



LAKE SHORE GOLD

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PAN AMERICAN
— SILVER —

Towards Sustainable Mining Verification Report

Lake Shore Gold Operations, Timmins,
Ontario

24 January 2023

Project No.: 0667132

The business of sustainability



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24 January 2023

Towards Sustainable Mining Verification Report

Lake Shore Gold Operations, Timmins, Ontario



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Acronyms and Abbreviations

<u>Name</u>	<u>Description</u>
BC	Bell Creek Mine and Processing Facility
BCTF	Bell Creek Tailings Facility
CMP	Crisis Management Plan
COI	Community of Interest
DSI	Dam Safety Inspection
DSR	Dam Safety Review
ECA	Environmental Compliance Approval
ECCC	Environment and Climate Change Canada
EEM	Environmental Effects Monitoring
EOR	Engineer of Record
EPRP	Emergency Preparedness and Response Plan
FN	First Nations
GHG	Greenhouse Gases
HR	Human Rights
HS	Health and Safety
IBA	Impact and Benefit Agreement
ITRB	Independent Tailings Review Board
JHSC	Joint Health and Safety Committee
LSG	Lake Shore Gold
MOL	Ministry of Labour

<u>Name</u>	<u>Description</u>
MOU	Memorandum of Understanding
MOWL	Maximum Operating Water Level
NORCAT	Formerly Northern Centre for Advanced Technology
OMS	Operations, Maintenance and Surveillance
PAS	Pan American Silver
RASCI	Responsible, Accountable, Supporting, Consulted and Informed
SPCR	Spill Prevention, Control and Response
TARP	Trigger Action and Response Plan
TEK	Traditional Ecological Knowledge
TSM	Towards Sustainable Mining
TW	Timmins West Mine
VSP	TSM Verification Service Provider
WSIB	Workplace Safety and Insurance Board
WSN	Workplace Safety North

1. FACILITY INFORMATION

Name of Company	Pan American Silver
Name of Facility	Lake Shore Gold
Address	8215 Hwy 101 West Timmins, Ontario P4N 7W7
Country of Operation	Canada
Products/metals produced on site	Gold
Types of operations included in scope:	
Mining	The Lake Shore Gold operation in Timmins, Ontario, consists of two underground gold mines, the Timmins West mine and the Bell Creek mine, which both feed the Bell Creek mill.
Concentrate blending	N/A
Smelting	N/A
Refining	N/A
Other (please explain)	N/A
Types of infrastructure included in scope:	
Roads	Ore from Timmins West is hauled on provincially designated roads to the Bell Creek Mill
Rails	N/A
Ports	N/A
Other (please explain)	N/A

1.1 Map of Lake Shore Gold Operations

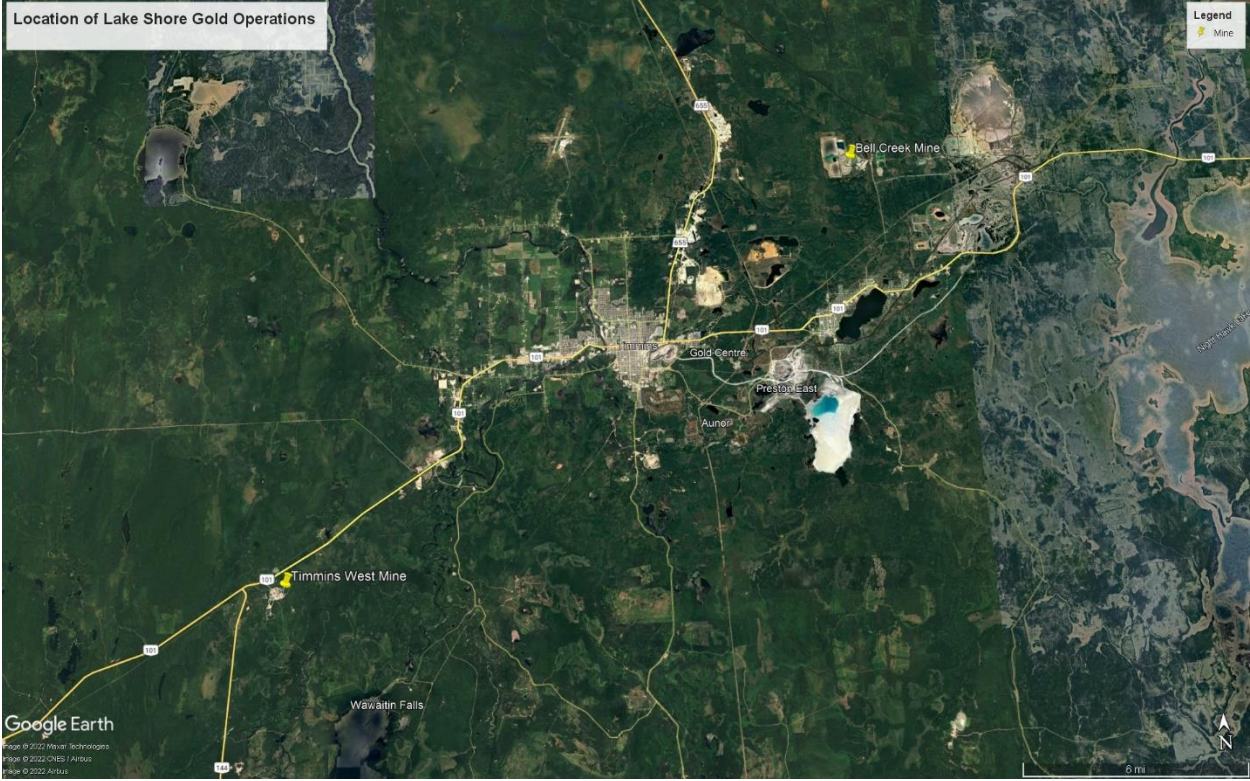


Figure 1. Location of Lake Shore Gold Operations

2. VERIFIER AND VERIFICATION INFORMATION

Verification Firm	ERM Consultants Canada Ltd.
Confirmation that all verifiers involved in the verification are accredited TSM verifiers	<p>Yes.</p> <p>Glenn Keays, Principal Assessor is a qualified VSP.</p> <p>Judy Fedorowick, Partner in Charge and Senior Reviewer, is a qualified VSP.</p>
Date(s) of verification activities (dd/mm/yyyy – dd/mm/yyyy)	<p>Document Review: 21/11/20220 – 22/12/2022</p> <p>Site Visit: 6/12/2022 – 8/12/2022</p> <p>COI Interviews: 13/12/2022 – 20/12/2022</p> <p>Reporting: 20/12/2022 – 6/1/2023</p>
Verification period	<p>This is the first external verification of Lake Shore Gold (LSG). The VSP focused on the 2022 self-assessments provided by the site, with reference to the 2021 assessments. The corporate crisis management verification focused on current practice as of December 2022.</p>
Summary of the verification methodology	<p>This was the first verification for LSG.</p> <p>The verification did not include other standards or the addition of the Responsible Sourcing Alignment Supplement.</p> <p>A site visit to LSG was agreed to given this is their first verification.</p> <p>No external audits were conducted – the site was not pursuing AAA conformance with any of the protocols.</p> <p>The process included document review, site-based interviews, COI interviews, and reporting.</p> <p>There were no exclusions to the protocols – all requirements were verified.</p>
Summary of the verification activities	<p><u>Planning</u></p> <p>Planning for the verification was organized with Pan American Silver (PAS) corporate environment staff, who also attended the site visit with a representative from the social team. A request for key COI representatives was made and arrangements were made to have short interviews. A schedule of verification activities was prepared and shared with site representatives. The schedule included a focused interview with the lead for each TSM protocol. A site tour was planned</p> <p><u>Document Review</u></p>

In advance of the site visit, a SharePoint site was set up by PAS to allow access to the self-assessment reports and associated documented evidence. The VSP reviewed this material in advance of the site visit and in several cases, requested some additional information.

Site Visit

A visit to the Bell Creek Mine (central office location for LSG) was conducted over three days. In accordance with the schedule, an opening meeting was held with site staff, including the mine general manager and other site leadership. The subsequent interviews focused on details reviews of the site's self-assessments for each protocol. Evidence was reviewed and if required, the VSP requested additional information or adjustments to the self-assessment.

Sampling of evidence was limited to certain monitoring reports, minutes of meetings, and other periodically scheduled activities. Evidence for both Timmins West and Bell Creek was examined.

Due to inclement weather, a tour of the facilities did not occur, however, the VSP was able to observe parts of the facility while entering and exiting the site.

Interviews with operational staff did not occur. Rather, the focus was on verification of systems, processes, and the implementation of procedures. With some protocols, multiple individuals were involved in the discussion, both site-based and corporate. See Appendix A for a list of PAS participants.

COI Interviews

The COI interviews were completed virtually due to availability of the participants. See Appendix B for a list of COI the VSP engaged with.

3. SUMMARY OF FINDINGS

This section summarizes ratings for all TSM indicators and provide brief commentary regarding these indicators and the facility's score on a given protocol.

Table 1. Summary of Conformance Ratings

Criterion	PAS / LSG Rating	ERM Verified Rating
<i>Indigenous and Community Relationships</i>		
1. Community of Interest (COI) Identification	A	AA
2. Effective COI Engagement and Dialogue	A	A
3. Effective Indigenous Engagement and Dialogue	A	A
4. Community Impact and Benefit Management	A	A
5. COI Response Mechanism	A	A
<i>Safety and Health</i>		
1. Commitments and Accountability	A	A
2. Planning and Implementation	A	A
3. Training, Behaviour and Culture	AAA	AAA
4. Monitoring and Reporting	A	A
5. Performance	AA	AA
<i>Crisis Management and Communications Planning</i>		
1. Crisis Management and Communications Preparedness	Yes	Yes
2. Review	Yes	Yes
3. Training	Yes	Yes
<i>Preventing of Child and Forced Labour</i>		
1. Preventing Forced Labour	Yes	Yes
2. Preventing Child Labour	Yes	Yes
<i>Energy and Greenhouse Gas Emissions</i>		
1. Energy use and greenhouse gas emissions management systems	AAA	AAA

Criterion	PAS / LSG Rating	ERM Verified Rating
2. Energy use and greenhouse gas emissions reporting systems	AAA	AAA
3. Energy and greenhouse gas emissions performance targets	AAA	AAA
<i>Biodiversity Conservation Management</i>		
1. Corporate biodiversity conservation commitment, accountability, and communications	A	AAA
2. Biodiversity conservation planning and implementation	A	AAA
3. Biodiversity conservation reporting	A	AAA
<i>Tailings Management</i>		
1. Tailings management policy and commitment	A	A
2. Tailings management system and emergency preparedness	A	A
3. Assigned accountability and responsibility for tailings management	A	A
4. Annual tailings management review	A	A
5. Operation, maintenance, and surveillance	A	A
<i>Water Stewardship</i>		
1. Water Governance	A	AA
2. Operational Water Management	A	AA
3. Watershed-scale Planning	A	AA
4. Water Reporting and Performance	A	AAA

Table 2. Detailed Comments on Conformance Ratings

Criterion	Rating	Comments
<i>Indigenous and Community Relationships</i>		
1. Community of Interest (COI) Identification	AA	<p>The COI identification process (including COI self-identification opportunities) is summarized in the COI Outreach Program. COI areas of interest are included in the COI List.</p> <p>The COI list includes attributes for identified COI including contact information, areas of interest, etc. The COI list is reviewed on an annual basis to ensure it contains current information. Changes are also made periodically to the COI List as required. Records are maintained to document when the COI List is reviewed/updated.</p> <p>There are confidentiality provisions within Non-Disclosure Agreements (contractors, consultants) and Impacts and Benefits Agreements (Indigenous communities). The COI Outreach Program refers to the importance of protecting confidentiality when requested by COI.</p> <p>COI are reconsidered periodically during all stages of the mine life cycle to ensure engagement occurs with affected COI for any new or expanded projects, exploration activities, mining or closure activities, etc.</p> <p>The "duty to consult" with Indigenous and Metis communities rests with the Crown; however the responsibility is passed on to industry prior to, during and after the mine permitting and approval process (although initial identification of Treaty 9 beneficiaries is provided). Memorandums of Understanding, Exploration Agreements and Impact and Benefits Agreements have been signed with the Indigenous communities related to Timmins operations and exploration properties. The government will add or remove COIs as required (i.e., the Metis were formally added in the last 10 years). The Wabun Tribal Council, who represents several Indigenous communities, ensures that traditional land assertions are made and valid.</p> <p>COI are invited to provide input to the maintenance of the COI list as outlined in the COI Outreach Program.</p> <p>LSG through its broad community engagement program and specific COI engagements seeks out under-represented COI within the local context.</p> <p>To achieve an AAA conformance level, COI would need to be directly invited to provide input regarding the COI identification process.</p>

Criterion	Rating	Comments
<p>2. Effective COI Engagement and Dialogue</p>	<p>A</p>	<p>Engagement processes are outlined in Collaboration Agreements (e.g., IBAs, MOUs, Exploration Agreements) with Indigenous Communities: Mattagami FN, Matachewan FN, Wahgoshig FN, Flying Post FN. Although the COVID-19 pandemic made it difficult in 2020 and 2021, LSG continued to have virtual meetings with their Indigenous partners as per the agreement. Additionally, an Indigenous IBA Coordinator was appointed via the Wabun Tribal Council to facilitate dialogue and ensure all IBA requirements are being completed. Other Indigenous or Metis communities have hired mineral/resource development advisors (and other related positions) that also facilitate dialogue between LSG, community members and chief/council. In accordance with these agreements, LSG provided assistance to ensure COI were able to participate.</p> <p>COI engagement and dialogue activities and results were discussed at weekly update meetings and at monthly scorecard meetings with senior management, which both have a CSR component. COI engagement activities and results were also reported in the corporate sustainability dashboard and corporate communications reports (https://www.panamericansilver.com/sustainability). Reporting mechanisms for COI engagement and dialogue activities were documented in the COI Outreach Program.</p> <p>The commitment to ensure communications are written in a language that is clear and understandable to COI is described in the COI Outreach Program.</p> <p>Relevant materials were provided to COI for review in advance of executing any plans / proposed projects.</p> <p>The commitment to provide capacity building to COI is described in the COI Outreach Program, section 5.2: "LSG will make accommodations to ensure effective dialogue takes place. Accommodations will be made relating to cultural requirements, technological capabilities, level of expertise, financial constraints, language, delivery and format of information, review timelines, etc." This is re-enforced by PAS Social Sustainability Policy (https://www.panamericansilver.com/sustainability/our-approach-and-performance/policies-and-commitments).</p> <p>Training/awareness requirements for those involved in COI engagement activities are described in the COI Outreach Program.</p> <p>To achieve an AA level, COI feedback on engagement and outcomes, while actively sought, would need to be publicly.</p>

Criterion	Rating	Comments
<p>3. Effective Indigenous Engagement and Dialogue</p>	<p>A</p>	<p>Commitments to Indigenous engagement are included in PAS corporate policies and LSG policies. Impact and Benefit Agreements have been negotiated with Indigenous Communities and demonstrate LSG's commitment to ongoing Indigenous engagement. The COI Outreach Program describes the engagement process.</p> <p>The commitment to Indigenous engagement was demonstrated through regular COI meetings, community events/visits, site tours, correspondence, etc. The VSP reviewed a number of summary reports and meeting minutes to verify. Consultation activities were tracked in the COI Engagement Log, which was deemed to be complete.</p> <p>Training/awareness requirements for those involved in COI engagement activities were described in the COI Outreach Program and reflected in training records. Competency was established by hiring individuals with skill set and background (current Director is qualified for COI engagement), and also on-the-job coaching and development (succession planning, participation in engagement), participation in cultural and National Indigenous Day events, and general awareness through site induction video and Diversity and Inclusion Committee activities.</p> <p>Impact and Benefit Agreements exist between LSG and local Indigenous communities and contain provisions for long-term sustainable benefits in the areas of Procurement, Education and Training, Environmental Care, and Economic Benefits. The implementation/realization of these benefits can be demonstrated through financial support for community development projects, training, capacity building opportunities (i.e., Wabun Tribal Council IBA Coordinator), and bidding/tendering opportunities, etc.</p> <p>Education, awareness, and/or training on the history, traditions, and rights of Indigenous peoples and intercultural awareness and engagement was not available to all employees, in order to achieve an AA level.</p> <p>See Appendix B for a list of COI interviewed.</p>
<p>4. Community Impact and Benefit Management</p>	<p>A</p>	<p>Consultation occurs with Indigenous communities as identified by the government or through self-identification, as applicable. Processes to engage with local Indigenous communities are implemented as per signed IBAs which were negotiated to avoid and mitigate potential and actual impacts to their treaty rights. IBAs cover processes for procurement, education/training, environmental protection and financial benefits. Meetings between LSG and community representatives occur to provide updates on these topics (e.g.,</p>

Criterion	Rating	Comments
		<p>upcoming jobs, contracts, environmental items, exploration, projects, corporate social responsibility, etc.), which provides an opportunity for feedback and dialogue on all aspects of Timmins Operations. Any issues and concerns identified by COI (e.g., TEK, socioeconomic, biodiversity, etc.) are discussed at meetings with an aim at addressing. Formal grievance processes are included in IBAs and represent a mechanism to COI to voice concerns if resolution was not obtained. Financial compensation for impacts is distributed on a schedule as per IBAs. Prioritization of concerns raised by COI is determined through ongoing dialogue between COI and LSG in order to decide what projects to work on (i.e., walleye populations are important to COI, and therefore LSG has decided to provide support to the Mattagami Fish Hatchery in terms of labour and materials). However, financial compensation provided to IBA signatories is also used in the community for a range of activities and needs.</p> <p>LSG's COI List identifies stakeholder groups, along with their areas of interest (i.e., concerns). The COI Outreach Program includes the commitment to work with COI to identify concerns, and to prioritize action items to address these concerns. LSG stated that the community at large has been interested in water stewardship, biodiversity conservation initiatives, tailings management, closure activities, and climate change.</p> <p>In general, the relevancy of potential social, environmental and health and safety impacts to COI are dictated by the COI themselves; however, LSG conducts business in line with all applicable internal policies, external commitments, and legislative responsibilities.</p> <p>Community health and safety impacts may involve emergencies/crises originating from the facility that have the potential for off-site impacts (i.e., fires, spills, tailings breaches, etc.). Risk assessments are undertaken to better understand the threats that could escalate to crises/emergencies. LSG engages in dialogue with local municipalities and emergency authorities for notification purposes and to prepare for coordinated response efforts. LSG Crisis Management Plans/Emergency Response Plans are typically shared with local emergency authorities and applicable COIs (i.e., Indigenous communities, neighbours, etc.).</p> <p>LSG does not, in collaboration with COI, regularly measure and analyze the trends of identified prioritized adverse impacts, as required to achieve an AA level.</p>

Criterion	Rating	Comments
5. COI Response Mechanism	A	<p>The process for receiving, documenting, reporting and responding to COI feedback is described in the COI Feedback Procedure and the COI Outreach Program. Feedback can be received by phone, email, mail, public engagement sessions, stakeholder meetings, and general conversations. The procedure is clearly communicated to COI including employees in a number of formats.</p> <p>COI complaints are recorded as per the COI Feedback Procedure (Isometrix software).</p> <p>As per the COI Feedback Procedure, the Director of Environment and Sustainability is responsible for the investigation of any feedback and determines which items require remedy and follows-up with the originator. The results of the investigation are documented in Isometrix.</p> <p>The procedure was not collaboratively developed with COI and an effectiveness review has not been conducted, as required for an AA level.</p>
Safety and Health		
1. Commitments and Accountability	A	<p>The commitment to health and safety is communicated via the PAS Health and Safety Policy and is included in the Employee Handbook.</p> <p>Accountability has been assigned to a senior management representative. Additionally, there are three HS coordinators, three trainers, two occupational nurses and security personnel.</p> <p>A process is in place to ensure that employees, contractors, and suppliers who work at the facility are aware of the company's safety and health commitments, as defined in section 4.0 of the HS management system.</p> <p>An internal audit of the HS management system has not been completed, as required for an AA level.</p>
2. Planning and Implementation	A	<p>The LSG HS management system, dated 2019, defines:</p> <ul style="list-style-type: none"> - Objective and target setting - Hazard identification and risk assessment, and the maintenance of a risk register - An industrial hygiene program (utilizing a contract hygienist) - Defined roles and responsibilities - Workplace inspections - Record keeping - Validation of the effectiveness of controls

Criterion	Rating	Comments
		An internal audit of the HS management system has not been completed, as required for an AA level.
3. Training, Behaviour and Culture	AAA	<p>LSG maintains a training Matrix for hourly employees and supervisors (example reviewed)</p> <p>There are orientation programs for employees, on-site contractors, and visitors. The VSP received the visitor orientation during the site visit.</p> <p>LSG uses NORCAT and Common Core and Simulator training; and in-house inductions are provided to all employees and contractors.</p> <p>Safety and health criteria are integrated with business planning, purchasing decisions (screening and qualifications), performance appraisals, and compensation (annual safety incentives). Healthy lifestyles are encouraged through the Wellness Program.</p> <p>There have government led independent assessments of the LSG safety programs. Trainers are assessed for effectiveness (trainee audit program)</p>
4. Monitoring and Reporting	A	<p>Health and safety reporting includes:</p> <ul style="list-style-type: none"> - Monthly internal reporting on leading and lagging indicators - Joint health and safety committee meeting minutes - Safety slides used for communication of objectives <p>Various audit programs are in place including government led assessments (e.g., WSIB), WSN Recognition Program, 5 Point Card (field level risk assessment) audits, MOL inspections, and corporate audit programs.</p> <p>Reviews of the HS management system take place monthly. An example presentation from Oct 2022 was reviewed as an example.</p> <p>Public communication on safety and health is done through government reporting (https://safetycheck.onlineservices.wsib.on.ca/safety-check/) and corporate reporting (https://panamericansilver.com/sustainabilityreport2018/our-people/health-and-safety/)</p> <p>An internal audit of the HS management system has not been completed as required for an AA level.</p>
5. Performance	AA	Safety and health performance targets set for employees of the facility and communicated on through monthly reporting and during toolbox talks, and electronic displays.

Criterion	Rating	Comments
		<p>Facility management and the JHSC are involved in objective setting.</p> <p>There have been no fatalities at LSG during the past three years.</p> <p>The facility has not met its continual improvement performance target for at least 3 of the past 4 years, as required for an AAA level.</p>
<i>Crisis Management and Communications Planning</i>		
1. Crisis Management and Communications Preparedness	Yes	<p>The VSP reviewed both the corporate level and site level crisis management and communication plans and interviewed the persons responsible for their ongoing maintenance.</p> <p>The PAS Country Manager has approved the LSG Crisis Management Plan (CMP).</p> <p>A risk registry is maintained in a risk management database (Resolver).</p> <p>Results of evaluations are shared and updated.</p> <p>A site level and corporate level crisis management team has been established, including alternates for each position.</p> <p>There is a notification protocol in place.</p> <p>Media training has been provided for designated team members.</p> <p>A crisis control centre (and backup) has been established.</p> <p>Contact information for all key stakeholders is maintained current. Both the Emergency Notification and CMP are controlled documents within Security. Material Management has the contact list for all vendors operating on Lake Shore Gold Property</p>
2. Review	Yes	<p>The CMPs are reviewed annually with the contact list every quarter or as personnel are changed.</p> <p>Testing of notification systems occurs eight times per year in conjunction with the facility stench gas drill. There is also a quarterly test of the third party notification system, Noggin.</p> <p>The site maintains an alarm system to notify employees and contractors, as well as radio and stench gas.</p> <p>Plans are shared with corporate and community emergency response agencies.</p>
3. Training	Yes	<p>Facility level "table top" exercises are conducted annually.</p> <p>A crises simulation is conducted every three years.</p>

Criterion	Rating	Comments
<i>Preventing of Child and Forced Labour</i>		
1. Preventing Forced Labour	Yes	<p>There are processes in place that are commensurate to jurisdictional risks to ensure forced labour, including bonded or indentured or involuntary prison labour is not used. Given the facility is located in Canada, labour legislation and their enforcement, address this requirement. PAS also maintains a whistleblower program.</p> <p>Where there is a high risk of forced labour, processes have been put into place to monitor supply chains and relationships with recruitment agencies for human trafficking and forced labour. These include a Supplier Code of Conduct, HR and HS Policy, and vendor qualification program.</p>
2. Preventing Child Labour	Yes	<p>There are processes in place that are commensurate to jurisdictional risks to ensure that no child under the age of 18 engages in work which by its nature or the circumstances in which it is carried out is likely to jeopardize the health, safety or morals of young persons as defined in national law or regulation.</p> <p>There are processes in place that are commensurate to jurisdictional risks to ensure that no child under the age of 15 is employed. PAS will not employ a person under the age of 18, either above or below ground.</p>
<i>Energy and Greenhouse Gas Emissions</i>		
1. Energy use and greenhouse gas emissions management systems	AAA	<p>A comprehensive energy use and GHG emissions management system established (Energy Management Plan, June 2020). The plan establishes accountability for energy use and GHG emissions.</p> <p>Section 3.6 of the plan shows all historical annual energy consumption. Section 5.12 describes all reporting and record keeping for energy sources. Sources are review monthly.</p> <p>Monthly Energy Management Meetings are held to review site consumption, intensities, metrics and project progress. One of the monthly energy management meetings per year review budget for all energy sources, reduction and emissions targets, sustainability goals. The meeting also determines if energy sources are deemed to be material.</p> <p>There are actions and process controls related to energy use and GHG emissions are included in management systems for</p>

Criterion	Rating	Comments
		<p>material sources. Government quarterly reporting requires actions and process controls to be reported on.</p> <p>Monthly Energy Management Meetings provide energy awareness and training on critical sources of energy and innovative technology.</p> <p>Government energy programs (NIER/NEAP/EMI) require proof of training which is audited by certified third party.</p> <p>Authorizations for Expenditure require signoff from the Energy Manager who reviews the technology or equipment being purchase to ensure energy efficient equipment is purchased.</p> <p>Design Engineering Studies are funded by IESO to determine more efficient technologies and equipment to reduce energy consumption. DES were done for Bell Creek for dewatering and compressed air improvements.</p> <p>Procurement includes energy and GHG criteria in evaluations.</p> <p>LSG participates in government energy efficiency programs (Northern Industrial Electricity Rate (NIER) Program)</p>
<p>2. Energy use and greenhouse gas emissions reporting systems</p>	<p>AAA</p>	<p>The Energy Management Plan highlights all reporting requirements for energy and GHG in Section 5.12. Examples include:</p> <ul style="list-style-type: none"> - NIER/NEAP/EMI - reporting done on a quarterly basis and third-party external verification - Energy Dashboard - monthly basis - OBPS/EPS - Carbon Reporting on monthly basis and annual - Fuel Charge Reports - done monthly to Canada Revenue agency <p>The PAS Annual Sustainability Report includes data on energy and GHG emissions and progress towards meeting objectives.</p> <p>(https://www.panamericansilver.com/sustainability/sustainability-reporting/)</p> <p>Energy and GHG emissions (scope 1 and 2) reports are externally verified in accordance with ON government requirements.</p>
<p>3. Energy and greenhouse gas emissions performance targets</p>	<p>AAA</p>	<p>Energy use and GHG emissions performance targets for the facility and/or business unit been met in the reporting year. Targets are set annually and reviewed on monthly basis with Senior Management and Corporate for progress.</p> <p>The example provided concerned switching from Propane to Compressed Natural gas. This fuel switch allowed LSG to have</p>

Criterion	Rating	Comments
		<p>better security for their heating resources while reducing their GHG emissions for heating by 17%. The Compressed Natural Gas system also has remote monitoring which alerts the provider of faults/issues and consumption trends and holding capacity.</p> <p>LSG has also installed more efficient compressors at Bell Creek Mine, and new pumping systems in both Bell Creek and Timmins West Mines.</p> <p>The LSG BC and TW GHG Reports rev.1 - Scope 1 emissions are externally verified.</p> <p>Monthly Fuel Reports are externally verified through Canada Revenue Agency.</p> <p>Energy Use is internally verified with Accounting, Environmental and Energy Departments. Scope 1 emissions are externally verified by GHG reporting above. Scope 2 emissions externally verified with third party provider.</p>

Biodiversity Conservation Management

<p>1. Corporate biodiversity conservation commitment, accountability, and communications</p>	<p>AAA</p>	<p>The PAS Environmental Standard for Biodiversity and Mine Closure (CG-MA-02) outlines biodiversity commitments for the company. The commitments listed align with the TSM Mining and Biodiversity Conservation Framework, however the Mitigation Hierarchy is not referenced in the Environmental Standard. The PAS Environmental Standard demonstrates senior management commitment (i.e., VP, Env. and Sustainability is accountable for biodiversity conservation, and General Managers are accountable for implementing the requirements of the biodiversity and mine closure standard, although the responsibilities may be delegated).</p> <p>The PAS Environmental Policy includes commitments to managing risks related to biodiversity and integrating biodiversity conservation into mine planning. The Environmental Policy is consistent with the intent of the TSM Mining and Biodiversity Conservation Framework. It was approved by the Board on March 15, 2021.</p> <p>The LSG HSEC Policy includes commitments to prevent environmental impacts, adhere to standards and legislation, and implement environmental programs/systems. The HSEC Policy was reviewed and re-approved by the LSG General Manager in Jan 2021.</p> <p>The LSG Biodiversity Management Program (TI-ENV-MAN-01) summarizes biodiversity conservation commitments, including the mitigation hierarchy (which is consistent with the intent of the TSM Mining and Biodiversity Conservation Framework). It</p>
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Criterion	Rating	Comments
		<p>also outlines mechanisms for communicating commitments, includes a section on responsibilities and refers to corporate and site-level policies with environmental/biodiversity commitments. The Biodiversity Management Program is owned and approved by the Director of Env. and Sustainability.</p> <p>The LSG Biodiversity Conservation Continual Improvement Plan (TI-ENV-PLN-01) outlines objectives, targets and action plans, which are reviewed and approved by senior management. Resources are assigned to meet the objectives/targets and to implement the action plans.</p> <p>The PAS Sustainability Report includes biodiversity commitments, programs and performance for all operations including Timmins. It is available on the public web site for COI to review. (https://www.panamericansilver.com/sustainability/sustainability-reporting/)</p> <p>Environmental presentations include biodiversity conservation initiatives, as applicable (e.g., 2021 biodiversity enhancement project). The Induction Video for employees/contractors includes MAC TSM initiatives.</p> <p>The Environmental Department for Bell Creek/Timmins West is responsible for biodiversity conservation management as it relates to legal compliance and community commitments.</p> <p>Financial resources are assigned to biodiversity conservation initiatives including studies, monitoring programs, community events, projects, etc. Includes budgets for third-party specialists to conduct biodiversity studies and initiatives, when needed (e.g., Biodiversity Enhancement Project in 2021 by Blue Heron Environmental). This requires senior management approval.</p> <p>An independent verification (corporate internal audit) of biodiversity conservation commitments and implementation was conducted in 2021.</p> <p>The Pan American Silver Environmental Policy includes a commitment to achieve no net loss with respect to biodiversity, and to engage in open and transparent dialogue and consultation with COI on environmental matters.</p>
2. Biodiversity conservation planning and implementation	AAA	<p>The LSG Biodiversity Management Program (TI-ENV-MAN-01) describes the risk assessment process for determining the significant biodiversity aspects/risks and for identifying objectives, targets and action plans to address the significant biodiversity aspects/risks. This includes tracking and reporting progress towards meeting objectives and action plans.</p>

Criterion	Rating	Comments
		<p>Action plans are identified to support the achievement of the objectives. Status of action plans are discussed at monthly senior management scorecard meetings.</p> <p>Induction for employees/contractors includes the Biodiversity Program and related policies; the induction video includes TSM initiatives.</p> <p>Annual Environmental Awareness Training is provided to all LSG staff (part of monthly safety huddle); includes commitment to biodiversity conservation.</p> <p>Examples of COI Engagement on biodiversity include:</p> <ul style="list-style-type: none"> - Bell Creek Closure Plan Biodiversity Enhancement Project / Creation of Moose Aquatic Flooding Areas (2021 Project) – communicated to COI for feedback. - Mattagami River Watershed (with City of Timmins) – Integrated Management, Potential Off-setting - Porcupine Watershed Public Liaison Committee (e.g. Apr 26, 2021) - Beaver Dam Protocol Committee Meeting (e.g. May 18, 2021) - - Member and supporter of City of Timmins Bee City Pollinator Team <p>Status of objectives and action plans are discussed at monthly senior management scorecard meetings.</p> <p>An independent verification (corporate internal audit) of biodiversity conservation commitments and implementation was conducted in 2021.</p> <p>Research and Development Investments to Contribute to Biodiversity Enhancement include:</p> <ul style="list-style-type: none"> - Mattagami Sturgeon Restoration Project, Friends of the Porcupine River, Mattagami First Nation Fish Hatchery, and Matachewan First Nation Fish Hatchery. - Bell Creek Closure Plan - Biodiversity Wetland Habitat Enhancement Plan (Moose Aquatic Feeding Areas) <p>Scientific Projects/Studies to increase understanding for biodiversity protection include the Mattagami Sturgeon Restoration Project, the Mattagami First Nation Fish Hatchery, and the Matachewan First Nation Fish Hatchery.</p>
3. Biodiversity conservation reporting	AAA	Progress on biodiversity objectives, targets, and action plans is reported to senior management on a quarterly basis; Results inform decision-making.

Criterion	Rating	Comments
		<p>There are Monthly Sustainability Scorecard Presentations - Status of biodiversity conservation projects / initiatives and issues are presented to senior management.</p> <p>There is a Corporate Sustainability Dashboard Report - Status of biodiversity projects / initiatives communicated to corporate.</p> <p>There is Annual GRI / SASB Reporting - Performance (e.g. amount of land disturbed, rehabilitated, or protected; number of significant spills, etc.) reported to Corporate for Sustainability Report. (https://www.panamericansilver.com/sustainability/sustainability-reporting/)</p> <p>An independent verification (corporate internal audit) of biodiversity conservation commitments and implementation was conducted in 2021.</p> <p>A readiness assessment for sustainability report verification was completed by PWC. The same criteria that would typically be used for independent verification was applied.</p> <p>PAS has included in their annual sustainability report, the results of their annual stakeholder survey, which highlights 41 sustainability topics. No environmental issues ranked in the top ten during their last survey.</p>
Tailings Management		
1. Tailings management policy and commitment	A	<p>Verification was completed using the facility's TSM Tailings Table of Conformance and the Tailings Guide Checklist.</p> <p>BC-E-PCY-002 Tailings and Water Management Policy is approved by the Country Manager. The Standard, 201122_Tailings Water HFL Standard Update 2020_v6, is approved by corporate.</p> <p>LSG policies are communicated in "2021 Environmental Awareness Training" provided to all LSG employees. It was also emailed to all staff.</p> <p>The Mill Operating Budget is home to tailings costs including EOR, contractors, surveys, etc. An example of implementation is the 2021 CAR for Dyke Raise and Polishing Pond.</p> <p>An external audit had not been conducted to determine that all requirements for a Level A have been met, which is required to achieve an AA level.</p>
2. Tailings management system and emergency preparedness	A	<p>The company has developed and implemented a tailings management system in conformance with the Tailings Guide</p> <p>An up-to-date dam safety risk assessment (Document: 2020 05 19 - Dam Safety Risk Assessment) was completed for the</p>

Criterion	Rating	Comments
		<p>BCTF in 2020. A summary is included in the OMS Manual, section 3.1. It states that "The risk assessment should be reviewed and updated as per the Management of Change section of this OMS Manual, which includes input from the Engineer of Record and the Responsible Person, or every two years. This ensures that changes not anticipated when the assessment was conducted or material changes to the BCTF are captured and reflected in the Tailings Management System."</p> <p>The results are documented in 2020 05 19 - Dam Safety Risk Assessment.</p> <p>The Risk Management Plan for the BCTF includes implementation of the OMS Manual, which includes Trigger, Action and Response Plans (TARPs) for all unwanted events tied to a credible failure mode in 2020 05 19 - Dam Safety Risk Assessment.</p> <p>The last Dam Safety Review was completed in 2020 by Stantec who is considered independent as they have no connection to the BCTF or the EOR (Document: 2021 05 14 - BCTF 2020 DSR - Stantec).</p> <p>LSG maintains ML-T-PLN-001 Emergency Preparedness and Response Plan, which is tested on an annual basis (Dec 2021 and Dec 2022).</p> <p>An external audit had not been conducted to determine that all requirements for a Level A have been met, which is required to achieve an AA level.</p>
3. Assigned accountability and responsibility for tailings management	A	<p>The company has delegated responsibility and authority for tailings management in conformance with the Tailings Guide.</p> <p>In addition to the roles and responsibilities outlined in the various plans, LSG maintains RASCI Matrix found in the OMS Manual. An ITRB is not maintained for the facility due to its risk level but an EOR has been retained. DSRs are not completed by the EOR to maintain independence of the process, but annual DSIs are performed by the EOR.</p> <p>An external audit had not been conducted to determine that all requirements for a Level A have been met, which is required to achieve an AA level.</p>
4. Annual tailings management review	A	<p>An annual review for 2021 was the first year implemented. It was completed on Dec 14, 2021.</p> <p>Because this was the inaugural formal annual management review as part of SM, there were no actions identified from previous years. However, LSG has been working with the EOR</p>

Criterion	Rating	Comments
		<p>on addressing dam safety recommendations from various EOR and independent reports, which are described in the "Recommendations" tab of the Tailings Management Summary spreadsheet.</p> <p>In general, the tailings facility achieved the goals and performance objectives in 2021 and there were no major issues related to the operation of the BCTF. Three events did require additional investigation as per the OMS Manual (i.e., Levels of Alert triggered by Surveillance Program) and were related to increased seepage at an existing location, external erosion and CWP over the MOWL. They were deemed not a dam safety concern after investigation and action items were implemented.</p> <p>An external audit had not been conducted to determine that all requirements for a Level A have been met, which is required to achieve an AA level.</p>
5. Operation, maintenance, and surveillance	A	<p>An OMS Manual is maintained for the Bell Creek Tailings Facility. This manual includes current status and life cycle (operating), but also covers other life cycle phases including design, construction, temporary suspension, state of inactivity and active closure.</p> <p>The OMS Manual meets the requirements of the TSM OMS Guide.</p> <p>An external audit was not conducted to determine that the OMS manual had been developed and implemented in conformance with the OMS Guide, which is required to achieve an AA level.</p>
Water Stewardship		
1. Water Governance	AA	<p>The LSG Water Stewardship Program (TI-ENV-MAN-02) outlines water stewardship commitments and has a section that refers to corporate and site-level policies with environmental/water commitments. The commitments are consistent with the intent of the TSM Water Stewardship Framework (i.e., considerations of water catchment-scale interactions with other users, integration of water management considerations in business strategies, setting targets based on reduction projects, promoting access to clean water, public reporting, etc.).</p> <p>The Water Stewardship Program is owned and approved by the Director of Environment and Sustainability. Job specific responsibilities that may impact on water are defined in associated procedures.</p>


Criterion	Rating	Comments
		<p>Annual Environmental Awareness Training provided to all LSG staff (part of monthly safety huddle); includes commitment to water stewardship and continual improvement plans.</p> <p>The Induction Training Program for New Employees / Contractors covers general environmental policy topics, including spill response requirements, and other impacts to water.</p> <p>The PAS Sustainability Report includes water stewardship commitments, programs and performance for all operations including Timmins, which is available on the public web site for COI to review. Water is also a specific focal area of some of LSG's COI, and has been discussed at meetings.</p> <p>An internal audit of water stewardship commitments, roles, responsibilities, and accountabilities was conducted as part of the 2021 corporate internal audit. An external audit was not conducted, as required to achieve an AAA level.</p>
<p>2. Operational Water Management</p>	<p>AA</p>	<p>All water management activities are done in accordance with LSG's Environmental and Tailings/Water Management Systems, which have been developed to meet or exceed applicable legislation and internal policy direction. The EMS risk matrix includes a number of water related risks and controls.</p> <p>Examples of EMS procedures that describe water management and monitoring activities and responsibilities for Bell Creek include:</p> <ul style="list-style-type: none"> - BC-E-OP-010 Effluent and Surface Water Sampling - BC-E-OP-011 Groundwater Sampling - BC-E-FRM-004 Environmental Sampling Requirements - BC-E-FRM-003 Environmental Reporting Requirements - ML-T-MAN-001 Bell Creek Tailings Facility OMS Manual - LSG-TW-446-PRO-00001 Water Management System SOP <p>The EMS also includes risk identification and assessment processes (Water Stewardship Risk Assessment, Dam Safety Risk Assessment), establishment of objectives, tracking of action plans, identification of compliance obligations, communication and training processes, and document control processes.</p> <p>The selection of water quality and quantity parameters have been informed by legal requirements (permits, closure plans) or by risk (e.g., TARPs).</p>

Criterion	Rating	Comments
		<p>A site-wide water balance has been prepared for the BCTF by KCB using MS Excel and interlinked spreadsheets as indicated in their June 2020 report. A similar water balance was prepared for TW in 2019.</p> <p>For Bell Creek, the water balance is updated frequently throughout the year with actual site data in order to calibrate assumptions and include changes to the tailings facility. The water balance was calibrated over 2018 and 2019 against environmental data from ECCC for the Timmins Airport weather station and operational site records. As per section 9 of the report, the model is set-up to run on a monthly time step to account for the seasonal variation in precipitation and runoff, evaporation and operational constraints. Late fall each year, the balance is updated to predict spring conditions.</p> <p>For Timmins West, the water balance is reviewed annually as part of the Sustainability Report process. Assumptions were confirmed and there have been no infrastructure changes since then.</p> <p>Each water balance reviews or update incorporates monitoring data (site water levels and pump records or estimated flow rates and volumes), a range of climate conditions/meteorological data (precipitation and temperature).</p> <p>Response and contingency plans for water-related risks and incidents are summarized in the following documents:</p> <ul style="list-style-type: none"> - BCTF OMS Manual and TARP - BCTF EPRP - BC-E-PLN-001 SPCR Plan - BC-E-OP-001 Spill Response Procedure - LSG Crisis Management Plan <p>An internal audit of water stewardship commitments, roles, responsibilities, and accountabilities was conducted in 2021.</p> <p>An external audit has not been completed, as required to achieve an AAA level.</p>
3. Watershed-scale Planning	AA	<p>COI engagement in the watershed has taken place. LSG's approach actually exceeds the watershed boundaries and involves COI in the Timmins region, such as their participation in the Porcupine Watershed Public Liaison Committee.</p> <p>Dialogue with COI occurs as needed or as preferred by each COI (e.g., COI meetings, open house events, community visits). Dialogue occurs with COI as per Collaboration Agreements (e.g., IBAs, MOUs, and Exploration Agreements). As part the</p>

Criterion	Rating	Comments
		<p>implementation of these agreements, an Indigenous (EA/IBA) Coordinator was appointed via the Wabun Tribal Council to facilitate dialogue and ensure all EA/IBA requirements are being completed. Dialogue with local, provincial, and federal governments occurs regarding permits, licenses, inspections and reporting, as required. The public is also invited to comment on permit applications posted on the Environmental Registry of Ontario.</p> <p>The COI engagement process is described in the COI Outreach Program (TI-COM-MAN-01). Engagement has occurred with COI in the Porcupine Watershed for the Bell Creek Facility:</p> <ul style="list-style-type: none"> - Porcupine Watershed Public Liaison Committee, - Friends of the Porcupine River Watershed, Mattagami Region Conservation Authority, and <p>with COI in the Mattagami Watershed for the Timmins West Facility:</p> <ul style="list-style-type: none"> - City of Timmins, - Mattagami Region Conservation Authority (MRCA). <p>LSG has provided information to COI regarding how water management practices that exist at the Timmins Operations addresses priority watershed-related risks.</p> <p>Engagement also occurs with other dischargers such as the Glencore Kidd and Newmont Porcupine mines.</p> <p>Ongoing opportunities are provided for COI to share Traditional Knowledge, practices, and customs with LSG personnel regarding water resources, and if any concerns are brought forward, these are documented, discussed and acted upon.</p> <p>LSG's participation in watershed-scale planning initiatives and governance includes:</p> <ul style="list-style-type: none"> - Mattagami Fish Hatchery project (LSG and Mattagami FN) - Beaver Dam Protocol Committee meetings (LSG, MRCA, Newmont and Glencore, City of Timmins) - Porcupine Watershed Public Liaison Committee (LSG and multiple COI) - Mattagami River Sturgeon Project - Friends of the Porcupine River <p>The LSG Water Stewardship Program describes the activities that help support the assessment of how operational water management practices at LSG's Timmins Operations contribute to cumulative effects in the watershed, such as:</p>

Criterion	Rating	Comments
		<ul style="list-style-type: none"> - Assimilative capacity studies and control - EEM studies - Water Monitoring Studies that support the Bell Creek Closure Plan / Timmins West Closure Plan <p>Watershed level goals have not been set and planning has not been done, as required to achieve an AAA level.</p>
4. Water Reporting and Performance	AAA	<p>Water stewardship objectives, targets and continual action plans are established on annual basis, tracked and reported on to senior management team on a quarterly basis. Progress is documented and tracked in the LSG Water Stewardship Continual Improvement Plan.</p> <p>Water-related compliance is communicated to COIs through regulatory reporting submitted to government agencies and Indigenous partners. The public water compliance reports include:</p> <ul style="list-style-type: none"> - Industrial Sewage Works ECA - Annual Public Discharger Reports - Annual Performance Reports <p>The PAS Sustainability Report also includes water performance provided for Timmins Operations (GRI/SASB water indicators and spills) (https://www.panamericansilver.com/sustainability/sustainability-reporting/)</p> <p>A readiness assessment for sustainability report verification was completed by PWC. The same criteria that would typically be used for independent verification was applied.</p> <p>This process did verify the accuracy of public water performance reporting at the facility level.</p>

4. STATEMENT OF VERIFICATION

<p>The external verification was conducted in accordance with the <i>Terms of Reference for Verifiers</i> and, accordingly, consisted primarily of interviews, data analysis, and examination (on a sample basis) of other evidence relevant to management's assertion of conformance to the requirements of the TSM performance indicators.</p>	
<p>The scores indicated in this report are verified as being accurate based on the evidence reviewed during the external verification of this facility.</p>	
Limitations	No limitations to how this verification was to be planned and completed were encountered. Some rescheduling of interviews was required but this did not impede the process.
Additional comments	The Pan American Silver and Lake Shore Gold teams were well prepared for the verification process. Their self-assessments were comprehensive, and they were very transparent with document and data sharing.
Name of lead verifier	Glenn Keays, MSc, EP, VSP
Date of statement of verification	January 24, 2023
Signature of lead verifier	

APPENDIX A PAN AMERICAN SILVER / LAKE SHORE GOLD PERSONNEL INTERVIEWED

Protocol	Interviewees	Position
Biodiversity	Ben St.Amour Marcel Cardinal Jae Min	Environmental Supervisor Sustainability Director Environmental Analyst
Energy and GHG	Bruce Armitage Jae Min	Energy Manager Environmental Analyst
Water	Ben St.Amour Marcel Cardinal Jae Min	Environmental Supervisor Sustainability Director Environmental Analyst
Tailings	Dwayne Hoven Dave Felsher Ben St.Amour Marcel Cardinal Americo Delgado	Tailings Coordinator Plant Manager Environmental Supervisor Sustainability Director Tailings VP, PAS
Crisis and Communications	Paul Primeau Richard Graves	Security Manager Security Director, PAS
Indigenous and Community	Marcel Cardinal Ben St.Amour Jhosselin Hostos	Sustainability Director Environmental Supervisor Social Coordinator

Child and Forced Labour	Angela Tremblay	Human Resources Manager
Safety and Health	Dave Fenato Dan Methe	Health and Safety Manager Health and Safety Director, PAS

APPENDIX B**COMMUNITY OF INTEREST (COI) PARTICIPANTS IN THE VERIFICATION PROCESS**

Name	Organization	Protocol Association
Andy Small	Klohn Crippen Berger	Engineer of Record Tailings Management
David Vallier	Mattagami Region Conservation Authority	Biodiversity Water Stewardship
David Landers	City of Timmins	Indigenous and Community Relations Water Stewardship Biodiversity
Shane Whitehouse	Indigenous IBA Coordinator, Wabun Tribal Council	Indigenous and Community Relations Water Stewardship Biodiversity Tailings Management

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