



Ministry of
Energy, Mines and
Low Carbon Innovation

Photo: Sullivan Mine reclamation located in Kimberley, BC

Chief Inspector of Mines 2020/2021 Annual Report

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Photo: Nickel Plate Mine (closed), near Hedley BC.

Report Overview

This report is completed annually, to comply with the requirement under section 36 of the *Mines Act* (the "Act") that the Chief Inspector of Mines publish an annual report showing results during the previous year in achieving the purposes of the Act.¹

The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) is responsible for BC's electricity, alternative energy, oil, natural gas, mining and mineral exploration sectors. Based on the recommendations of the Auditor General's Report (2016) and the Mining Jobs Task Force (2018), the regulation of BC's mining and mineral exploration was divided into two divisions – the Mines Health, Safety and Enforcement Division (MHSE) and the Mines Competitiveness and Authorizations Division (MCAD).

¹Previously, the Chief Inspector of Mines Annual Report reported on the preceding calendar year. However, from this year forward, the report will reflect the fiscal year to align with the service plan and inspection targets within the Ministry of Energy, Mines and Low Carbon Innovation (EMLI, the "Ministry"). As such, this report will describe the period of January 2020 to March 31, 2021, with information demarcated as January 1 through March 31, 2020 and April 1, 2020 through March 31, 2021 (fiscal year) where needed.

Message from the Chief Inspector of Mines (CIM)



I am pleased to release the 2020/2021 Chief Inspector of Mines Annual Report. 2020/2021 were challenging years for the world, the effects of which were certainly felt in BC's mining industry. However, as this report outlines, BC's mining industry remains strong and will continue to support BC's economic recovery.

COVID-19 altered how EMLI conducted its work, forcing us to think of "outside the box" and develop new strategies to achieve our mandate. Our staff developed new methodologies that are more efficient and productive than before and will continue to shape the way we work in the future.

2020/2021 also saw substantial changes to the organizational structure within the mining divisions, providing for more effective regulatory oversight. The recently created "Office of the Chief Inspector of Mines Branch" (OCIM) houses all mining compliance inspectors to oversee the health, safety, and

technical compliance initiatives for EMLI. This involved merging the Health and Safety Inspectors (Major Mines) with the Health, Safety and Environment Inspectors (Regional Mines), so that regulatory oversight is under one reporting stream, separate from authorization responsibilities.

This past year, the OCIM introduced several new systems to improve efficiency and increase our ability to effectively regulate, including: the introduction of a new risk-based inspection methodology; a centralized incident reporting system; improved certification processes for blasting, shift boss, fire boss and mine rescue exams; and a revised Mine Emergency Management Plan.

- The **introduction of risk-based inspection planning** allows for effective inspection planning based on the analysis of multiple factors. As a result, mine sites that pose a higher potential risk are subject to a greater inspection frequency, to promote health and safety and ensure compliance with the regulatory requirements.
- The **new centralized incident reporting system** allows our staff to provide timely reporting and effective response to mining incidents in the Province. Furthermore, real-time data allows our staff to identify health and safety trends and determine appropriate responses, such as education, compliance inspections or enforcement.
- Our **improved certification processes** allow our staff to efficiently administer examinations across the Province, using modern methodologies and leveraging new technologies.
- The revised **Mine Emergency Management Plan** strengthens EMLI's ability to respond to mine-related emergencies. It supports EMLI staff training and preparation to provide support to a mine site or manage emergency response.

EMLI continues engaging Indigenous Nations to promote a more collaborative approach to compliance oversight of the mining industry, such as through accompanied inspections. The OCIM will continue building relationships with Nations across the Province by working together on oversight and compliance initiatives.

I am encouraged to see industry continuing to adopt new technologies to support a safer and greener future at mines. I am very proud of the work achieved by all EMLI staff in 2020/2021 and excited about our path forward in regulating BC's safest heavy industry.

Herman Henning
Chief Inspector of Mines

Message from the Chief Permitting Officer (CPO)



The August 2020 update to the *Mines Act* gave the Minister the authority to appoint a Chief Permitting Officer (CPO) responsible for mine permitting under Section 10 of the *Mines Act*. I am pleased to be the first CPO appointed under the Act and I'm keen to work with my colleagues to find efficiencies in permitting processes, while upholding the high standards that have been established surrounding health & safety and environmental protection.

In 2020, the Major Mines Office (MMO) continued its work toward improving the process for reviewing and making timely decisions on major mining projects by implementing risk management tools and seeking alignment between Provincial agencies. In the Spring of 2020, a dedicated team was created to support all the coal projects in southeast BC. This unit has proven to be very effective in developing and trialing innovative management tools, supporting the development of emerging technologies for water treatment, facilitating cross-agency

cooperation, and improving authorization timelines. In 2021, we will expand key lessons learned in the southeast to the rest of the Province. In another initiative, MMO developed and implemented guidance for staff and industry regarding notices of departure from approved mine plans, which has cut timelines for decisions on these notices in half. In 2021, we will continue to work to make review processes as efficient as possible by working with partner agencies to review the information requirements for coordinated authorizations.

Amendments to the *Mines Act* came into force on August 14, 2020. These amendments created the role of the Chief Permitting Officer (CPO), officially separating the permitting and compliance and enforcement authorities within EMLI.

In Regional Operations, there are several projects that have advanced under the umbrella of the Mines Standardization and Service Improvement Project. In spring 2020, a [Mineral and Coal Exploration Notice of Work Application Companion Document](#) was released to provide clarity on information requirements for exploration applications. Other guidance clarifies mapping standards for digital geo-referenced maps making application reviews more efficient for industry, government and Indigenous Nations.

Looking forward, Regional Operations is seeking to further improve and standardize permitting processes, including improvements to online application forms, implementing more streamlined processes for application review and improving guidance materials for applicants.

I am pleased with the work completed in 2020, and I am optimistic about what we can accomplish in 2021 as we continue to work together with Indigenous Nations, industry, other agencies and stakeholders to improve mining authorization processes in BC.

George Warnock
Chief Permitting Officer

Mining in BC

Mineral exploration, mining and related sectors in BC provide jobs for more than 30,000 people in communities throughout the Province and add millions to BC’s economy every year. EMLI aims to support a sustainable, responsible and competitive mining sector that supports Indigenous reconciliation, creates jobs and contributes to responsible mining products and low-carbon technologies. The mining industry in BC is subject to robust regulatory oversight that is protective of the health and safety of workers, the public and the environment.

Mineral Production, 2020 (See more details in Appendix A)



Total Production (all commodities): \$7.3B

¹Estimated production value based on global commodity prices. ²2020 production numbers from Natural Resources Canada are preliminary estimates.

What is metallurgical coal used for?



Metallurgical coal is used for making steel, iron alloy, carbon and other metals. Steel plays a critical role in building green energy infrastructure, such as wind turbines, solar panels, and tidal power systems. According to the Mining Association of BC, 100 tonnes of metallurgical coal is required to produce the 185 tonnes of steel used to build a typical wind turbine.

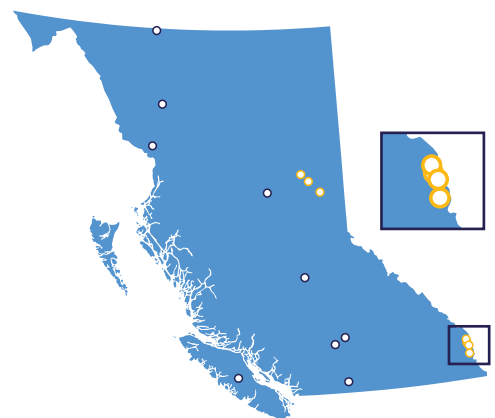
Operating Mines

(Breakdown in Appendix B)

7 operating coal mines
9 operating major metal mines

Legend

-  Operating major metal mine
-  Operating coal mine



A combination of high commodity prices, dedicated staff, and hard work by mining companies to safeguard their staff and nearby communities allowed mining to continue, and even flourish in spite of the pandemic. At \$422M, exploration expenditures in BC rose to the highest level seen since 2012 and no major mines were permanently impacted by the pandemic. This has placed the Province on excellent footing to recover from the economic impacts of Covid-19.”

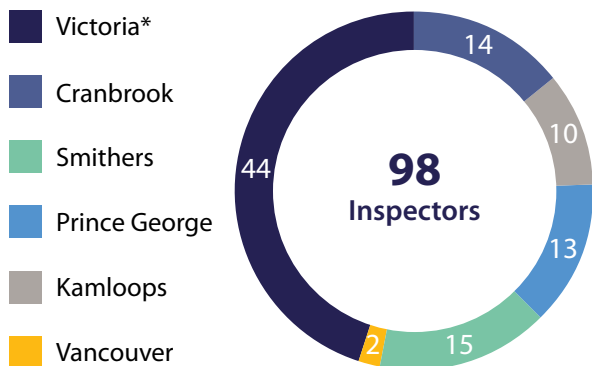
CPO, George Warnock

Our Staff

With 5 regional offices, as well as headquarters in Victoria, an office in Vancouver and individuals in remote locations, Mines Health, Safety and Enforcement (MHSE) and Mines Competitiveness and Authorizations Division (MCAD) staff are located throughout the Province. Each regional office includes regional permitting inspectors, health, safety and compliance inspectors, and may also include staff or inspectors from the Major Mines Office or other branches within the divisions.



Inspectors by Location



*Some inspectors assigned to Victoria live and work in other regions of the Province.

Staff Training in FY 2020/21

See more details in Appendix C.

Mandatory courses

26

Staff hours for mandatory training

1908

Optional and recommended courses

35

Staff hours for optional & recommended courses

2196

How We Regulate



Issuing title/
tenure



Reviewing
applications



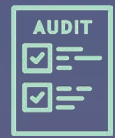
Setting
requirements
(permitting)



Verifying
compliance



Enforcing
compliance



Auditing for
continuous
improvement

What We Regulate



Health &
Safety



1339
Mineral
Exploration Sites



49
Coal
Exploration Sites



88
Metal Mines



25
Coal Mines



1213
Sand & Gravel
Operations



357
Quarries



923
Placer Mines



413
Certifications*

Based on MINFILE data

*Issued in 2020-21, breakdown in Appendix D.



Mines Health, Safety & Enforcement Division

The Mines Health, Safety and Enforcement Division (MHSE) has made recent revisions to its organizational structure, reflecting EMLI's commitment to continuous improvement, regulatory oversight and protections for the environment, human health and public safety.

Office of the Chief Inspector (OCIM)

The OCIM is responsible for mining compliance oversight, programs required to protect the health and safety of workers and members of the public from risk factors associated with mine operations across BC, and mine emergency incident response. This work is divided among four work units:

- Mining Compliance
- Health & Safety Specialists
- Operational Support
- Technical Compliance

Regulatory Management and Enforcement Branch (RMEB)

The RMEB provides cross-divisional regulatory, policy and enforcement services to support the Ministry's regulatory oversight objectives, including conducting investigations and leading review of the Health, Safety and Reclamation Code for Mines in BC (the Code). This work is divided among four work units:

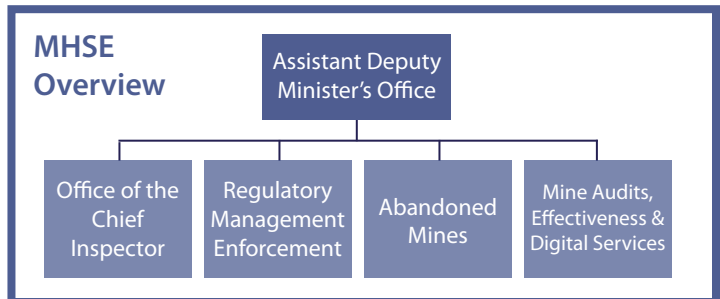
- Regulatory Management Unit
- Mines Investigation Unit
- Code Review Secretariat
- Administrative Monetary Penalty Administration

Abandoned Mines Branch (AMB)

The AMB was formed in 2019 with a mandate to systematically inventory, prioritize and address sites of past mining activities that present the highest risk to public safety and/or the environment and where no owner has been identified.

Mine Audits, Effectiveness and Digital Services

The Mine Audits, Effectiveness and Digital Services Branch is responsible for the continuous improvement of Ministry mining regulatory systems by: delivering the mine audits program under the authority of the Chief Auditor; leading the development and overseeing implementation of Government's responses to Chief Auditor recommendations; conducting special projects; and, developing and maintaining the Ministry's digital tools.





Mines Competitiveness & Authorizations Division

The Mines Competitiveness and Authorizations Division (MCAD) regulates and provides technical oversight for authorizations. MCAD also develops strategic policy to ensure that BC continues to be a competitive jurisdiction for a safe and environmentally sustainable mining industry.

Policy & Competitiveness Branch

The Policy and Competitiveness Branch develops and leads strategic legislative and policy initiatives to support the growth of mineral exploration and mine developments in BC and represents the Division's interest on key government initiatives.

Major Mines Office (MMO)

The MMO brings coordination and clear accountability to both industry and government to ensure timely review of high-quality permit applications to support enduring decisions with respect to permitting major mine projects.

Regional Operations Branch (ROB)

The Regional Operations Branch is primarily responsible for authorizations and setting compliance requirements for regional mines, including sand and gravel pits, industrial mineral and rock quarries, and placer and mineral exploration sites.

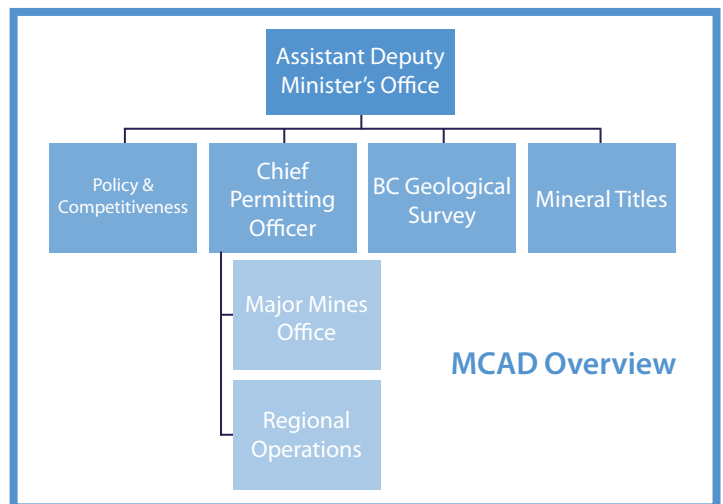
BC Geological Survey

The British Columbia Geological Survey is responsible for assessing BC's geology and related mineral and coal resources. It integrates active research programs with

historical data and, drawing on continuously advancing concepts and technologies, provides information to guide societal decisions centered on the Earth sciences.

Mineral Titles Branch

The Mineral Titles Branch administers the legislation governing the acquisition, exploration and development of mineral, placer mineral, and coal rights in the Province.



COVID-19

The Mines Inspectorate adapted quickly to the COVID-19 pandemic. The importance of mining within BC was demonstrated when it was deemed an essential service during the pandemic. Permitting and compliance verification activities carried on, with inspectors adapting to ensure field inspections continued safely when necessary.

Although fewer field inspections occurred in 2020, inspectors continued to keep in regular contact with mines, increased the volume of office-based inspections, telephone and video meetings with mines, and maintained ongoing delivery of training and safety certification exams. EMLI also encouraged collaboration and information-sharing between mining companies and Indigenous Nations with respect to COVID safety protocols.

EMLI's regulatory work continued throughout the pandemic, although in an adapted manner to ensure safety of the inspectorate and the public. EMLI met inspection targets, continued to process incoming Notices of Work and offered certification examinations throughout the pandemic.

Inspections (January-December 2020)



EMLI inspectors took on additional responsibilities to support requirements set out for mines by the Provincial Health Officer (PHO). These responsibilities involved



reviewing COVID safety protocols for mine camps to ensure that mining activity could continue safely and in compliance with PHO orders.

EMLI endeavoured to support the industry throughout the pandemic, including relaying critical areas of concerns pertaining to industrial camps and broader COVID measures, as well as testing and vaccine roll-out within mine sites. The Ministry also extended tenure and mineral exploration permit timelines to ensure that authorizations did not expire due to an inability to conduct work in 2020.

Supports for the economic recovery of the mining sector continue to demonstrate its importance to BC's economy. Economic recovery measures related to the mining sector include infrastructure investments in mining regions, funding for mine reclamation, and a PST rebate on select machinery and equipment.



The COVID-19 pandemic has had a significant impact on the way the Ministry conducts business. I am proud of the agility and resilience that permitting staff demonstrated through their ability to continue to get work done in the face of challenges posed by the pandemic."

CPO, George Warnock

Continuous Improvement

5 Years Since 2016 Auditor General's report

2021 marks 5 years since the 2016 Auditor General's report on mining compliance and enforcement was released. In that time, EMLI has made significant structural and operational changes to improve safety, oversight, and transparency of the regulation of BC's mining industry.

Regulatory & Legislative Changes

2016

- Ministry commenced action to address the 2016 Office of the Auditor General Report and Recommendations on Mining Compliance and Enforcement.
- Updated the Health, Safety and Reclamation Code ("the Code") to strengthen tailings management requirements and emergency preparedness as unanimously recommended by a committee of labour, Indigenous and industry representatives.

2017

- Established the [Compliance and Enforcement Branch](#) and the [Mines Investigation Unit](#) with specialized expertise to undertake complex investigations (reference page 16 for more information).
- Formalized the EMLI staff training program.
- Administrative Monetary Penalties (AMP) regulation came into force, enabling a new enforcement tool and monetary penalties of up to \$500,000 as a deterrent for non-compliance.
- Launched the [BC Mine Information](#) website to increase transparency of mining regulatory oversight.

2018

- Completed cross-jurisdictional research to inform restructuring of the Ministry's mining regulatory oversight and creation of a second mining division to separate compliance and enforcement away from authorizations.

2019

- Budget 2019 invested \$20 million over three years to fund up to 65 new staff and enhance regulatory effectiveness through the creation of the Mining Health, Safety and Enforcement Division (MHSED) (reference page 9 for more information).
- Established a [Standing Code Review Committee](#) to ensure regulation for mining in B.C. is updated and modernized.
- Established the Abandoned Mines Branch (reference page 25 for more information).
- First *Mines Act* prosecution in two decades and first ever [administrative monetary penalty](#) issued under *Mines Act*.

2020

- *Mines Act* amendments came into force, creating separate statutory decision makers for permitting (CPO) and health, safety and enforcement (CIM).
- Established the Chief Auditor and audit function, and appointed the first Chief Auditor.
- Updated compliance and enforcement provisions under the *Mines Act*.

2021

- First revision of the Code by the Standing Code Review Committee.
- [First audit](#) released on April 1, 2021.



Quick Stats

\$20M
budget lift
over 3 years
(2019-2021)

30%
increase in
inspections
from 2016-2019

\$400K+
in AMPs collected
since 2017*

1st
prosecution under
the *Mines Act* in
20+ years

Improved Tailings Storage Facility (TSF) Safety

Revisions to the TSF provisions of the Code were implemented in July 2016. These revisions were based on recommendations provided by the Independent Expert Engineering Investigation Review Panel (IEERP) and the Chief Inspector of Mines, and included requirements related to the Engineer of Record, Independent Tailings Review Board, Tailings Storage Facility Qualified Professional, and Dam Safety Inspections.



Budget Lifts & Restructuring to Improve Regulatory Effectiveness



- *Budget 2017*: created Mines Investigation Unit (MIU); added resources for increased Compliance and Enforcement (C&E) support; launched the Natural Resource Inspection System (NRIS).
- *Budget 2019*: created Mines Health, Safety and Enforcement Division and the Mines Audits, Effectiveness and Digital Services Unit; provided a significant resource increase for health and safety; established Standing Code Review Committee.

Increased Transparency & Improved Digital Systems



- Launch of the BC Mine Information website (BCMI) for increased public transparency
- Launch of the Natural Resource Inspection System (NRIS) for use by inspectors
- Launch and ongoing development of a new data management system for regulatory information, including an industry portal, MineSpace, for document submissions.

To learn more about EMLI's digital systems, see page 28 of the report.

*As of April 8, 2021

Mines Act Amendments

Amendments to the *Mines Act* came into force in August 2020, further strengthening and modernizing mining oversight. This included several targeted *Mines Act* amendments to strengthen investigation authorities, clarify offence provisions and give EMLI more tools to hold mines accountable. These amendments created the role of the Chief Permitting Officer, officially separating the permitting authorities away from health, safety, compliance and enforcement authorities. The amendments also created the role of the Chief Auditor, separate from other regulatory authorities, with a mandate to evaluate the effectiveness of the provincial regulatory program for mining.



Audits



In 2020, EMLI introduced the role of the Chief Auditor. This position leads a dedicated team within the Ministry to evaluate the effectiveness of the regulatory system for mining in BC and make public recommendations to Government. This team is independent of the other regulatory functions of the Ministry.

Standing Code Review Committee



In 2019, EMLI established a Standing Code Review Committee to review B.C.'s mining regulations in light of evolving trends and to ensure strong protection for health, safety, and environment at mine sites. The committee has equal representation from Indigenous communities, labour and industry. The first revisions, unanimously recommended by the committee, came into force April 1, 2021 and the work of the committee is ongoing.

2021 Code Revisions



In 2021, eight unanimous revisions to the Code were made to improve health and safety at BC mines, reflect the August 2020 amendments to the *Mines Act*, and recognize the introduction of the CPO.

More information on the recent Code revisions and the Standing Code Review Committee can be found here: <https://www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/health-safety/health-safety-and-reclamation-code-for-mines-in-british-columbia/codereview>

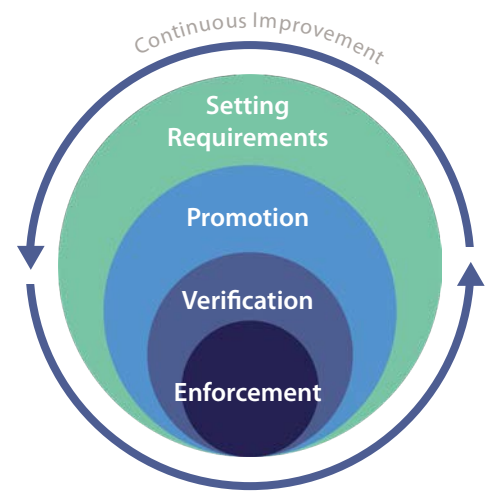
The updated online version of the Code can be found: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/health-and-safety/code-review/feb2021_health_safety_reclamation_code_2021_rev.pdf



Regulatory Oversight

The Ministry has adopted the Natural Resource Compliance Management Framework as a model for its regulatory oversight activities. This Framework includes a continuous improvement element and sets out key factors for:

- setting requirements (permitting, Code requirements)
- promoting requirements (education about the rules)
- verifying compliance (inspections, compliance reviews); and
- enforcing compliance (issuing orders, enhanced enforcement tools).



Compliance Management Framework

As a general approach, the Ministry has prioritized inspections in consideration of site and operational risks, to ensure that inspection resources are appropriately and effectively allocated. In 2020, the Ministry moved to standardize and formalize an annual risk-based inspection planning approach for mines across the Province. Risk considerations, in combination with inspection resources, determine the inspection plans. Planned versus actual inspection goals are monitored and adjusted as necessary.

Factors considered in the risk-based approach include:



Operational Status



Type of Operation



Size of Mine



Phase of Operations



Discipline-specific factors established for each inspection speciality¹



Compliance History

¹Electrical, ergonomics, geoscience, geotechnical, occupational health and reclamation.



Photo: Inspection at Red Chris Mine in north-west BC.

Inspections FY20/21

Major Mines:

- ▶ **General Compliance¹**
330
- ▶ **H&S Specialities²**
123
- ▶ **Technical Compliance³**
59

Regional:

- ▶ **General Compliance**
661
- ▶ **H&S Specialities**
278
- ▶ **Technical Compliance**
63

▶ COVID Protocol Checks **338**

For more information on inspections during COVID, see page 11.

¹General Compliance includes: health and safety (H&S), permitting
²H&S Specialities include: mechanical, electrical, ergonomic, occupational health
³Technical Compliance includes: reclamation, geotechnical, geoscience

Mines Investigation Unit (MIU)

The Mines Investigations Unit (MIU) was introduced in 2017. A team of investigative professionals, the MIU investigates serious incidents to determine what happened, why it happened and make findings for prevention. Investigation findings may lead to industry Hazard or Safety Alerts to ensure critical safety messages and learnings are shared across industry. Where the causes of an incident are due to significant non-compliances, the MIU may recommend an administrative monetary penalty or write a report to Crown Counsel. The MIU may also assist inspectors regarding escalated enforcement for non-compliances encountered during inspection activities and associated follow-up.

In 2020/21, the MIU completed 11 reports recommending administrative monetary penalties. These reports are submitted to a delegated decision maker and go through an administrative hearing process that allows the named party an opportunity to be heard before a finding is rendered. Five decisions were issued in this reporting period. All decisions are published to the [BC Mine Information website](https://www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/compliance-enforcement/mines-investigations-unit) following a 30-day appeal period.

More about the MIU can be found here: <https://www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/compliance-enforcement/mines-investigations-unit>

Indigenous Engagement

Reconciliation with Indigenous peoples is a cross-government priority shared by every provincial ministry. Through the *Declaration on the Rights of Indigenous Peoples Act*, BC is committed to advancing reconciliation with Indigenous peoples.

Working with Indigenous Peoples

- ▶ BC was the first jurisdiction in Canada to pass legislation implementing the UN *Declaration on the Rights of Indigenous Peoples*.
- ▶ The *Declaration on the Rights of Indigenous Peoples Act* (Declaration Act) was unanimously passed in November 2019.
- ▶ EMLI is committed to working with Indigenous peoples to ensure collaboration continues throughout the life of mines, to uphold s. 35 of the Constitution and advance BC’s commitments under the Declaration Act.

EMLI recognizes the importance of working collaboratively with Indigenous peoples in relation to the operations of mines and mining-related activity. EMLI engages with Indigenous peoples in relation to both regional and major mines that may affect s.35 rights in relation to Indigenous lands, territories and resources. EMLI is also working to increase opportunities for engagement in compliance activities for permitted mines, including through participation in training and compliance activities.

Revenue Sharing

Economic Community Development Agreements (ECDAs) secure support for mining projects, increase process certainty for the Province, Indigenous Nations and industry, and reduce litigation risks for the life of the agreement. All ECDAs contain engagement process commitments between the Parties concerning project-specific engagement over the life of the mine. The engagement process commitments in each ECDA reflect both the nature of the project and the interests brought forward for consideration. Engagement approaches between the Province and Indigenous Nations under ECDAs vary depending on the ECDA, as each agreement is project-specific, nation-specific, and was negotiated at a particular point in time.

ECDAs

Introduced in
2008

Share up to
37.5%
of mineral tax
revenue with
Indigenous Nations.

48
signed ECDAs
between the BC
Government &
Indigenous Nations.

\$28M
shared with
Indigenous Nations
from mineral taxes
in the 2020 tax year.

\$160M
shared with
Indigenous Nations
from mineral tax
since 2008.

Indigenous Engagement in Compliance Activities

In spring 2020, EMLI provided guidance to inspectors to increase consistency regarding engaging Indigenous Nations in compliance activities. The purpose of this guidance is to:

- Build relationships with Indigenous Nations in whose traditional territories mining activity occurs;
- Provide a clear and transparent approach for compliance-related engagement;
- Increase Indigenous Nations' knowledge and understanding of EMLI's compliance verification approach;
- Help enhance mines inspectors' understanding of Indigenous interests, values and experiences related to compliance; and
- Increase trust in the regulatory regime for mining.

Three ways Indigenous Groups can get involved in compliance activities:



Compliance related education/training.



Identification of compliance interests, input into compliance planning.



Site visits (mine tours or accompanied inspections).

Indigenous Engagement at a Glance

While developing and rolling out this guidance, EMLI met with Indigenous Groups to introduce and gather input on the policy and to provide compliance-related training for groups that were already engaged in compliance activities.

12

engagement sessions with Indigenous Groups

24

Indigenous Nations engaged

Accompanied Inspections



Read about AMB's work in collaboration with the Taku River Tlingit and Upper Similkameen Indian Band on page 26.

Lands and Resource-Related Negotiated Agreements

EMLI is also working to advance reconciliation through specific land and resource-related negotiated agreements, such as the Shared Prosperity Agreement between BC and the Tahltan Nation, which sets out the Parties' land use priorities, strategies and vision for creating shared prosperity for the future. Further to the success of negotiations to date between the Province and the Tahltan Nation, the Parties entered into the Shared Prosperity Agreement in March 2020 to advance innovative, collaborative approaches to mining and resource management, including interim strategies in relation to permitting and culturally significant areas, and to set out their shared vision for comprehensive reconciliation negotiations.

BC/Tahltan Shared Prosperity Agreement

The Tahltan Territory is the most active mineral exploration region in the Province, and has the potential to become a significant economic driver and world-class sustainable mining jurisdiction that benefits both the Tahltan Nation and the Province. In March of 2020, the Province and Tahltan Nation entered into the Shared Prosperity Agreement. The Shared Prosperity Agreement sets out the Parties' agreement to the principles and outcomes associated with establishing a collaborative, long-term, and evolving government-to-government relationship in relation to lands, resources and economic development in the Tahltan Territory.

Through the Shared Prosperity Agreement, the Province and Tahltan are working together on a number of shared priorities, including:

- Negotiation of a comprehensive reconciliation agreement (aka Foundation Agreement);
- A phased approach for the Parties to co-develop the Tahltan Territory; and,
- Interim Strategies to pilot regarding both (i) the pace and scale of mineral development near Tahltan communities and cultural areas, and (ii) mineral and mineral-related permit predictability and efficiency within areas of high mineral investment interest.



Health & Safety

Mining is one of the safest heavy industries in the Province. It has remained so over the past decade through the cooperative efforts of mine employees, mine management, unions, and EMLI.¹

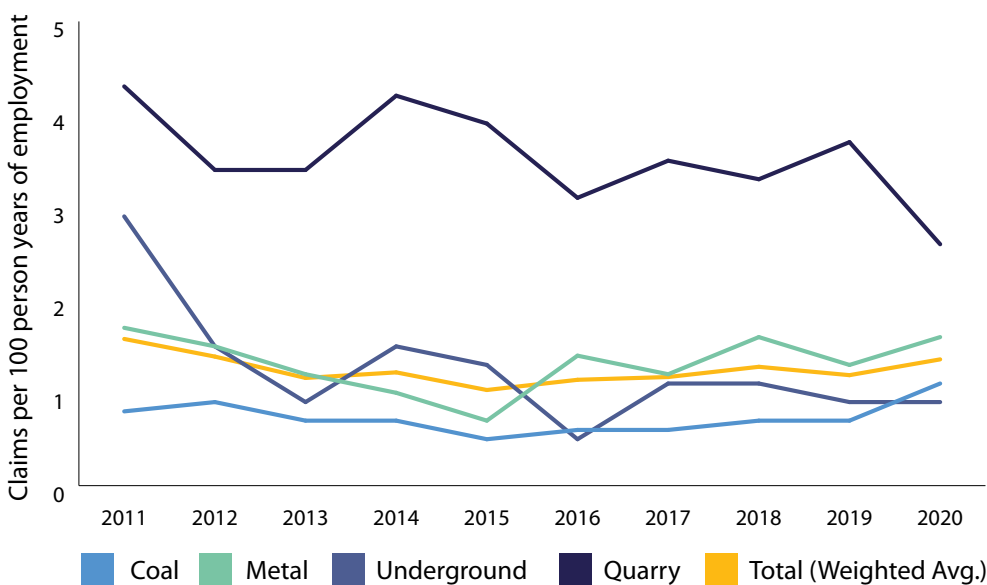
¹WorkSafeBC oversees the claim system for injured workers and are the holders of official and comparable statistics of worker safety in BC.

Injuries by Sub-Sector², Weighted Average (Source: WorkSafeBC)

Sub-Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*
Mining (Metal, Coal & Quarries) ³	1.3	1.6	1.4	1.1	1.2	1.0	1.1	1.2	1.3	1.2	1.4
Heavy Construction	3.4	3.5	3.6	3.4	3.3	2.9	3.1	3.2	3.1	2.3	1.7
Forestry	4.7	4.8	4.8	5.2	5.0	4.8	4.8	4.5	4.6	4.3	4.0
General Construction	4.5	4.6	4.4	4.1	4.2	4.2	4.2	3.9	4.1	3.7	3.4
Oil & Gas or Mineral Resources	1.5	1.8	1.4	1.1	1.1	1.1	1.1	1.1	1.3	1.2	1.4
Road Construction or Maintenance	2.8	3.1	2.9	2.7	2.6	2.7	2.6	2.7	2.7	2.6	2.5
Wood and Paper	2.9	3.0	3.4	3.1	3.1	3.2	3.0	2.9	2.7	2.7	2.8
Provincial	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1

*Includes COVID-19 cases.

Mining Injury Rates



²The unit for injury rates is the number of claims per 100 person years of employment; one person-year is the equivalent of one worker working for a full year, whether on a full-time or part-time basis.

Data has been updated to reflect changes to new and ongoing claims. Weighted average reflects the injury rate/person years data weighted by the number of workers in each industry.

³Injury rates for mining may vary slightly from past CIM Annual Reports, as statistics from quarries had previously not been incorporated into the weighted total. Historical values have been amended to reflect the inclusion of this data.

A Proactive Approach to Protecting Workers

Historically, measuring the effectiveness of health & safety prevention initiatives has been done by collecting data “after-the-fact”. However, taking a proactive approach, or measuring data before an incident occurs, reduces the risk of harm to employees and increases overall employee wellbeing. EMLI is excited to take a more proactive approach to protecting workers.

Dangerous Occurrence Reporting

In January 2021, the Chief Inspector centralized dangerous occurrence reporting and now provides a weekly online summary report to ensure that important safety lessons are shared in a timely way across the mining sector. This report summarizes reportable incidents from the prior week and provides reminders about key regulatory requirements. See the reports here: <https://www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/health-safety/incident-information/dangerous-occurrence->

Dangerous Occurrences

Jan-March 2020	80
FY 2020-21	247



New Safety Award

In 2021/22, EMLI is introducing a new Mine Safety Technology Award to recognize companies taking proactive steps to protect mine workers. The award will reward new and innovative technology uses to reduce the risk of harm from various hazards in the mining industry.

Mine Safety Awards

EMLI sponsors the Mine Safety Awards, held annually for the past 58 years. Awards are given to mining operations with the lowest injury rates in their respective operation categories for the past year.

emergency on site. Their quick and competent actions including performing CPR for 45 minutes and 9 AED shocks, sustained and saved a worker’s life.

[Full news release of winners for all awards.](#)

1962

First Mine Safety Awards

2021

59th Mine Safety Awards held virtually in May

Award Spotlight

For 2020, EMLI awarded a Chief Inspector of Mines Award for Exemplary Emergency Response to G Shift Mine Rescue, Castle Safety, and Fording River ATWF-S Contractor Tradesman of Teck Coal Ltd. Fording River Operations. This award recognizes workers who responded to a critical medical



Mining-Related Fatalities

When fatalities occur on a mine site, they are investigated by the Mines Investigation Unit (for more on the MIU, see page 16). Tragically, three mining-related fatalities occurred in FY 20/21. Two of these incidents occurred on mine sites. In one incident, an employee was fatally injured during a maintenance activity on surface. The second fatality was due to an underground flow of water and solids, known as a “mudrush.” The third fatality, a helicopter crash that killed the pilot during a drill move, occurred off of a mine site and was investigated by the Transportation Safety Board.

Permitting

The Mines Competitiveness and Authorizations Division (MCAD) is responsible for regional and major mines permitting. MCAD is working hard to ensure permitting is both timely and thorough, with a fulsome consideration of environmental values and a commitment to Indigenous consultation and advancing reconciliation.

Regional Permitting

EMLI's regional offices are responsible for permitting all exploration, placer, quarry, and sand and gravel mining activities. These regional operations provide economic opportunities for people throughout the Province. In addition, mineral exploration projects that advance to development can lead to more sustained economic benefits for the Province. With the exception of 2019, industry expenditures have continued to increase year over year since 2016, resulting in over \$1.54B spent from 2016 to 2020.

Over **\$1.54B** in exploration spending from 2016-2020

Regional permitting functions are conducted in 5 regional offices located throughout the Province. Applicants submit a Notice of Work (NOW) application for new permits or amendments to existing permits. NOW applications are reviewed by permitting inspectors, who consult Indigenous Nations and engage other ministries, as needed, to ensure that the proposed activity can be conducted in a way that minimizes impacts on traditional values and on the environment. Permitting inspectors impose permit conditions, which must be complied with along with the requirements found in the *Mines Act* and the Health, Safety and Reclamation Code for Mines in BC.

Permits Issued

Despite the challenges of COVID-19, regional permitting inspectors issued a comparable number of permits or amendments to existing permits as in previous years. **To learn more about how EMLI responded to COVID, see page 11.**



Regional Mines Standardization and Service Improvement Project

EMLI has a Regional Mines Standardization and Service Improvement project underway to promote consistency and efficiency in the processing of permit applications. This project has identified opportunities for improvement in the intake of Notices of Work and those will be resourced and actioned beginning in 2021/22.

Major Mines Permitting

The Major Mines Office (MMO) brings coordination and clear accountability to both industry and government to ensure the timely review of high-quality permit applications to support enduring decisions with respect to permitting major mine projects. MMO leads the coordinated authorizations process for major mine permitting across the Province, through collaboration with other natural resource agencies.

Recent highlights:

- Establishment of a Chief Permitting Officer under changes to the *Mines Act*;
- Establishment of the Southeast Coal team to provide a dedicated, coordinated inter-agency team to review applications relating to coal projects in that region;
- Development of Departure from Approval Guidance, which has cut timelines by 50% for processing these types of applications; and
- Additional resourcing, which has enabled MMO to keep pace with a high volume of small/minor *Mines Act* amendments, Notice of Departures, regional requests and other associated reviews.

Regulatory Efficiency

The Departure from Approval Guidance was developed to provide clarification on the process for determining whether a proposed activity is considered a “substantial” departure from the approved mine plan and reclamation program under Part 10.1.18 of the Code. This guidance includes a tool for mine managers to assess whether or not a proposed departure is substantial and provides instruction on how to proceed with these types of requests.

More information and a self-assessment tool can be found here:

<https://www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/permitting/mines-act-departures-from-approval>

Reclamation

Reclamation, and the standard to which it must be completed, has evolved considerably since *Mines Act* permits were first required in 1969. Work within EMLI to improve tools, guidance, and policy related to reclamation has been ongoing over the past number of years. These efforts include a focus on accurately capturing reclamation liability costs when determining the security amount to be required under a *Mines Act* permit. For example, the Regional bond calculator was introduced in 2018 to allow for a more consistent and transparent method of calculating reclamation costs on regional mine sites. Since the introduction of the calculator, reclamation bonding for regional sites has increased from approximately \$59.9M at the end of FY16/17 to approximately \$95.5M at the end of FY20/21.





Photo: Brucejack Mine, near Stewart, BC

Regional Mines Securities

Industry	2016/217	2020/2021
Coal Exploration	\$11,429,908	\$14,532,281
Sand & Gravel	\$14,737,828	\$21,819,857
Mineral Exploration	\$20,377,978	\$27,420,075
Placer	\$6,801,453	\$10,242,413
Quarries	\$6,543,188	\$21,455,433
Total	\$59,890,355	\$95,470,059

More information on reclamation and securities can be found here: <https://www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/permitting/reclamation-closure>

Major Mines Securities

In November 2020, the Minister of EMLI received a mandate to work with the Minister of Environment and Climate Change Strategy to implement bonding at large-scale industrial sites to ensure that those sites pay the costs for environmental clean-up if their projects are abandoned. EMLI is engaged in this inter-agency work which is complementary to work at EMLI respecting reclamation securities for major mines.



**Increase in major mines securities held from 2016/17-2020/21:
+\$1,051,380,131**

Below is the estimated reclamation liability for major mines and the reclamation security held by EMLI, as of December 31, 2020. Mine permits may contain schedules for placing additional security that are not reflected in these totals. A detailed list can be found in Appendix E.

Major Mines Securities Held (as of December 31, 2020)	2020 Liability Estimates	2020 Differential
\$2,307,179,634.43	\$3,446,289,150.58	\$1,139,109,516.15

Abandoned Mines Branch

While the regulation of the mining industry has evolved and improved, the long history of mining in the Province has resulted in legacy mines that pose a risk to public safety because the owners did not reclaim the site or the condition to which the site was reclaimed falls short of today's standards.

The mandate of the Abandoned Mines Branch (AMB) (formed in 2019) is to recognize and reclaim past mining activities that today pose potential risks to public safety and/or the environment, where there is no *Mines Act* permit and/or responsible person to address these risks.

The regulatory authority for the actions of the AMB is derived from Section 17 of the *Mines Act* which allows for the Chief Inspector of Mines to take action in, on or about a closed or abandoned mine in order to prevent danger to persons or property or to abate pollution of land and watercourses.



Photo: Lakeview Dividend Mine, near Osoyoos, BC.

AMB's Approach

- ▶ The creation of the AMB established the structure within the Ministry to address risks at closed and abandoned sites in a more systematic manner.
- ▶ AMB developed their risk-based assessment process by looking at the practices of contaminated sites programs in other jurisdictions.
- ▶ AMB is building an inventory of abandoned mines using historic permitting data and field inspections to categorize sites as low, medium, or high risk.
- ▶ Understanding the condition of abandoned sites allows the AMB to know the scale of the issues at sites, allocate resources accordingly, and plan future work.

2020/2021 Highlights

Setting up for future successes

Established tools and procedures for future work. This work included:

- Initiating development of a data management system to serve as the foundation for accurate data collection, storage, analyses and sound decision-making
- Refining a risk assessment framework to aid in the prioritization of sites for future remediation action
- Creating a field tool for consistent data collection and accurate georeferencing

Protecting Public Safety

Undertook two remediation projects in the Sandon area to secure historic mine openings and prevent the public from inadvertent access. This included:

- Re-filling a collapsed historic adit and recontouring the overlying road
- Designing and installing a gate to prevent the public from entering an open adit, but allow access by resident bats

Conducting a groundwater risk assessment at Candorado Mine (Hedley, BC)

Partnered with the Upper Similkameen Indian Band (USIB) to conduct a groundwater risk assessment of the Candorado mine heap leach facility and complete minor risk mitigation work at the mine.

This included:

- Sampling groundwater to assess groundwater pathways to the environment
- Installing deterrents to prevent harm to wildlife
- Compiling potential reclamation options
- Repairing pond liners to mitigate spring flood risk and potential groundwater contamination
- Providing funding for wildlife studies and end land use engagement



Early reclamation work at Tulsequah Mine (Atlin, BC)

Worked with the Taku River Tlingit First Nation (TRTFN) on early works to support reclamation at the Tulsequah Chief Mine, as identified in the conceptual closure and reclamation plan released in 2020. This work included:

- Upgrading a 20-person camp facility
- Removing debris and hazardous materials
- Repairing roads and bridge culverts to address erosion and safety concerns
- Initiating a multi-year aquatic monitoring program



Project Highlight: Tulsequah

In 2020, the Taku River Tlingit First Nation (TRTFN) and EMLI collaborated on the development of a conceptual closure and reclamation plan for the Tulsequah Chief Mine to address longstanding concerns about the mine, primarily related to water discharge.

The closure and reclamation plan outlines a phased approach that involves a series of steps designed to reduce the ongoing contamination. It is designed to be flexible, so changes can be made once more information is gathered from the site.

Early reclamation work, conducted in summer 2020, included replacing and repairing bridges, upgrading the access road, establishing an erosion protection berm and repairing the existing airstrip. This work was required to address environmental, health and safety issues and to prepare the site for long-term remediation. A large portion of the work was conducted by the economic arm of the TRTFN government, the Atlin Tlingit Economic Limited Partnership.

Future work at this site includes the continuation of the water quality monitoring program and ongoing assessment of the water treatment plan to find a long-term solution for the site. AMB will continue to work with TRTFN throughout the lifespan of the project.

More information and future updates can be found at: <https://www2.gov.bc.ca/gov/content/environment/air-land-water/site-permitting-compliance/tulsequah-mine>



25

Atlin residents employed



\$1.575M

in Provincial funds



\$500K

for aquatic monitoring programs



Photo: Candorado heap leach facility near Hedley, BC.

Assessing the safety of tailings storage facilities at abandoned mines

Oversaw the monitoring at abandoned tailings storage facilities (TSFs) at 4 mines to assess their alignment with current safety guidelines and standards. This work included:

- Ensuring annual dam safety inspections (DSIs) are completed at all sites
- Conducting dam safety reviews (DSRs) on all sites
- Ensuring operation, maintenance and surveillance (OMS) manuals and emergency response plans (ERPs) are completed and updated at all sites
- Developing plans for ensuring recommendations in the DSI/DSR reports are being adhered to

Project Highlight: TSF Safety

The Abandoned Mines Branch (AMB) oversees monitoring at 5 TSFs, located at four abandoned mines: Lawyers, Coxey, Northair and Mt Copeland.

The Ministry contracts independent qualified geotechnical engineers to inspect and advise the Ministry on dam stability and performance at these sites. Dam Safety Inspections are conducted annually at each of these sites. Other future work is being informed by the recommendations of the engineers inspecting the site, and may include site maintenance, such as vegetation removal, dam and spillway maintenance and site-specific investigations.

These five TSFs were identified from list of major mines with known TSFs permitted in BC. The AMB anticipates other sites will be identified as further assessments on historic sites are completed.

\$2.2M
spent on TSF
work since
2018

Working with Others

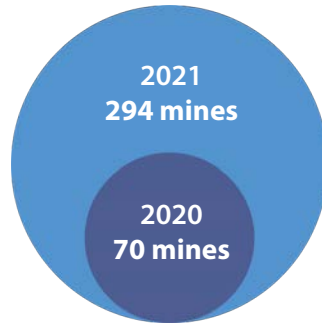
- ▶ AMB engages Indigenous Nations to assess impacts at sites, determine work programs, provide employment opportunities, and collaborates with industry where possible.
- ▶ The AMB collaborates and shares information with the Crown Contaminated Sites Program (CCSP) to make efficient use of resources and are working towards formalizing their working relationship.
- ▶ The AMB manages physical risks at historic mines (e.g. infrastructure, open adits, etc), and regulates environmental and physical risks at abandoned mines. CCSP manages contamination at sites on Crown land for which there is no existing responsible party, including historic mines.

Digital Systems Modernization

EMLI continues to improve data accuracy, transparency and information sharing between industry, the public, and the Ministry.

MineSpace

In 2020 the Mines Digital Services team enhanced the interactive portal connecting EMLI to mining proponents in BC. The MineSpace portal has received hundreds of document submissions and streamlined interactions between mining proponents and EMLI.



Mines on MineSpace

Proponents in MineSpace can:

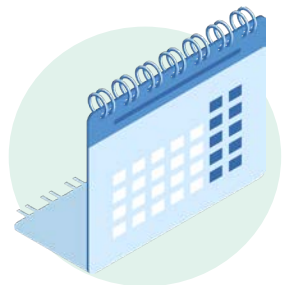
- view their mine information as held by EMLI
- view their permits, compliance history, variance applications
- review their bond information
- submit Code Required Reports directly to EMLI

The number of mines on MineSpace grows weekly. Proponents with a personal or business BCeID can register at: <https://minespace.gov.bc.ca/>

Continuous Improvement

In 2021/22, the Mines Digital Services team plans to:

- increase functionality in MineSpace by allowing proponents to submit additional reports to EMLI
- connect the MineSpace systems to software systems in other ministries to improve collaboration
- improve the mines authorization process for mining proponents in BC

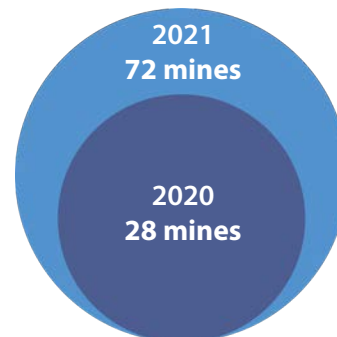


Natural Resource Inspection System (NRIS)

The NRIS application was introduced in 2018 and is linked to EMLI's other digital databases. This application allows inspectors to create inspection records, such as site observations, orders and remedial actions, using the most up-to-date and accurate mine information. It also allows for tracking and analysis of inspection and compliance data.



BC Mine Information Website



Mines on BCMI

The BC Mines Information (BCMI) website made significant improvements in 2020. The most notable improvement was the significant increase in the number of major mines available for viewing on the website; in addition to this work, the site now has a direct connection to the EMLI database so that information on BCMI directly reflects data stored at EMLI, and many of the mines represented on the site now have permitted mine area spatial data shown.

Visit the website at: <https://mines.nrs.gov.bc.ca/>



Conclusion

As BC continues to deal with the challenges of COVID-19, the Ministry of Energy, Mines, and Low Carbon Innovation (EMLI) realizes the economic opportunities that the mining sector can provide throughout the Province and the importance of robust oversight for the protection of workers, the public and the environment.

The past year has provided many opportunities for EMLI to continue improving regulation of the mining industry in BC. Restructuring into the Mines Competitiveness and Authorizations Division (MCAD) and the Mines Health, Safety, and Enforcement (MHSE) Division has separated the authorities for permitting and compliance and enforcement, allowing for more efficient and effective oversight. The creation and appointment of the Chief Auditor provides EMLI with a mechanism for continuous review and improvement of the regulatory framework for mining.

The Chief Inspector of Mines Annual Report will continue to evolve to reflect the priorities of the Ministry, industry and the public, as EMLI moves towards improved data analytics, transparency and information sharing.

Appendix A: Major Mines Production

Metal Mines				
Mine Name	Company	Nearby Community	Commodity	2020 Production
Brucejack	Pretium	Iskut	Gold (oz)	347,743
			Silver (oz)	472,163
Copper Mountain	Copper Mountain Mining	Princeton	Copper (lb)	73,300,000
			Gold (oz)	26,137
			Silver (oz)	323,276
Gibraltar	Taseko	Williams Lake	Copper (lb)	123,000,000
			Molybdenum (lb)	2,300,000
Highland Valley Copper	Teck	Logan Lake	Copper (lb)	263,011,166
			Molybdenum (lb)	3,300,000
Mount Milligan	Centerra Gold	Fort St. James	Copper (lb)	82,800,000
			Gold (oz)	161,855
New Afton	New Gold	Kamloops	Copper (lb)	72,100,000
			Gold (oz)	64,220
			Silver (oz)	286,846
Red Chris	Newcrest/Imperial Metals	Iskut	Copper (lb)	88,343,000
			Gold (oz)	73,787
			Silver (oz)	176,376
Myra Falls	Nyrstar	Myra Falls, mid-Vancouver Island	Zinc (lb)	65,278,798
			Lead (lb)	956,805
			Copper (lb)	11,404,499
			Gold (oz)	6,794
			Silver (oz)	429,492
Coal Mines				
Brule	Counuma Coal	Chetwynd	Metallurgical Coal (tonnes)	1,844,000
Elkview	Teck	Sparwood	Metallurgical Coal (tonnes)	6,289,000
Fording River	Teck	Elkford	Metallurgical Coal (tonnes)	6,839,000
Greenhills	Teck	Elkford	Metallurgical Coal (tonnes)	5,317,000
Line Creek	Teck	Sparwood	Metallurgical Coal (tonnes)	3,138,000
Willow Creek	Counuma Coal	Chetwynd	Metallurgical Coal (tonnes)	690,000

Wolverine	Counuma Coal	Chetwynd	Metallurgical Coal (tonnes)	1,181,000
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Appendix B: Major Metal & Coal Mines

Operating Major Metal Mines	
Mine Name	Company
Mount Milligan	Centerra Gold Inc.
Copper Mountain	Copper Mountain Mining Corporation
Red Chris	Imperial Metals Corporation
New Afton	New Gold Inc.
Brucejack	Pretium Resources Inc. (Pretivm)
Gibraltar	Taseko Mines Ltd.
Highland Valley Copper	Teck Resources Ltd.
Myra Falls	Nyrstar
Silver Tip	Coeur Mining (care and maintenance as of February 2020)
Operating Coal Mines	
Brule	Conuma Coal Resources Ltd.
Wolverine	Conuma Coal Resources Ltd.
Elkview	Teck Coal Ltd.
Fording River	Teck Coal Ltd.
Greenhills	Teck Coal Ltd.
Line Creek	Teck Coal Ltd.
Willow Creek	Conuma Coal Resources Ltd.

Appendix C: Internal Training

Continuous Improvement (virtual training):

Mandatory Training (inspectors)	Mandatory Training (all staff)
Recommended Training (inspectors)	Recommended Training (all staff)
Supplemental/Optional Training	Group-specific courses

Course	Participants	Hours
Administrative Law	69	3.5
Better Presentations with PowerPoint	76	1
Calibration Session - Electrical Safety	79	1.5
Calibration Session - Grinders	46	1
Calibration Session - Guarding	78	1.5
Calibration Session - Lock-Out/Tag-Out	61	1.5
Code Revisions - WHMIS	57	1
Code Revisions Overview	128	0.75
Courtproofing	54	1
COVID-19: What Inspectors Need to Know	135	1
Dangerous Occurrence Reporting and Management	106	1
Emergency Operations Centre Workshop	18	2
Enforceable Order Writing	96	2
Ergonomic Tips for Working from Home	83	1
Fatigue Awareness	105	1
Field Level Risk Orientation	123	1
Information Gathering/Notetaking	95	2
inReach and Lone Workers/Field Check-In Policy	82	1
Inspections with OneNote	58	1
Interviewing	47	1.5
Intro to New Policy on Indigenous Engagement in C&E Activities	82	1
Introduction to the Learning Management System	115	1
Meetings in MS Teams	55	1
Mine Emergency Management	161	1.5
Mine Inspection Procedure	87	2
Mineral Titles	108	2
<i>Mines Act: Compliance and Enforcement</i>	146	3
Mines Certification Registry for Regional Administrators	7	2
OneNote 101	72	1
Online Facilitation Skills	96	1

Overview of <i>Mines Act</i> Amendments, Implementation and Q&A	34	1
Permitting Review Checklist in OneNote	53	1
PowerPoint 101	59	1
Privacy Training for the Inspectorate	94	1
Skype 101	68	1
Skype for Business Troubleshooting	62	1
Travel Health and Safety Program	112	1
Virtual Conference: How to Use MS Teams to Participate	165	1
Virtual Conference: Training for Presenters	37	1

Appendix D: Certifications Issued to Industry 2020/21

Sector	Number of Certifications Issued
Blasting	101
Mine Rescue - Gravel	1
Mine Rescue - Surface	125
Mine Rescue - Underground	113
Shiftboss - Fireboss	1
Shiftboss - Open Pit	34
Shiftboss - Underground	38
Total	413

Appendix E: Reclamation Liabilities

Mine	Owner (2020)	Total Bond Amount (\$) 2020	Liability Estimate (\$) 2020	2020 Differential (\$)
Elk Valley (Elkview, Fording River, Line Creek, Coal Mountain, Greenhills, Upper Elk Valley)	Teck Coal Ltd.	\$1,193,310,000	\$1,708,810,000	\$515,500,000
Sage Creek	Sage Creek Coal Ltd.	\$1,000	\$1,000	\$0
Tent Mountain	Luscar Ltd.	\$58,500	\$0	-\$58,500
Sukunka	Tailsman Energy Inc.	\$50,000	\$67,500	\$17,500
Mt Speiker	Canadian Natural Resources Ltd.	\$10,000	\$10,000	\$0
Benson Mt.	Netherlands Pacific Mining Co. Ltd.	\$0	\$5,000	\$5,000
Willow Creek	Conuma/Willow Creek Coal Partnership	\$12,000,000	\$20,014,728	\$8,014,728
Quintette	Teck Coal Limited	\$20,083,200	\$27,020,000	\$6,936,800
Bullmoose	Teck Coal Limited	\$1,000,000	\$1,000,000	\$0
Benson Mt.	Wolf Mountain Coal Ltd.	\$0	\$20,000	\$20,000
Mt. Klappan	Fortune Coal Ltd.	\$25,000	\$0	-\$25,000
Quinsam	Quinsam Coal Corp.	\$1,309,309	\$12,466,000	\$11,156,691
Basin Coal	Basin Mine Ltd. Partnership	\$276,547	\$275,000	-\$1,547
Brule	Conuma /Brule Coal Partnership	\$5,350,000	\$23,160,640	\$17,810,640
Wolverine	Conuma /Wolverine Coal Partnership	\$14,500,000	\$30,944,545	\$16,444,545
Trend-Roman	Peace River Coal Ltd.	\$73,900,000	\$84,064,669	\$10,164,669
Endako	Thompson Creek Mining Co.	\$15,345,700	\$56,592,366	\$41,246,666
Pinchi	Teck Resources Ltd.	\$2,000,000	\$2,000,000	\$0

Granisle	Glencore Canada Corp.	\$161,522	\$1,506,343	\$1,344,821
Island Copper	BHPBilliton Base Metals.	\$4,227,913	\$33,700,000	\$29,472,087
Kitsault	Avanti Kitsault Mine Ltd.	\$1,770,000	\$1,400,000	-\$370,000
Highland Valley Copper	Teck Highland Valley Copper Ltd.	\$283,638,000	\$418,087,000	\$134,449,000
Brenda	Glencore Canada Corp.	\$5,000,000	\$33,396,000	\$28,396,000
Cassiar	Cassiar-Jade Contracting Inc.	\$600,000	\$383,250	-\$216,750
Myra Falls	Nyrstar Myra Falls Ltd.	\$132,424,500	\$127,265,012	-\$5,159,488
Copper Mountain	Copper Mountain Mining Corp.	\$20,983,554	\$14,900,000	-\$6,083,554
Bull River	Bul River Mineral Corp.	\$491,511	\$470,747	-\$20,764
Bell	Glencore Canada Corp.	\$25,100,000	\$17,570,021	-\$7,529,979
Gibraltar	Gibraltar Mines Ltd.	\$50,000,000	\$41,300,000	-\$8,700,000
Giant Nickel	Barrick Gold Inc.	\$27,000	\$2,833,333	\$2,806,333
Silvana	Klondike Silver Corp.	\$225,000	\$175,000	-\$50,000
Craigmont	Huldra Properties Inc.	\$700,000	\$700,000	\$0
Dolly Varden	Dolly Varden Mines Ltd.	\$6,000	\$6,000	\$0
Beaverdell	Teck Resources Ltd.	\$10,000	\$500,000	\$490,000
Mt. Copeland	KRC Operators	\$3,484	\$1,411,000	\$1,407,516
Sullivan	Teck Resources Ltd.	\$22,500,000	\$22,500,000	\$0
HB Mine	Teck Resources Ltd.	\$10,000	\$10,000	\$0
Dankoe	439813 BC Ltd.	\$10,000	\$3,000	-\$7,000
Boss Mountain	Glencore Canada Corp.	\$30,000	\$1,900,000	\$1,870,000
Afton-Ajax Mine	KGHM Ajax Mining Inc.	\$350,000	\$350,000	\$0

Equity	Goldcorp Canada Ltd.	\$95,003,000	\$95,003,000	\$0
Table Mountain	Cassiar Gold Corp.	\$274,444	\$1,675,789	\$1,401,345
Mosquito Creek	Mosquito Consolidated Gold Mines Ltd.	\$5,000	\$437,119	\$432,119
Ladner Creek	New Carolin Gold Corp.	\$256,250	\$660,000	\$403,750
Scottie Gold / Summit Lake	Red Eye Resources Ltd.	\$15,000	\$3,100	-\$11,900
Baker	Dupont Canada Ltd.	\$15,606	\$165,681	\$150,075
Goldstream	Barkerville Gold Mines Ltd.	\$200,000	\$1,125,000	\$925,000
Venus	United Keno Hills Mines Ltd.	\$7,000	\$7,000	\$0
Taurus	Cassiar Gold Corp.	\$10,000	\$442,202	\$432,202
Silence Lake	Dimac Resources Corp.	\$10,000	\$10,000	\$0
Mt. Brussilof Magnesite	Baymag Mines Co. Ltd.	\$15,102	\$863,660	\$848,558
Ashlu Gold	Osprey Mining and Exploration Ltd.	\$10,000	\$160,000	\$150,000
Four-J / Lussier	Georgia Pacific Canada Ltd.	\$20,000	\$45,930	\$25,930
Union	Sumac Resources Ltd.	\$5,000	\$5,000	\$0
Blackdome	J- Pacific Gold Inc.	\$100,000	\$130,000	\$30,000
Nickel Plate	Barrick Gold Inc.	\$1,671,754	\$105,698,967	\$104,027,213
Lawyers	Cheni Gold Mines Ltd.	\$4,587	\$935,000	\$930,413
Johnny Mountain	Skyline Gold Corp.	\$562,310	\$4,428,788	\$3,866,478
Premier	Boliden Canada Ltd.	\$14,650,000	\$14,650,000	\$0
Parson Barite	Sherritt International Corp.	\$10,000	\$87,866	\$77,866
Hedley Gold Tailings (Candorado)	Sunrise Resources Ltd.	\$0	\$3,000,000	\$3,000,000
Samatosum	First Quantum Minerals Ltd.	\$7,800,000	\$7,266,667	-\$533,333

Barrier Feldspar	Kanspar Industries Inc.	\$20,000	\$20,000	\$0
Horse Creek Silica	HiTest Sand Inc.	\$0	\$0	\$0
Golden Bear	Goldcorp Canada Ltd.	\$210,000	\$73,200	-\$136,800
Shasta	Sable Resources Ltd.	\$54,149	\$1,110,000	\$1,055,851
Snip	Skeena Resources Ltd.	\$2,425,000	\$2,450,000	\$25,000
CIL	Clayburn Industries	\$1,000	\$5,000	\$4,000
Stronsay (Cirque)	Cirque Operating Corp.	\$220,000	\$50,000	-\$170,000
Eskay Creek	Skeena Resources Ltd.	\$13,005,256	\$8,761,153	-\$4,244,103
QR	Barkerville Gold Mines Ltd.	\$8,750,000	\$11,565,832	\$2,815,832
Elk/Siwash	Gold Mountain Mining Corp.	\$150,000	\$60,672	-\$89,328
Mount Polley	Mount Polley Mining Corp.	\$31,350,611	\$32,770,061	\$1,419,450
Huckleberry	Huckleberry Mines Ltd.	\$32,000,000	\$49,203,203	\$17,203,203
Kemess South	AuRico Gold Inc.	\$56,500,000	\$49,845,861	-\$6,654,139
Bralorne	Bralorne Gold Mines Ltd.	\$2,615,000	\$12,300,000	\$9,685,000
May Mac (formerly Bow Mines)	Golden Dawn Minerals Inc.	\$50,000	\$94,995	\$44,995
Ainsworth Mill	Bluebird Mining Ltd.	\$5,000	\$250,000	\$245,000
Lumby Mine	Saddle Mountain Minerals Ltd.	\$5,000	\$5,000	\$0
HB Tailings	Regional District East Kootenay	\$0	\$4,000,000	\$4,000,000
Max Molybdenum	Discovery Ventures Inc.	\$730,000	\$1,313,403	\$583,403
New Afton	New Gold Inc.	\$24,839,000	\$38,728,876	\$13,889,876
Galore Creek	Galore Creek Mining Corporation	\$1,167,000	\$1,167,000	\$0
Ruby Creek	Global Drilling Solutions Inc.	\$100,000	\$50,000	-\$50,000

Tulsequah	Chieftain Metals Inc.	\$151,410	\$72,910,000	\$72,758,590
Zip Mill	1086359 BC Ltd.	\$235,000	\$325,558	\$90,558
Lexington-Grenoble	1086359 BC Ltd.	\$215,000	\$248,732	\$33,732
Yellowjacket	African Queen Mines Ltd.	\$150,000	\$105,300	-\$44,700
Mount Milligan	Terrane Metals Corp.	\$52,600,000	\$52,600,000	\$0
Dome Mountain	Gavin Minerals Ltd.	\$600,000	\$13,312,503	\$12,712,503
Bonanza Ledge	Barkerville Gold Mines Ltd.	\$8,300,000	\$13,170,621	\$4,870,621
Treasure Mountain	Huldra Silver Inc.	\$505,100	\$500,000	-\$5,100
Red Chris	Red Chris Operating Corp.	\$12,000,000	\$119,045,923	\$107,045,923
Yellow Giant (Tel)	Banks Island Gold Ltd.	\$214,315	\$2,273,123	\$2,058,808
Silvertip	Coeur Silvertip Holdings Ltd.	\$18,179,000	\$16,360,988	-\$1,818,012
Brucejack	Pretium Resources Inc.	\$31,700,000	\$17,993,224	-\$13,706,776
Total		\$2,307,179,634	\$3,446,289,151	\$1,139,109,516