRO	64.952	Hoyle	-	Prentice & McLennan; 10%	0799714 BC Ltd; 2% NSR
	PAT-46922		460SND	MRO					
Bell Creek Facility	PAT-91SWS	LSG 100%	15504SEC	SRO	64.75	Hoyle	-	Casselman & Fisher; 10% NPI	0799714 BC Ltd; 2% NSR
	PAT-46921		24055SEC	MRO					
Bell Creek Facility	PAT-50503	LSG 100%	439SND	MR & SR	63.94	Hoyle	-	-	
BC - Marlhill Mine	PAT-49083	LSG 100%	13436SEC	MR & SR	64.75	Hoyle	-	Marlhill Mines; 20% NPI	Goldcorp2A-2; 2% NSR
Bell Creek Mine/Mill	PAT-1144SWS	LSG 100%	3559SEC	SRO	64.143	Hoyle	P44696 to P44699	0799714 BC Ltd; 2% NSR	
	LEA-107916		155LC	MRO					
Bell Creek Facility	LEA-107727	LSG 100%	1338LC	MR & SR	127.476	Hoyle	P515775 to P515782	Allerston; 10% NPI	0799714 BC Ltd; 2% NSR
Bell Creek Facility	PAT-50SWS2	LSG 100%	14737SEC	SRO	64.748	Hoyle	-	Stringer; 10% NPI	Goldcorp2A-2; 2% NSR
	PAT-50SWS1		15420SEC	SRO					
	PAT-50SWS4		15125SEC	SRO					
	PAT-50SWS3		15503SEC	SRO					
	PAT-48383		10568SEC	MRO	64.748				
Bell Creek Facility	PAT-48384	LSG 100%	9083SEC	MR & SR	62.726	Hoyle	-	Dommel; 1% NSR	Goldcorp2A-2; 2% NSR
BC - Marlhill Mine	PAT-49084	LSG 100%	24053SEC	MR & SR P1 SRO P2	80.937	Hoyle	-	-	

4.3 Past Mining, Environmental Liabilities and Permitting

Gold mineralization was first discovered on the Property through a joint venture between Rosario Resources Canada Ltd. ("Rosario") and Dupont between 1980 and 1982. Between 1986 and 1991 Canamax explored and developed Bell Creek. Access to mineralization was through a 290 m deep three compartment shaft with an 8-foot diameter double drum hoist, and includes a 30m 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 240mL to access ore below shaft bottom to a vertical depth of 300m. A 300 tpd mill was commissioned in 1987.

From 1991 to 1992 Falconbridge operated Bell Creek followed by Kinross until the mine's closure in 1994. Between 1987 and 1994, 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) using vertical sublevel retreat, longhole, and shrinkage mining methods. This includes some ore from Marlhill.

After closure, the Property was kept on care and maintenance until 2001 when it was allowed to flood. The Property was reactivated in 2005 and on January 1, 2012, LSG announced Bell Creek to be in commercial production.

Historical permits and approvals were updated as required. The historical tailings and water management infrastructure was updated and re-commissioned and are managed by internal personnel in conjunction with a third party Engineer of Record. Activities include an annual Dam Safety Inspection and adherence to the Mining Association of Canada's Towards Sustainable Mining tailings protocol.

4.4 Significant Factors and Risks

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

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

An Impact and Benefits Agreement ("IBA") was signed in September of 2016. The IBA outlines how LSG and the Indigenous communities will work together in the following areas: education/training of Indigenous community members, employment, business and contracting opportunities, financial considerations and environmental provisions.

5 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

5.1 Physiography, Vegetation, and Climate

The Bell Creek property exhibits low to moderate topographic relief, with the property elevation ranging from 285 to 298m above sea level. Drainage is characterized by slow, meandering creeks and rivers that flow into the Arctic watershed as shown in Figure 5.1. The 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%.

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 Pine, 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.

The area, and the City of Timmins experience a Continental Climate with an average mean temperature range of -16.8 degrees centigrade ("°C") (January) to +17.5°C (July) and annual precipitation of approximately 834.6 millimetres ("mm"). Table 5.1 summarizes the average temperature and precipitation values recorded at the Timmins Airport for the period 1981 to 2010.

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

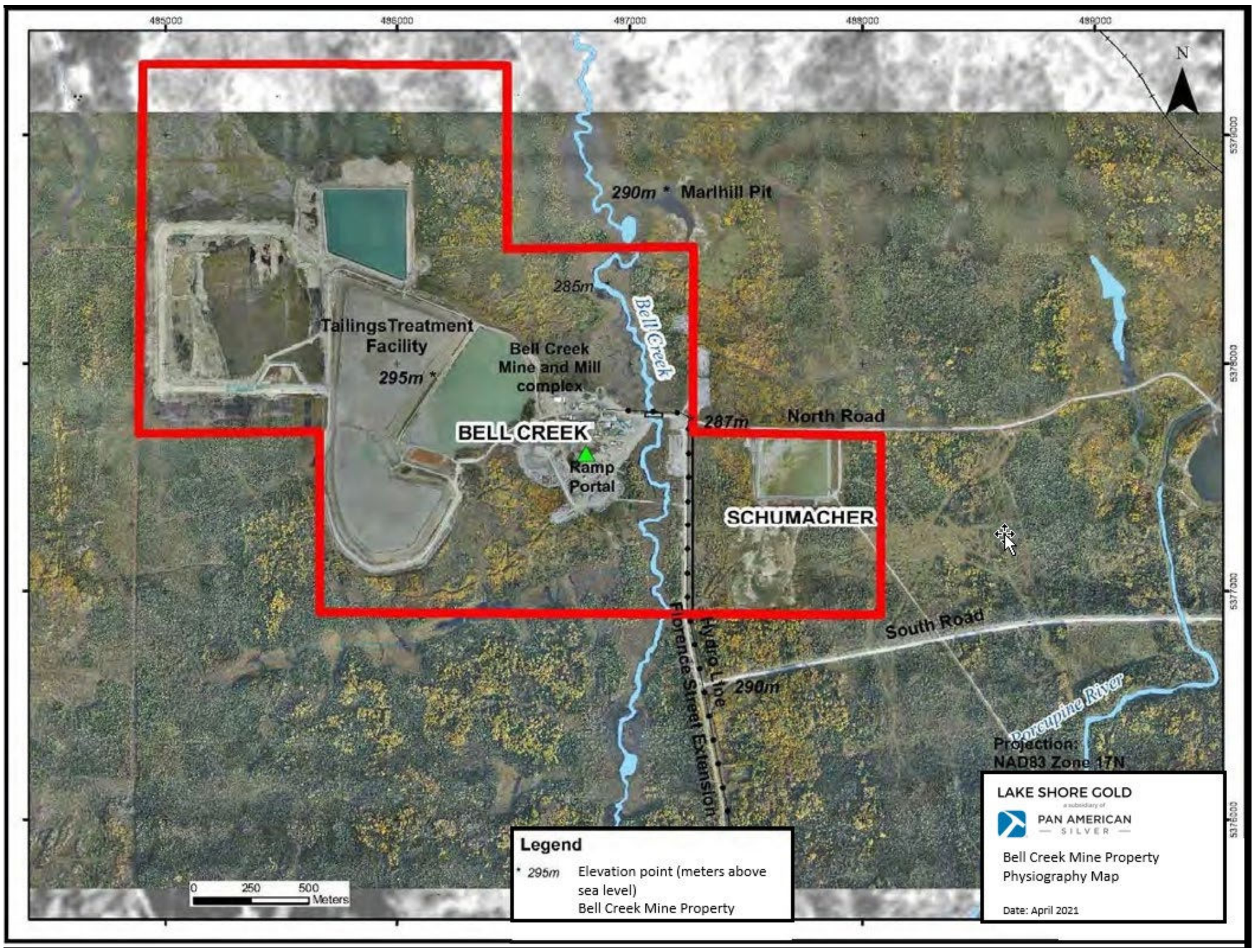
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Temperature													
Daily Average (˚C)	-16.8	-14.0	-7.4	1.8	9.6	14.9	17.5	16.0	11.1	4.4	-3.4	-11.9	1.8
Daily Max. (˚C)	-10.6	-7.2	-0.6	8.0	16.6	21.9	24.2	22.5	17.1	9.0	0.6	-6.9	7.9
Daily Min. (˚C)	-23.0	-20.7	-14.2	-4.5	2.5	7.8	10.7	9.4	5.2	-0.3	-7.4	-17.0	-4.3
Precipitation													
Rainfall (mm)	3.2	1.7	14.1	30.1	62.3	83.2	90.9	81.6	83.7	68.1	30.9	8.5	558.3
Snowfall (cm)	58	46	45	27	5	0	0	0	1	15	49	65	311
Precipitation (mm)	51.8	41.3	54.5	56.2	67.4	83.4	90.9	81.6	84.7	82.5	78.9	64.5	834.6
Snow Depth (cm)	53	64	54	18	1	0	0	0	0	0	7	28	19

Wind Speed (km/h)	12.3	12.3	13.4	13.5	12.4	11.5	10.3	9.8	11.2	12.3	12.5	11.8

Data from Environment Canada: http://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?stnID=4180&autofwd=1

Local lakes begin to freeze over in mid-November, and breakup takes place in late April to early May. Work can be carried out on the Property year-round.

Figure 5.1: Physiography



5.2 Accessibility, Local Resources, Population Centres, and Transport

Year-round 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, approximately 20 km northeast of Timmins, Ontario. Access to Bell Creek is illustrated in Figures 4.1 and 5.1.

The City of Timmins has an area of 3,210 square km (km^2) and a population of 41,788 (2016 Census). The economic base is dominated by the mining and forestry 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 services provided by Air Canada, Air Creebec, Bearskin Airlines and Porter Airlines. Air Creebec flies to communities along the Hudson and James Bay region in northern Ontario and northern Quebec as well as Val-d'Or, Chibougamau and Montreal, while Bearskin Airlines services major centers in northeast and northwest Ontario. Air Canada flies to Toronto via Pearson International Airport, while Porter Airlines connects passengers to Toronto through Billy Bishop Toronto City Airport.

The Timmins District Hospital is a regional health care facility for northeastern Ontario.

5.3 Surface Rights

The mine workings and infrastructure, processing plant, tailings storage facilities, waste disposal areas, effluent management and treatment facilities, roads, and power lines are located within the boundaries of the mining leases and patented claims illustrated in Figure 4.2 of which the surface rights controlled by LSG.

The authors believe that the Property has sufficient surface rights to carry out mining operations.

5.4 Power and Water

All-weather road access and electrical power transmission lines are established and operational to the Bell Creek Mine. Water for the mining operation is supplied from the underground mine dewatering systems, tailings facilities, and wells located on the Property, and is adequate for the existing and planned future requirements of the mine.

5.5 Infrastructure

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 6,000 tpd by LSG. The mill processes material from the Timmins West Mine in addition to that from Bell Creek;
- a crushed ore storage dome;
- 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;
- water treatment and supply facilities;
- a hoist room, a headframe, and a 1080m deep shaft;
- a portal, ramp, ventilation raises and a series of ramp-connected underground sublevels;
- a fleet of underground mobile mine equipment; and
- site power supply provided by a 115 kilovolt (“kV”) power line from Hydro One

6 History

In November 2005, LSG 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. Acquisition of the Bell Creek claims by LSG from the previous owner, PJV, was finalized on December 18, 2007. The two “northern claims” were acquired by LSG from the previous owner in December 2009.

The discovery of gold occurrences in the Timmins area began to appear in historic records 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 throughout the 1900s, 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 Bell Creek. 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
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 Property through a joint venture between Rosario and Dupont between 1980 and 1982. Between 1986 and 1991, Canamax explored and developed the Bell Creek Mine.

Canamax held the Schumacher property under option during the period 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 1m.

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

In 1995, Pentland Firth Ventures Ltd. ("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 drillholes (diameter unknown) encountering 4.40 g/t Au over 5.1m (including 34.19 g/t Au over 0.4m) and 3.28 g/t Au over 7.3m. 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 (2,014 ft.)	
1963	Broulan Reef Mines Ltd	Surface diamond drilling - 1 hole (163.7m.)	
1978 to 1981	Rosario Resources Canada Ltd	IP Survey	R.S. Middleton (1978)
		Magnetom Survey	R.S. Middleton (1979)
		Overburden drilling	Metres and location uncertain
		Surface diamond drilling - 90 holes (12,637.0 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 Magnetom 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 **Bell Creek Mine**	Canadian Mine Services Ltd.
		Underground development - **Bell Creek Mine**- 280 m shaft, levels at 30, 60, 90, 120, 180, and 240mL. Ramp driven from shaft bottom to 300mL	

		Underground diamond drilling - **Bell Creek Mine** - 227 holes (13,022.2 m)	
		Commercial Production - Bell Creek Mine – 576,017 tons @ 0.196 oz/ton for 112,739 recovered ounces	Total Production from 1987 to 1994
		Underground development - **Marlhill Mine** - ramp to 150 m vertical depth, levels at 25, 50, 92, 100, 125, and 150mL	1989 to 1991
		Underground diamond drilling - **Marlhill Mine** - 117 holes (6,302.3m)	1989 to 1991
		Commercial Production – Marlhill Mine – 30,924 total recovered ounces	1989 to 1991, allowed to flood November 1991
1992 to 1994	Falconbridge Gold Corporation Ltd.	Underground diamond drilling - **Bell Creek Mine** - 64 holes (6,155.5 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 (5,623 m)	
1995 to 1997	Pentland Firth Ventures Ltd	Surface diamond drilling - **Marlhill Mine** - 105 holes (29,730.8 m)	
		Dewatering of **Marlhill Mine**	1996 to 1997, no production
		Underground diamond drilling - **Marlhill Mine** - 10 holes (3,566 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).	

6.1 Historical Resource Estimates

6.1.1 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. A Qualified Person has not done sufficient work to classify the historical estimates described below as current mineral resources or mineral reserves and the Company is not treating the historical estimates as current mineral resources or mineral reserves.

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

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

A mineral resource estimate was completed by the PJV in 2004 using a polygonal interpolation method 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 not considered as a mineral resource by the PJV, only as a "Mineral Inventory" for exploration purposes only.

The 2004 estimate is derived from Butler (2008) and summarized in Table 6.3.

Table 6.3: 2004 Resource Estimate (Not NI 43-101 Compliant)

Classification	Tonnes	Gold Grade (g/t)
Measured	0	0
Indicated	191,000	8.3
Inferred	347,000	7.7

After acquiring Bell Creek from the PJV in 2007, these historic estimates were factored into LSG's decision to resume exploration on the Property in 2008.

6.1.2 NI 43-101 Compliant Mineral Reserve and Mineral Resource Estimates

In March 2015, LSG published an updated mineral reserve and mineral resource for Bell Creek which would have been the last technical report issued on the Property prior to LSG becoming a subsidiary of Pan American through the Company's acquisition of Tahoe Resources Inc.

The mineral resource was estimated using an ID^2 interpolation method with gold assays capped to 44 g/t for the North A vein, and 34 g/t for all other domains excepting the Hangingwall veins which were capped to 25 g/t. An assumed long-term gold price of US$1,100 per ounce and 0.90 $US/$CAD 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 mineral reserves and mineral resources for Bell Creek from the 2015 technical report are summarized in Tables 6.4 and 6.5 below.

Table 6.4: 2015 Mineral Resource Statement

Category	Tonnes	Capped Grade (g/t Au)	Capped Ounces Au
Measured	331,000	5.3	55,900
Indicated	4,573,000	4.3	630,800
Measured and Indicated	4,904,000	4.4	686,700
Inferred	4,399,000	4.8	685,000

Notes:

1. *The effective date of this report was December 31, 2014.*
2. *The mineral resource estimates had been classified according to CIM Definitions and Guidelines.*
3. *Mineral resources were reported inclusive of mineral reserves.*
4. *Mineral resources incorporated a minimum cut-off grade of 2.2 g/t for the Bell Creek Mine which includes dilution to maintain zone continuity.*
5. *Cut-off grade was determined using a weighted average gold price of US$1,100 per ounce and an exchange rate of 0.90 $US/$CAD.*
6. *Cut-off grade assumed mining and G&A costs of up to $77 per tonne and/or processing costs of $22 per tonne and assumed metallurgical recovery of 94.5%.*
7. *Mineral resources had been estimated using an ID^2 interpolation method and gold grades which had been capped between 25 and 44 g/t based on statistical analysis of data in each zone.*
8. *A minimum mining width of 2m was used to model the mineralized zones.*
9. *The mineral resources were prepared under the supervision of, and verified by, Eric Kallio, P. Geo., Senior Vice-President, Exploration, Lake Shore Gold Corp., who is a QP under NI 43-101 and an employee of LSG.*
10. *Tonnage information is rounded to the nearest thousand and gold ounces to the nearest one hundred, as a result totals may not add exactly due to rounding.*

Table 6.5: 2015 Mineral Reserve Statement

Reserve Classification	Diluted/Recovered Tonnes	Capped Grade (g/t	Ounces Mined To Surface
Proven	172,000	4.5	24,900
Probable	1,620,000	4.6	238,800
Total (Proven + Probable)	1,792,000	4.6	263,600

1. *The effective date is of this report was December 31, 2014.*
2. *The mineral reserve estimates were classified according to CIM Definitions and Guidelines.*
3. *Mineral reserves were based on a long-term gold price of US$1,100 per ounce and an exchange rate of 0.90 $US/$CAD.*

4. *Mineral reserves were supported by a mine plan that features variable stope thicknesses, depending on zone, and expected cost levels, depending on the mining methods utilized.*
5. *Mineral reserves incorporated a minimum cut-off grade of 2.7 grams per tonne. The cut-off grade includes estimated mining and site G&A costs of $77 per tonne, milling costs of $22 per tonne, mining recovery of 95.0%, external dilution of 13% and a metallurgical recovery rate of 94.5%.*
6. *The mineral reserves were prepared under the supervision of, and verified by, Natasha Vaz, P. Eng., Vice-President, Technical Services, Lake Shore Gold Corp., who is a qualified person under NI 43-101 and an employee of Lake Shore Gold.*
7. *Tonnage information is rounded to the nearest thousand and gold ounces to the nearest one hundred, as a result totals may not add exactly due to rounding.*

The mineral resources and mineral reserves were updated on an annual basis with the most recent NI 43-101 compliant estimate completed by LSG (effective date June 30, 2020) utilizing an ID^2 interpolation method, a long term gold price of US$1,350 per ounce, exchange rate of $CAD/$US of 1.3 and a resource cut-off grade of 1.8 g/t. The Company is not treating this 2020 estimate as current mineral resources or mineral reserves but is relevant as it shows continuity with and was reconciled against the current 30 June 2021 mineral reserves and mineral resources (as described in Section 14.11 below).

Table 6.6: 2020 Mineral Reserve and Mineral Resource Statement

Mineral Reserves				
Deposit	**Classification**	**Tonnes**	**Au g/t**	**Au Ounces**
Bell Creek	Proven	2,283,000	3.2	232,200
	Probable	2,686,000	2.9	247,500
	Proven + Probable	**4,970,000**	**3.0**	**479,700**
Mineral Resources (EXCLUSIVE OF RESERVES)				
Deposit	**Classification**	**Tonnes**	**Au g/t**	**Au Ounces**
Bell Creek	Measured	1,989,000	3.4	216,000
	Indicated	3,388,000	2.8	301,900
	Measured + Indicated	**5,376,000**	**3.0**	**517,800**
	Inferred	4,727,000	3.2	487,700

Notes:

1. *CIM guidelines were followed for classification of mineral reserves and mineral resources.*
2. *Mineral reserves and mineral resources as at June 30, 2020 were calculated using a block model that was estimated in May 2020 and depleted for mining up to the end of April 2020 and month-end production for May and June 2020.*
3. *Mineral reserves were supported by a mine plan that features variable stope thicknesses, depending on zone, and expected cost levels, depending on the mining methods utilized.*

4. *Mineral reserves incorporated a minimum cut-off grade of 2.0 g/t. The cut-off grade includes estimated mining and site G&A costs of US$61.05 per tonne, milling costs of US$17.43 per tonne, mining recovery of 95%, external dilution of 15.5%, and a metallurgical recovery rate of 94.5%. A minimum mining width of approximately 2m was used.*

5. *Capped gold grades were used in estimating the mineral resource average grade.*

6. *Sums may not add due to rounding.*

7. *Al Mainville, B.Sc. P. Geo., is the Qualified Persons for this resource estimate.*

6.2 Historic Production

Between 1987 and 1994, Bell Creek produced 576,000 short tons of ore at a grade of 0.197 oz/ton 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 6.7, from Pressacco (1999), summarizes historical ore production from Bell Creek.

Table 6.7: Bell Creek Historical Production (1987-1994)

Year	Short Tons Produced	Grade (opt Au)	Recovered Ounces Au	Remarks
1987	55,000	0.173	9,600	Mill commissioned in July
1988	135,000	0.195	24,600	93.4% mill recovery
1989	147,000	0.203	29,800	94% mill recovery, includes Marlhill
1990	67,000	0.206	13,700	ore Excludes 82,200 tons of Marlhill
1992	138,000	0.195	26,900	ore Includes co-mingled Marlhill ore
1992	5,000	0.223	1,100	
1993	Limited	-	-	
1994	34,000	0.207	7,000	
Total	**576,000**	**0.197**	**112,700**	

In January 2007, LSG entered into an agreement with PJV to acquire the Bell Creek mine and mill.

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 15m vertical intervals below the 300mL and a bulk sample taken.

The Bell Creek Mine declared commercial production effective January 1, 2012. Production figures for 2010 to 2020 are tabulated in Table 6.8 below.

Table 6.8: Bell Creek Historical Production (2010-2020)

Years	Milled Tonnes	Grade (g/t)	Recovered Ounces
2010	21,000	6.5	4,200
2011	158,000	4.2	20,500
2012	181,000	3.9	21,700
2013	205,000	4.4	27,400
2014	259,000	5.2	41,600
2015	296,000	4.4	39,700
2016	319,000	4.3	41,800
2017	348,000	4.5	47,900
2018	515,000	4.3	66,500
2019	775,000	3.5	81,900
2020	698,000	3.1	65,500
Jan 1-Jun 30, 2021	300,000	3.1	28,000
Totals	**4,076,000**	**3.9**	**486,700**

7 Geological Setting and Mineralization

7.1 Regional Geology

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 million years ago ("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; and
- 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.

Most of the gold produced in the Abitibi Subprovince were from deposits formed proximal to two major regional structures. The major gold deposits in the Kirkland Lake and Rouyn-Noranda camps are located along the Cadillac-Larder Lake Fault ("CLLF") and those in the Timmins camp are located along the Destor-Porcupine Fault ("DPF").

Supracrustal rocks in the Timmins region are assigned as members of nine tectonic assemblages within the Western Abitibi Subprovince, of the Superior Province. The seven volcanic and two sedimentary assemblages are of Archean age. Intrusions were emplaced during Archean and Proterozoic times. Tectonic assemblages of the Abitibi Subprovince, east of the Kapuskasing Structural Zone, are illustrated in Figure 7.1 (after Ayer J.A., Dubé, B., and Trowell, N.F., 2009). Table 7.1 is modified after Ayer (1999, 2000, 2003, 2005, 2011) and summarizes the characteristics of the assemblages from youngest to oldest.

Figure 7.1: Tectonic Assemblages of the Abitibi Subprovince East of the Kapuskasing Structural Zone (After Ayer, J.A., Dubé, B., Trowell, N.F.; NE Ontario Mines and Minerals Symposium, April 16, 2009)

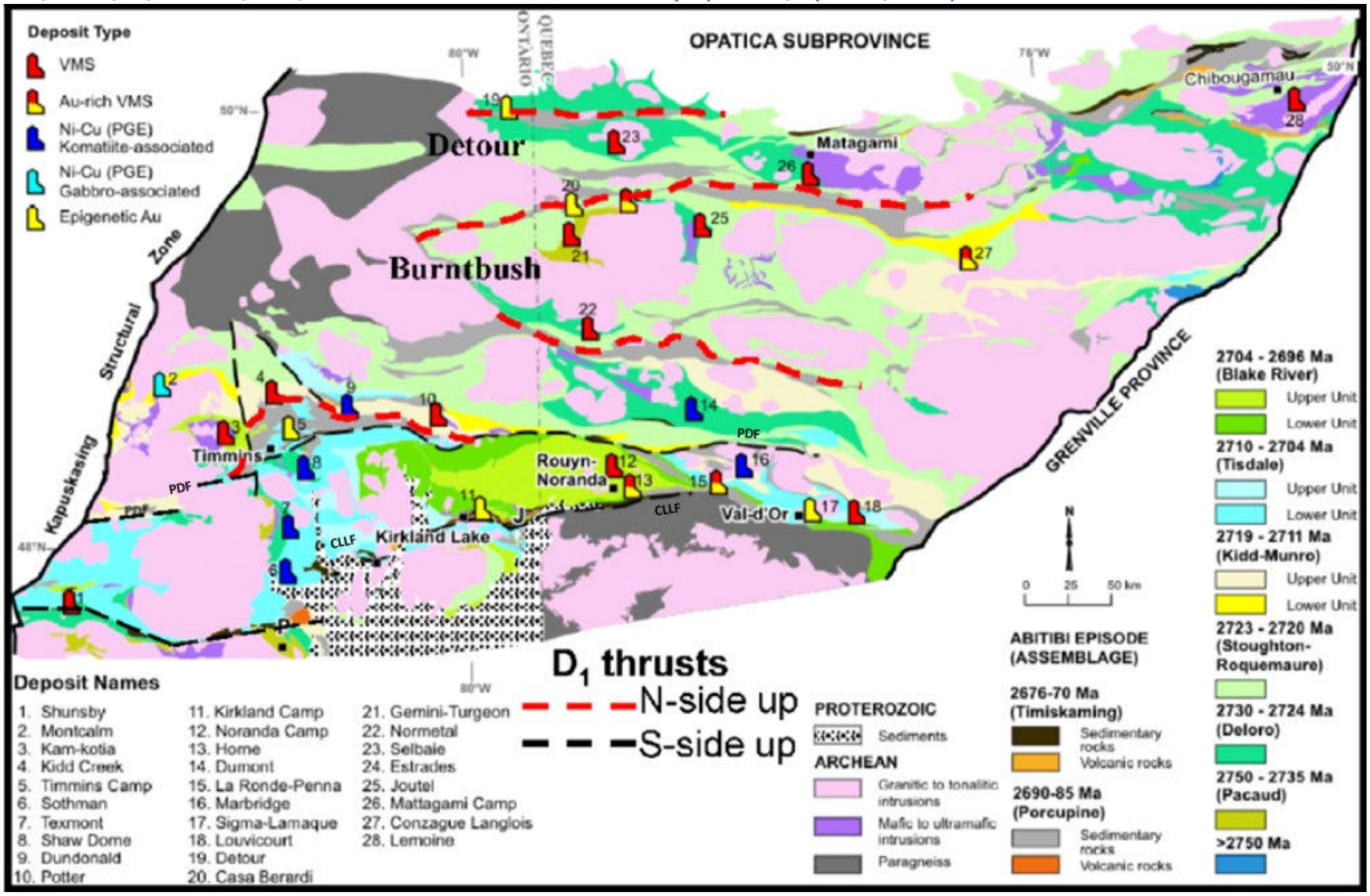


Table 7.1: Tectonic Assemblages

Assemblages	Description
Timiskaming Assemblage Unconformably deposited from 2676- 2670 Ma (6 Ma time span)	Consists of conglomerate, sandstone and alkalic volcanics Coeval Gold mineralization occurs near regional fault zones (PDF & CLLF) Mineralised deposits associated with this assemblage occur include: • Quartz veins (e.g. Timmins & Val d'Or deposits) • Sulphide rich Stockworks (e.g. Holloway Twp., Kirkland Lake, Matachewan) • AIC (Thunder Creek) 2687 ±3Ma (Barrie, 1992)
Porcupine Assemblage Deposited from 2690 – 2685 Ma (5 Ma time span)	Lithologies found are turbidites with minor conglomerates & iron formation locally. The Krist Formation forms part of the Porcupine assemblage and is coeval with calc-alkalic felsic porphyries (2691 ±3 to 2688 ±2 Ma).
Blake River Assemblage Deposited from 2703 – 2696 Ma (7 Ma time span)	Upper and Lower Units composed of Tholeiitic volcanics and Calc-alkaline mafic to felsic volcanics. Mineralised deposits associated with this assemblage occur as: • Volcanogenic Massive Sulphide (VMS) deposits associated with F3 felsic volcanics (Noranda deposit) • Syngenetic gold & base metals (Horne, Thompson Bousquet deposits)

Tisdale Assemblage
 	
Deposited from 2710 – 2704 Ma (6 Ma time span)
	Upper and Lower Units composed a tholeiitic to komatiite suite and a calc-alkaline suite.
	Mineralised deposits associated with this assemblage include:
	• VMS Deposits:
	  ○ Kamiskotia – contained in tholeiitic volcanics, gabbros & F3 felsics
	  ○ Val d'Or – contained in calc-alkaline volcanics & F2 felsics
	  ○ Sheraton Township area – contained in intermediate-felsic calc-alkaline volcanics
	• Ni-Cu-PGE: Shaw Dome, Texmont, and Bannockburn

Kidd-Munro Assemblage Deposited from 2719 – 2711 Ma (8 Ma time span)	Consists of two units: • Tholeiitic to komatiitic volcanics. • Calc-alkaline suite. Several different minerlised styles are found: • VMS deposits: ○ mineralisation associated with F3 felsic volcanics & komatiites (Kidd Creek deposit) • mineralisation associated with tholeiitic-Komatiitic volcanism (Potter deposit) • Ni-Cu-PGE (Alexo deposit)
Stoughton-Roquemaure Assemblage Deposited from about 2723 – 2720 Ma (3 Ma time span)	Composed primarily of magnesium and iron rich tholeiitic basalts with localized komatiites and felsic volcanics. PGE mineralization occurs in mafic-ultramafic intrusions and komatiites (Mann & Boston Townships)
Deloro Assemblage Deposited from about 2730 – 2724 Ma (6 Ma time span)	A single unit composed of mafic to felsic calc-alkaline volcanics which is commonly capped by regionally extensive chemical sediments. Two different types of VMS deposits generally associated with this assemblage: • F2 felsic volcanics and synvolcanic intrusion (e.g. Normetal) • Localized sulphide-rich facies in regional oxide facies iron formations (e.g. Shunsby)
Pacaud Assemblage Deposited from 2750 – 2735 Ma (15 Ma time span)	A single unit composed of magnesium and iron rich tholeiitic basalt with localized komatiites and felsic volcanics.

There is a time span of 80 Ma between the volcanic eruption of the lower Pacaud assemblage (2750 Ma) and the sedimentation and volcanism of the upper Timiskaming Assemblage (2670 Ma). Each of the assemblages demonstrates a melt evolution from komatiitic or tholeiitic basalt, to felsic or calc-alkaline volcanics. In the Bell Creek area, only the Tisdale [2710 – 2704 Ma (6 Ma)], Porcupine [2690 – 2685 Ma (5 Ma)], and Timiskaming Assemblages [2676 – 2670 Ma (6 Ma)] are present. Revised age dates for the Porcupine Assemblage indicate that the felsic volcanism of the Krist Formation is coeval with emplacement of calc-alkalic felsic porphyries in Timmins (2692 ±3 to 2688 ±2 Ma).

Deformation in the Timmins – Bell Creek area is characterized by a long lived deformation history which is constrained in timing by the presence of unconformities within the sequence (Rhys2010). 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 approximately 5km southeast of the Bell Creek Mine. These events are followed by faulting along the DPF 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 favorably 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). Figure 7.2 shows the location of the property relative to the regional geology.

Figure 7.2: Regional Geology Map

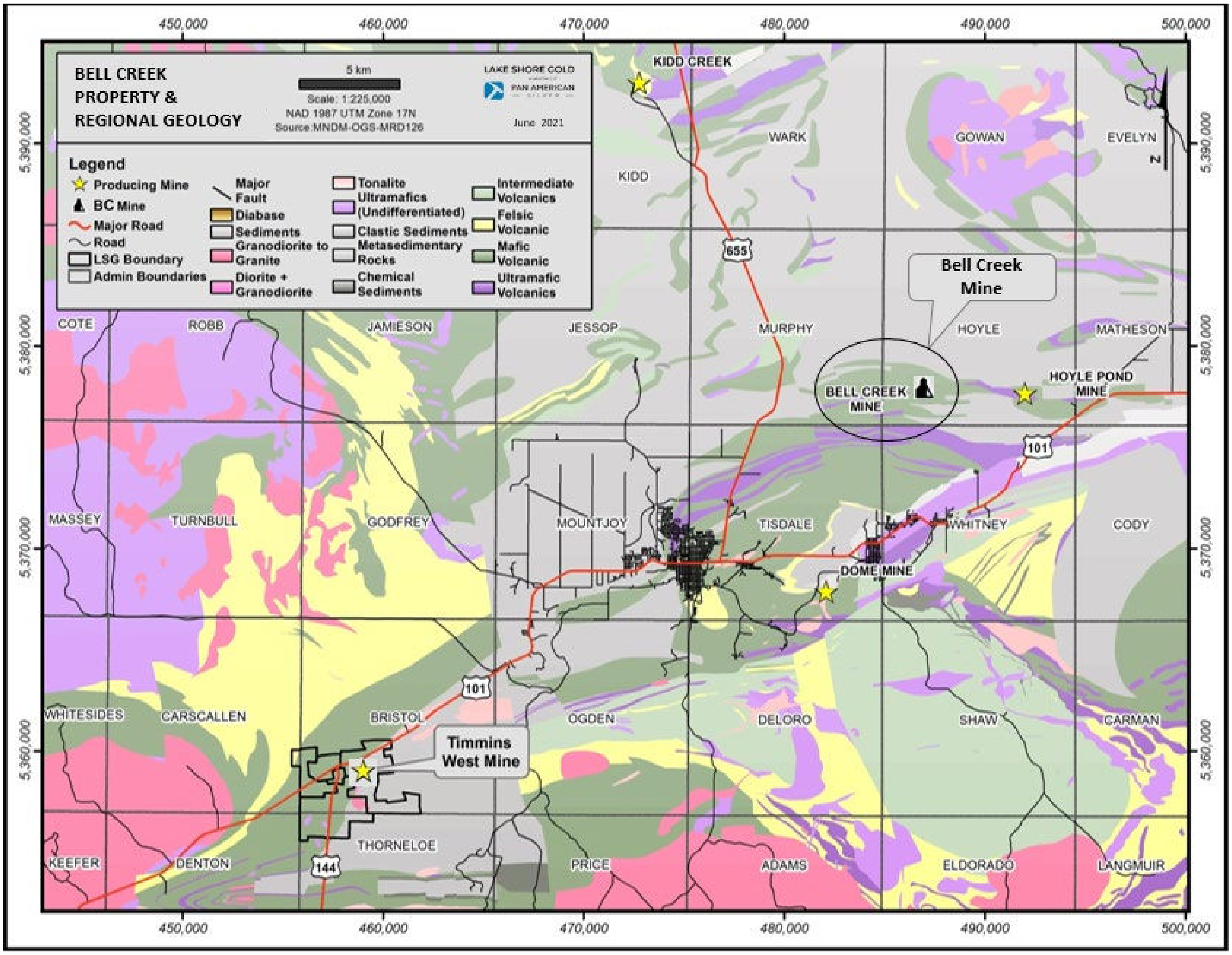


Table 7.2: Sequence of Geological Events for the Timmins Camp (Simplified)

Event	Age (Ma)	Reference
Faulting		
Diabase (Matachewan) Dyke Intrusion Hearst Dyke – Diabase	2461 ± 2	Heaman, 1988
Penetrative Deformation/Greenschist Facies Metamorphism	~2633	
Timiskaming Sedimentation		
Unconformity/Folding		
Copper Gold Mineralization and Related Hydrothermal Alteration		

Albitite Dyke Intrusion (and Related Hydrothermal Alteration) Albitite Dyke Watabeag Batholith Winnie Lake Stock (monzonite) Garrison Stock (monzonite) Garrison Stock (monzonite) Otto Stock (syenite) Watabeag Batholith Lake Abitibi Batholith (granodiorite)	2673 ± 3 2676 ± 2 2677 ± 2 2678 ± 2 2679 ± 4 2680 ± 1 2681 ± 3 2689 ± 3	Mortensen, 1987 Frarey and Krough, 1986* Frarey and Krough, 1986* Corfu et al., 1989 Frarey and Krough, 1986* Corfu et al., 1989 Frarey and Krough, 1986* Mortensen, 1987
Porphyry intrusion, emplacement of heterolithic breccias, and related hydrothermal alteration Crown Porphyry Pearl Lake Porphyry Preston Porphyry Paymaster Porphyry Millerton Porphyry	2688 ± 2 2689 ± 1 2690 ± 2 2690 ± 2 2691 ± 3	Corfu et al., 1989 Corfu et al., 1989 Corfu et al., 1989 Corfu et al., 1989 Corfu et al., 1989
Beatty Sedimentation		
Krist (Keewatin) Calc-alkaline Volcanism and Sedimentation	2691 ± 3 to 2688 ± 2	
Unconformity		
Tilting/Folding?		
Watabeag Batholith (Diorite)	2699 ± 2	Frarey and Krogh, 1986*
Tisdale Group (Keewatin) Komatiite-Tholeiitic-Calc-alkaline Volcanism Flavrian Stock (trondhjemite) Aquarius Diorite 99 Flow	2701 ± 1.5 2705 ± 10 2707 ± 3	Mortensen, 1987 Ayre, OGS Corfu et al., 1989
Deloro Group (Keewatin) Komatiite-Tholeiitic-Calc-alkaline Volcanism Dunite	2707 ± 3	Corfu et al., 1989

7.2 Local and Property Geology

The Bell Creek properties are underlain by carbonate altered, greenschist facies Archean-aged, metavolcanic and clastic metasedimentary rock. The metavolcanic portion of the stratigraphy represents the lower portion of the Tisdale Assemblage (Brisbin, 1997; Pyke, 1982). The Krist Formation is absent from the Property (Berger, 1998). The clastic metasedimentary rocks belong to the Porcupine assemblage. Lithologies generally strike east-west, to west-northwest, and are steeply dipping.

The Tisdale 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 magnesium (“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 100m to 200m thick lens-shaped units with intense local ankerite-fuchsite alteration.

The Tisdale mafic metavolcanic rocks exhibit massive, pillowed and breccia flow textures. Several thin interflow sedimentary horizons are present within the mafic sequence (Kent 1990), and 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. The mafic schists occur as a fine grained fissile unit that weathers a dark green to orange brown color. The presence of abundant leucoxene is associated with the iron (“Fe”)-rich tholeiitic basalts of the lower Tisdale Assemblage and has been used to distinguish it from Mg-rich basalts (leucoxene absent) in this formation. 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 Porcupine Assemblage metasedimentary rock units are composed of wacke, siltstone, mudstone, graphitic and pyritic mudstone (Jackson and Fyon, 1991; Berger, 1998). Wacke beds vary from 5mm to over 1 m 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, 400m of the contacts with mafic metavolcanic rocks of the Tisdale Assemblage. Pyrite comprises from 1% to 30% of the graphitic mudstone and occurs in two forms, as nodular pyrite balls that are 1mm to 2 centimetres (“cm”) in diameter, and as disseminated to massive laminated or bedded layers 1mm to 10mm thick (Berger, 1998).

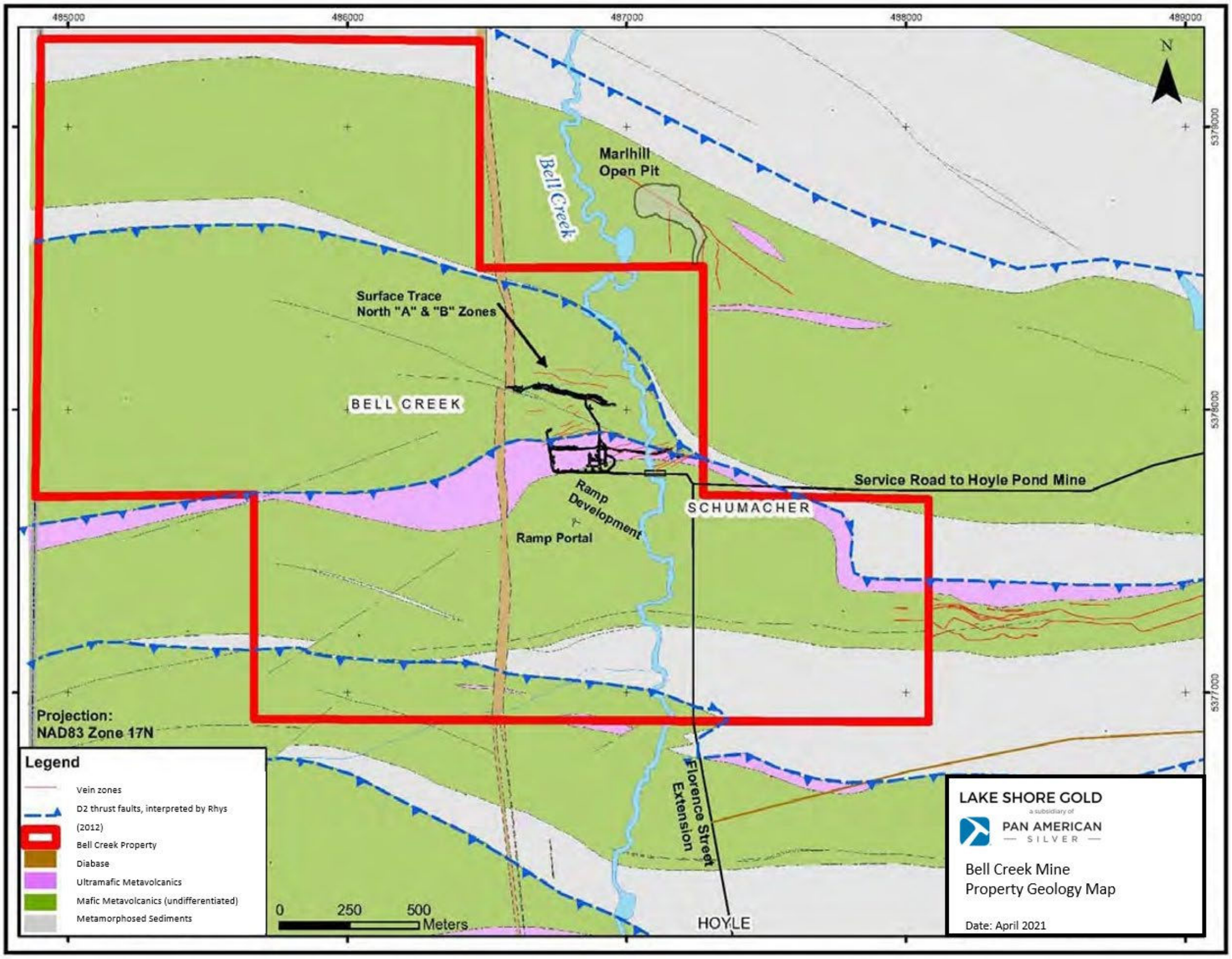
Intruding the Archean rock units is a north-south trending swarm of diabase dykes which has been correlated with the Paleo-Proterozoic age Matachewan swarm. This mafic intrusive unit contains up to 15% magnetite and weathers an orange-brown color.

Berger (1998) describes a Cretaceous regolith that was intersected in several overburden drillholes in Hoyle Township. He describes the unit as being a green to gold colored, 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-lacustine deep water varved silts and clays overlain by gravel and clay till of the Matheson till sheet. Recent organic black mud and peat deposits, overlie the Quaternary geology.

Figure 7.3 illustrates the generalized property geology relative to the property survey lines, cultural, and topographical features.

Figure 7.3: Plan View showing the Bell Creek Property Geology



7.3 Structural Geology

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.) in the area 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 events 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).

7.4 Mineralization

Overview

Regionally, gold bearing structures most commonly form in relatively competent volcanic rocks intruded by felsic porphyry stocks and dykes prior to the deposition of the Timiskaming Assemblage sedimentary rocks. Porphyries dating from 2691 ± 3 Ma to 2688 ± 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 within Timiskaming conglomerates at both the Pamour and the Dome mines, located approximately 5km southeast and 10km south-southwest of the Property respectively, suggest a prolonged gold deposition event from the creation of the steep south dipping DPF zone 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, iron rich dolomite to ankerite, quartz, and dark green to black chlorite. Micro-fractures 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 pyrrhotite, and in association with amorphous carbon. High grade gold mineralization occurs mostly as replacement style pyrite and pyrrhotite mineralization in the wall rock of quartz veins located within alteration zones and sometimes as free gold within these quartz veins. The alteration zones are characterized by carbonate, graphitic and amorphous carbon, fine grained pyrite, sericite, and/or paragonite and are enriched in Au, arsenic (“As”), bismuth, and tungsten. This style of alteration is referred to by mine geologists as “grey zones” and is an exploration target in Hoyle Township.

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. 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).

Bell Creek Mine

The Bell Creek mineralization differs in style from many deposits in the area in being composed largely of disseminated, replacement style 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 Bell Creek 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).

Bell Creek and West Zones

The Bell Creek and West Zones were discovered in 1980 while drill testing electromagnetic conductors and Induced Polarization (“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 0.5m to 7m in width. Lenses that are approximately 100m in length and 200m in vertical extent strike west-east and plunge steeply to the east.

Multiple mineralized zones are identified along a one km 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 is not planned where this is encountered (Kent, 1990). Only a small portion of these zones were mined in the upper levels of the mine prior to 1992.

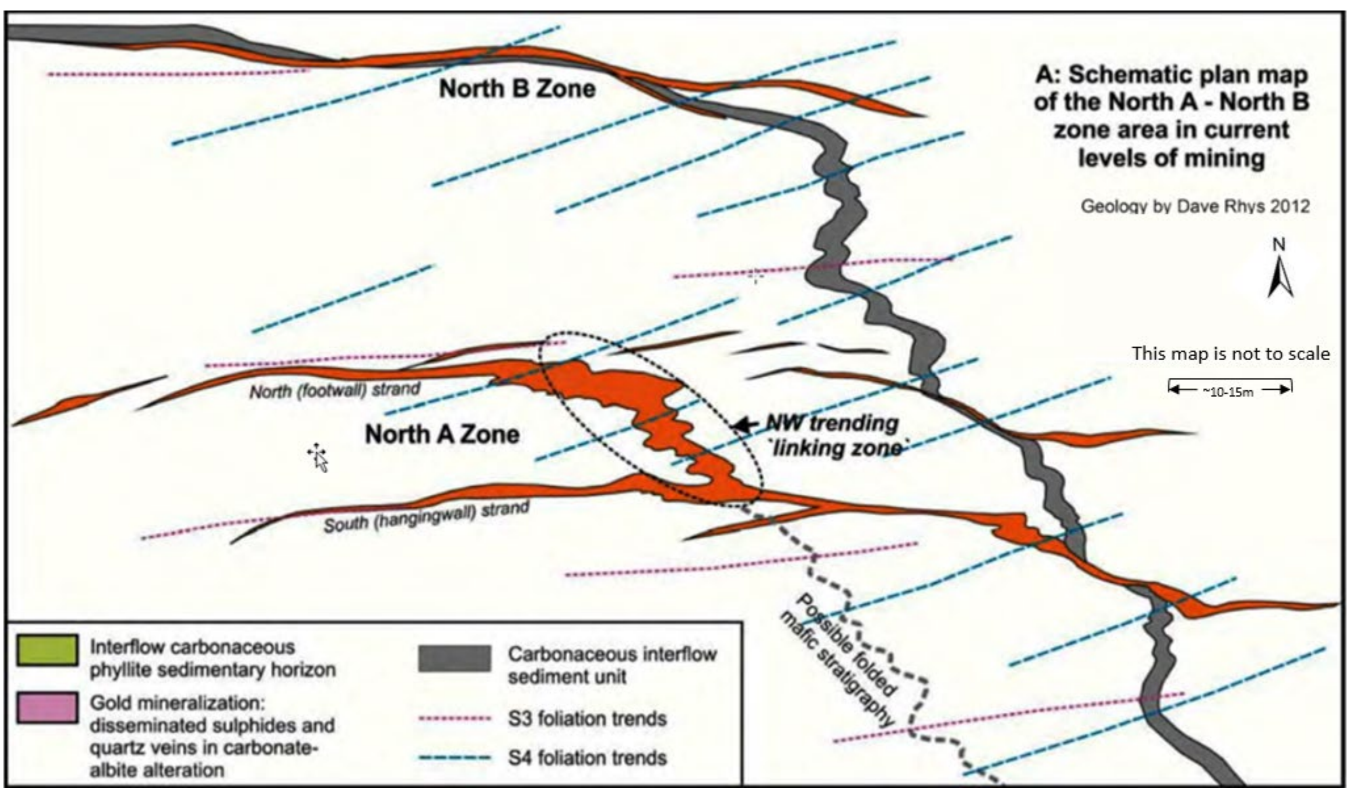
North Zones

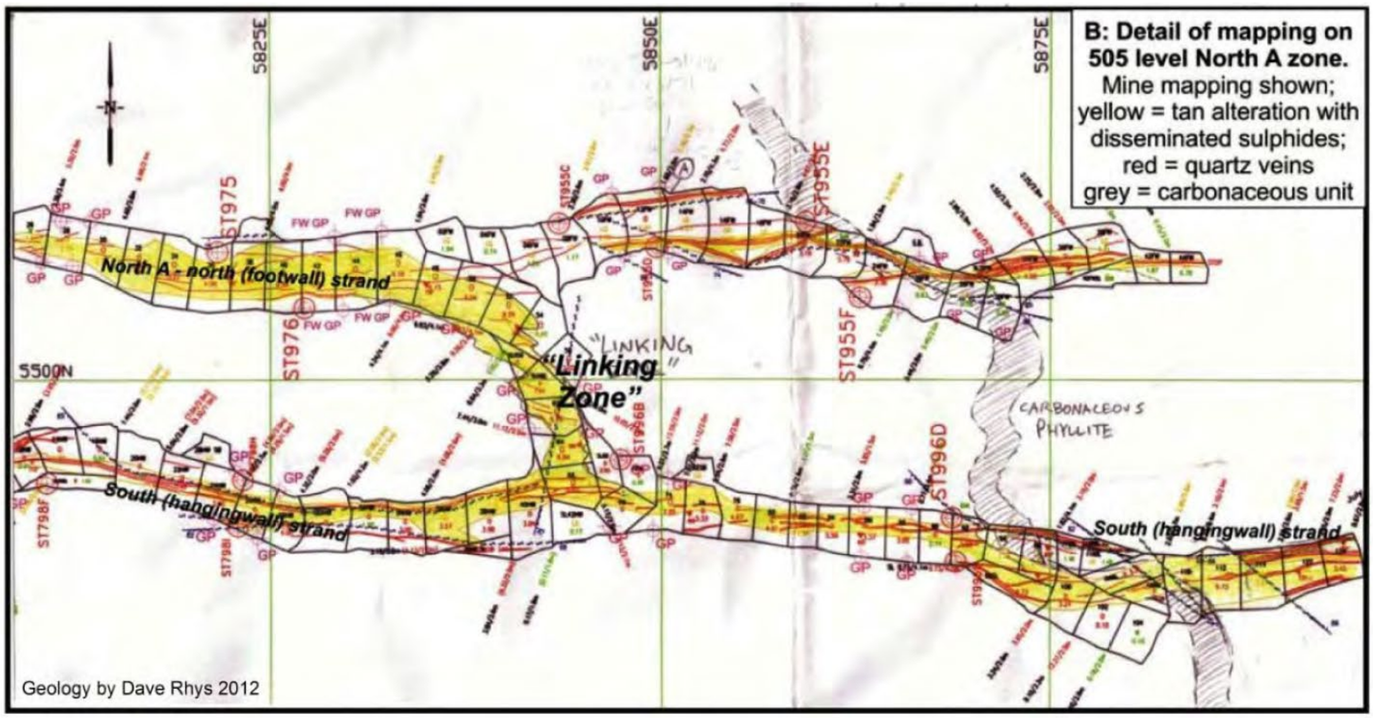
The North Zones at Bell Creek were intersected in 1981 while targeting IP anomalies. The vein system consists of two main sub-parallel horizons, roughly 40 to 60m apart, historically referred to as the North A (“NA”) and North B (“NB”) zones. They occur within mafic volcanic rocks, approximately 200m 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 m 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, refer to Figure 7.4 (Rhys 2012).

Collectively, the North Zones extend up to 500m along strike, have an overall plunge which is steep to the east and has been traced continuously by drilling below 1,800m vertical depth, and remain open at depth. Overall plunge of the system is approximately parallel to the L4 lineation. Internally, steeper plunges to the west of thicker, high grade segments of the zone are apparent, forming more local, stope scale ore shoot plunges at bends in the structures (Rhys 2012).

The NA and NB Zones locally branch or break into strands which define multiple domains of gold mineralization and contain the majority of the total mineral resources.

Figure 7.4: Map patterns in the NA and NB zones in areas of mining. Schematic plan map (A) and mine geology map (B) showing patterns observed in the eastern parts of the North zones of mineralization. Both the NA and NB zones cross the carbonaceous unit, bending and running parallel to it as they intersect it. Note the "linking zone", also named the HW6 locally, a bend to southeast-northwest trends of the northern footwall strand of the NA Zone which links it to a second strand (NA2) to the southeast. Highest grades and thickest parts of the NA Zone occur close to and within this "linking zone".





Results from drilling and underground development have shown that the North Zones consist of multiple mineralized zones, with sub-parallel and oblique or splay zones. Figure 7.5 shows development and geologic mapping done by LSG on the NA, NA2, NA3, NA4, NA2HW5, NAFW, NB3, NB2, NB and HW6 zones on the 1095mL along with the drill interpreted NAFW, NA, NA2, NA3, NA4, NA2HW and HW6 zones (black outlines). The albite-, ankerite-, pyritic- gold bearing alteration is shown in yellow with quartz, locally gold bearing veins are in red.

The geometry of the mineralized zones changes with depth with the NA zone losing the dramatic bend linking the "north" and "south" strands between 715mL and 895mL. On the 715mL, the NA zone shows a general west to east trend with two more gentle bends, one where it converges with the HW2 zone and again where it intersects the NA4 zone. Consequently, the hangingwall (south) and footwall (north) strands as identified by Rhys (2012) are not as pronounced on the 715mL. The majority of the zones on the 715mL follow the S3 foliation trends as identified by Rhys (2012) while the HW2 and NA4 zones conform to the S4 foliation trends.

The "link zone" becomes more apparent below 895mL averaging approximately 10m between the north and south strands with an increased strike length at depth, up to 60m, as identified on 1320mL. On the 1095mL, the NA shows a northern strand leading to "southeast-northwest" trend with a second significant bend leading to the second strand to the east. Splays that intersect include the NA3, NA3, NAFW and NB3 zones. The NB zone has a "southeast-northwest" trend and confirmed up to 1000mL and down to 1250mL. The NB3 appears to also have a southeast-northwest trend as identified on 1135mL but is not confirmed on the levels above or below. Thickening of the mineralization and the subsequent merging of the NB3, NB2 and NA over 240 vertical metres from the 1120mL to the 1345mL occurs at the northern intersection of the southeast-northwest trend.

HW6 is a subparallel southeast-northwest trend of the NA zone which links it to NA2 strand to the southeast. The NA and HW6 are separate zones. On the 915mL, the zones are 50m apart from each other. The distance between the zones closes with depth and at the 1205mL, HW6 merges with the NA zone resulting in only one southeast-northwest trend.

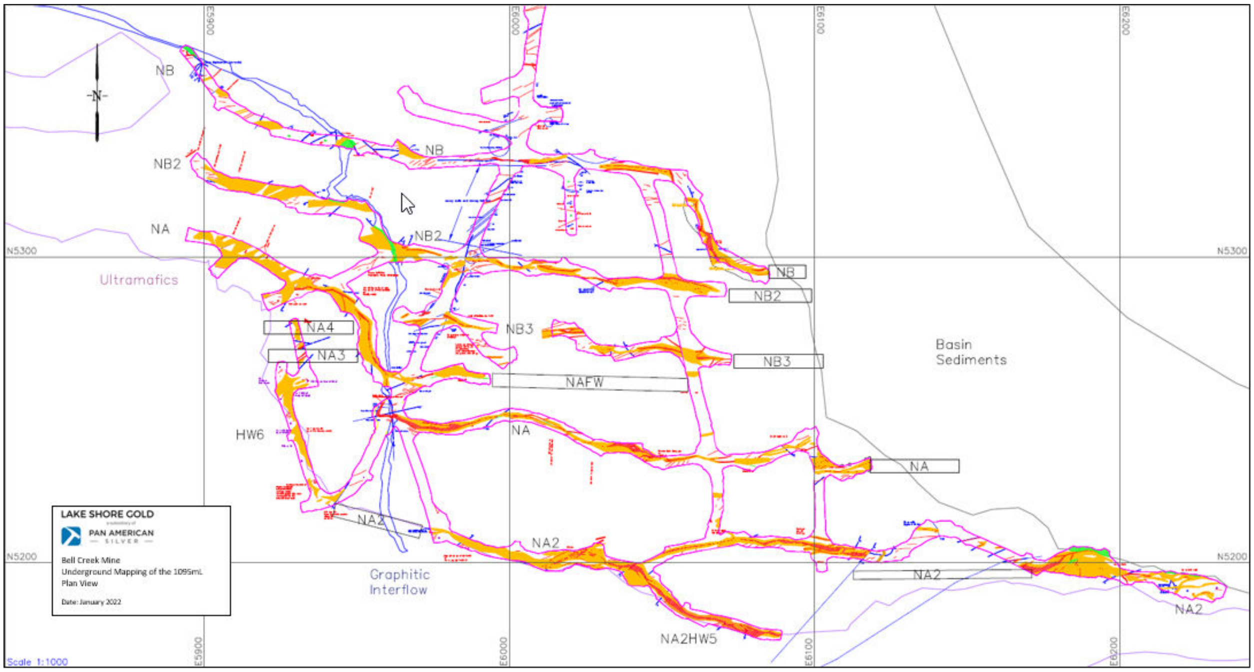
North A Zone

The NA zone outcrops approximately 200m north of the Bell Creek headframe and consists of a marker quartz vein that varies from 0.1m to 2m in width with an associated alteration halo. Approximately 0.5m 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 ("VG") occurring with the mica. Brown tourmaline (dravite) is ubiquitous. The NA Zone can typically average 6 g/t Au to 10 g/t Au over 2 to 10 m widths. Adjacent to the quartz marker vein is a pale grey to buff colored 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 NA Zone occurs within the alteration halo, in discrete sulphide zones and in vein-brecciated wall rock zones that extend up to 5m from the margin of the core vein.

North B Zone

The NB zone occurs 40m to 60m further north and runs sub-parallel to the NA zone. The NB zone is predominantly hosted by the same interflow carbonaceous sediment which is locally transected by the NA 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 NA zone.

Figure 7.5: Plan View of the development and mapping of the 1095mL



8 Deposit types

As shown in Figure 7.1, the Porcupine area is well known for hosting several types of mineral deposit types including:

- base metal deposits such as Glencore's Kidd Creek Mine, which is a volcanogenic massive sulphide deposit;
- industrial mineral deposits such as the Penhorwood talc deposit
- and most notably numerous mesothermal Archean shear-hosted gold deposits.

Total gold production to the end of 2020, from some 62 operational and historical sites is reported to be 2,412,123 kilograms of gold (77,551,574 ounces of gold). Table 8.1 highlights 26 locations that exceeded production of 3,110 kilograms of gold (100,000 ounces of gold) during this same period.

Over 75% of gold production from the Porcupine Camp (1997) was mined from orebodies in the Tisdale Group rocks (which are thus considered the most important rocks in the camp). 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).

Table 8.1: Operations with Greater than 100,000 Ounces of Gold Production in the Porcupine Gold Camp (as of 2020)

Mine	Total milled (Tonnes)	Production (oz Au)	Grade (g/t)
Hollinger	76,612,773	20,013,316	7.41
Dome (incl. stockpile)	108,014,169	16,655,432	4.38
McIntyre	36,454,203	10,770,201	8.38
Detour Lake	170,499,376	5,825,016	1.07
Pamour	59,552,869	4,820,068	2.29
Hoyle Pond	10,748,864	4,196,462	10.94
Aunor (Pamour #3)	7,694,899	2,502,214	9.06
Hallnor (Pamour #2)	3,834,143	1,645,892	12.19
Preston	5,701,116	1,539,355	7.50
Paymaster	5,086,950	1,192,206	6.56
Coniarum (Carium)	4,049,678	1,109,574	7.81
Timmins West (incl. 144 Gap + Thunder Creek)	8,918,581	1,107,504	3.44
Buffalo Ankerite	4,530,416	957,292	5.94
Delnite	3,541,133	924,006	7.40
Pamour (other sources)	6,728,257	676,645	2.81
Bell Creek	4,456,690	593,394	3.77

Broulan Reef Mine	1,945,464	498,932	7.19
Vipond (Anglo–Huronian)	1,419,942	414,367	8.13
Broulan Porcupine	1,039,687	243,757	6.56
Owl Creek	1,800,217	236,880	3.75
Nighthawk	1,342,277	175,803	3.75
Borden	968,168	175,003	5.94
Moneta	285,608	149,250	14.69
Crown (Hollinger)	205,187	138,330	19.06
Stock	745,074	129,856	5.00
Hugh–Pam	577,651	119,604	5.94
Total (26 mines > 100,000 ounces)	**526,753,392**	**76,810,359**	**4.54**
Total (all 62 mines)	**530,871,076**	**77,551,574**	**4.27**
(source: http://http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=OFR6374)			

9 Exploration

LSG has been actively exploring in the Bell Creek area since the Schumacher property 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.

To date the bulk of the exploration work has been focused on delineating, defining, and extending the mineralization contained within the NA and NB zones which were previously identified or exploited underground. Initially, exploration activity was focused on surface diamond drilling however, the focus shifted to underground exploration as mineralized zones were extended deeper. An advanced exploration ramp was collared at UTM, NAD 83, Zone 17 coordinate 486,814 east, 5,377,603 north on June 6th, 2009. The 5m high by 5m wide ramp provided access to all zones, especially the NA Zone, as well as provided diamond drill platforms to further define mineralization. In early 2019, a new 1080m deep shaft was commissioned and tied in with the existing mine and ramp infrastructure. This shaft provides more efficient access to the deeper part of the mine

Current exploration is comprised entirely of underground diamond drilling and underground development and mapping of the mineralized zones.

10 Drilling

10.1 Historic Drilling Summary

Diamond drilling in the general vicinity of Bell Creek has been conducted by several entities with the first recorded drillhole 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 drilling completed in 1978. Drilling completed prior to LSG's acquisition is described as historic drilling, and consists of 73,294m in 546 holes (255 surface holes and 291 underground holes).

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 (Original)	Hole Sequence (renamed in digital database)	Location	Bell Creek Area	
		from to	from to		# holes	metres
Rosario Resources Canada Ltd.	1978 - 1981	MH78-1 to 7; MH79-01 to 05; MH80-01 to 19; MH81-01 to 46	MH7801-7807; MH7901-7905; MH8001-8019; MH8101-8146	surface	65	9,842
Amax Minerals Exploration Ltd.*	1982	1202-01-101 to 1202-01-136	C101 to C136	surface	34	5,520
Canamax Resources Inc.*	1982 - 1990	045-01-137 to 045-01-379	C137 to C379	surface	113	25,478
Canamax Resources Inc.	1988 - 1991	UG 1-01 to 1-07; UG 2-01 to 2-07; UG 3-01 to 3-08; UG 4-01 to 4-09; BC-88-01 to 88-10; 88-240-01 to 240-15; UG 2c-01-88 to 02-88; UG 3b - 01-01-88 to 01-05-88; 180-01A-88 to 05-88; 120-01-88 to 02-88; 180-89-01 180-89-04; 240-89-01 240-89-04; 89-11 to 89-18; 9001 to 9080; 9101 to 9183	1-1 to 1-7; 2-1 to 2-7; 3-1 to 3-8; 4-1B to 4-9; 8801 to 8810; 240-01 to 240-15; 2C01 to 2C02; 3B01 to 3B05; 18001B to 18005; 1201 to 1202; 1801-1804; 2401-2404; 89-11 to 89-18; 9001 to 9080; 9101 to 9183	underground	227	13,022
Falconbridge Gold Corporation	1992 - 1994	9201 to 9229; 9401 to 9460	9201 to 9229; 9401 to 9460	underground	64	6,155
Pentland Firth Ventures Ltd	1995	KB380 to KB411	KB380 to KB411	surface	7	1,807
Porcupine Joint Venture	2005	BC05-01 to BC05-41	BC05-01 to BC05-41	surface	36	11,469

The Rosario drilling (1978 to 1981) consists primarily of North to South oriented drillholes (360 degree azimuth). Drilling in 1978 and 1979 was in the general area with no drillholes collared within 1,000m of the Bell Creek Mine workings.

The NA and NB veins were first intersected in 1980. The veins strike at 100 degrees and dip 70 degrees to the south and this drilling yielded intersections approximately normal to vein strike (10 degree variance).

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

Underground diamond drilling by Canamax (1988 through 1991) and Falconbridge (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.

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

Refer to Figure 10.1 for surface diamond drillhole collar locations (historic and LSG) and traces plotted with respect to the surface projection of the geology.

10.2 Drilling on the Bell Creek Deposit Property by LSG

All work performed on the Property is referenced to the Bell Creek Mine grid which has been extended eastward through the Schumacher and Vogel properties. Proposed diamond drillhole collar locations for both surface and underground are located or "spotted" in reference to this grid.

All drillholes completed from surface and underground are monitored downhole in 30 and/or 50 m intervals. Drillholes deviate in both azimuth and dip, and usually, the longer the holes the greater the deviation. Tracking the deviation in shorter holes can be accomplished by using a magnetic downhole survey tool to measure dip and azimuth (relative to magnetic north). Over the course of the Bell Creek drilling, these downhole surveys were accomplished using either of the "EZ-SHOT" or "EZ-TRAC" survey instruments manufactured by Reflex™.

Generally, the rocks at Bell Creek are non-magnetic so acquiring an accurate measure of deviation for short holes can be acquired using these instruments. For longer holes where deviation is greater, determining the location of a hole becomes problematic. In these cases and where the drilled rock contains magnetic material, a gyroscopic survey tool is used to acquire the downhole survey data.

A summary of diamond drilling completed by LSG to the date the database was locked down, April 22, 2021, is summarized in Table 10.2

Table 10.2: Summary of Diamond Drilling Exploration Activities Conducted by LSG at Bell Creek January 2005 to April 22, 2021[1]

Activity	# of Drill Holes	Metres	Notes
Surface Drilling			
Bell Creek: July 2008 – Apr. 22nd, 2021	259	125,926	
Schumacher: July 2008–Apr. 22nd, 2021	47	26,821	Collared on Schumacher claim targeting Bell Creek zones
Total – Surface Drilling	**306**	**152,747**	
Underground Drilling[2]			
Completed to Nov. 1st, 2012	536	72,689[3]	
Nov. 1st, 2012 – Dec. 17th, 2014	387	46,037	
Dec. 18th, 2014 – Apr. 22nd, 2021	3,577	405,779	
Total – underground drilling	**4,500**	**524,505**	

Note:

(1) All completed LSG drilling at Bell Creek Mine excluding holes in progress on April 22, 2021

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

(3) Metres corrected from March 28th, 2013 NI 43-101 Technical Report

10.2.1 Surface Drilling

A total of 306 surface and wedge-holes were completed by LSG since the acquisition of the Property, for a total of 152,747m drilled. Most of the drillholes 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 rig availability, the program was carried-out by drilling contractor Bradley Bros. Ltd. of Timmins, Orbit Garant of Val-d'Or, Quebec, and by Norex Diamond Drilling Ltd. of Porcupine, Ontario.

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

If the drill-hole trajectory needed adjustment, steel wedges were used. When required, directional drilling was provided using “mud” motors operated by technicians from International Directional Services (“IDS”), based out of Capreol, Ontario.

During the course of the drilling, the deviation of the holes is tracked by taking “EZ-SHOT” or “EZ-TRAC” measurements at every 30-50m. Upon completion of a drillhole the normal practice is to have the holes resurveyed using a north-seeking gyro by Halliburton/Sperry Drilling Services of North Bay, Ontario or Reflex Instruments North America of Timmins. 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 drillholes (typically greater than 800m depth) results in intersections approaching true thickness.

Figure 10.1 shows all surface drilling (historic and LSG) for Bell Creek while Figure 10.2 shows a typical cross-section of the surface drilling relative to lithology and vein wireframes.

Figure 10.1: Bell Creek Surface Drilling Location

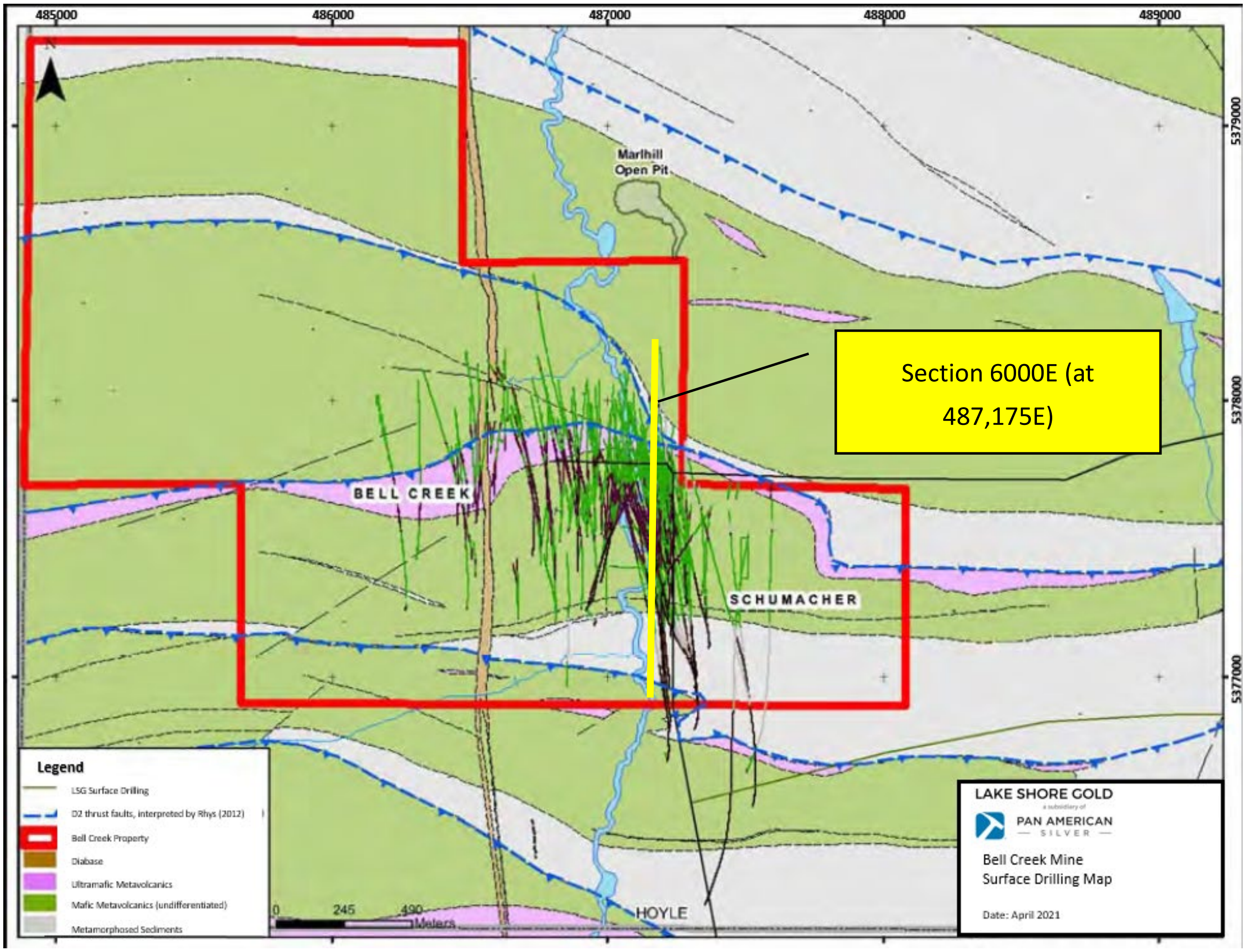
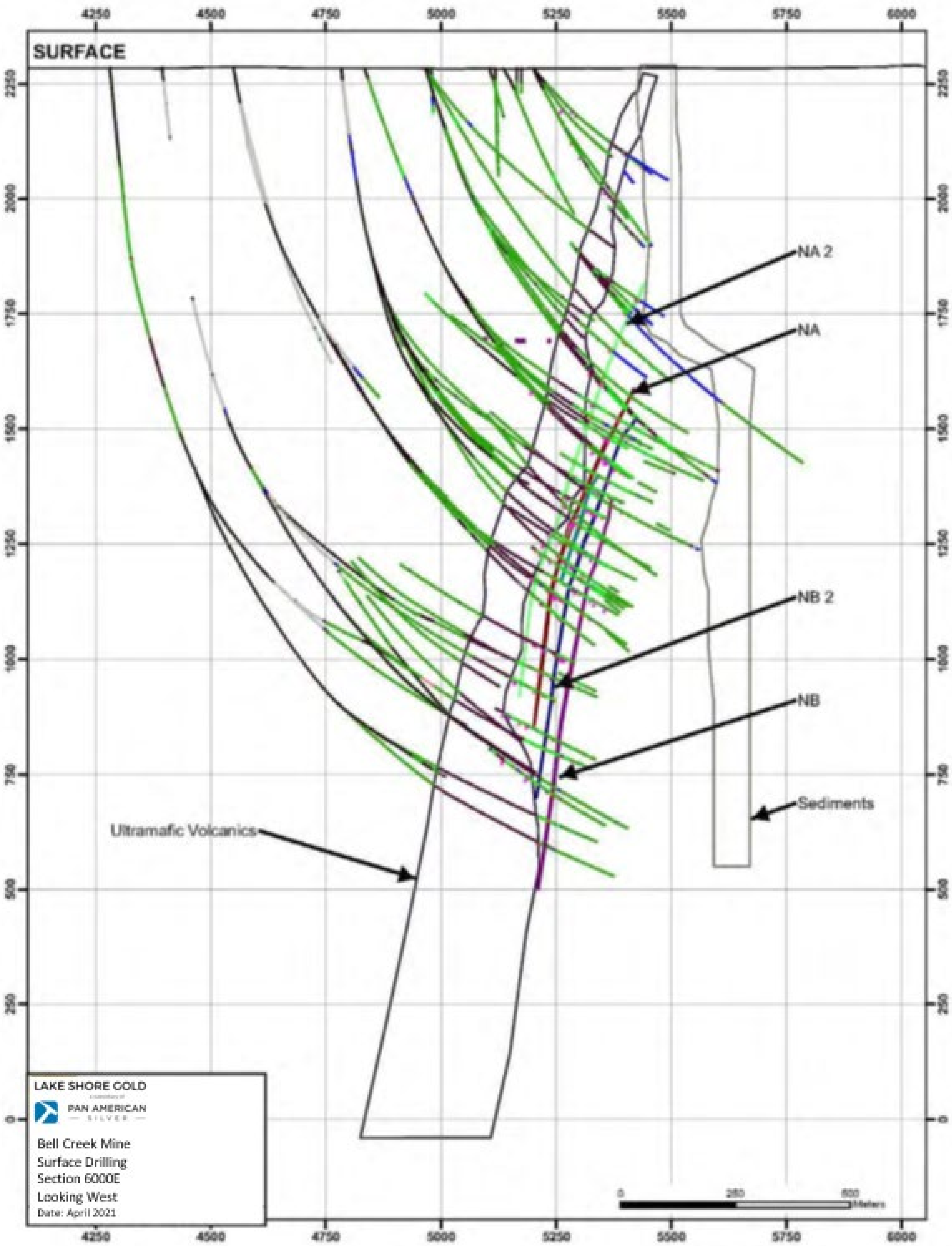


Figure 10.2: Bell Creek Surface Drilling-Section 6000E (at 487,175E) Looking West. Yellow line in Figure 10.1 indicates location of cross-section.



10.2.2 Underground Drilling:

Since LSG acquired Bell Creek in 2007, a total of 524,505m (4,500 holes) of underground drilling has been completed.

This total includes:

- 46,037m completed in 387 holes between 1 November, 2012 to 17 December, 2014;
- 405,779m completed in 3,577 holes between 17 December, 2014 to 22 April, 2021; and
- Prior to 1 November, 2012, the effective date of the March 2013 technical report, 536 holes (72,689m) were completed from underground.

This drilling was carried-out by one of two contractors, Boart Longyear, out of the North Bay, Ontario office (headquartered in Salt Lake City, Utah) or Orbit Garant of Val-d'Or, Quebec.

During the course of the drilling, holes are surveyed by taking "EZ-SHOT" or "EZ-TRAC" measurements at every 30-50m. Upon completion of a drill-hole, underground holes longer than 350m are re-surveyed using a Reflex™ Gyro. This instrument is a micro-electrical-mechanical system or MEMS gyro.

Current drilling at Bell Creek is being conducted from underground and is a mix of definition, infill, exploration, and holes completed from within the "ore" sills to ensure that the mineralized zones have been fully developed prior to mining.

The drill-hole database for Bell Creek was locked down on April 30th, 2021. At the time, drilling, core logging and sampling of the most recently finished holes was completed, and no assay data was pending. Details on core handling and sampling protocols are reported in Section 11.

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

Figure 10.3: Underground Diamond Drillholes – Vertical Longitudinal Section (Looking North)

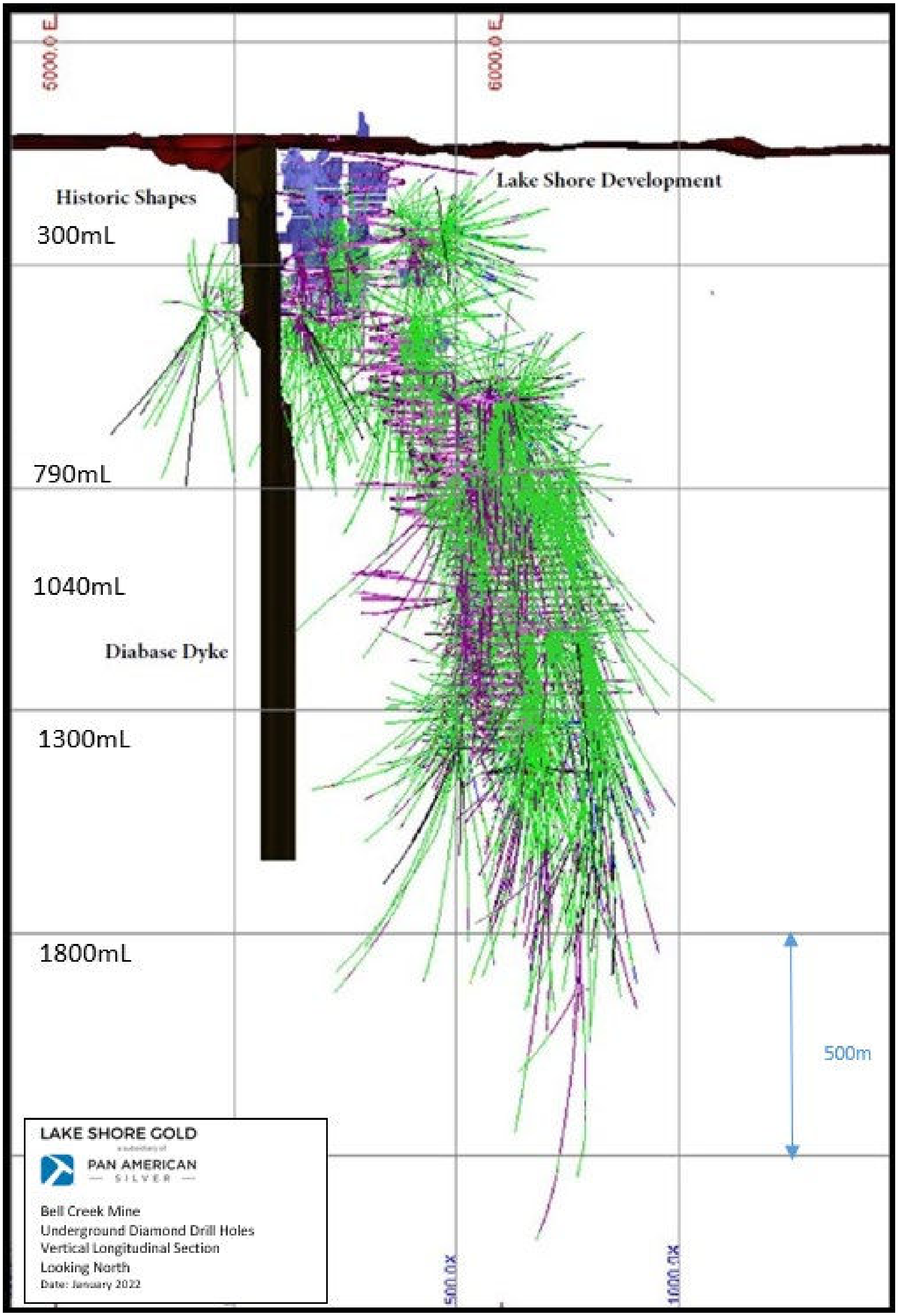
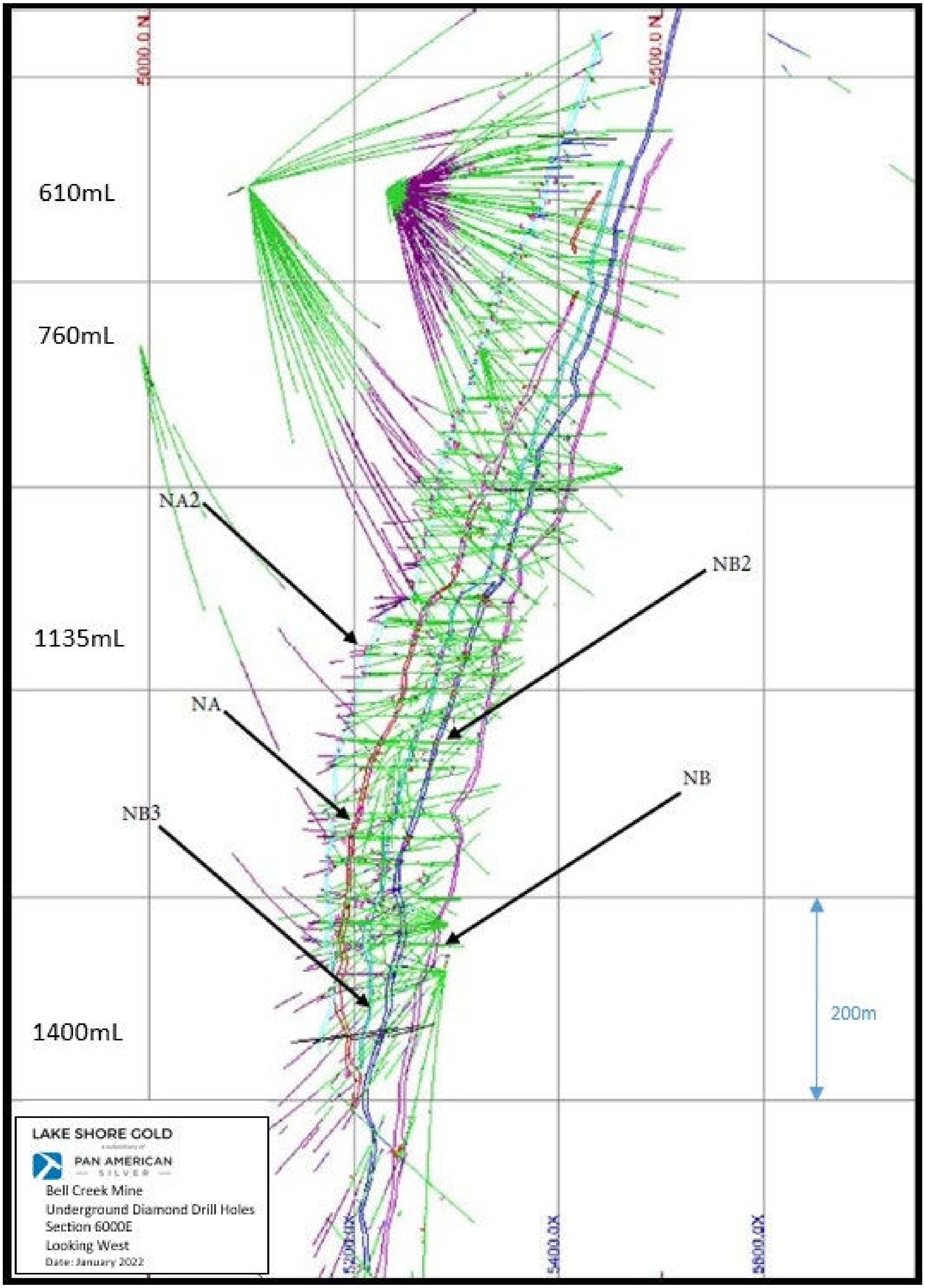


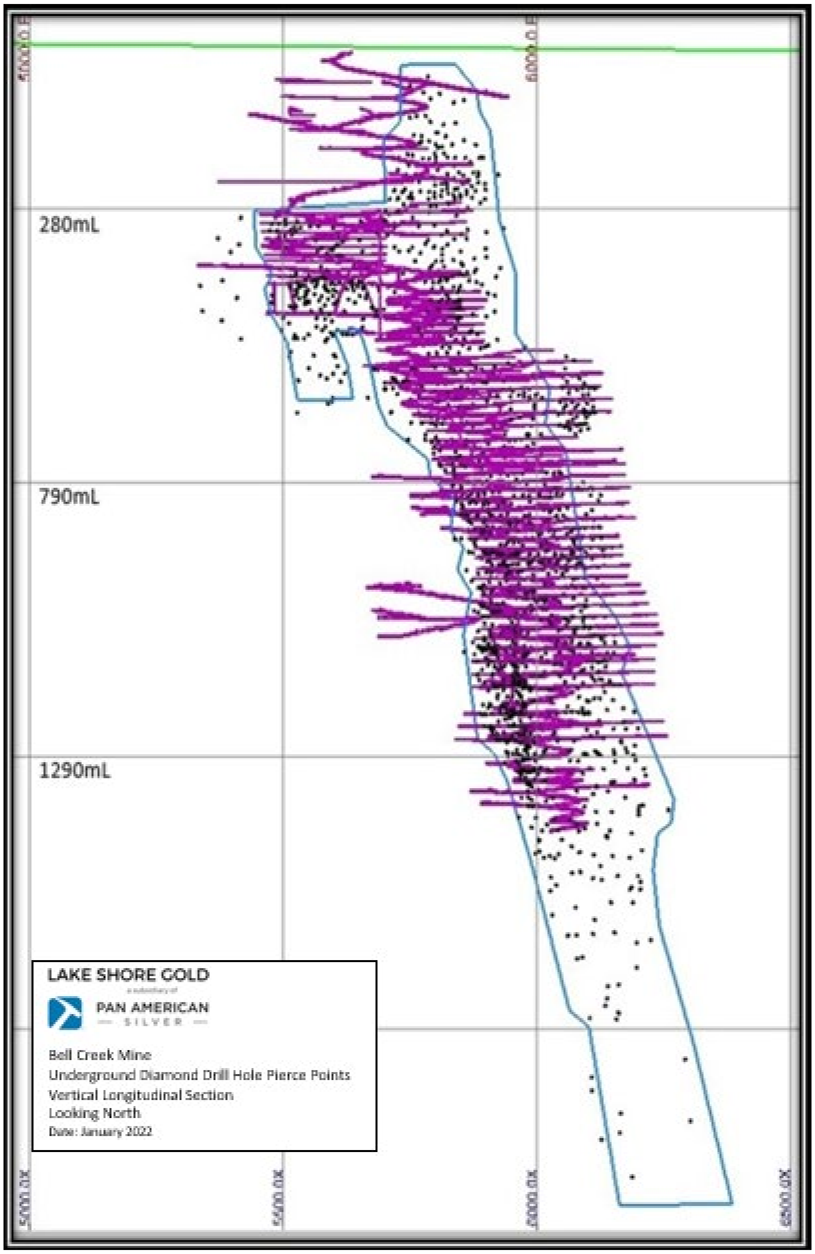
Figure 10.4: Underground Diamond Drilling Relative to Vein Wireframes- Vertical Section 6000E Looking West



10.3 Lake Shore Gold Drill Results

Diamond drilling has identified multiple mineralized veins or zones (sub-parallel and splay zones) that comprise the NA and NB vein systems and which extend from surface to a vertical depth of approximately 2,075m. Mineralization remains open down plunge and to the east at depth. For reference, diamond drill pierce points for the NA zone are presented in Figure 10.5.

Figure 10.5: NA Zone (blue outline) Drillhole Pierce Points (black dots) Relative to Mine Workings (magenta) - Vertical Longitudinal Section (Looking North)



10.4 Material Impact on the Accuracy and Reliability of Drilling Results

There are no known drilling, sampling, or core recovery issues that could materially impact the accuracy and reliability of the results. As observed in both historic and LSG drilling, core recovery beneath the weathered horizon approximately 30-50m below surface is typically greater than 90-95%.

11 Sample Preparation, Analyses, and Security

Sample preparation, analysis, and security for the period 1978 to 2012 are described in the following independent reports:

Technical (Geological) Report on the Bell Creek Complex (Hayden 2008);

- A Technical Review and Report for the Bell Creek Complex Properties', Exploration Diamond Drill Programs, August 2005 to July 31, 2009 (Powers, 2009);
- Technical Report on the Initial Mineral Resource Estimate For the Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada (Pressacco, 2011); and
- The LSG NI 43-101 Technical Report, Resource Estimate Update and Prefeasibility Study and Mineral Reserve Estimate for Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada (Crick, Koch and Vaz, 2013).

11.1 Historic: Pre-LSG

General Statement

In the opinion of the QP, the procedures and practices employed by the various operators at Bell Creek prior to LSG's involvement conform to industry standards at the time of drilling and sampling which predates the adoption of NI 43-101 standards. While the information does not comply with current NI 43-101 standards, it is considered suitable for use in estimation because:

- as described in Section 12.1 below, the data was verified by an independent consultant as part of the initial mineral resource estimate on the Property,
- most of the intercepts from historic drilling are in the upper parts of the mine and this area is mostly mined out, and
- Historic areas not supported by recent LSG drilling and development are typically classified as inferred mineral resources.

Sample Preparation and Analysis: Rosario; Amax/Canamax; Falconbridge Gold and PFV

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 14 diamond drillholes from this period are modelled within the mineralized volumes.

Diamond drill core does not exist from Amax/Canamax surface drilling or Canamax/Falconbridge underground drilling. Review of the drill logs for the surface-based drillholes indicates that selective sampling of the drill core was done with a nominal sample length of one m. Sample lengths greater or less than one m 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 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 VG. 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 LSG’s acquisitions of the properties.

It is not known which lab completed gold assays for Rosario. 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 managed by the Canadian Certified Reference Material Project (“CCRMP”) in co-operation with the Task Group Laboratories Mineral Analysis Working Group of the Standards Council of Canada.

Swastika Labs processed all samples with a 0.5 assay ton ("AT") fire assay ("FA") process and an Atomic Absorption Spectrophotometry ("AA") finish. At lower detection limits, for geochemical work or, where required, the Au article or doré bead is dissolved and determined by AA.

All underground drill samples were processed at the Bell Creek Mine assay laboratory. This includes the drilling completed by Canamax (1988 to 1991) and Falconbridge (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 using a FA technique with an AA finish.

Security

Records could not be found regarding security practices employed prior to 1982, by Rosario.

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.

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.

Security practices employed by Falconbridge 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.

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 fiber bags, sealed with security tags, and shipped via Manitoulin transport to the SGS in Rouyn-Noranda, Quebec, for analysis.

QA/QC

Quality Control ("QC") samples are generally submitted with routine samples to provide ongoing assessment of the precision and accuracy of the sampling and assay process and provide confidence in the assay database. Generally, three types of QC samples are used: standards, duplicates and blanks.

Standards or Reference Materials ("RMs"). These samples have a known value and are used primarily to assess accuracy of the analytical technique. They can either be certified (in which case they are referred to as "CRMs") or not.

Duplicates are samples which are taken in the same way as routine samples. They are submitted either to the primary or to a secondary laboratory to assess precision of the sample preparation procedure and analytical technique. There are several different types of duplicate samples depending on where in the sampling process the duplicate is taken: field, coarse crush, and pulp duplicates. Each duplicate assesses precision at a different point in the sampling chain.

Blank samples are inserted with primary samples in order to check for any contamination in the sample preparation procedure. They should be full volume and placed after a sample expected to be high grade.

Quality assurance and quality control ("QA/QC") was not required in the industry, and therefore commonly not implemented, before NI 43-101 standards were widely adopted and so most historical (pre-NI 43-101) drilling programs do not have comprehensive QA/QC.

It is not known whether Reference Materials ("RM") (certified or otherwise), duplicates or blank samples were used by Rosario.

Duplicate and RM samples were processed with drill core samples forwarded by Amax, Canamax, and PFV as part of Swastika Labs' in house QA/QC program. RM in use at the time were certified Canmet MA-1 samples and Amax's Au 7 and Au 9 samples. Results of coarse crush duplicate analyses were returned and are recorded on drill logs. Independent QC samples were not used by Amax or Canamax and check duplicate analyses were not completed by an independent assay laboratory.

No QC samples were submitted with 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 RM, one blank, and one coarse crush duplicate for each of the 20 routine samples submitted. The PJV report on the 2005 Exploration Program at Bell Creek identified no major issues.

11.2 LSG

General Statement

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

Core Handling, Logging Protocols, Sample Preparation and Analysis

Drill core obtained from surface and underground diamond drill programs is delivered daily to LSG's core logging facility at either 1515 Government Road or 216 Jaguar Drive (up to 2019) exploration offices in Timmins, Ontario.

Under the direct supervision of project geologists, LSG personnel open the boxes; check the m 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 drillhole was completed by a geologist or geological technician and entered directly into a computer database using the Geovia GEMS Logger custom drillhole logging software. The logs document rock characteristics such as lithology, alteration, mineralization, veining, as well as documenting sample numbers, intervals, and assay results. Sample intervals are marked directly on the drill core with china marker and a sample tag inserted. Sample intervals range from 0.3m to 1.5m in length, with an average sample length of 0.8m. The core sample length is determined by the geologist based upon lithology, alteration, percent sulphides, and the presence of VG. Samples do not cross geological boundaries as determined by the geologist. Coarse crush duplicate, blank, and standard samples are inserted at this point. Three-part sample tags labeled with unique identification ("ID") numbers were used. One part of the tag stays in the sample book and documents the hole number and interval being sampled. The second portion of the tag is stapled in the core box at the end of the sample, and the third portion is placed in the sample bag during sampling. Core considered to be from production definition drilling is "whole core" sampled, meaning the entire core from each specific sample interval is collected and sent to the lab with no representative equivalents kept. The remaining non-sampled core is discarded. Core from exploration holes or from holes of particular interest is either split using a hydraulic splitter, or cut using a diamond core saw, and one half of each individual sample is sent to the lab. The samples are placed in plastic bins and are delivered directly to various local labs by LSG employees. All cut diamond drill core is archived in core racks or cross-piled in a secure systematically indexed core farm at the LSG office compound, or securely cross-piled at the enclosed security patrolled Bell Creek site.

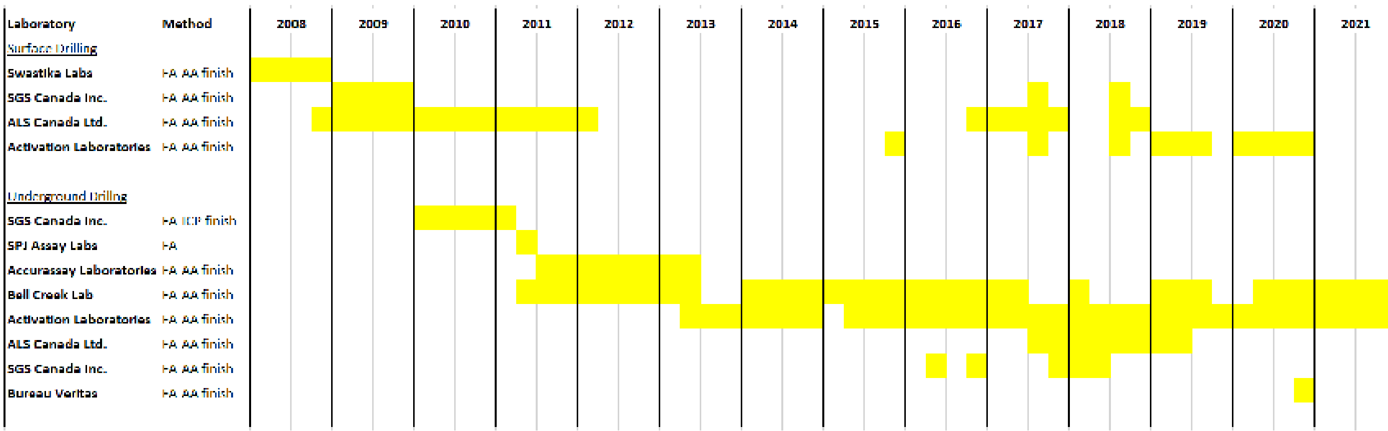
All samples are analyzed for gold at various independent laboratories using FA with an AA finish, except for samples sent to SGS, which provided an Inductively Coupled Plasma ("ICP") finish. For samples that return a value greater than 3.0 g/t Au (changed to greater than 10 g/t Au on March 15th, 2011), another aliquot from the same pulp is taken and FA with a gravimetric finish. Occasionally for samples which may include VG, analysis is requested to be completed using a pulp metallic method. In reporting assay results, the protocol utilized by LSG stipulates that metallic assay results override FA with a gravimetric finish, which in turn overrides FA with an AA or ICP finish. After processing, all reject and pulp material from cut drillholes is returned to LSG and stored at the Bell Creek core farm where it is available for future evaluation.

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

- During the period mid-2009 to mid-2013 drill core was logged on-site at the Bell Creek core logging facilities under the supervision of the Chief Mine Geologist (Ralph Koch, P. Geo., 2010 to 2011, and Ivan Langlois, P. Geo., 2011 to 2013).
- Since 2013, core from underground drilling at Bell Creek has been handled and logged at the LSG Government Road exploration office under the supervision of Stephen Conquer, P. Geo., 2014, Keith Green, P. Geo., 2013-2019 and by Alain Mainville, P. Geo., 2019-2021.
- Due to the density of drilling and the large amount of core being generated by the underground programs, most holes are whole core sampled. Select exploration holes are retained for future reference with core being cut and sampled as per the normal LSG process.

Assaying facilities used by LSG are summarized in Table 11.1:

Table 11.1: Assay Labs used by Lake Shore Gold



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.

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 FA. The SGS Minerals Services labs are ISO 17025 certified. Beginning in 2016, samples were sent to the SGS lab in Cochrane, ON.

ALS Minerals Ltd. ("ALS") is a division of ALS Limited (formerly Campbell Brothers Limited). Sample preparation was completed at the ALS preparation facility in Timmins, and pulps were subsequently forwarded to the ALS 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/IEC17025:2005 Accredited (#689) and the North Vancouver, BC assay laboratory is also SCC ISO/IEC 1 7025:2005 Accredited (#579).

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

Accurassay Laboratories Ltd. ("Accurassay") 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 sample preparation facility located at 150A Jaguar Drive, Timmins Ontario. Pulps are forwarded to the Accurassay main laboratory facility located at 1046 Gorham Street in Thunder Bay, Ontario for analysis.

The LSG Bell Creek Lab conducts in-house analysis of mill, underground muck chip, test hole and drill core samples. The Bell Creek Lab as of September 2012 successfully completed the Proficiency Testing Program for Mineral Analysis Laboratories ("PTP-MAL"), run by the CCRMP of Natural Resources Canada ("NRCan").

ActLabs operates a full preparation and FA, AA, gravimetric, and ICP analysis laboratory in Timmins, Ontario. Diamond drill core samples are entirely crushed to 80% (instead of 70% at ALS) passing 2 mm mesh with a 250 g split sub-sample pulverized to 95% passing up to 106 microns (instead of 85% passing 75 microns at ALS) using a ring and puck (RX1-terminator). Special instructions for a silica wash can also be requested on submittal forms for VG-bearing samples. FA with AA finish is conducted on a 50 g aliquot taken from the pulp (1A2-50 FA-AA). For over-limit assay values (>10.0 g/t Au), another 50 g aliquot is analyzed using FA with gravimetric finish (1A3-50 FA/GRAV).

Bureau Veritas is an ISO 9001:2015 certified laboratory. Sample preparation is completed at 2-3300 Riverside Drive in Timmins, ON and pulps are sent to the Vancouver, BC facility for analysis. Two holes were sent here in late 2020 as test batches.

Table 11.2: Summary of Sample Types Submitted by Analytical Laboratories used by LSG

Bell Creek Mine: December 17, 2014 to April 22, 2021						
Laboratory	**Drill Core Samples**	**Standards**	**Blanks**	**Coarse Crush Duplicates**	**Total QA/QC Samples**	**Total Samples Sent (Core + QA/QC)**
Activation Laboratories	200 616	5412	5733	5375	16 520	217 136
ALS Canada Ltd.	11 219	309	310	303	922	12 141
Bell Creek Laboratory	20 259	588	618	515	1721	21 980
Bureau Veritas	29	2	2	1	5	34
SGS Canada Inc.	4407	122	127	110	359	4766
TOTAL	**236 530**	**6433**	**6790**	**6304**	**19527**	**256 057**

Security

For both surface and underground drill set-ups, the diamond drill contractor secures the drill core at the drill site. The drill contractor (under direct supervision by LSG personnel) or LSG core technicians bring the drill core to the designated logging facility daily. Core logging facilities are considered secure. The exploration office facilities have limited access and are locked and alarmed overnight. Mine site facilities have limited day time access, and are located within the gated mine site monitored by security personnel.

Samples to be sent for analyses are placed in sealed shipping bags that are placed in a larger shipping bin, each sealed with a numbered security tag by LSG personnel. These bins are delivered to the assay facility by LSG personnel. LSG personnel are not involved in any aspect of sample preparation after core specimens are delivered to the assay laboratory. The lab employee that receives the sample shipment signs a chain of custody document that is returned to the Company's office for reference and filing. The return assay results are currently processed by database manager/coordinator and are reviewed by qualified site/project geologists (who are registered P.Geos.) for both underground and surface programs.

QA/QC

LSG has implemented a QC program to ensure best practice in sampling and analysis of the drill core.

The QA/QC program involves inserting one blank, one CRM and one coarse crush duplicate in the sample stream. Prior to June 2012 one of each CRM, coarse crush duplicate and blank were inserted for every 20 to 25 samples submitted for analysis. After June 2012 the QC to routine sample ratio was changed to one of each QC sample for every 40 core samples.

Prior to May 2010, ALS had been instructed to take one coarse crush 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.

Drill core from a local, barren diabase dyke is used as a blank sample medium and are therefore full volume. Blanks are submitted in a ratio of one for every 40 routine samples. Blanks are inserted after core samples and, when mineralization is encountered, blanks are placed after expected high grade samples to determine whether the lab's cleaning process is effective in avoiding cross contamination between samples.

CRMs used by the Company are individually wrapped in 60 g sealed envelopes prepared by Ore Research and Exploration Pty. Ltd. of 37 Hosie Street, Bayswater North, Victoria, Australia (OREAS. Several standards are used to vary the expected value and may depend on availability of particular standards. These CRMs are purchased from Ms. Lynda Bloom, Analytical Solutions Ltd., at 1214-3266 Yonge Street, Toronto, Ontario. CRMs are inserted into the sample stream at a frequency of one every 40 samples and are used to check the accuracy of the analytical process. In late 2015, LSG also began using CRMs from a Canadian standard supplier, CDN Resource Laboratories Ltd., of 20148 102 Avenue, Langley, BC, Canada. Table 11.3 lists the CRMs used by the Company and their accepted mean and variance.

Table 11.3: Standards used by Lake Shore Gold

Standard	Mean Au (g/t)	Std. Dev	1 Std. Dev.		2 Std. Dev.		3 Std. Dev.	
			Min	Max	Min	Max	Min	Max
CDN-GS-1K	0.867	0.049	0.818	0.916	0.769	0.965	0.720	1.014
CDN-GS-1P5P	1.590	0.075	1.515	1.665	1.440	1.740	1.365	1.815
CDN-GS-1R	1.210	0.055	1.155	1.265	1.100	1.320	1.045	1.375
CDN-GS-3K	3.190	0.130	3.060	3.320	2.930	3.450	2.800	3.580
CDN-GS-3L	3.180	0.110	3.070	3.290	2.960	3.400	2.850	3.510
CDN-GS-3M	3.100	0.115	2.985	3.215	2.870	3.330	2.755	3.445
CDN-GS-3P	3.060	0.090	2.970	3.150	2.880	3.240	2.790	3.330
CDN-GS-3Q	3.300	0.130	3.170	3.430	3.040	3.560	2.910	3.690
CDN-GS-4F	3.830	0.120	3.710	3.950	3.590	4.070	3.470	4.190
CDN-GS-5K	3.840	0.140	3.700	3.980	3.560	4.120	3.420	4.260
CDN-GS-7F	6.900	0.205	6.695	7.105	6.490	7.310	6.285	7.515
CDN-GS-7G	7.190	0.185	7.005	7.375	6.820	7.560	6.635	7.745
CDN-GS-8E	8.530	0.205	8.325	8.735	8.120	8.940	7.915	9.145
CDN-GS-P4C	0.362	0.018	0.344	0.380	0.326	0.398	0.308	0.416
CDN-GS-P4E	0.493	0.029	0.464	0.522	0.435	0.551	0.406	0.580
CDN-GS-P6B	0.625	0.023	0.602	0.648	0.579	0.671	0.556	0.694
CDN-GS-P6D	0.769	0.047	0.723	0.816	0.676	0.862	0.630	0.909
O-10c	6.600	0.160	6.440	6.760	6.280	6.920	6.120	7.080
O-15d	1.559	0.042	1.517	1.601	1.475	1.643	1.433	1.685
O-15h	1.019	0.025	0.994	1.044	0.969	1.069	0.944	1.094
O-15Pb	1.060	0.030	1.030	1.090	1.000	1.120	0.970	1.150
O-16a	1.810	0.060	1.750	1.870	1.690	1.930	1.630	1.990
O-16b	2.210	0.070	2.140	2.280	2.070	2.350	2.000	2.420
O-18c	3.520	0.106	3.414	3.626	3.308	3.732	3.202	3.838
O-19a	5.490	0.100	5.390	5.590	5.290	5.690	5.190	5.790
O-200	0.340	0.012	0.328	0.352	0.316	0.364	0.304	0.376
O-201	0.514	0.017	0.497	0.531	0.480	0.548	0.463	0.565
O-202	0.752	0.026	0.726	0.778	0.700	0.804	0.674	0.830
O-203	0.871	0.030	0.841	0.901	0.811	0.931	0.781	0.961
O-204	1.043	0.039	1.004	1.082	0.965	1.121	0.926	1.160
O-205	1.244	0.053	1.191	1.297	1.138	1.350	1.085	1.403
O-206	2.197	0.081	2.116	2.278	2.035	2.359	1.954	2.440
O-207	3.472	0.130	3.342	3.602	3.212	3.732	3.082	3.862
O-209	1.580	0.044	1.536	1.624	1.492	1.668	1.448	1.712
O-210	5.490	0.152	5.338	5.642	5.186	5.794	5.034	5.946
O-214	3.030	0.082	2.948	3.112	2.866	3.194	2.784	3.276

O-216	6.660	0.155	6.505	6.815	6.350	6.970	6.195	7.125
O-216b	6.660	0.158	6.502	6.818	6.344	6.976	6.186	7.134
O-218	0.531	0.017	0.514	0.548	0.497	0.565	0.480	0.582
O-224	2.150	0.053	2.097	2.203	2.044	2.256	1.991	2.309
O-250	0.309	0.013	0.296	0.322	0.283	0.335	0.270	0.348
O-2Pd	0.885	0.029	0.856	0.914	0.827	0.943	0.798	0.972
O-502	0.491	0.020	0.471	0.511	0.451	0.531	0.431	0.551
O-503	0.687	0.024	0.663	0.711	0.639	0.735	0.615	0.759
O-50Pb	0.841	0.031	0.810	0.872	0.779	0.903	0.748	0.934
O-54Pa	2.900	0.110	2.790	3.010	2.680	3.120	2.570	3.230
O-601	0.780	0.031	0.749	0.811	0.718	0.842	0.687	0.873
O-601b	0.775	0.021	0.754	0.796	0.733	0.817	0.712	0.838
O-602	1.950	0.066	1.884	2.016	1.818	2.082	1.752	2.148
O-602b	2.290	0.094	2.196	2.384	2.102	2.478	2.008	2.572
O-603b	5.210	0.209	5.001	5.419	4.792	5.628	4.583	5.837
O-60b	2.570	0.106	2.464	2.676	2.358	2.782	2.252	2.888
O-60d	2.470	0.079	2.391	2.549	2.312	2.628	2.233	2.707
O-61d	4.760	0.140	4.620	4.900	4.480	5.040	4.340	5.180
O-61f	4.600	0.134	4.466	4.734	4.332	4.868	4.198	5.002
O-62c	8.790	0.210	8.580	9.000	8.370	9.210	8.160	9.420
O-62d	10.500	0.330	10.17	10.830	9.840	11.160	9.510	11.490
O-67a	2.238	0.096	2.142	2.334	2.046	2.430	1.950	2.526
O-68a	3.890	0.150	3.740	4.040	3.590	4.190	3.440	4.340
O-6Pc	1.520	0.067	1.453	1.587	1.386	1.654	1.319	1.721

Check Assay Program

For significant drilling periods, or for drill campaigns leading to mineral resource or mineral reserve calculations, a check assay program is implemented either during or following completion of drilling. Approximately 5% of the pulps from previously analyzed samples (excluding pulps from standards) were selected and sent for re-assay to other neutral certified labs. Groups of samples that passed QC were randomly selected from various drill programs. The pulps were selected randomly by hole, ensuring that a wide range of original assay values from trace to high grade were represented. Starting in November 2017, a new method was implemented for selecting check assays, where the assay lab prepares an extra pulp split every 1 in 15 samples to obtain the approximate 5% ratio of reanalysis needed for this program.

The pulp duplicate samples were packaged by project and then logged into an Excel spreadsheet prior to shipment. The original sample numbers were used, unless inserting a new standard. The old and new sample numbers and the positions of the standard and blank pulps were recorded on the check assay Excel table as the samples were being packed for shipping to the labs.

The pulps are analyzed using FA with an AA finish method, and for results greater than 10 g/t Au, a re-assay was conducted by FA using a gravimetric finish. Once the analyses were completed, the assay lab provided results in the standard LSG assay file format, including all their internal QC data. Once all assays were received and were determined to have passed QC checks, a comparative statistical analysis of the new data versus the original assays was completed, including an analysis of the performance of inserted QC samples, following a format previously used by external auditors.

A report with statistical analysis was carried out to assess the precision of each project and lab included in the check assay program.

11.3 Assay Data Management for Surface and Underground Diamond Drill Programs

Copies of assay certificates are either downloaded from each lab's external LIMS system and/or sent via mail and electronic mail to the Company's database manager/coordinator, and to the project's QP. The digital assay data, in comma separated values (*.csv) file format, are checked manually against the final paper assay certificates for clerical errors, and the results evaluated by an Excel query file or the Lab Logger Version 2.0 program (created by Gemcom) for all labs. The use of the software program ensures that the results from the QA/QC samples fall within the approved limits of the standard before this data is imported into the database.

The procedures for handling and managing the surface and underground QC data are discussed in detail below.

Accuracy Analysis- Standards and Blanks

Sample assay results, internal QC information, certificate dates, CRMs, and coarse crush duplicate samples are each stored in separate QC database tables, and data can be merged into relevant plot files as needed. In late 2020, a server update caused an incompatibility with the outdated Lab Logger program and importing and review of assay reverted to the prior Excel spreadsheet method.

The QC samples in each group are subjected to specific pass or failure criteria, which determine whether a re-assay of the batch is required. A sample group failure is identified whenever:

a) the analytical result for any CRM is greater than three standard deviations (the control limit) from the certified mean value for the standard, or

b) the assay for any blank material is greater than 0.1 g/t.

All failed groups of samples are investigated to attempt to determine the cause of the erroneous result (analytical or clerical). Potential clerical errors are sometimes reconciled by checking against original drill log records, sample books or original laboratory data sheets. After the batch pass/failure criteria are applied, a geological override may be applied by the project QP on batches for which re-assay would be of no benefit (i.e., completely barren of gold assay values and mineralization indicators). Sample groups given a geological override are not re-assayed.

Sample groups in which the QC samples fall outside the established control limits that did not receive a geological override are not imported into the database. Instead, these samples are requested to be re-run at the analytical lab. In the case where a CRM has failed, a re-run of the entire or partial batch is requested from the pulps. In the case of a blank failure, a re-run of the entire or partial batch is requested from coarse crush reject material, as this indicates contamination of the pulps in the sample preparation stage.

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 override include:

- If a standard or a blank fails by less than 0.05 g/t, as this is very close to the cut-off for a pass.
- If a standard or a blank fails by more than 0.05 g/t 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 drillhole 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 QP 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.

Reporting and Plotting

Brief monthly reports are completed during the year to include the number of samples sent to each lab for each project, the number of QC samples that failed, and identified reasons for said failures. In addition, graphs of all QC samples are generated monthly to check for sample bias, separated into blanks, standards (each one plotted separately), and coarse duplicates at each assay lab. All major projects are summarized individually, typically at year-end or at the end of a program, as soon as reasonably possible.

11.4 Discussion

The internal QA/QC program on drill core for underground drilling was followed by LSG for the period covered by this Technical Report (December 17, 2014 to April 22, 2021) as shown in Table 11.4.

Table 11.4: Bell Creek Mine QA/QC Sample Summary (Drilling from December 17, 2014 to April 22, 2021)

Description	Bell Creek Mine	
Sample Type	Number	Percent
Total Blanks	6790	34.77
Total Standards	6433	32.95
Total Duplicates	6303	32.28
Total QAQC	19526	
Total Blank Overrides	13	86.67
Total Blanks Re-Assayed	2	13.33
Subtotal Blank Failures	*15*	0.22
Total Standard Overrides	196	70.25
Total Standard Re-Assayed	83	29.75
Subtotal Standard Failures	*279*	4.34
Total QAQC Failures	294	1.51

For the surface drill programs, ALS and ActLabs were the main labs 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 results showed good correlation with original assays.

For the underground drill programs, ActLabs 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 results showed good correlation with original assays.

The QP 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.

The sampling preparation, analysis, security, and QA/QC sample summary for LSG drill data for periods prior to December 17, 2014, are not applicable to this Technical Report, but can be found in previously filed technical reports. For the period November 2, 2012 to December 17, 2014, this information is described in the NI43-101 Technical Report, Updated Mineral Reserve Estimate for Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada released on March 27, 2015. The period between October 25, 2010 and November 1, 2012 is described in the NI 43-101 Technical Report, Resource Estimate Update and Prefeasibility Study and Mineral

Reserve Estimate for Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada released on March 28, 2013. The period from LSG acquisition of the Property (December 18, 2007) to October 24, 2010 is described in the NI 43-101 Technical Report on the Initial Mineral Resource Estimate for the Bell Creek Mine, Hoyle Township, Timmins, Ontario, Canada released January 14, 2011. These reports are referenced in Section 27 (Lake Shore Gold Corp., 2011, 2013, and 2015) and are filed on SEDAR (https://www.sedar.com).

12 Data Verification

12.1 Historic Data

Historical diamond drill data was acquired by LSG in the form of electronic databases (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.

LSG 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 drillhole database. Approximately 10% of the drillholes that intersected the mineralized domain models at Bell Creek were selected for validation on a semi-random basis. In all, a total of 23 drillholes were selected for examination, with drill logs located for 19 of these holes. The original drill logs for four of the historical drillholes 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 drillhole database supplied to Scott Wilson RPA is the end result of the amalgamation of older drillhole databases prepared by previous owners of the property and new drillhole information recently obtained by LSG. Given this historical context of data entry over a period spanning several decades, the database format, coordinate system, lithologic codes, and data entry protocols for the older, vintage drillholes may not be consistent with those currently employed by LSG for the entry of new drillhole 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

Drill Hole	Comments
BC05-12	Collar coordinates in drill log are in UTM grid while the database uses the Bell Creek coordinate system.
(PJV drill hole)	Recommend that the Bell Creek coordinates be added to the logs of all PJV-vintage drill holes.
C141 (Canamax Drill hole)	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.
	Recommend review/editing of litho codes for Canamax-vintage drill holes.
	Zeros have been inserted into the digital database for unsampled intervals – can result
	in misleading understanding of the sampling coverage. Recommend review/editing of assay entries for Canamax-vintage drill holes.
	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.
C125 (Canamax Drill hole)	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.
	Recommend review/editing of litho codes for Canamax-vintage drill holes.
	Zeros have been inserted into the digital database for unsampled intervals – can result in misleading understanding of the sampling coverage.
	Recommend review/editing of assay entries for Canamax-vintage drill holes.
	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).
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)	Elevation in database is 4 m lower than listed in drill log (2,046 m vs. 2,050 m)
	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. Recommend review/editing of litho codes for Canamax-vintage drill holes.
	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.
	Recommend that the database be edited to enter the correct assay value.
	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.
240-12 (Canamax Drill Hole)	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.
	Recommend review/editing of litho codes for Canamax-vintage drill holes.
	Zeros have been inserted into the digital database for unsampled intervals – can result
	in misleading understanding of the sampling coverage. Recommend review/editing of assay entries for Canamax-vintage drill holes.
General Comment	Software/data bug appears to be present in LSG drill log printing routine. Some assays in the database are not being printed out on the drill logs.
	Current LSG (?) 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.
	Recommend that the average value of all FA-Gravimetric assays be entered into the database.
	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.
	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 drillhole 4-9, at Scott Wilson RPA's request, LSG carried out a program of assay validation for all samples in the drillhole 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 provided an opinion that was reviewed and agreed to by the QP that the drillhole data representing the mineralization intersected by drilling at Bell Creek is appropriate for use in the preparation of mineral resource estimates.

LSG Surface Drilling

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.

12.2 LSG Database

Geological data is currently stored in a Geovia GEMS (Microsoft SQL) database which was compiled from data received as outlined in Section 10.1 above and work completed by LSG since the acquisition of the properties. A review of all historical data available was completed to ensure all assay and survey (collar and downhole) information was properly imported and presented into the database.

The following is a summary of how different data types are added to the database:

- Lithology – entered manually using Geovia's GEMS Logger custom drillhole logging software by the logging geologist/geotechnician
- Collar data:
  - collar location imported after field pick-up by surveyor
  - collar azimuth and dip entered manually from reported data from the north-seeking gyroscope ("Azimuth Aligner")/ Reflex™ TN14 gyrocompass
- Downhole survey data:
  - Collected while drilling – using an instrument such as the Reflex™ EZ-TRAC – manually using GEMS Logger
  - Collected after drilling – using an instrument such as the Reflex™ GYRO – imported
- Assay data – imported from digital files provided by assay lab

On a regular basis the following steps are taken to ensure the integrity of the database:

- A monthly validation is run on the Gemcom drillhole data which searches for overlapping geological or assay intervals, out of sequence intervals, incorrect drillhole lengths, negative and zero length intervals (From and To errors), and missing geological intervals. Any errors encountered are corrected when discovered.
- Plans and sections are plotted regularly to check for drillhole location, elevation, and downhole survey errors.

- Selected historical drillholes are checked underground for collar labels, drillhole location, and collar azimuth and dip. Any discrepancies are examined and modified as required.

All errors are corrected prior to use.

Validation of the data occurs on an ongoing or "in-program" basis as holes are completed, by viewing drillholes on screen using Geovia GEMS in both in 2D and 3D and sometimes through printed copies of plans and sections. Any discrepancies in collar location, downhole survey data, lithology and assay data are communicated to the Database Manager/Coordinator who makes the necessary changes to the database.

As a result of these data validation efforts, the author believes that the drillhole data is appropriate for use in the preparation of mineral resource estimates.

13 Mineral Processing and Metallurgical Testing

13.1 Introduction and Previous Work

The metallurgical assumptions used for the mineral resource and mineral reserve estimates and the economic analysis in this Technical Report are based on operational plant performance.

Test work results indicate that the ore will be very amenable to the Bell Creek Mill conventional gold milling processes. Specifically, the ore was free milling and the gold responded well to cyanide leaching and CIP recovery.

In general, there was found to be a good correlation between the results expected based on test work and the actual operating results. In some cases, the actual results exceeded expectations.

The historical recoveries per year can be seen summarized in Table 13.1.

Table 13.1: Bell Creek Mine Yearly Milling Recovery

Bell Creek Mine Milling Recoveries	
Operating Year	**Ounce Recovery**
2010	95.6%
2011	95.0%
2012	95.2%
2013	94.1%
2014	95.5%
2015	95.4%
2016	94.5%
2017	94.7%
2018	94.5%
2019	94.6%
2020	95.2%
2021	95.4%
Total	**94.9%**

13.2 Metallurgical Recovery

The Bell Creek Mill Phase 1 expansion was completed in October 2010. Planning for Phase 2 of the Bell Creek Mill expansion (increasing throughput capacity to over 3,000 tpd) was started in the first quarter of 2011. Part

1 of the expansion was completed by the end of 2012 and increased the plant to a throughput of 2,500 tpd. The Phase 2 expansion was completed during the third 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 (“Starkey”);
- Xstrata Process Support, Falconbridge, Ontario (“XPS”);
- Outotec Canada Inc. (“Outotec”); and
- FLSmidth Knelson, Langley, BC (“Knelson”)

The bond ball mill work index for this ore is 13.3 kWh/tonne. Sag mill (“SMC”) tests were also completed on these samples with the test data indicating that the ore is hard with an A*b value of 29.9. The objective of Starkey’s test work was to size a sag mill that would enable the throughput to be increased to 3,000 tpd 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 tpd and also had the capability (in conjunction with regrind mills) to process up to 6,000 tpd. 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 (Bell Creek and Timmins West ores). 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 tpd.

Test work was undertaken in 2013 by SGS Minerals to determine the effect of grind on recovery. It showed a slightly increasing recovery with finer grinds, as well as lower than expected gravity gold recoveries. Gravity gold recoveries were 38.7% for Bell Creek ore and 18.3% for Timmins Deposit ore.

In-house test work continues on a regular basis to confirm and increase the metallurgical performance of the plant, including stripping circuit and leaching circuits.

Overall, the combination of LSG’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.

In 2020, processing capacity was increased at the Bell Creek Mill. Upgrades were made to increase processing throughput to 5,300tpd if required.

14 Mineral Resource Estimates

14.1 Summary

The Company updates mineral resource estimates on an annual basis following reviews of metal price trends, operational performance and costs experienced in the previous year, the results of diamond drilling conducted during the year, and production and cost forecasts over the LOM.

The effective date of the mineral resource statement is June 30, 2021. Other than typical metal price fluctuation, no new material information has become available between June 30, 2021 and the signature date given on the certificates of the QPs. Mineral resources were prepared by LSG staff under the supervision of, and reviewed by, Al Mainville, P. Geo., Geology Manager of LSG, who is a QP as that term is defined by NI 43-101.

There are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the development of the mineral resources. Mineral resources that are not mineral reserves do not have demonstrated economic viability. Mineral resources reported here are exclusive of mineral reserves. Previous technical reports on the Bell Creek Mine stated mineral resources inclusive of mineral reserves.

This mineral resource estimate for Bell Creek updates the mineral resources reported in the previous NI 43-101 Technical Report effective March 27, 2015 (Lake Shore Gold Corp., 2015). The estimate is based on historical diamond drilling as described in Section 10.1 and drilling completed by LSG between July 2008 and April 22, 2021.

A total of 4,105 drillholes with intersections through modelled mineralized envelopes were used for estimation of the Bell Creek mineral resources. The diamond drillhole database has been subjected to verification and is considered to be robust and of adequate quality for the estimation of mineral resources.

Mineral resources have been depleted for mining up to the effective date of this Report – June 30, 2021. The mineral resource statement for Bell Creek is summarized in Table 14.1.

Table 14.1: Bell Creek Mineral Resource Statements

In-Situ Mineral Resources Reported Above 1.8 Au g/t Cut-Off Grade				
Deposit	**Classification**	**Tonnes ('000)**	**Au Grade (g/t)**	**Au Ounces**
Total Bell Creek Mine	Measured	2,408	3.43	265,800
	Indicated	4,174	2.80	375,700
	Measured & Indicated	**6,582**	**3.03**	**641,500**
	Inferred	3,772	3.06	371,600

1. The effective date of the mineral resource statement is June 30, 2021 and was calculated using a model that was estimated in May 2021 and subtracted for mine depletion from month-end production for May and June 2021.

2. Mineral resource estimates have been classified according to CIM Definitions and Guidelines.

3. Mineral resources are reported ***exclusive*** *of mineral reserves. Note: previous technical reports on the Bell Creek Mine stated mineral resources inclusive of mineral reserves.*

4. Mineral resources have been estimated using an ID^2 interpolation method with anisotropic weighting and gold grades which have been capped between 15 and 44 g/t based on statistical analysis of each zone.

5. A minimum mining width of 2.2m has been used to model the mineralization.

6. Tonnes information is rounded to the nearest thousand and gold ounces to the nearest one hundred. As a result, totals may not add exactly due to rounding.

7. The mineral resources were prepared under the supervision of, and verified by, Al Mainville, P. Geo., Geology Manager, LSG, who is a QP under NI 43-101.

The general procedure for completing the updated estimates included the following key steps with further explanation in the various subsections below.

- Database compilation and verification.
- Interpretation and modelling of mineralized zones.
- Analysis of drillhole assay data.
- Assay composting.
- Analysis of specific gravity.
- Block modelling.
- Removal of depleted and non-recoverable blocks.
- Classification.

14.2 Database Compilation and Verification

The database used for the current estimate is comprised of a Gemcom GEMS (Microsoft SQL) database which was compiled from both historic data and work completed by LSG since acquisition of the properties (as described in Sections 10 and 12 above). The GEMS diamond drillhole database consists of the following major tables, header, survey, lithology, and assay with pertinent fields summarized in Table 14.2.

All drillhole data used in the estimation was verified using the GEMS "validate" feature which checks for duplicate and overlapping intervals, missing intervals, negative length intervals and inconsistencies between tables.

Cross-sectional data, geological interpretation strings, section and level plan definitions, 3D geological solids, point area data of assays and composites, as well as the block model, are also stored within GEMS. Details on database validation are discussed in Section 12 of this Report.

Table 14.2: Summary of GEMS SQL Drillhole Database

Table Name	Table Description	Fields
Header	Drillhole 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 g/t	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
Mineralmaj	Minor mineralized intervals down hole	Hole-ID From To Style %Mineral

14.3 Interpretation and Modelling of Mineralized Zones

Interpretation and modelling of mineralized zones are completed on both plan and vertical sections taking into account structure, lithology, alteration, veining and sulphide content. In addition to diamond drilling, underground development mapping and sampling were used as an aid but only diamond drill data was used for grade estimation.

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

A total of sixteen mineralized zones or domains are recognized.

On strike and down plunge extent of the domains varies. The NA and NB are the most continuous with strike lengths of 500m and down plunge length of 1,720m (1,680 m 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	parallel and north of NA
North B3	NB3	BC_NB3	315	100	70 S	parallel and north of NA
North BW	NBW	BC_NBW	317	100	70 S	western extension of NB
Hangingwall 2	HW2	BC_HW2	335	70	70 SE	oblique splay south of NA
Hangingwall 3	HW3	BC_HW3	337	70	70 SE	oblique splay south of NA
Hangingwall 5	HW5	BC_HW5	341	100	70S	short strike, south of NA
Hangingwall 6	HW6	BC_HW6	343	100	70 S	short strike, south of NA
Hangingwall 7	HW7	BC_HW7	345	100	70 S	short strike, south of NA

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

- Interpretation was completed on either plan sections or North-South sections.
- Underground development including mapping was used to aid interpretation.
- Mineralized domains were based on a combination of grade, alteration (albite/ankerite/sericite), sulphide content and quartz content.
- A minimum horizontal width of 2.2m was used.
- Mineralized domains were restricted to the mafic volcanic and south ultramafic volcanics.
- Points on each polyline are snapped to the exact drillhole location in three dimensions. Longitudinal and oblique views of the mineralized domains are presented in Figure 14.1 and Figure 14.2.

Figure 14.1: Longitudinal View (Looking North) of the 4 Main Mineralized Domains

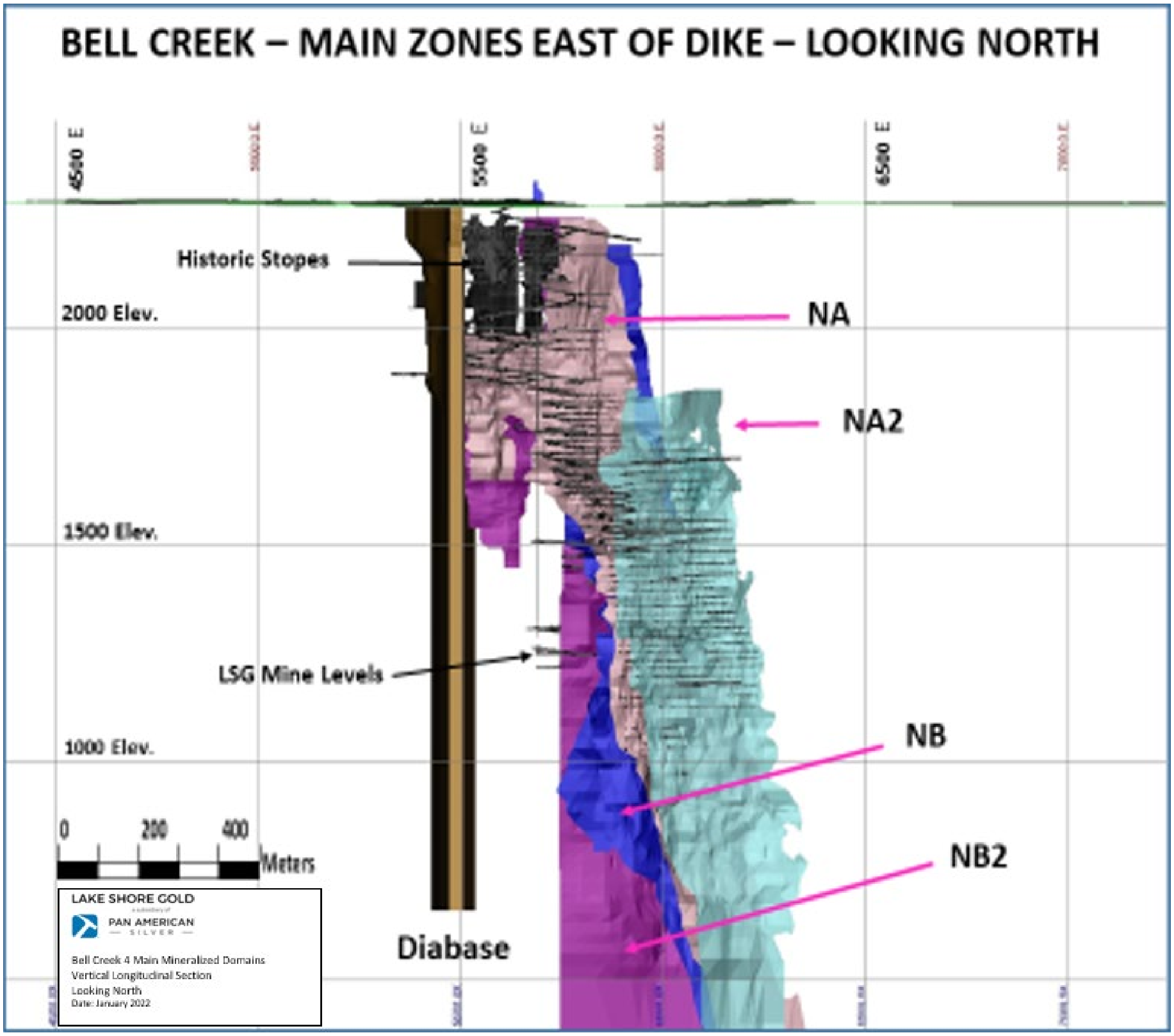
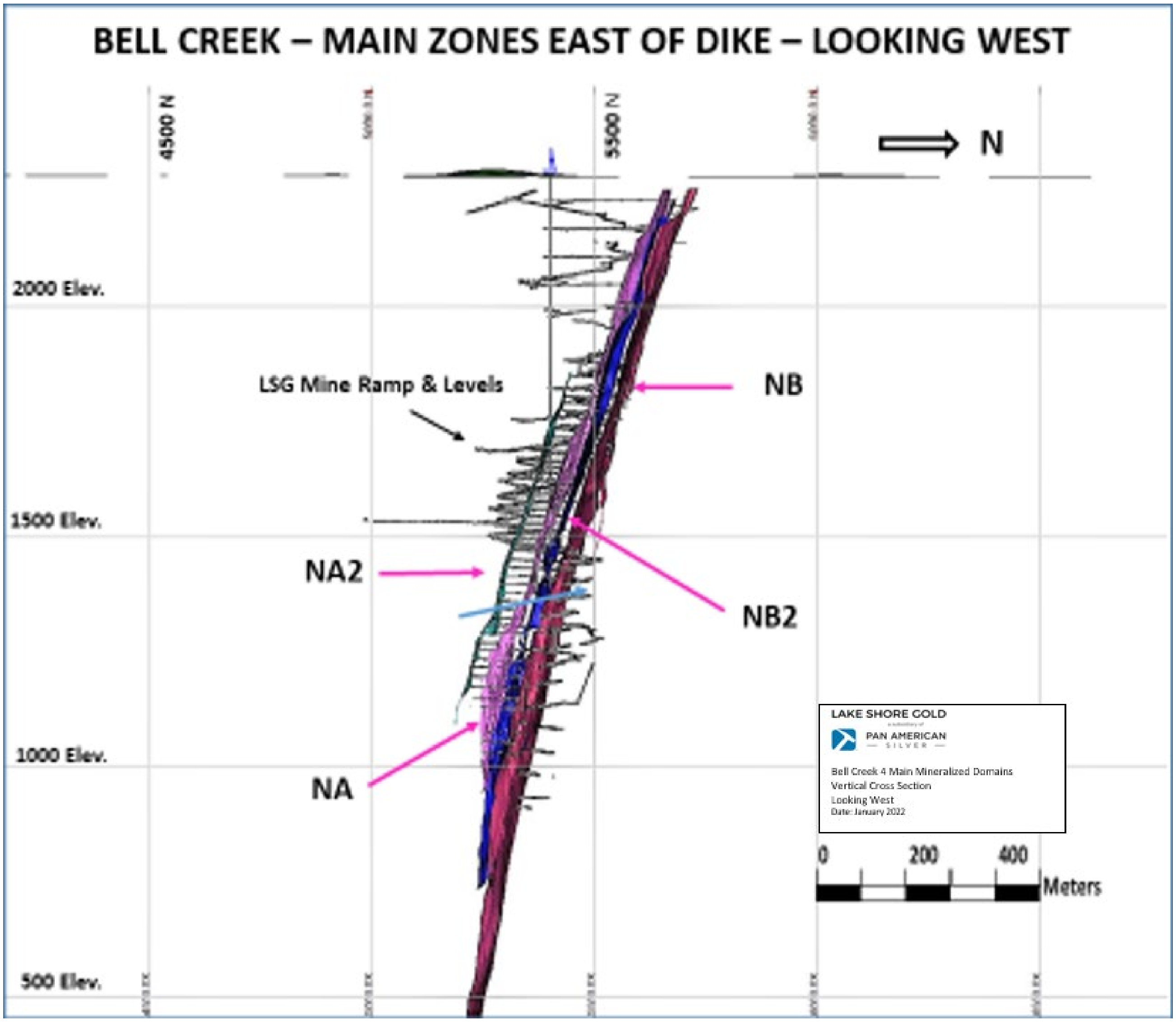


Figure 14.2 Cross Section (Looking West) of the 4 Main Mineralized Domains Relative to Mine Development



14.4 Statistical Analysis

Grade Capping

LSG has utilized grade capping of diamond drillhole assay values in its estimation of the mineral resources for Bell Creek. To evaluate potential capping factors, assay values were extracted from the drillhole database and flagged by zone according to the mineralized solid enclosing the drillhole assay. Individual statistical reports based on the raw gold assays were generated for each domain. Domains with a limited number of samples were grouped for evaluation with those displaying similar mineralization characteristics.

To aid in determining an appropriate capping limit, histograms, cumulative frequency plots and log probability plots were evaluated by LSG personnel. Extreme values were capped prior to compositing and no further capping was applied before grade estimation. Capped gold grades used to create composites for estimation are summarized in Table 14.4.

Table 14.4: Statistics Comparing Capped and Uncapped Gold Samples used for Compositing

ZONE	# SAMPLES	MAXIMUM (g/t Au)	MEAN (g/t Au)	CAPPING VALUE (g/t Au)	CAPPED MEAN (g/t Au)
NA	15,534	1,970	4.59	44	4.40
NA2	10,812	633	3.43	34	2.26
NA3	2,930	64	3.37	34	3.35
NA4	3,060	118	3.91	34	3.77
NAX	691	172	3.57	25	2.90
NB	9,184	1,190	2.74	34	2.54
NB2	8,984	105	3.38	34	3.33
NB3	5,266	556	2.91	34	2.78
E VEINS	972	64	1.99	15	1.87
NAWOD	119	20	2.05	34	2.05
NBWOD	144	18	1.76	34	1.76
NBFW	3,904	1,440	2.14	25	1.68
NBHW	1,491	75	3.25	34	3.16
NB2FW	127	41	3.37	34	3.26

NAFW	1,725	357	3.62	34	3.21
NAHW	1,310	36	3.08	25	3.05
HW2	1,042	145	3.50	25	3.12
HW3	113	27	4.32	25	4.29
HW4	650	129	2.75	25	2.55
HW5	296	25	2.80	25	2.80
HW6	2,115	166	6.15	44	5.97
HW7	480	54	2.83	25	2.68
NC	626	252	4.02	34	2.64
NA2HW	3,414	160	2.61	34	2.56

Assay Compositing

Each domain wireframe was assigned a unique name and numeric rock code which was used to flag the drillhole assay table in GEMS. This table was used to generate a set of nominal 1 m composites. A 1 m composite length was chosen as it most closely matched the average sampled widths in the database. The composite length was adjusted to make all composite intervals in a given drillhole equal (while keeping as close to the desired composite interval as possible), to ensure all samples were used. The domain codes and nominal 1 m composites are stored in a GEMS table and were extracted out to a point area file for interpolation purposes.

A total of 11,097 solid intersections from 4,105 unique holes were used to produce a total of 41,580 one m composites.

Variography

A number of variographic studies have been completed for the various zones at Bell Creek.

Gold mineralization for the main mineralized zones plunge steeply (70 degrees) to the east within the steeply south dipping veins.

Results of these studies have consistently indicated:

- a very high nugget effect;
- preferred direction for grade continuity along the defined trends/plunges of the mineralized zones; and
- and short ranges which are typically less than 20-30m.

Results of the variographic work were used to define the orientation and ranges of the search ellipses as outlined in the Grade Interpolation section below and summarized in Table 14.7.

14.5 Specific Gravity

Historically, specific gravity ("SG") was determined from 236 mineralized samples selected from surface diamond drillholes targeting the Bell Creek NA and NB zones. In prior mineral resource estimates, an average SG of 2.82 was used for mineralized zones and an average SG of 2.75 was used for unmineralized material.

Over the course of the last few years, an additional 176 representative samples of all mineralized and unmineralized domains were collected from the deeper parts of the mine.

SG measurements were completed at the LSG exploration office utilizing the conventional approach of weighing the samples dry and immersed in water.

The more recent results showed slightly higher SG than the historic values for both mineralized and unmineralized material.

An average SG of 2.86 was assigned to mineralized zones and an average SG of 2.83 was assigned to unmineralized material in this mineral resource update.

14.6 Block Model Mineral Resource Modelling

General

The grade of the mineral resources at Bell Creek was estimated using an ID^2 interpolation and anisotropic weighting. This method interpolates the grade of a block from several composites within a defined distance range from the block. The estimation uses the inverse of the distance between a composite and the block as the weighting factor to determine the grade.

Block Model Parameters

Bell Creek was estimated within a single block model coded separately for all mineralized domains. A summary of the model grid parameters are shown in Table 14.5.

Table 14.5: Block Model Grid Parameters

Table 14.5: Summary of Block Model Limits

Type	Y	X	Z
Origin	4950	5190	2300
Maximum Coordinates	5770	6480	2300
Minimum Coordinates	4950	5190	-400
Rotation	0.000	0.000	0.000
	rows	columns	level
Block Size	2	3	3
Number of blocks	410	430	900

Several attributes were created to store information such as metal grades, the number of informing samples, average distances, domain codes, classification codes, and claim owners. These attributes are summarized in Table 14.6.

Table 14.6: 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^2 uncut gold grade (g/t)
AU_CUT *	Real	3	0	ID^2 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 drillholes used in estimate

ESTIMATED	Integer	-	0	Flag for estimated, 1 = estimated in 1st pass, 2 = second pass, 3 = third pass
MINED_OUT	Integer	-	0	Flag for mined out, 0 = not mined. 1 to 35 represents mined. Number indicates development
REMNANTS	Integer	-	0	Flag for non-recoverable mineralization. 1 = non recoverable pillars and isolated non-contiguous blocks. 2= mineralization in crown pillar.

**Only the AU_CUT grades have been used to define resources. AU_UNCUT was 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 wireframes are used to flag individual blocks as to rock type (domain), and percentage of the block that is within the domain. For reporting purposes volumes are obtained from the domain wireframe with corresponding grades obtained from the block model.

Grade Interpolation

Gold grades were interpolated into the individual blocks for the mineralized domains using ID^2 and anisotropic weighting. A three-pass expanding search approach was used with the ellipse oriented along the dominant mineralization trend. The minimum and maximum number of samples used for estimation were 12 and 18 respectively. A maximum of 4 samples per drillhole was also used for the estimation.

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

Only capped, composited grades (AU_CUT) were used to estimate mineral resources.

Grade interpolation parameters are summarized in Table 14.7.

Table 14.7: Interpolation Parameters

Bell Creek Estimation Parameters - 2021

ID squared estimate using 3 estimation runs
Anisotropic search and weighting
Minumum 12 samples per estimate (Pass 3 minimum 1)
Maximum 18 samples per estimate
Maximum 4 samples per drill hole
Grades capped on raw assays
Non contiguous blocks estimated by only one drill hole are removed post estimation

Name	Code	Trim	Ellipse	Rot Z	Rot X	Rot Z	Range X, Y, Z (Pass 1)	Range X, Y, Z (Pass 2)	Range X, Y, Z (Pass 3)
BC_NA	301	44	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2	303	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA3	305	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA4	307	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NAX	309	25	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NB	311	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NB2	313	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NB3	315	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NAWOD	321	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NBWOD	323		2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NBFW	325	25	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NBHW	327	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NB2FW	329	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NC	331	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_EVEIN	317	15	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NAFW	331	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NAHW	333	25	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_HW2	335	25	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_HW3	337	25	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_HW4	339	25	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_HW5	341	25	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_HW6	343	44	2019_H1	140	-85	0	20, 15, 10	60, 30, 20	90, 60, 30
BC_HW7	345	25	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW1	361	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW2	363	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW3	365	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW4	367	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW5	369	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW6	371	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW7	373	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW8	375	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW9	377	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW10	379	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW11	381	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NA2HW12	383	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NBFW2	393	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55
BC_NBFW3	395	34	2019_R1	-10	80	-80	30, 15, 10	60, 30, 20	90, 70, 55

14.7 Block Model Validation

Several steps were taken in order to review and validate the current block model and estimated results. This includes:

- comparison of solid model and block model volumes;
- comparison of the block model against diamond drill results; and
- review of recent reconciliation data.

Volumes of the individual solids were compared to volumes from the block model for the same domain to ensure proper coding of the model. No significant variances were encountered.

Plans and sections were cut through the block model and mineral resource solids to view overall trends and patterns as well as compare block grades and grade distribution to the drillhole data. Results of the review indicate a complex pattern for block grades which is consistent with observations from drilling and mapping.

An example of plan views and sections showing block grade distribution and the original diamond drill data for the 144 Gap Deposit is shown in Figure 14.3 and Figure 14.4.

Figure 14.3: Plan View Showing Gold Grade Variable in Block Model and Diamond Drillholes – Bell Creek 1315mL

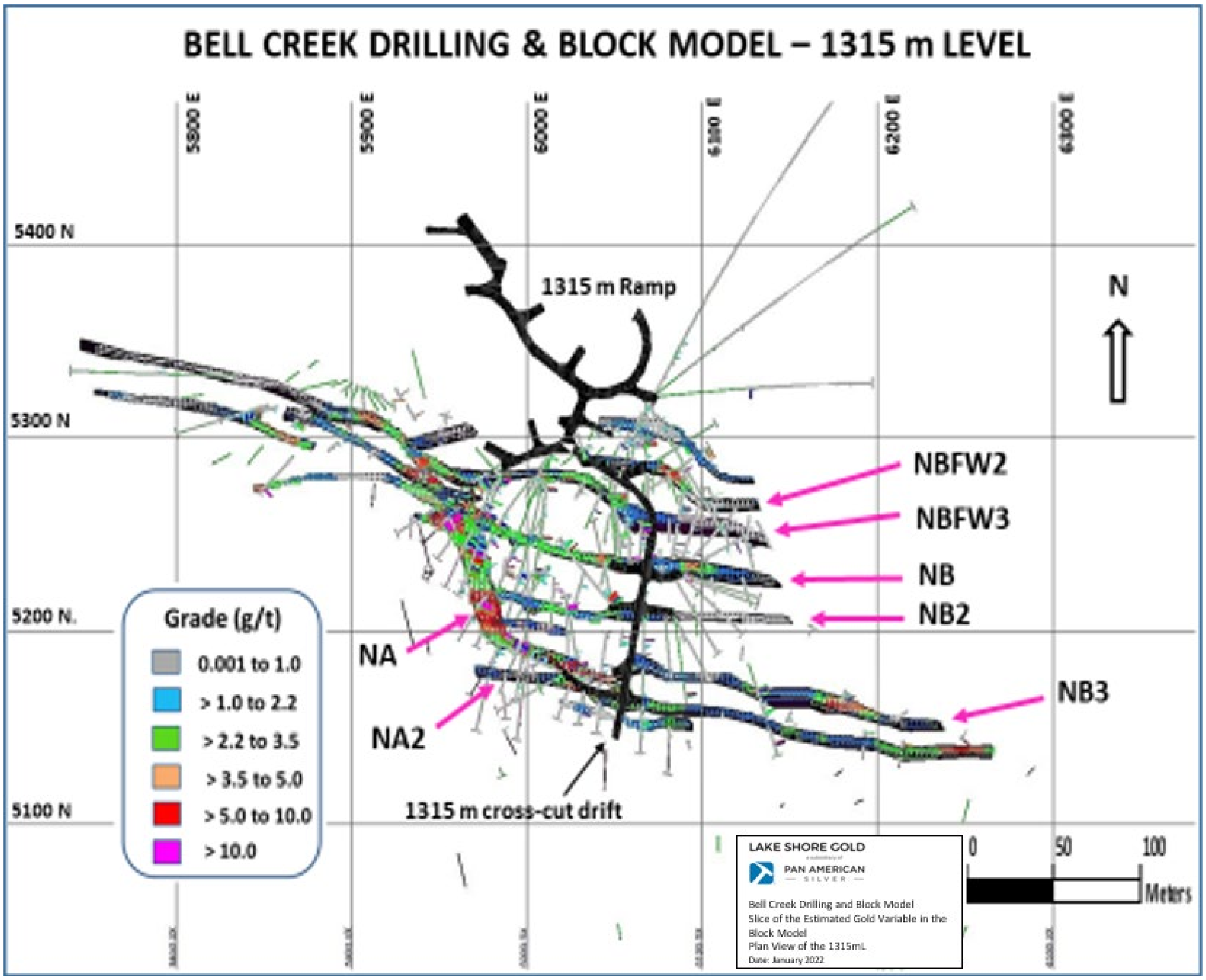
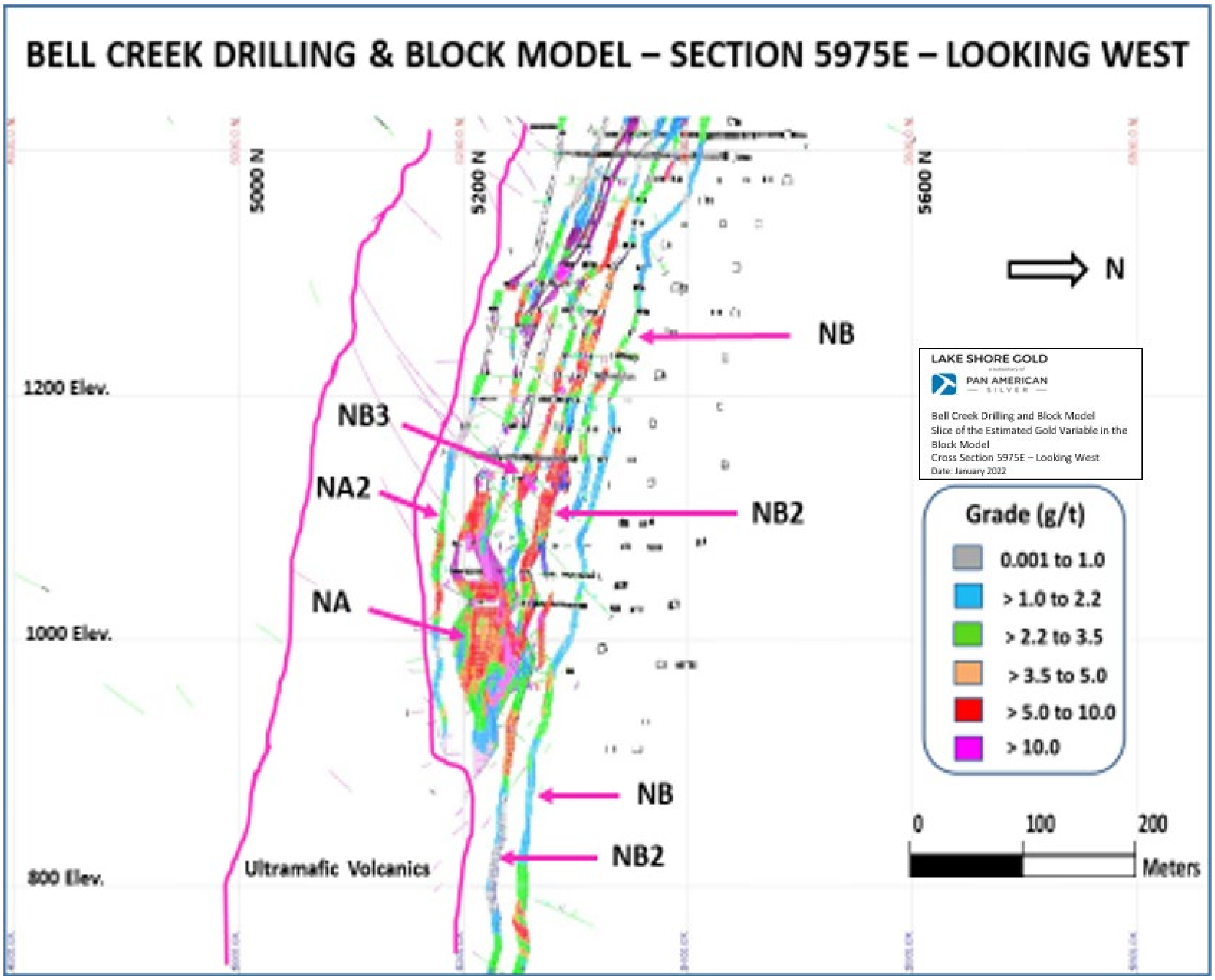


Figure 14.4: Cross Section 5975E Looking West – Gold Grade Variable in Block Model and Diamond Drillholes



Further validation of the block model estimate can be drawn from a comparison of the block model grade to the reconciled mill production. Comparison of the block model to the mill production is carried out for each stope upon completion. Tonnage and grade from the block model based upon a survey of the final mined out void is compared to the mill production. Significant differences for individual stopes are observed with a reasonable overall comparison to mill reconciled figures. The presence of large differences on a stope scale is not unexpected and likely the result of several factors. These include sampling difficulties due to coarse gold, uncertainties in tracking and assigning tonnage accurately back to individual stopes due to blending and milling ore from multiple sources in a common mill, uncertainties regarding final stope shapes and quantities of rock extracted and uncertainties in mill grade and losses of gold to mill inventory during certain months. Efforts to address the above factors are being examined on an ongoing basis.

14.8 Removal of Mined and Non-Recoverable Resource Blocks

Mineral resources at Bell Creek are reported after the removal of all underground development and mining from the block model as well as the removal of all non-mineable material including low grade and non-recoverable pillars.

The removal of mined out blocks and development was completed by flagging blocks within mining shapes provided by the engineering department and setting the density and grade of these blocks to zero. A similar process was completed for non-mineable blocks where only the grade of these blocks were set to zero. Non-mineable blocks are typically associated with pillars near mined areas or other mineralized material that cannot be safely accessed, however some are defined by economic considerations as determined by the engineering and geology group and can be reviewed should economic conditions improve.

14.9 Mineral Resources Classification

Mineral resources were classified into measured, indicated and inferred confidence categories based primarily on estimation run. Those areas deemed to form a continuous zone with blocks of largely Pass 1 and 2 (15 to 30 m search) were clipped out of the domain solid to create a wireframe for classification. These blocks were assigned either measured or indicated confidence categories, while the remaining blocks within the domain were classified as inferred. Resource blocks of the NA, NB and NA HW4 estimated west of a north-south diabase dyke ("WOD"), located near mine grid 5500E, were re-classified as inferred as there is no on vein development that could be used to provide confidence in the estimates in this area. Other historic areas without recent LSG drilling were also re-classified as inferred.

14.10 Mineral Resources

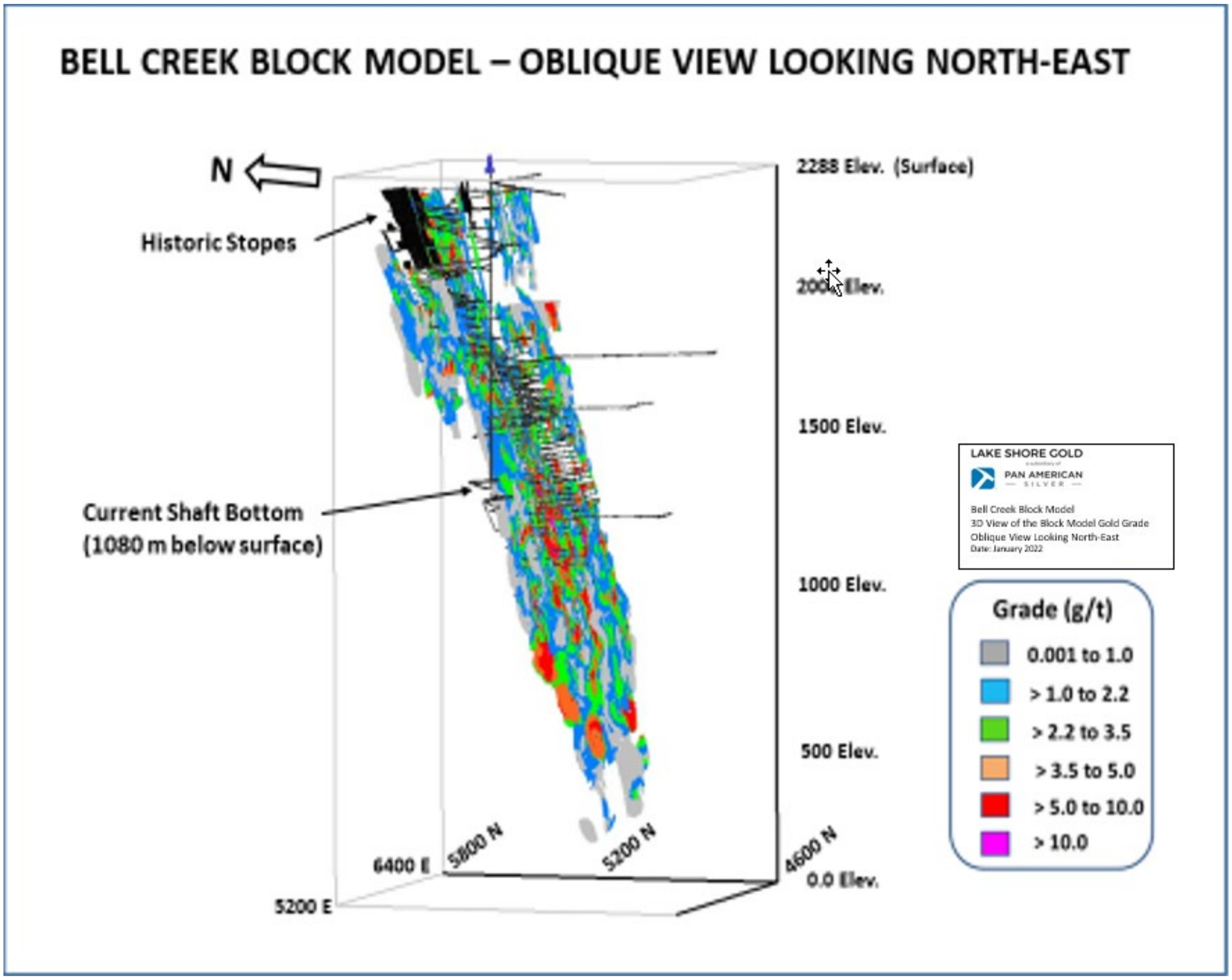
Mineral resources reported for Bell Creek are located between 5260E and 6330E (mine grid) over a horizontal distance of 1,070m. Vertically, the zones have been defined from the 2,220 m elevation (65m below surface) to 450m elevation (1,832m below surface).

As reported in Table 14.1 above, the estimated mineral resource totals 2.41 million tonnes at 3.43 g/t Au, amounting to 265,800 ounces of gold in the measured category, 4.17 million tonnes at 2.80 g/t Au, amounting to 375,700 ounces of gold in the indicated category and 3.77 million tonnes at 3.06 g/t Au amounting to 371,600 ounces of gold in the inferred category. Mineral resources are reported exclusive of mineral reserves.

The mineral resource for Bell Creek was reported using a gold cut-off grade of 1.8 g/t. All mineral resources have been depleted for mining up to the effective date of this Report – June 30, 2021.

A schematic 3D view of the individual block models showing the distribution of grade relative to the underground workings is presented in Figure 14.5.

Figure 14.5: Schematic 3D View Looking North-East of Gold Grade Variable in the Block Model



14.11 Reconciliation to Previous Mineral Resource Estimate

Comparison of the mineral resources at Bell Creek as reported for midyear 2020 and midyear 2021 is summarized inTable 14.8.

Table 14.8: Comparison of Midyear Mineral Resources (exclusive of Mineral Reserves) and Mineral Reserves for 2020 vs. 2021

Resource Above 1.8 Au g/t Cut-Off Grade	2020 MID-YEAR RESOURCES			2021 MID-YEAR RESOURCES			Variance (oz.)	Variance %
	Tonnes (‘000)	Grade	Ounces	Tonnes (‘000)	Grade	Ounces		
Bell Creek								
Measured	1,989	3.38	216,000	2,408	3.43	265,800	49,900	23%

Indicated	3,388	2.77	301,900	4,174	2.80	375,700	73,800	24%
Measured + Indicated	**5,376**	**3.00**	**517,800**	**6,582**	**3.03**	**641,500**	**123,700**	**24%**
Inferred	4,727	3.21	487,700	3,772	3.06	371,600	-116,100	-24%
Reserve Above 1.8 Au g/t Cut-Off Grade	**2020 MID-YEAR RESERVES**			**2021 MID-YEAR RESERVES**			**Variance (oz.)**	**Variance %**
	Tonnes ('000)	**Grade**	**Ounces**	**Tonnes ('000)**	**Grade**	**Ounces**		
Bell Creek								
Proven	2,283	3.16	232,200	2,440	3.03	237,300	5,100	2%
Probable	2,686	2.87	247,500	2,685	2.89	249,200	1,700	1%
Total	**4,970**	**3.00**	**479,700**	**5,125**	**2.95**	**486,500**	**6,800**	**1%**
	Changes Due to Mining Depletion			**Changes due to Design/Resource**				
	Tonnes	**Grade**	**Ounces**	**Tonnes**	**Grade**	**Ounces**		
Bell Creek	-641	2.96	-61,000	797	2.65	67,800		

The drilling, development and mining completed since the last mineral resource update on June 30, 2020 shows an overall increase in mineral reserves of 6,800 ounces and an increase in mineral resources of 7,600 ounces in all mineral resource categories. Resource changes are:

- an increase in the measured category of 49,900 ounces,
- an increase of 73,800 ounces in the indicated category and
- a decrease of 116,100 ounces in the inferred category.

This overall decrease in ounces contained in the mineral resource is mainly due to

- the conversion of mineral resources to mineral reserves as demonstrated by the replacement and overall increase in proven and probable mineral reserves of 6,800 ounces between the 2020 midyear and 2021 midyear models and
- depletion of 61,000 ounces from mining

The Bell Creek measured and indicated mineral resources increased by 49,900 ounces and 73,800 ounces respectively due to the conversion of material in proximity to close spaced infill drilling. The inferred mineral resources decreased by 116,100 ounces because the deeper projections of the Bell Creek zones could not be drilled from the 1135mL exploration drift and thus converted areas could not be replaced by extension drilling. Exploration platforms have recently been excavated on the 1345mL which will allow the deeper parts of the deposit to be drilled.

14.12 Additional Drillhole Information

Between April 22, 2021 and October 31, 2021 (subsequent to the closing of the Bell Creek database) a further 10,891 meters of operating drilling, 13,440 meters of capital drilling and 5,324 meters of exploration drilling has been completed.

The new drilling consists mostly of close spaced holes to infill measured and indicated areas and while there is potential for some minor changes in size, shape and grade in these areas, the net effect of this on the global mineral resource is unlikely to be significant.

15 Mineral Reserve Estimates

15.1 Summary

The mineral reserves estimated for Bell Creek incorporate that portion of the measured and indicated mineral resources within an updated LOM plan that are economically feasible, with dilution and mine losses applied. The mineral reserve estimate is based on material provided as feed to the Bell Creek Mill. mineral reserves for Bell Creek are summarized in Table 15.1.

Table 15.1: Bell Creek Mineral Reserves

Deposit	Classification	Tonnes ('000)	Au Grade (g/t)	Au Ounces
Bell Creek	Proven	2,440	3.03	237,300
	Probable	2,685	2.89	249,200
	Total Proven & Probable	5,125	2.95	486,500

1. *The effective date of this Technical Report is June 30, 2021. Mineral reserves as at June 30, 2021 were calculated using a block model that was estimated in May 2021 and subtracted for mine depletion from month-end production for May and June 2021.*
2. *The mineral reserve estimates are classified in accordance with the Canadian Institute of Mining Metallurgy and Petroleum's "CIM Standards on Mineral Resources and Reserves, Definition and Guidelines" as per NI 43-101 requirements.*
3. *Mineral reserves are based on a long-term gold price of US$1,450 per ounce and an exchange rate of 1.3 $CAD/$US.*
4. *Mineral reserves are supported by a mine plan that features variable stope thicknesses, depending on zone, and expected cost levels, depending on the mining methods utilized.*
5. *Mineral reserves incorporate a minimum cut-off grade of 2.0 g/t. The cut-off grade includes estimated mining and site G&A costs of US$70.55 per tonne, milling costs of US$19.09 per tonne, mining recovery of 95%, external dilution of 22%, and a metallurgical recovery rate of 94.5%.*

6. *Tonnes information is rounded to the nearest thousand and gold ounces to the nearest one hundred. As a result, totals may not add exactly due to rounding.*
7. *The mineral reserves were prepared under the supervision of, and verified by, Eric Lachapelle P.Eng., Manager, Technical Services, LSG, who is a QP under NI 43-101.*

The mine design was updated to reflect the most likely life of mine production scenario. The mine design includes all sustaining development and construction required to access the measured and indicated mineral resources that meet the definition of mineral reserves and extracting the mineral reserves using longhole mining techniques in place at Bell Creek.

Mineral reserve estimates are based on a number of assumptions, however there are no known environmental, metallurgical, permitting, legal, title, infrastructure, or other relevant factors that could materially affect the estimate of mineral reserves as at June 30, 2021.

15.2 Cut-Off Grade

To develop the LOM plan and estimate the mineral reserves for Bell Creek, a cut-off grade ("COG") was estimated using actual operating costs and mill recoveries based on LSG's operating experience. The assumptions for the COG calculation are summarized in Table 15.2.

Table 15.2: Bell Creek Mine Cut-Off Grade Assumptions

Item	Value
Mine Operating and Site General Costs	$US 70.55 / tonne
Mill Operating Cost	$US 19.09 / tonne
Total Operating Cost	$US 89.64 / tonne
Mill Recovery	94.5%
Gold Price ($US)	$1,450 / ounce
Exchange Rate ($CAD/$US)	1.3
Cut-Off Grade	**2.0 g/t**

In addition to considering the estimated COG, mine planning personnel have considered the overall economics in localized areas when evaluating sublevels and stoping blocks.

15.3 Bell Creek Deposit Mineral Reserve Estimate

Based on the indicated mineral resource for Bell Creek, the following methodology was used to estimate the mineral reserves. The reference point for the mineral reserves is delivery to the Bell Creek Mill.

The block model was reviewed in plan and in section to identify potential mining areas with concentrations of indicated mineral resources above the COG and to determine appropriate mining methods. Sublevels were designed at 20 m vertical intervals, and vertical sections were cut through the model at appropriate intervals along strike (depending on the complexity of the resource). Mining shapes were designed on each section and joined with shapes on adjacent sections to generate wireframes.

The mineral resources contained within the wireframes was retrieved from block model data and includes:

- Higher grade material grading above 2.0 g/t.
- Low grade material grading below 2.0 g/t (planned internal dilution).
- Waste rock grading 0.0 g/t (planned internal dilution).

Stope reconciliation data has been used to estimate unplanned dilution and mining recovery factors. Based on this analysis, 22% unplanned dilution (grading 0.0 g/t) and 95% mining recovery has been used to estimate the mineral reserves.

The in-situ tonnes and grade contained within the wireframes were extracted from the block model mineral resource data, and unplanned dilution and mining recovery factors have been applied to estimate the probable reserves.

Some sublevels have an overall grade that is near the COG. In general, these sublevels already have their associated development and infrastructure in place or require minimal operating development to access.

A mine design, development schedule, and production profile and has been completed to estimate the capital and operating costs required to access, develop, and extract the Bell Creek mineral reserves. A LOM cash flow analysis was completed to demonstrate that the mineral reserves support capital infrastructure.

16 Mining Methods

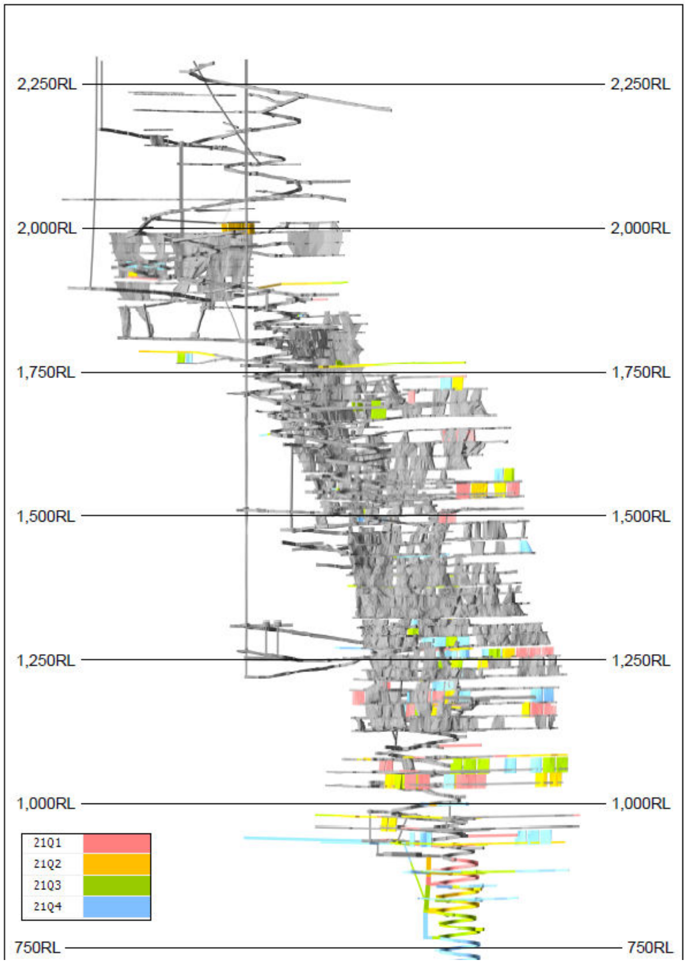
16.1 Overview

Bell Creek consists mainly of multiple nearly parallel narrow gold veins that are steeply dipping. This steepness of the veins allows for longhole extraction methods. Main mining veins trend East-West with some convergence observed between the 1185mL and down to 1450mL, including some north-south trending.

The existing underground infrastructure at Bell Creek is listed below. Figure 16.1 below highlights the main ramp and ventilation infrastructure:

- The 6.3 m by 2.6 m three compartment shaft, 1080m deep
- Main shaft stations at the 300L, 535L, 790L, and 1000L.
- Ore and waste rockbreakers and bins at 1000L, and a loading pocket at 1040L.
- Ventilation raises to surface and internal ventilation raises underground.
- The main ramp from surface to approximately 1450L depth.
- Mine dewatering facilities.
- Electrical distribution and communications.
- Compressed air and service water distribution.
- Maintenance facilities.

Figure 16.1: Bell Creek Mine Underground Infrastructure



Underground Access

The Bell Creek mineral reserves will continue to be extracted using underground mining methods and is accessed via the existing shaft and portal/ramp from surface.

Primary / Secondary Access

The primary access to the underground workings will continue to be via the existing Bell Creek shaft, and ore and waste rock will be trucked to the existing 1000mL grizzly/rockbreaker station for sizing and subsequent skipping to surface.

Secondary access/egress to/from the underground are via the existing portal and ramp to surface, and internal raises equipped with escapeways.

16.2 Shaft and Hoisting Facilities

The primary access to the underground workings and transfer of ore and waste rock to surface will continue to be via the existing production shaft. The existing shaft is a 6.3 m by 2.6 m rectangular, three compartment shaft. The top 290m of the shaft have timber sets installed, while the remaining 760m have fabricated steel sets. Shaft stations can be used to access the shaft from the ramp on 1000, 790, 535 and 300m levels. The shaft station on the 1000mL is currently the primary access to the mine. The shaft is equipped with a cage for transporting personnel which significantly reduces the pre and post shift travelling times between surface and the 1000mL. The 1040mL to 1000mL ore bin, loading pocket and skip system is used to transport ore and waste up to surface. The shaft includes two skip compartments (9.3 tonne capacity bottom dump skips), a service cage compartment (8-person capacity triple deck cage), and service compartment for fuel, piping and electrical services. The shaft does not have an escapeway compartment. The existing steel headframe includes a collar house and chute to dump ore and waste to an outside pad.

Hoisting Plant

The hoisting plant includes a production hoist for skipping operations and a service hoist for cage operations.

Production Hoist

The existing production hoist is a Hepburn, 3.6 m (12 foot) diameter double drum, single clutch hoist, powered by 2 x 1118.5 kW (2 x 1,500 horsepower) AC motors. Combined with the 9.3 tonne skips, the plant has capacity to hoist 4,900 tonnes per day, at the current hoisting depth of 1,040m and hoisting speeds of 11 M/S (2,200 FPM). This capacity will be sufficient to meet ore production and waste rock hoisting requirements.

Service Hoist

The existing service hoist is a 2.44 m (8 foot) diameter single drum Hepburn hoist, powered by a single 1118.5 kW (1,500 horsepower) AC motor. Combined with the 24-person triple deck cage, currently traveling at 4 M/S (800 FPM) and capable of 7 M/S (1400 FPM) the capacity will be suitable to meet personnel and material transfer requirements.

Shaft Services

The existing pipe services in the shaft include a 50.8mm fuel line from surface to the 1000mL, a 152 mm diameter process water pipeline, 203 mm diameter dewatering pipeline, and a 254 mm diameter compressed air line extending from surface to 1040mL. Shaft services also include fiber optic communication, leaky feeder radio systems, multi conductor communication and two (2) 15 KV electrical feeder cables to provide power to the mine. Current mine electrical power requirements are fed through one of the two 15KV shaft feeder cables, the second will be powered once mine power demands increase. All shaft services are installed and secured in the service cage (#3) compartment. The shaft services have sufficient capacity to supply the mine, with reserve capacity for future increase in demand.

Ore / Waste Handling System and Loading Pocket

Broken ore and waste rock are hauled to separate ore and waste dumps/rockbreaker arrangements near the shaft at 1000L. Broken material is dumped onto grizzlies and sized with stationary hydraulic rockbreakers. The sized ore material feeds either of two 2,000 tonne capacity rock bins.

The bins below the 1000L grizzly feed the 1040 conveyor way and loading pocket. Ore and waste is fed onto a 54" wide conveyor belt by means of two (one for each bin) electrically powered vibratory feeder. The belt feeds a hydraulically powered diverter chute. The chute directs the ore or waste material to one of two measuring flasks to prepare for skip loading in the shaft. The loading flasks accurately weigh the ore or waste by means of 3 electric load cells per measuring flask. The measuring flasks load the skip in the shaft by means of a hydraulic arc gate and loading lip chute. The vibratory feeders, conveyor belt, diverter chute and measuring flasks are programmed to work in unison, with the production hoist program to allow manual, semi-automatic and fully automatic ore or waste rock extraction

The headframe is of steel construction with insulated metal cladding and equipped with two (2) conventional back legs. The top of the headframe houses one (1) 8 foot sheave wheel for the service hoist and two 12 foot sheaves, for the production hoist. The center line of the sheave wheels is situated 38.675m above surface. The upper limits of travel for all 3 conveyances (cage and two skips) is 35m above surface. The headframe is also equipped with a skip dump and 700 tonne capacity ore bin. The ore material in the bin is loaded into a 40 tonne surface rock truck by means of an IR remote controlled hydraulic arc gate chute.

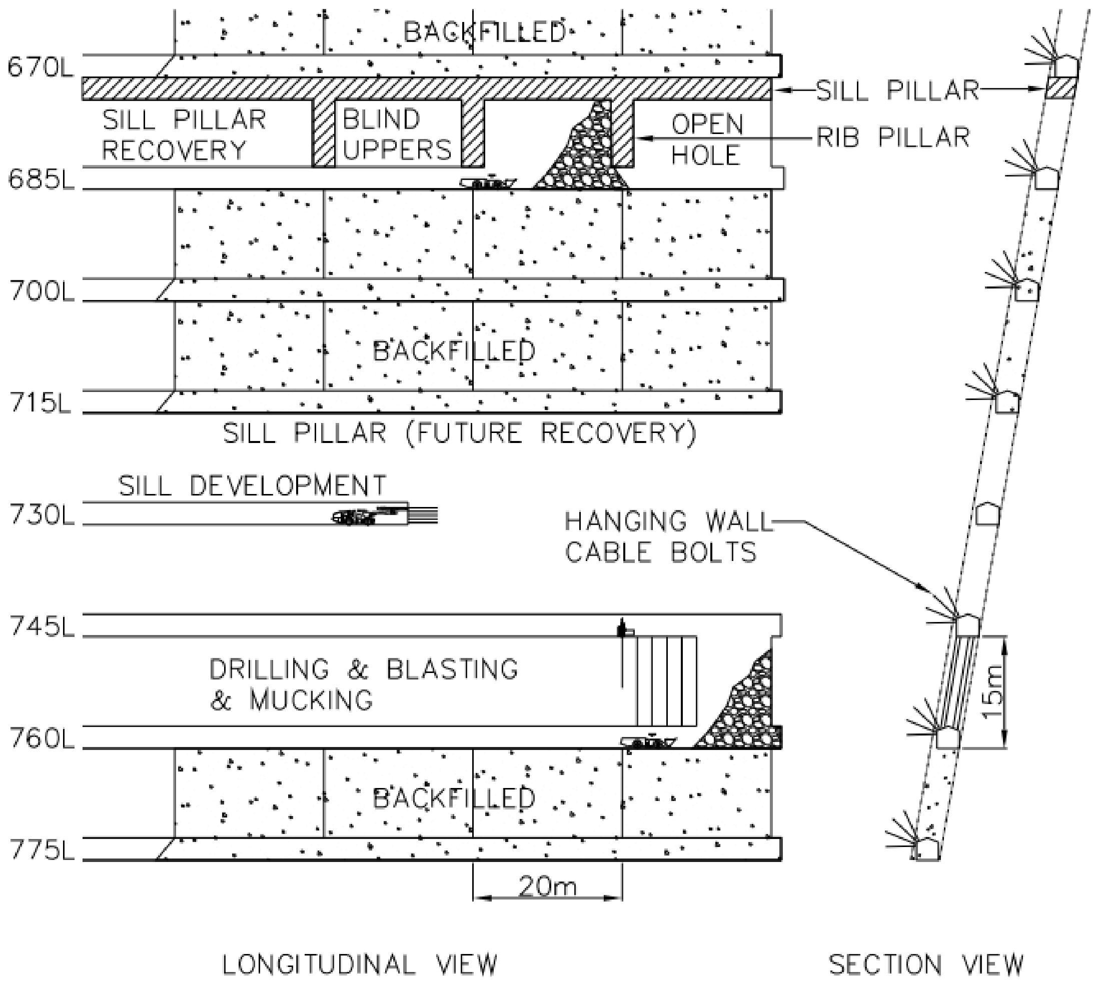
16.3 Stoping Methods

Veins to be narrow vein longhole mined are developed on the level nominally 3.0m wide by 3.0m high under geology control. When a vein has been developed on a bottom and top level and the ore outline has been verified by geology, slashing may be required on engineering control to provide proper access for longhole drilling. A slot raise can then be designed and drilled. Slot raises are typically drilled 2.4m high by 2.4m wide and usually designed at the furthest point from the stope access. Blast holes are then designed and drilled on vertical planes retreating away from the slot raise towards the stope access. Blast holes are typically drilled at 2 ½" in diameter with a burden and toe spacing of 1.2-1.5m and 1.2-1.5m respectively. The blast holes are then timed with the use of detonators blasted with ammonium nitrate/fuel oil in a series of vertical slices retreating from the slot raise. The blasted rock is mucked by remote scoop from the lower level drift.

Below 1000mL onwards, active mining area sublevels have been established at 20-23 m vertical intervals and this sublevel spacing will be maintained for remaining sublevels. On each sublevel, the resource is accessed near the centre (along strike) and stope undercut and overcut sills developed to the east and west extents. Stope lengths are generally 20m along strike however stopes abutting waste or low grade material may be marginally longer or shorter to optimize recovery. A 3 m rib pillar is recommended to be left between down hole stopes that are to be backfilled with waste rock and a 5 m rib pillar between up hole stopes, which will not be backfilled. Longitudinal mining will retreat from the furthest stope from the access, toward the initial access point. The resource is mined “top down” in blocks as ramp development advances. To maintain steady production rates, a mining front is established at every third sublevel. Where a stope is mined up to a previously mined stope in the mining front above, sill pillar recovery is required. Sill pillar recovery requires working on top of backfill and mining uppers stopes, leaving a permanent sill pillar in place below the stope above to contain the unconsolidated rockfill (“URF”). Sill pillars are recommended to be twice as thick as the width of the widest of the two stopes but historically designed at a nominal 3m and planned to fail. No mining or personnel access is authorized above sill pillars. These areas are barricaded with permanent fencing. The upper stopes will not be backfilled and a 5 m rib pillar is recommended to be left to support the hanging wall (and footwall) between stopes.

The mining method is shown in the longitudinal and section view sketches in Figure 16.2.

Figure 16.2: Longitudinal Longhole Mining Method



Ore sills are developed along the strike of the resource under geological control (i.e. under the direction of mine geologists). Where ore widths are less than 8m, the entire sill from the hangingwall to footwall contacts is developed. Where ore widths exceed 8m, the hangingwall contact is followed, with crosscuts developed at preset intervals to expose the footwall contact. Where ore widths allow, a sill drift is developed along each contact, with a pillar left between.

Longholes are primarily drilled with a top hammer drill (current practice), downward from the overcut sill with some holes breaking through into the undercut, and others fanned as required to contour the stope limits. A drop raise is drilled and blasted to create the initial void for production blasting. When mining a sill pillar (below a backfilled stope), uppers drilling is completed from the stope undercut sill.

Longholes are loaded with emulsion explosives. The emulsion is detonated with non-electric blasting caps and boosters.

Broken ore is extracted from stopes using 3.5 and 6 cubic yard LHDs with remote control operation as required for safe extraction.

Mining Dilution and Recovery

Mining Dilution

Two sources of dilution have been considered in estimating the mineral 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 hangingwall rock that has been drilled and blasted to maximize ore recovery and/or maintain favorable wall geometry for stability.

Planned dilution is directly reported from block model data and waste rock within stope wireframes.

Unplanned dilution includes sub-economic mineralization, 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.

Mining Recovery

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

Planned recovery includes the measured and indicated mineral resource that will be accessed, developed, and mined. Measured and indicated mineral resources not included in the mining shapes (i.e. stopes) have not been included in the mineral reserves. Reasons that some measured and indicated mineral resources will not be recovered may include:

- The resource includes 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 adjacent to previously mined stopes that have been backfilled with unconsolidated rockfill.

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

- Poor ground.
- Blasting difficulties (ground does not break properly and cannot be recovered).
- Resource geometry.

- Broken ore that cannot be extracted (i.e. resting on the footwall or around corners).
- Unplanned resource pillars left in place.

A 95% mining recovery (based on site operating experience) has been considered in estimating the mineral reserves.

16.4 Haulage

All ore and waste rock skipped to surface is hauled by trucks to the existing production shaft, 1000L grizzly/rockbreaker stations. Ore hauled from stopes and development above the 505L (inclusively) is hauled directly to surface via the main ramp/portal where it is stockpiled. All ore extracted below 505L is sent to 1000L grizzly/rockbreaker for sizing followed by skipping to surface. 42 and 50 tonne capacity haul trucks are used for these hauls.

16.5 Development

Ramp

The existing ramp extends from surface to 1450L.

The ramp profile is 5m wide by 5m high (arched back) at a maximum gradient of 15 percent.

Sublevel Infrastructure Development

The main access to sublevels are developed 4m wide by 4.5m high to accommodate equipment, services and ventilation. Ancillary development such as electrical substations are developed off the level access and have dimensions to suit the purpose and/or to accommodate the size of the development gear. The infrastructure on sublevels includes:

- Sublevel access drift.
- Sump.
- Electrical cut-out (load centers, starters, communications, etc.).
- Haulage drift/truck load out
- Material storage bays (on some levels).
- Fresh air raise access drives.
- Return air raise access drives.
- Ore and waste pass accesses, finger raise dumps
- Ore and waste storages (remucks)
- Refuge stations (on some levels)
- Backfill stations/ cemented rock fill (“CRF”) plants (on some levels)
- Access to cross cutting ore veins

Ground Support

Primary Ground Support

Ground support is installed in all underground excavations, consistent with current practices. Additional ground support details are included in Item 16.17.

Secondary Ground Support

Geotechnical study work has concluded that under certain conditions secondary ground support (generally referred to as cable bolting) may be required. An allowance has been included for installing cable bolts in the hanging wall of stopes.

16.6 Development Schedules

Development schedules have been completed and updated regularly using Deswik. Mining activities are resourced in the schedule and exported into spreadsheets and Gantt charts for planning and reporting.

16.7 Backfill

Backfilling consists of placing broken development waste muck (unconsolidated rock fill ("URF")) into voids created from stope extraction using scoop trams. CRF has been introduced to be used in applicable situations to increase stability post-extraction of adjacent stoping, and to help maximize ore recovery. The process of adding cement is accomplished by constructed small cement batch plants located underground which take dry form cement and transform it in a cement slurry by adding the correct mixture of water. This slurry is then mixed with waste rock in a mixing pen underground located near its backfilling point. Once mixed by the scoop tram it is hauled and deposited into its backfill stope location.

Paste backfill is being considered to replace the URF and CRF to eliminate the need for sill and rib pillars and maximize recovery.

16.8 Production

The mine operates two shifts per day, seven days per week. Underground crews and maintenance workers work 10 hour shifts. Annual production has been based on 365 days per year.

Production is from a combination of development on vein and longhole stoping – mainly longitudinal, however transverse is used in certain applications.

Table 16.3.

16.9 Production Equipment

The existing surface equipment and underground development, production, and auxiliary equipment fleet will continue to be used, with equipment purchased and rebuilt as required to meet production demands. The mobile equipment fleet (including spares) is summarized in Table 16.1.

Table 16.1: Surface and Underground Mobile Equipment Fleet

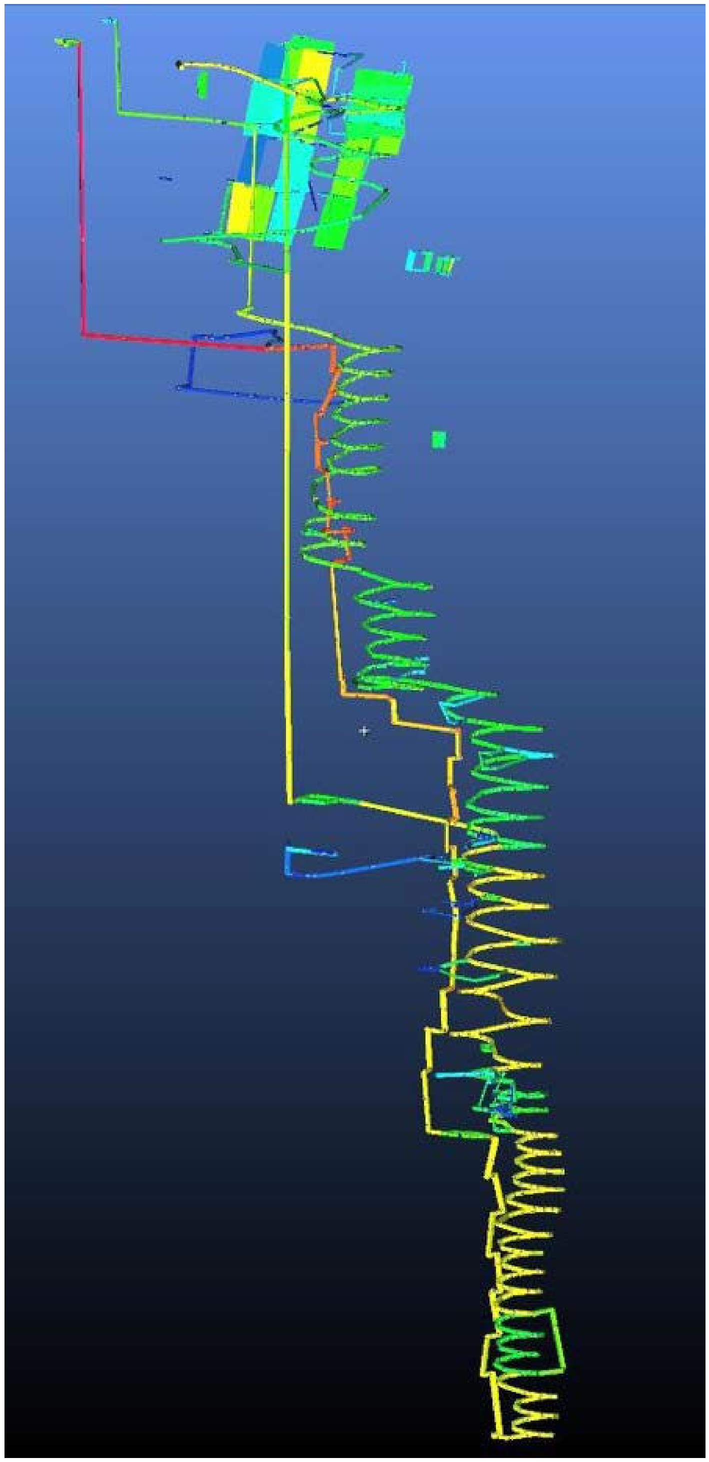
Equipment Type	Fleet
2-Boom Jumbo	3
1-Boom Jumbo	6
LHD – 8 yd.	1
LHD – 6 yd.	7
LHD – 3.5 yd.	12
LHD – 2 yd.	5
LHD – 1.5 yd.	1
35 Tonne UG Haul Truck	4
45 Tonne UG Haul Truck	2
50 Tonne UG Haul Truck	2
Scissor Lift	5
Mechanical Bolter	1
Flat Deck Boom Truck	2
Grader	2
Tractor/Forklift/Minecat	12
Toyota UG Pick-Up	16
Blockholer	2
Transmixer	1
Fuel Truck	1
Surface Truck	1
LH Drill	6
980 Loader	2
Total	**94**

16.10 Ventilation

The primary ventilation system at Bell Creek consists of a pull/push system with all fans controlled with variable frequency drives. This allows for an up-casting shaft and portal above 370mL and the main ramp down casting to the lowest level. The fresh air supply side has two 84-50-1200 600HP fans that can supply a maximum of 280 cms and supports the two 25 mbtu mine air heating system for winter months. The return air side is designed to support three 84-58-1200 900HP fans mounted on top of a 5m diameter raise bore return air raise from surface to 415mL. The balance of the airways will be offset drop raises down to the lowest ramp face. The return air raise ("RAR") system currently has two fans operating to supply 175 cms to the lowest level and can increase to 265 cms when the 3rd fan is installed as mining continues to expand at depth. Implementation of an RAR booster system to support the primary RAR fans in order to reduce the total pressure within the raise system is currently underway for completion in 2022. The booster fan installation location has been developed off the 1370 Ramp as of 2021. To determine the primary flow of the mine, the mine's equipment fleet is studied to determine the appropriate amount of airflow to distribute through the primary ventilation system. Factors for primary flow determination include engine emissions (CO, NO2 & DPM) and average utilized engine HP. Additional considerations for total flow are made for the auto-compression of air along with primary ventilation system leakage.

The ventilation system is shown in Figure 16.3.

Figure 16.3: Bell Creek Mine Ventilation System Model (Venstim)



**Contains no legend – colours are used for distinction*

Mine Air Heating and Cooling

The existing surface fresh air ventilation plants include two ACI-Canefco mine air heaters. Each heating unit has 22.5 MMBH of heating capacity.

Mine air cooling is not expected to be required with the current mine plan.

16.11 Personnel

An existing core group of management, environmental, technical services (engineering/geology), administration, maintenance, supervisory, and production personnel will continue to operate the site. The personnel required to sustain the operation will reduce as activities reduce toward the end of the mine life.

The personnel required on payroll are summarized in Table 16.2.

Table 16.2: Personnel on Payroll

Classification	Persons
Site Management	
Mine General Manager	1
Electrical Superintendent	1
Electrical Foreman	1
Maintenance Foreman	1
Mine General Foreman	2
Administration Staff	
HR Administrator	2
Administrative Assistant	1
Purchaser	1
Warehouse Coordinator	2
Warehouse Clerk	1
Engineering Staff	
Chief Mine Engineer	1
Senior Mine Engineer	1
Mine Engineer	1
Engineer in Training (EIT)	4
Longhole Planner/Coordinator	1
Surveyors	2
Ventilation Planner and Technician	2
Geology Staff	

Classification	Persons
Chief Geologist	1
Senior Mine Geologist	1
Mine Geologist/Geotechnician	3
Resource Geologist	1
Health and Safety	
Safety Coordinator	1
Trainer	1
Environmental	
Environmental Coordinator	1
Environmental Technician	1
Mine Operations Staff	
UG Shift Supervisor	12
Surface Supervisors	1
Construction/Drill/Blast Supervisor	3
Maintenance Staff	
Maintenance Supervisor	2
Hoist Mechanical General Foreman	1
Maintenance Planner	1
Maintenance Clerk	1
Mine Construction/Services	
Construction Miner	10
Underground Labourer	10
Rockbreaker Operator	4
Surface Yard Maintenance Loader/Truck Operator	5
Bazooka Driller	6
Grader/Dewatering Operator	3
Shaft	
Hoistperson	4
Shaftperson	3
Cage/Skip Tender/Deckperson	4
Maintenance	
Lead Mechanic	4
Mechanic	21
Welder	1

Classification	Persons
Drill / Pump Mechanic	2
Mill Wright	6
Lead Electrician	2
Electrician	10
Instrumentation	1
Electrical Design Specialist	1
Mine Development	
Lead Development Miner	8
Development Miners	29
Raise Miner	4
Mine Production	
Blaster	20
Driller	20
LHD Operator	44
Haul Truck Operator	24
Total Personnel	**302**

16.12 Underground Mine Services

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

Electrical Distribution and Communications

Power is delivered underground at 13.8 kV via two new 13.8 kV feeders and 500 MCM size electrical cables installed in the shaft. The power supply will be sufficient for the expansion of the mine into new productions areas defined in the mine plan. Electrical substations (mine load centers) have been located at shaft stations and as required in electrical cut-outs on sublevels.

Underground power delivery is as follows:

- Ramp 4160 Feeder – 350MCM
- Ramp 13.8kV Feeder – 250MCM
- New Shaft Feeders 13.8KV – 2 x 500MCM

Communication has been established throughout the mine via an underground radio network (leaky feeder). In addition, a fiber optic network provides communications for control of pumps, monitoring cameras, refuge station dial phones, fan automation and gas monitoring. Underground shaft stations, electrical substations, some remote workplaces, and refuge stations will have direct communications to surface via pager phone.

The core of the electrical and communications systems have already been put in place and will expand accordingly as the mine develops into new production areas.

Compressed Air

The existing surface compressed air plant includes four Sullair 225 kW, 698 liter/second (1,480 cfm) compressors, and one Sullair 150 kW, 472 liter/second (1,000 cfm) compressor. The overall plant capacity is 3,264 liters/second (6,920 cfm).

Compressed air is delivered underground via the existing 254 mm diameter pipe in the shaft. The underground compressed air distribution system consists of steel piping installed in the ramps and sublevels. Compressed air is required to power pneumatic equipment and/or activities including:

- Jackleg and stoper use.
- Pneumatic Anfo loaders.
- Pneumatic longhole drills.
- Longhole cleaning.
- Refuge station ventilation (pressurizing).
- Pneumatic cylinders for door controls.
- Pneumatic pumps for local dewatering.
- Main shop (pneumatic tools).

Service Water

Currently, all service water required for underground drilling operations, dust suppression, and washing work places is supplied from recycled water inflow from the surrounding rock mass and collected at the Vogel sump. Additional service water will be available (if needed) from surface sources. Service water is supplied to the main levels via the existing 100 mm diameter pipe in the shaft and in the ramp. Service water will be distributed underground via steel pipe in the ramp and on sublevels. Service water will not be potable (i.e. not for drinking).

Mine Dewatering

The mine has a system of sumps on every level that are connected by pumps which deliver the water up to the sump on the level above, or the sump 3 levels above. The 100mm dewatering line discharges approximately 200m^3/ day. With the extension of the shaft down to 1000L, two major pump stations were established at 1040mL & 535mL. All old sumps have their flows redirected to these main pump stations that pump wastewater to surface through a 200mm line in the shaft.

Roadbed Material

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

Crushed/screened rock is sourced from local contractors for use underground and is delivered underground and distributed via production equipment and spread using the existing graders.

16.13 Materials Supply

Bell Creek 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 centers (such as Sudbury, Kirkland Lake, North Bay, and Rouyn-Noranda). Contracts have been established to support current site activities and these will continue to be amended as required.

16.14 Maintenance

There are existing maintenance facilities on surface to support maintenance of surface equipment and smaller fixed plant equipment brought to surface from underground.

An underground maintenance shop has been constructed and equipped at 860L. Mobile equipment can be brought to the shop for servicing, preventive maintenance, and repairs.

16.15 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, Mine Rescue Team, and training facilities.

There is currently a full time Safety Coordinator on site and this position will remain filled for LOM operations. The Safety Coordinator will maintain site safety programs and initiatives. There is one trainer on staff.

16.16 Geotechnical

A geotechnical engineering consultant has been providing ongoing geotechnical support and annual audits since project inception. Their visits typically include a review of the past years' mine performance and assessment of the LOM plan to identify any geotechnical risks.

Mining Method and Stope Sizing

The narrow veins are amenable to long-hole stoping using longitudinal retreat, using an echelon sequence to minimise effects of mining induced stress.

Stope geometry is assessed using the Matthews/Potvin Stability Graph Analysis Method (Potvin 1988) and is conducted on every stope mined. Dilution is similarly reviewed using the Equivalent Linear Overbreak Slough (ELOS) by Clark and Pakalnis (1997). Cable bolting is often used to increased stope wall performance when required.

Stope strike lengths are maximized at 20m, where rib pillars are to remain between stopes in order to control hanging wall stability. Stoping blocks are taken at 4 level intervals where a 3 m sill pillar will remain in order to provide global stability to the stoping areas.

Ground Support

Ground Support Standards for typical ground conditions are summarized as follows:

Non-Yielding Support Primary Support

- 1.8 or 2.4m resin-anchored rebar installed on a 1.1 - 1.2 m x 1.1 – 1.2m pattern with 6-gauge weld-wire mesh screen with push plate used to tie in the leading edge.

Yielding Support Primary Support

- 1.8 or 2.4m cone bolt installed on a 1.1 - 1.2 m x 1.1 – 1.2m pattern with 6-gauge weld-wire mesh screen with no push plates.

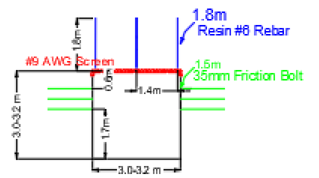
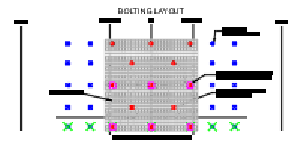
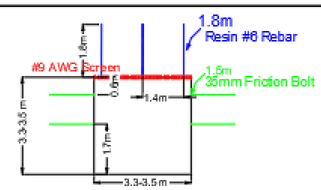
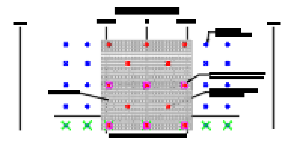
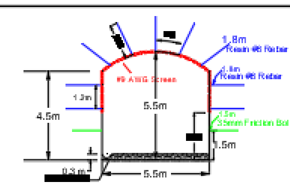
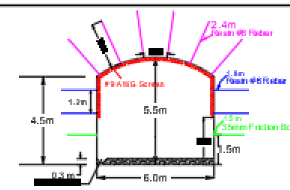
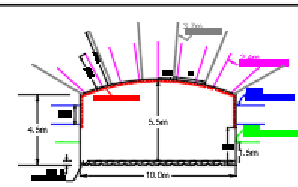
Secondary Support Elements include the following:

- 6.0m long 15.2mm twin-stand bulb cables that are typically installed on a 2.0m x 2.0m pattern.
- 3.7m Super Swellex installed on a 1.5 – 2.0m x 1.5 to 2.0m pattern.

Ground conditions that fall outside what is deemed typical for the site, are specifically designed and may include all or part of the different aforementioned support elements and use of dry mix shotcrete.

Face screening is also a requirement where one sheet of screen is required to be bolted across the development face in large profiles for protection of the development miners. Varying support standards based on excavation conditions are shown in Table 16.3.

Table 16.3: Support Standards

GROUND SUPPORT - MINIMUM REQUIREMENTS (unless otherwise instructed by Engineering)					
PERMANENT AND TEMPORARY EXCAVATIONS FOR ALL LEVELS					
Span		Bolt	Equivalent Spacing	Screen	Additional
3.0 to 3.2m	Back	1.8m long #6 Rebar.	1.2 m x 1.2m		
	Wall	1.5m long 35mm Friction Bolts Installed on a Dice 5 Pattern	1.2 m x 0.9m		
3.3 to 3.5m	Back	1.8m long #6 Rebar	1.2 m x 1.2 m		
	Wall	2 rows of 1.5m long 35mm Friction Bolts	1.2 m x 0.8 m		
3.5 to 5.5m	Back	1.8m long #6 Rebar	1.2 m x 1.2 m	#9 AWG Screen; 3 squares overlap, rebar to pin screen edges;	
	Wall	1.8m long #6 Rebar 1.5m long 35mm Friction Bolt	1.2 m x 1.2 m	1.8m #6 Rebar installed within screen. 1.5m long 35mm Friction Bolts to be used outside screen and to within 1.5m of the floor. ≥3.5mH: Screen must extend to within 2.4m of floor Use 0/0 Mesh Straps on brows/corners	
5.6 to 7.3m	Back	1.2 m x 1.2 m	1.2 m x 1.2 m	#9 AWG Screen; 3 squares overlap, rebar to pin screen edges;	
	Wall	1.8m long #6 Rebar 1.5m long 35mm Friction Bolt	1.2 m x 1.2 m	1.8m #6 Rebar installed within screen. 1.5m long 35mm Friction Bolts to be used outside screen and to within 1.5m of the floor. ≥3.5mH: Screen must extend to within 2.4m of floor Use 0/0 Mesh Straps on brows/corners	
7.4 to 11m	Back	2.4m long #6 Rebar with 3.7m Super Swellex Bolts, 3.7m long Spin Cables (25T Capacity) or 16mm dia. by 6m long bulge double cablebolts	Rebar - 1.2m x 1.2m pattern Swellex, 3.7m long Spin Cables (25T Capacity) - 2.0m x 2.0m pattern Cablebolts - 2.5m by 2.5m pattern	#9 AWG Screen; 3 squares overlap, rebar to pin screen edges;	
	Wall	1.8m long #6 Rebar 1.5m long 35mm Friction Bolt	1.2 m x 1.2 m	1.8m #6 Rebar installed within screen. 1.5m long 35mm Friction Bolts to be used outside screen and to within 1.5m of the floor. ≥3.5mH: Screen must extend to within 2.4m of floor Use 0/0 Mesh Straps on brows/corners	
Greater than 11m	Ground support requirements will be designed by Engineering and prints issued specific for that area.				

Infrastructure

Large excavations and critical infrastructure are established away from lithological contacts and large-scale structural features (faults and dykes) where possible. Numerical modelling and historical site experience is also used.

Monitoring

Geotechnical and ground support monitoring includes:

- Routine geotechnical inspection and damage mapping;
- QA/QC on ground support elements;
- Development and Stope over- and under-break assessments;
- Falls of ground;
- Instrumentation (micro-seismic monitoring system, extensometers, slough meters etc.); and
- Numerical modelling.

Data from routine monitoring programs can be readily used to optimize stope and development design and frequently identifying opportunity for:

- Increasing stope size (where stopes have historically performed well); or
- Reducing unplanned dilution by reducing stope dimensions and/or installing cable bolts in critical spans or high dilution risk areas.

Backfill

URF is used to backfill stopes once the ore has been extracted. This fill is sourced from broken waste development as describe in section 16.8.

CRF has been recently introduced in the converging vein areas in order to maximize ore recovery. This process is described in section 16.8.

17 Recovery Methods

Ore from Bell Creek is hauled from the surface stockpile to the mill's crusher, located on site. The designed 5,359 tonne per day processing plant consists of a one stage crushing circuit, ore storage dome, one-stage grinding circuit with gravity recovery, followed by pre-oxidation and cyanidation of the slurry with carbon-in-leach ("CIL") and CIP recovery. Ore from the Company's Timmins West Mine is also processed through the Bell Creek Mill.

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 Bell Creek 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 tpd to 1,500 tpd. LSG purchased the Bell Creek Mill in 2008 and re-commissioned it for operation in 2009 at 1,000 tpd. The Bell Creek Mill was expanded to 2,000 tpd in the fourth quarter of 2010 and was further expanded to 2,500 tpd in 2011. The Phase 2 expansion (to a design capacity of 3,300 tpd) was completed in the third quarter of 2013. Since then, the plant has demonstrated that it can achieve a higher throughput than the design capacity. In 2020 the Bell Creek Mill was further debottlenecked to achieve a max one day tonnage of 6,000tpd, which combined with a 91.14% run time and 2% moisture yields an average throughput of 5,359tpd.

17.2 Bell Creek Mill Process Description

Ore feed is dumped directly onto a 16" by 16" grizzly at the truck dump and a remote controlled rockbreaker is used to break up the oversized material. The ore is fed with an apron feeder to a series of conveyors reporting to a scalping grizzly feeder in the crushing building. The openings between the fingers on the grizzly feeder are 3.5”, with the oversize reporting to a 44” x 34” C110HD Metso jaw crusher. The jaw crusher is set to a closed side setting of 4”. The discharge from the crusher is combined with the -3.5” material from the grizzly feeder and conveyed to the ore storage dome. The dome has a 24,000MT storage capacity, 6,000MT of which is live. Three apron feeders pull ore from the dome and convey it to the SAG mill building.

The grinding circuit consists of one 22’ diameter by 36.5’ long low aspect ratio Metso SAG mill and is powered by twin 6,250 horsepower (4,600 kW) motors. The SAG mill is a repurposed ball mill converted to a SAG by installing ½” grates and a trommel with ½” openings. Oversize from the trommel reports to a collection bin which is fed back into the SAG mill feed chute. Undersize from the trommel reports to a pumpbox which feeds a cyclopac equipped with 6 outlets. Five of the outlets are fitted with 20” Krebs gMAX cyclones, and the other outlet is capped and available for possible future expansion. The SAG cyclone overflow reports to the thickener feed box and the underflow reports back to the SAG mill. A portion of the cyclone underflow is fed to a 30” Knelson. Knelson concentrate is collected in a hopper and is pumped daily to the refinery for further treatment, while the Knelson tails flow by gravity back to the SAG mill. Target grind is 80% passing 200 mesh.

Flocculent is added to the cyclone overflow and is pumped to a 20 m diameter thickener. The slurry from the cyclones is 25-35% solids by weight with the thickener underflow at 55-60% solids by weight. The thickener overflow water is pumped to the process water tank and reused in the grinding process. The thickener underflow 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 (“m^3”). Pure oxygen is sparged into the first three leach tanks to passivate the contained pyrrhotite in the ore, as well to maintain a target dissolved oxygen level, which is required for efficient gold dissolution in cyanide. Cyanide is then added to leach tank #4, or #5.

There are three CIL tanks equipped with Kemix screens having a total volume of 7,500m^3. The CIL tanks contain 8 - 10 grams of carbon per liter 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 5,500 g/t. Loaded carbon is pumped from CIL #5, screened, washed, and then transferred to the loaded carbon tank. Carbon in the CIP and CIL tanks is advanced counter-current to the flow of slurry in the circuits.

The slurry from CIL #1 tank reports to the CIP circuit and is split into two trains of three CIP tanks in parallel with approximately 45 grams of carbon per liter of slurry. Recovery of the gold from the carbon is a batch process with carbon being stripped at a rate of 3.5 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.

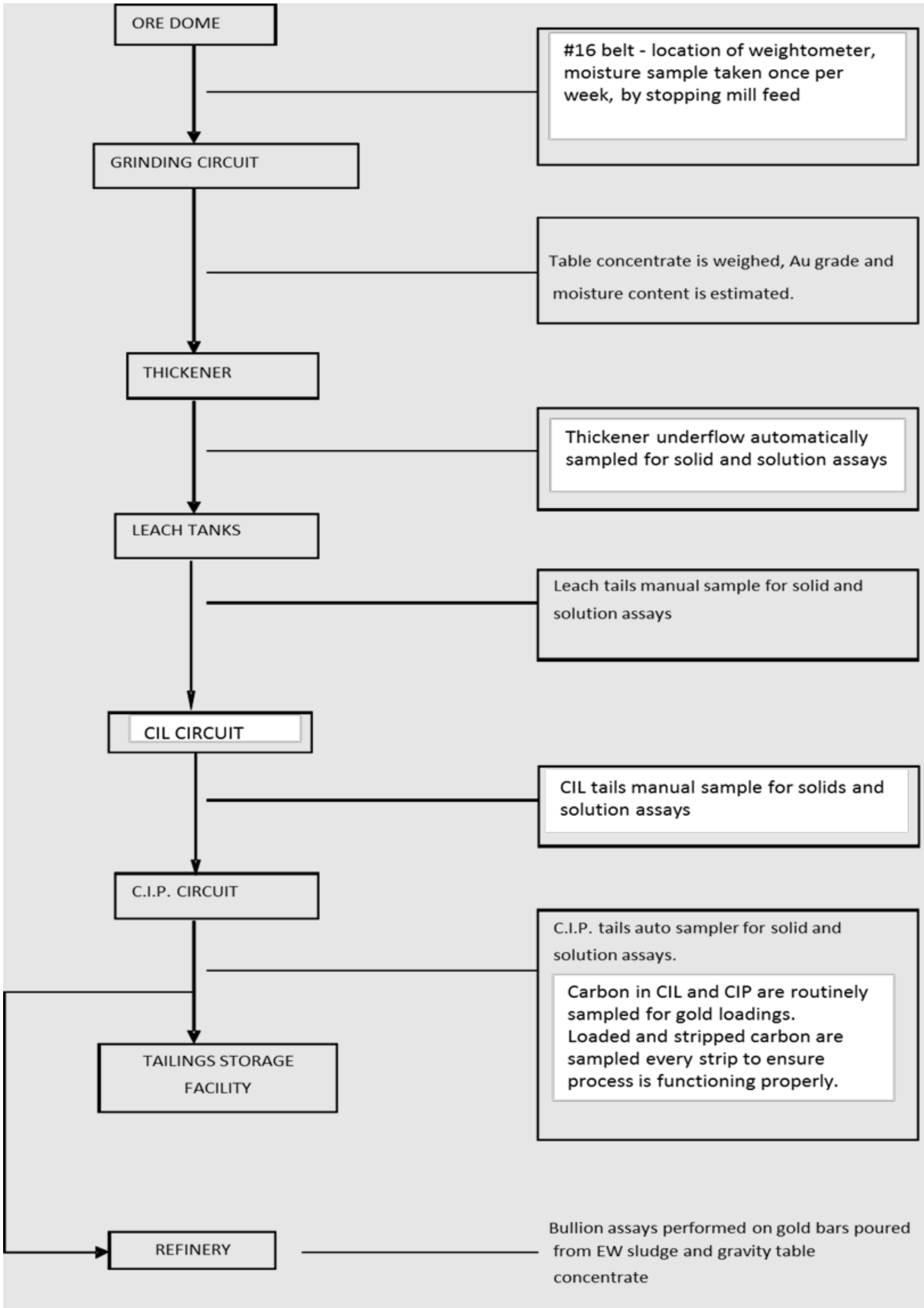
The gravity gold material collected from the Knelson concentrator is transferred to the refinery and a gravity table is used to increase the gold content. The concentrate is then dried, reagents are added and the material is melted in the induction furnace. The gravity concentrate and the CIP gold sludge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

17.3 Metallurgical Balance

A metallurgical balance is conducted daily based on the tonnage from the 4 roller belt weightometer located on the feed conveyor to the SAG mill. 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 moisture content of the gravity gold collected, 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 for tank level, percent solids, solids grade, solutions grade, carbon concentrations and grade (where applicable). 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 cathodes from the cells 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. See Figure 17.1 for the process and sampling points.

Figure 17.1: Simplified Milling Process and Sampling Points



17.4 2021 Mineral Processing Results of Bell Creek Mine Ore

The actual processing results of Bell Creek material during 2021 are shown in Table 17.1.

Table 17.1: Bell Creek Mine Material Processed in 2020

Ore Type	Tonnes Processed	Grade (grams Au/tonne)	Recovery
Bell Creek Mine	595,184	3.02	95.39%

Gold recovery from all Bell Creek 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 32% through this operational period.

18 Project Infrastructure

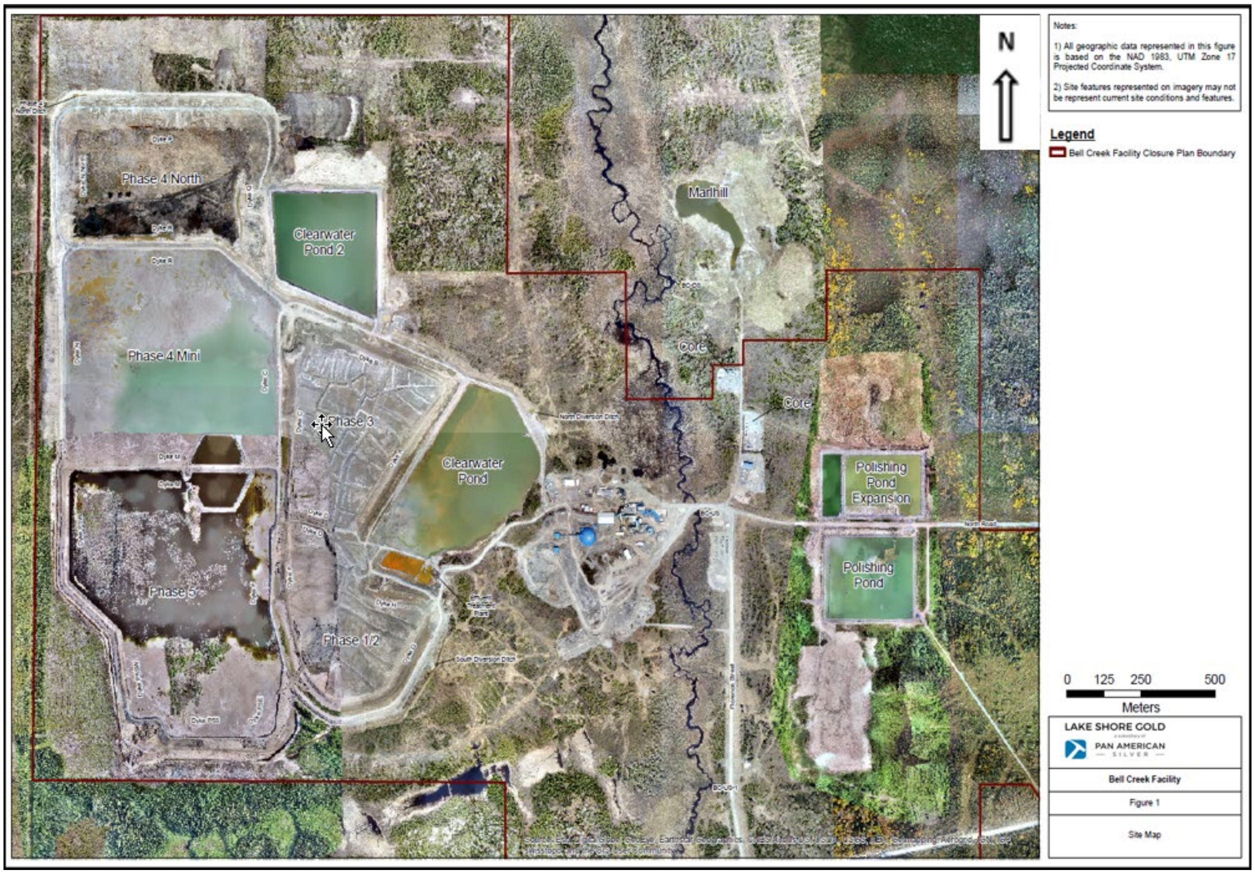
18.1 Bell Creek Mine Site

Bell Creek is a mature mine and the development and construction of the underground mine infrastructure and surface facilities to support mining the deposit has been completed. The deposit has been in commercial production since 2012.

The existing surface infrastructure at the Bell Creek Mine is shown in Figure 18.1 and includes:

- Access roads, site grading and security gate house.
- Shaft headframe, collar house, and hoisting plant.
- Compressed air plant.
- Process water supply.
- Portal and main ramp to underground.
- Electrical services infrastructure and distribution.
- fresh air ventilation fans and mine air heaters.
- Thunder Creek 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.

Figure 18.1: Bell Creek Surface Infrastructure



18.2 Bell Creek Mill Site

All mined material to date from Bell Creek Mine has been milled at LSG's existing Bell Creek Mill. All future production from the mine will also be processed at the Bell Creek Mill.

The Bell Creek tailings management area ("BCTMA") is part of the Bell Creek Complex ("BCC"). The facility first received ore from Bell Creek in 1986 at an initial rate of 300 tpd and later increased to 1,500 tpd by 2002. Production from Bell Creek ceased in 2002 and the tailings facility was placed in a state of inactivity (care and maintenance) from 2002 to 2008. The Bell Creek Mill resumed operation in the last quarter of 2008 and the tailings facility was reactivated. In 2016 the Bell Creek Mill processed material from both Bell Creek and Timmins West Mine at a nominal rate of 3,398 tpd.

The BCTMA is located west of the Bell Creek Mill, covers an area of approximately 150 ha, and includes the following:

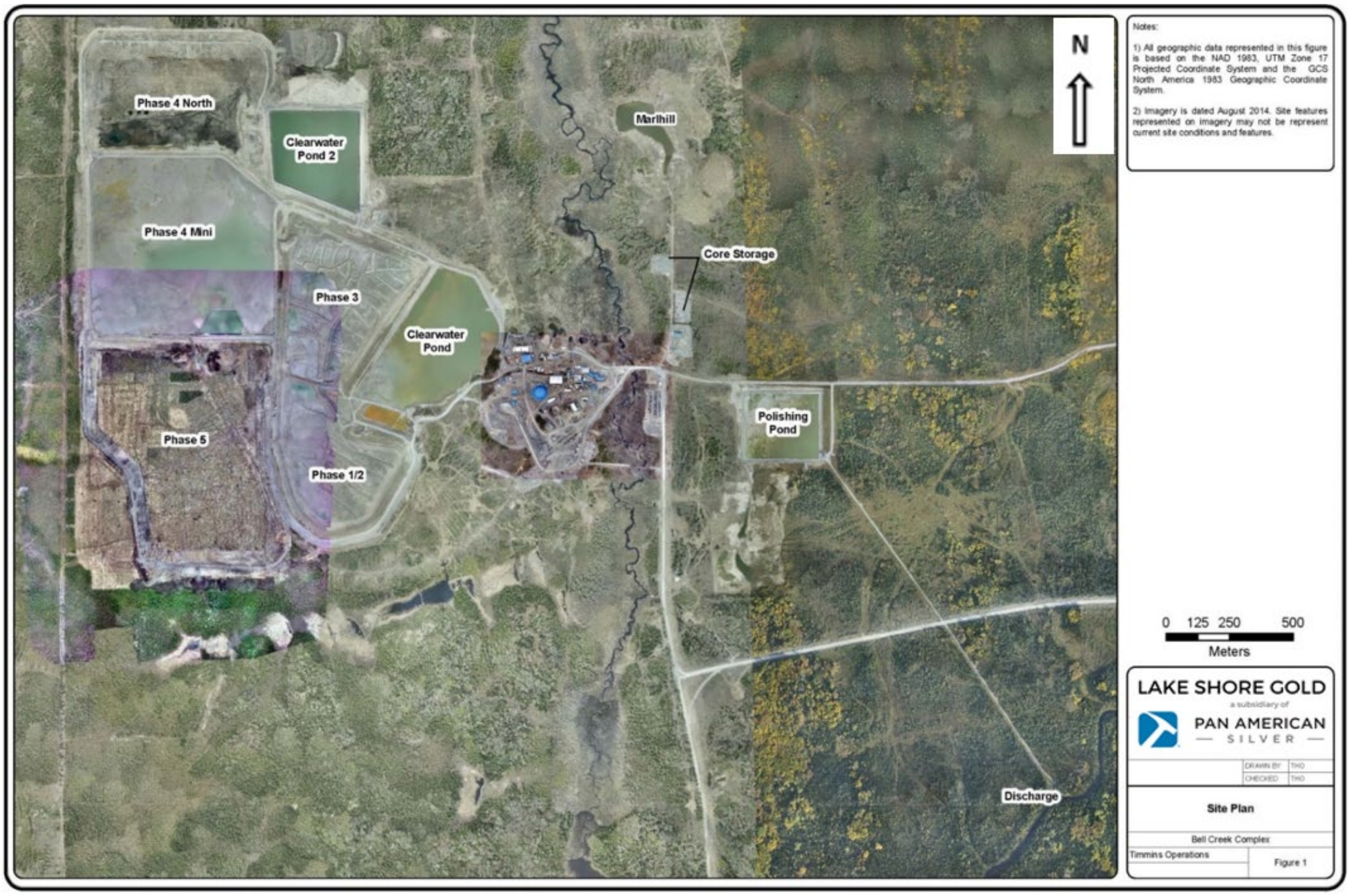
- Five tailings cells (Phase 1/2 cell, Phase 3 cell, Phase 4 Mini cell, Phase 4 North and Phase 5);
- Two clear water ponds (Clear Water Pond and Clear Water Pond 2);
- Effluent treatment plant and sludge settling pond; and
- North and south diversion ditches.

Tailings are pumped in a conventional slurry stream (45% to 50% solids) from the Bell Creek Mill to the tailings facility for deposition.

The Bell Creek Mill is permitted to 6,000 tpd. The Phase 4 Mini cell was constructed in 2014 and subsequently raised in 2015. Phase 4 North cell was constructed and commissioned in 2016 and Phase 5 was constructed and completed in 2018. In 2015 excavation of Phase 3 commenced to provide approximately 130,000 tonnes of tailings to Timmins West Mine as paste backfill in the underground workings. Tailings excavations continues as required for annual backfill requirements of TWM.

Also in 2015 a "Bell Creek Tailings Facility – Operations, Maintenance and Surveillance Manual" was completed in November to include all aspects of managing the tailings facility. The document was created with assistance from the Canadian Dam Association and Mining Association of Canada guidelines. The Bell Creek Mill is shown in Figure 18.2.

Figure 18.2: Bell Creek Mill Facility



19 Market Studies and Contracts

19.1 Contracts and Marketing

Gold Sales

Bell Creek Mill produces gold in the form of doré bars. The bars are a blend from the Timmins West Mine and Bell Creek. The doré bar's historical weighted average gold grade has been 84.9% and has ranged between 61.6% and 91.7%. The historical weighted average silver grade has been 9%.

The weight of the doré bar combined with the assay values (site assay and as well as from an independent laboratory for the purpose of comparing them to the refiner assays) allows the calculation of gold and silver contents and thus the overall value of each shipment.

LSG refines its doré bars at Asahi refinery in Brampton, Ontario, Canada. Asahi credits the Company with 99.9% of the estimated gold content shortly after doré bars are delivered to Asahi's vault in Brampton, Ontario.

Once final doré bar assays have been exchanged and agreed upon between the Company and Asahi, the remaining gold and silver contents are credited to the Company's account. In the agreement with Asahi, the terms, rates and charges are within industry norms.

Fine troy ounces refined at Asahi from the Company's doré production are sold to various customers based on the London Bullion Market Association daily settlement prices for gold and silver. Transportation costs, insurance, refining, processing, and other charges are paid to the refinery. The terms contained within the sales contracts are typical and consistent with standard industry practices and are similar to contracts for the supply of doré elsewhere in the world.

Currently, there are no forward sales or hedging for gold.

Gold Market

Markets for the gold refined from the doré, produced by the Company are readily accessible. These are mature, global markets comprised mainly of large bullion banks and merchants located throughout the world. There are no material contracts required for property development and mining.

19.2 Review by the Qualified Person

The Qualified Person responsible for this section of the Technical Report has reviewed the contract terms, rates, and charges for the production and sale of the doré and concentrates, and considers them sufficient to support the assumptions made in the mineral resource and reserve estimates.

20 Environmental Studies, Permitting, and Social or Community Impact

20.1 Regulatory and Framework

All of the required provincial, federal and municipal permits, approvals and authorizations have been obtained (and amended from time to time) for the Bell Creek Facility to allow for operations and project development, which are described in Table 20.1. Additional permit applications or amendments are dependent on site level or legislative changes and are initiated as required. Adherence to applicable legislation and general environmental compliance is achieved through the implementation of a site-level Environmental Management System and the Mining Association of Canada's Towards Sustainable Mining program.

There are no known environmental issues that could materially impact the ability to extract the mineral resources or mineral reserves.

Table 20.1: List of Main Bell Creek Facility Environmental Permits and Approvals

Permit Type	Number
Environmental Compliance Approval – Industrial Sewage	2679-AW6LF3
Environmental Compliance Approval – Air	8702-BNAL5P
Permit to Take Water – Mine Dewatering	3835-BEZJ48
Permit to Take Water – Marlhill Pit	2268-BNAS7C
Production Closure Plan Amendment	NA

20.2 Mine Waste Disposal, Site Monitoring and Water Management

There are various monitoring, inspection and reporting programs that occur at the Bell Creek Facility to support tailings and water management and environmental compliance. They include discharge, surface and groundwater monitoring, receiver environmental effects monitoring, waste rock and tailings Acid Rock Drainage and Metal Leaching testing, general site and tailings inspections and compliance reporting. Third party Dam Safety Inspections and Dam Safety Reviews are completed annually and every 5 years, respectively, by the Engineer of Record or an independent consulting firm.

Waste rock at the Bell Creek Facility is used as backfill in the underground operations or for various projects on surface. Tailings generated from mill processing are stored in the BCTMA. To ensure environmental aspects are identified and managed, they both undergo regular Acid Rock Drainage and Metal Leaching testing as per Ontario Regulation 240/00.

Water for the operation of the mill is 100% reclaimed from annual precipitation. Precipitation that accumulates on and around the tailings facility is captured and pumped to the mill. Excess water is treated and discharged to the environment.

Water required for underground operations is collected in a sump system. Excess water is pumped to surface ponds, and ultimately discharged to the environment.

The water systems are adequate for current operations. An upgrade to the effluent treatment plant would be required if the tailings catchment area is expanded.

20.3 Social and Community Factors

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

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

An Impact and Benefits Agreement ("IBA") was signed in September of 2016. The IBA outlines how the company and the Indigenous communities will work together in the following areas: education/training of Indigenous community members, employment, business and contracting opportunities, financial considerations and environmental provisions.

20.4 Project Reclamation and Closure

A Closure Plan Amendment for the Bell Creek Facility is filed with the Ministry of Northern Development, Mines, Natural Resources and Forestry. Rehabilitation measures are described within and will be implemented at closure.

Closure cost estimates for the Property are updated with each material change on site, such as an expansion or build, as per Ontario Regulation 240/00. The present value of the final site reclamation costs for the Property is estimated to be approximately $10.4 million as at February 2021. Monies are provided in the form of a surety bond.

21 Capital and Operating Costs

The estimated operating costs are presented in US dollars and are based on operating experience at the Bell Creek Mine and the Bell Creek Mill. Capital expenditures are limited to sustaining capital requirements. Project capital may be required if economically justified or if there are further substantial increases to the mineral reserves.

21.1 Capital Costs

The costs associated with underground infrastructure installation and construction projects. The costs include, ventilation system expansion, dewatering system expansion, and ore/waste handling infrastructure as the mine expands into new production areas. The estimated costs were developed based on operating experience and/or interaction with vendors/contractors.

Raise Development

Raise development includes all vertical development to support the mine design for ventilation and material handling purposes. Larger raises will be completed by either Alimak or Raise Boring methods.

Electrical Projects

Capital costs related to electrical infrastructure include additional surface substation upgrades, infrastructure maintenance and general upgrades to instrumentation.

Geology and Diamond Drilling

Diamond drilling and related labour and consumables for drilling inferred resource (for potential conversion to indicated) has been included in the capital costs.

Capital Equipment and Critical Spares

The capital costs related to mobile equipment includes purchase of equipment to replace current fleet and rebuilds to the current fleet.

Bell Creek Mill Related

The estimated costs associated with mill site related initiatives at the Bell Creek Mill and tailings facilities. The estimated costs were developed by LSG operations and projects personnel with experience in the area, and have been based on operating experience and/or interaction with vendors/contractors.

The sustaining and project capital costs for the calendar year 2022 have been estimated and are shown in Table 21.1. The sustaining capital expenditures vary from year to year depending on the requirements of the mine operation. Those sustaining capital expenditures related to the Bell Creek Mill tailings facilities are primarily dependent on the construction requirements during the year to maintain tailings storage capacity which is used by both the Bell Creek and Timmins West mines. The project capital expenditures are an estimate of the 2022 portion of expenditures for the construction of a paste backfill plant and piping network to replace the existing backfill system in addition to an allowance for exploration drilling at the Whitney and Wetmore properties. The new paste backfill system is expected to improve backfill quality and availability and to increase resource recovery.

Table 21.1: Sustaining Capital Cost Summary for 2022

Bell Creek 2022 Capital	Sustaining Capital for 2022 US$M
Mine Equipment and Infrastructure	$8.5
Bell Creek Mill and Surface Facilities	$1.3
Bell Creek Mill Tailings Facilities	$14.8
Geology / Exploration	$2.4
Total Sustaining Capital	$27.0
Project Capital	$12.0
Total Sustaining & Project Capital	$39.0

21. 2 Operating Costs

The LOM operating costs include both direct and indirect costs. The costs are based on the Company's operating experience at Bell Creek from 2012 through 2021 and/or developed from engineering first principles. The operating cost is forecasted to be $89.64 per tonne as summarized in Table 21.2.

Table 21.2: Operating Costs Summary

Item	**$US per Tonne**
Mining	$70.55
Processing	$19.09
Total Operating Costs	**$89.64**

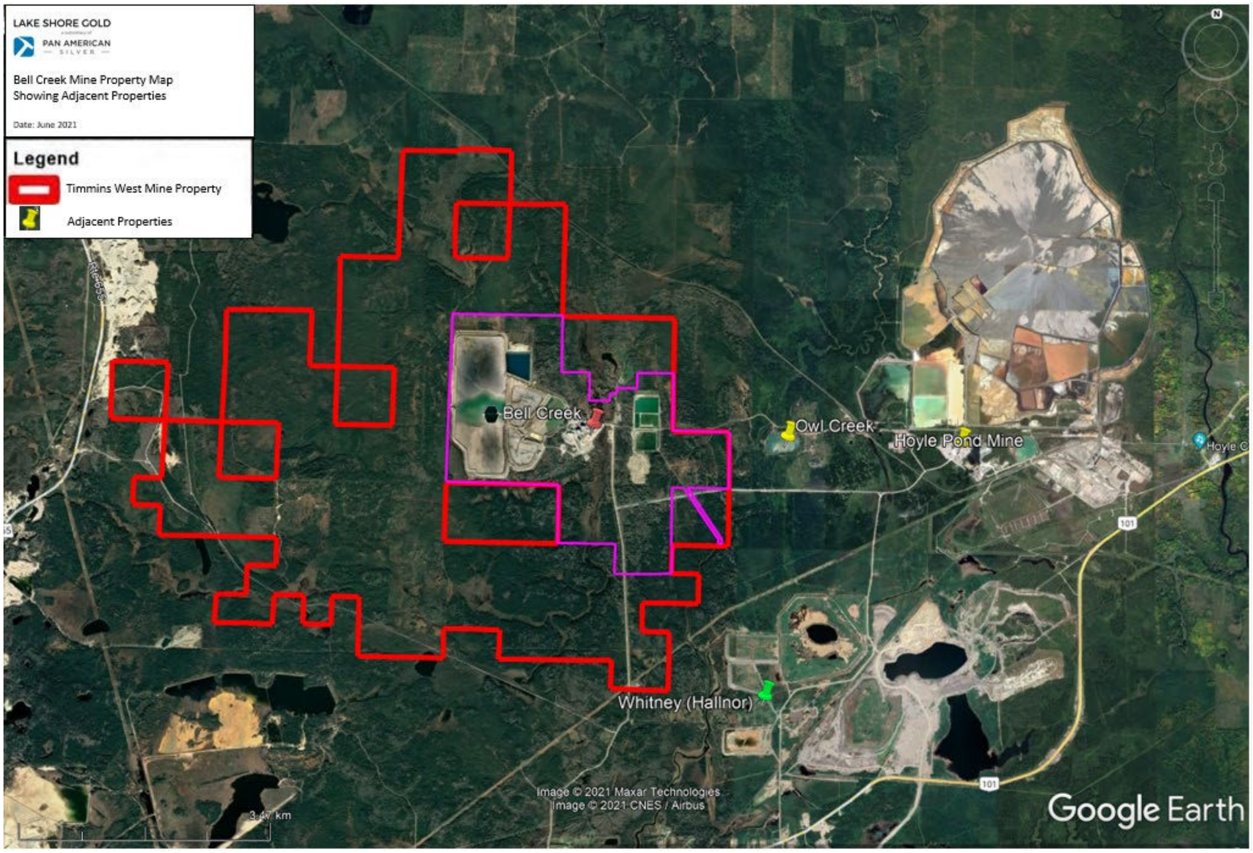
22 Economic Analysis

An economic analysis has been excluded from this Technical Report as Bell Creek is currently in production and this Technical Report does not include a material expansion of current production.

23 Adjacent Properties

Adjacent properties to the Bell Creek Property include the Owl Creek pit and Hoyle Pond mine controlled by Newmont Gold.

Figure 23.1: Bell Creek Mine – Adjacent Properties



23.1 Owl Creek Pit

The past producing 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 wall rocks in two zones within a package of east striking, steeply north dipping, volcanic and sedimentary rocks. At the West Zone, 1,729,603 tonnes 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 greywacke and argillite. Basalt/greywacke contacts are locally marked by graphitic-carbonaceous argillite, strike-parallel faults, and massive quartz veins. Deformed quartz +/- ankerite veins occur along the graphitic sedimentary/volcanic contacts and in gently to moderately dipping fractures in basalts, and, to a lesser extent, in greywackes. 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.

23.2 Hoyle Pond Mine

The operating 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 0.2m to 7m with a minimum mining width set at 1.5m, Butler (2008).

Hoyle Pond has produced in excess of 4.2M ounces of gold since production started in 1985 (**source: http://http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=OFR6374**).

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 Other Relevant Data and Information

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

25 Interpretation and Conclusions

An updated mineral resource estimate has been completed for Bell Creek using new information. The mineral resource estimate (reported exclusively from mineral reserves) for the Bell Creek contains 2.41 million tonnes at 3.43 g/t for 265,800 ounces of gold classified as measured resources, 4.17 million tonnes at 2.80 g/t for 375,700 ounces of gold classified as indicated resources, and 3.77 million tonnes at 3.06 g/t for 371,600 ounces of gold classified as inferred resources.

All resources have been depleted for mining up to the effective date of this Report, June 30, 2021. The mineral resource for Bell Creek is reported using a base case cut-off grade of 1.8 g/t for internal continuity purposes.

The estimated total proven and probable mineral reserves (diluted and recovered) for Bell Creek contains 2.44 million tonnes at 3.03 g/t for 237,300 ounces of gold and 2.69 million tonnes at 2.89 g/t for 249,200 ounces of gold, respectively.

The drilling, development and mining completed since the last mineral resource update on June 30, 2020 shows an overall increase in mineral reserves of 6,800 ounces and an increase in mineral resources of 7,600 ounces in all resource categories. Resource changes are:

- an increase in the measured category of 49,900 ounces,
- an increase of 73,800 ounces in the indicated category and
- a decrease of 116,100 ounces in the inferred category.

This overall decrease in mineral resource ounces is mainly due to

- the conversion of mineral resources to mineral reserves as demonstrated by the replacement and overall increase in proven and probable mineral reserves of 6,800 ounces between the 2020 midyear and 2021 midyear models and
- depletion of 67,800 ounces from mining

The Bell Creek measured and indicated mineral resources increased by 49,900 ounces and 73,800 ounces respectively due to the conversion of material when conducting close spaced infill drilling. The inferred mineral resources decreased by 116,100 ounces due to the inability to drill the deeper projections of the Bell Creek zones from the 1135mL exploration drift. Exploration platforms have been excavated on the 1345mL in Q2 and Q3 of 2021 that will allow drilling the deeper parts of the deposit.

The mine design used for the updated mineral reserve estimate is based on existing surface and underground infrastructure, and operating experience gained since commercial production commenced. The majority of the main mine infrastructure (surface and underground) is in place, equipment has been purchased, and the Bell Creek mill expansion has been completed to meet current production requirements. Bell Creek Mine successfully uses the longhole mining method which is commonly used worldwide for deposits with similar geometry and conditions. The operation also uses common, proven mining equipment and has experienced management and mine operations personnel. The Timmins area has a significant, well-established mining service/supply industry to support the operation.

Through years of operating experience, Bell Creek Mine has implemented the systems and programs (i.e. health and safety, environment, training, maintenance, operating procedures, etc.) necessary to sustain production. This experience has also provided a solid basis for estimating the capital and operating costs used in preparation of the LOM plan.

To estimate the mineral reserves, the following steps (summarized at a high-level) were used by mine planning personnel. The measured and indicated mineral resources were isolated from inferred mineral resources from the block models and assessments were made of the geometry and continuity of each of the mineralized zones. Ongoing geotechnical evaluations were taken into account in the assessment and assignment of appropriate mining methods and stope sizes. Individual stope designs (wireframes) were then created in three dimensions. These stope wireframes were queried against the block models to determine the in-situ mineral resource. This allowed for fair inclusion of internal dilution from both low grade and barren material. Additional factors were assigned for external dilution (with or without grade) dependent on the specific mining method and geometry of each stoping unit being evaluated. Finally, a recovery factor was assigned to the overall mineral reserves to allow for in-stope and mining process losses. Stope cut-off grades were estimated to determine which stopes to include in the mineral reserves. Detailed mine development layouts and construction activities were assigned to provide access to each of the stoping units. A detailed LOM development and production schedule was prepared to estimate the annual tonnes, average grade, and ounces mined to surface. Development, construction, and production costs were estimated to allow an economic assessment to be made comparing the capital and operating expenses required for each area to the expected revenue stream to ensure economic viability.

All capital costs required for all surface and underground facilities at Bell Creek Mine and relevant portions of the Bell Creek mill facility have been included in the LOM plan. No contributions from the Timmins West Mine's mining operations (positive or negative) have been considered.

Key outcomes of the mineral reserves justify continued mining at Bell Creek Mine.

Risks

The mineral resource used to estimate the Bell Creek mineral reserves and develop the LOM plan are almost equally weighted between indicated mineral resources and measured mineral resources. However, the realized grade in any mining plan has the greatest impact on financial returns. Infill and definition drilling is ongoing to add confidence to the LOM plan. Ongoing diamond drilling programs are planned and will need to be funded 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 could increase the stope cut-off grade and reduce the mineral reserves.

Currency fluctuations are also affected by factors which are beyond the control of the Company. Stronger than predicted Canadian dollar (versus the US dollar) could increase the stope cut-off grade and reduce the mineral reserves.

Recent supply chain issues in the global market can also affect pricing forecasts on certain items critical to mining (ground support, construction steel, equipment, etc.) due to variations in supply and demand.

Local competition from recent mine expansion and additional producers, explorers, and other mining related activity has led to difficulties in retention/recruitment and an increase to labour rates across all disciplines (i.e. underground specialized labour, technical personnel).

Unforeseen geotechnical conditions due to changing lithology, previously unidentified structures, seismic events, or higher stresses from mining at increasing depths can affect the operating costs and require additional ground support and new support mechanisms to stabilize the ground and maintain production.

Operating and capital costs determined as the basis for estimating the mineral reserves are based on actual performance metrics at Bell Creek. 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 Bell Creek.

26 Recommendations

Based on recent work to complete the resource update, the following recommendations are made for resource estimation and resource development:

1. Implement definition and exploration drilling to refine shapes and grades for existing resources and to expand the overall resource base for the future. Review this program on an annual basis.

2. Complete exploration drilling at Bell Creek in attempt to further increase the resource base.

Suggested underground diamond drilling programs are outlined as follows:

Underground drilling at Bell Creek for 2022 is proposed to be approximately 53,600m of combined operating, capital and exploration drilling and development for a total cost of approximately US$4.3 million.

Of this total, approximately 47,300m (for approximately US$3.6 million) are for operations and capital drilling to support the 2022 mine plan as well as infill drill for future mining. The remaining 6,300m (for approximately US$0.7 million) are planned for near mine exploration drilling and development, primarily testing the down plunge extents of the deposit.

There are additional recommendations for mine infrastructure which will look to help grow reserves and extend mine life. These are as follows:

1. Conduct a study on the effect of a paste backfill plant at Bell Creek Mine. Adding this infrastructure may help with: geotechnical stability post stope extraction at increasing mining depths; increased ore recovery by removing the need for pillars; and providing a potential alternative to tailings disposal leading to reduced costs in future expansions of the tailings management area.
2. Conduct a study on extending the shaft depth. A deeper shaft with ore skipping located at depth may help reduce ore handling costs, reduce haulage requirements, reduce travel time, and increase production time for personnel, while helping increase ultimate reserve depth.

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28 Date, Signatures, and Certificates

This Report titled "National Instrument 43-101 Technical Report, Updated Mineral Resource and Mineral Reserve Estimate for the Bell Creek Mine Property, Hoyle Township, Timmins, Ontario, Canada" having an effective date of June 30, 2021 was prepared under the supervision of the following Qualified Persons:

Dated at Timmins, Ontario

February 18, 2022

(Signed & Sealed) "Eric Lachapelle

Eric Lachapelle, P.Eng.,

Manager, Technical Services

Lake Shore Gold Corp.

Dated at Timmins, Ontario

February 18, 2022

(Signed & Sealed) "Alain Mainville"

Alain Mainville, P. Geo.,

Geology Manager

Lake Shore Gold Corp

Dated at Timmins, Ontario

February 18, 2022

(Signed & Sealed) "Dave Felsher"

Dave Felsher, P.Eng.,

Mill Manager

Lake Shore Gold Corp

CERTIFICATE

I, Eric Lachapelle, Manager, Technical Services for Lake Shore Gold Corp., 1515 Government Road South, Timmins, ON, Canada, P4R 0J5, do hereby certify that:

I am the co-author of the Technical Report titled "National Instrument 43-101 Technical Report, Updated Mineral Resource and Mineral Reserve Estimate for the Bell Creek Mine Property, Hoyle Township, Timmins, Ontario, Canada", with an effective date of June 30, 2021 (the "Technical Report").

I graduated with a Bachelor of Engineering degree from Laurentian University, Sudbury, ON, Canada, in 2007. I am a member in good standing with Professional Engineers Ontario (PEO Membership No. 100152982). I have worked as an engineer in the mining industry since 2008 and, over the last 15 years, have been employed by Goldcorp Canada as Mine Engineer and Construction Supervisor at the Hoyle Pond Mine, Underground Mine Engineer at the Dome Mine, by Lake Shore Gold Corp. and Tahoe Resources Inc. as Senior Mine Engineer for Timmins West and Bell Creek Mines, Chief Mine Engineer for the Timmins West Mine and others.

I have read the definition of 'Qualified Person' set out in National Instrument 43-101 ("the "Instrument") and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfill the requirements of a 'Qualified Person' for the purposes of the Instrument.

I am responsible for the preparation of the sections of the Technical Report as detailed in Section 2.1 – List and Responsibilities of Qualified Persons.

I am currently employed as the Manager, Technical Services for Lake Shore Gold Corp., a subsidiary of Pan American Silver Corp., the owner of Bell Creek Mine, and by reason of my employment, I am not considered independent of the issuer as described in Section 1.5 of the Instrument.

I have had prior involvement with Bell Creek Mine that is the subject of this Technical Report; I am an employee of Lake Shore Gold Corp. and have conducted site visits to Bell Creek, including as described in Section 2 – Introduction of the Technical Report, and most recently on December 16, 2021.

I have read the Instrument and Form 43-101F1, and the Technical Report has been prepared in compliance with the Instrument and that form.

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

Dated at Timmins, Ontario, this 18th day of February, 2022.

"Signed and sealed"

Eric Lachapelle, P.Eng.

CERTIFICATE

I, Alain Mainville, Geology Manager for Lake Shore Gold Corp., 1515 Government Road South, Timmins, ON, Canada, P4R 0J5, do hereby certify that:

I am the co-author of the Technical Report titled "National Instrument 43-101 Technical Report, Updated Mineral Resource and Mineral Reserve Estimate for the Bell Creek Mine Property, Hoyle Township, Timmins, Ontario, Canada", with an effective date of June 30, 2021 (the "Technical Report").

I graduated with a B.Sc. (Hons) degree in Geology from Laurentian University, Sudbury, ON, Canada, in 1998. I am a member in good standing with Professional Geoscientists of Ontario (Membership No. 0562). I have worked as a geologist in the mining industry since 1998 and, over the last 23 years, have been employed by Kinross Gold and Placer Dome Canada as Senior Mine Geologist at the Hoyle Pond and Pamour Mines, by Goldcorp as Senior Resource Geologist, Chief Geologist, Technical Services Superintendent for the Hollinger and Dome operations, Geology Superintendent for the Century project; by Tahoe Resources Inc. as Chief for the Bell Creek Mine and others.

I have read the definition of 'Qualified Person' set out in National Instrument 43-101 ("the "Instrument") and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfill the requirements of a 'Qualified Person' for the purposes of the Instrument.

I am responsible for the preparation of the sections of the Technical Report as detailed in Section 2.1 – List and Responsibilities of Qualified Persons.

I am currently employed as the Geology Manager for Lake Shore Gold Corp., a subsidiary of Pan American Silver Corp., the owner of Bell Creek, and by reason of my employment, I am not considered independent of the issuer as described in Section 1.5 of the Instrument.

I have had prior involvement with Bell Creek that is the subject of this Technical Report; I am an employee of Lake Shore Gold Corp. and have conducted site visits to Bell Creek, including as described in Section 2 – Introduction of the Technical Report, and most recently on December 13, 2021.

I have read the Instrument and Form 43-101F1, and the Technical Report has been prepared in compliance with the Instrument and that form.

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

Dated at Timmins, Ontario, this 18th day of February, 2022.

"Signed and sealed"

Alain Mainville, P. Geo.

CERTIFICATE

I, Dave Felsher, Mill Manager for Lake Shore Gold Corp., 3160 Florence Street, Timmins, ON, Canada, P0N 1C0, do hereby certify that:

I am the co-author of the Technical Report titled "National Instrument 43-101 Technical Report, Updated Mineral Resource and Mineral Reserve Estimate for the Bell Creek Mine Property, Hoyle Township, Timmins, Ontario, Canada", with an effective date of June 30, 2021 (the "Technical Report").

I graduated with a B.Eng. (1998) and M.Eng. (2000) in Metallurgical Engineering from McGill University, Montreal, QC, Canada. I am a member in good standing with Professional Engineers of Ontario (Membership No. 100112760). I have worked as a metallurgist in the metals and mining industry since 2000 and, over the last 22 years, have been employed by Stelco as a Jr Metallurgist, FFE minerals as a sales and design engineer, Goldcorp as a metallurgist, and as the chief metallurgist and then mill manager by Lake Shore Gold.

I have read the definition of 'Qualified Person' set out in National Instrument 43-101 ("the "Instrument") and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfill the requirements of a 'Qualified Person' for the purposes of the Instrument.

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Dated at Timmins, Ontario, this 18th day of February, 2022.

"Signed and sealed"

Dave Felsher, P. Eng.