Ontario

Mining sector plan 2017-2018

The plan lists health and safety priorities, describes the planned inspection blitzes and enforcement initiatives, and explains what inspectors will focus on during inspections at mines and mining plants.

Safe At Work Ontario is a Ministry of Labour (MOL) initiative to raise awareness of and increase compliance with Ontario's Occupational Health and Safety Act (OHSA) and its regulations.

As part of *Safe At Work Ontario*, the MOL develops annual sector-specific enforcement plans related to workplace hazards and describes the focus of inspectors.

This Sector Plan outlines the ministry's enforcement initiatives to protect Ontario's workers from occupational injury and illness.

Note that employers have the prime responsibility for ensuring compliance with the OHSA and its regulations.

Every year the ministry holds consultations to shape and improve its occupational health and safety compliance strategy and build closer partnerships with its stakeholders. These sessions:

- help the ministry to improve its approach to better meet the public's needs
- provide an opportunity to learn from the ministry's partners
- obtain feedback on how well the program is working
- increase support for new directions and
- identify areas for improvement.

The Sector Plans for 2017-2018 describe sector-specific hazards and compliance issues, and the MOL's enforcement focus for inspections in each sector for the upcoming fiscal year.

The plan also acknowledges recent changes to the OHSA that will affect:

- occupational health and safety
- workplace parties and
- the ministry's enforcement practices.

As of September 8, 2016, employers have additional duties with respect to workplace harassment, including a requirement to appropriately investigate workplace harassment incidents and complaints. The MOL has a Dedicated Harassment Enforcement Team (DHET) of Inspectors enforcing this new amended legislation.

New resources are available on the MOL site to assist employers and workers with the workplace harassment requirements under OHSA. A Code of Practice under OHSA has been developed to help employers in developing their own workplace–specific harassment policies and programs to comply with the law.

Effective July 1, 2016, *Noise Regulation (O. Reg. 381/15)* under the OHSA replaced the noise protection requirements set out in the regulations for *Industrial Establishments*, *Mines and Mining Plants*, and *Oil and Gas-Offshore* and extends noise protection requirements to all provincially regulated workplaces.

This Sector Plan contains a brief description of some of the main issues that an inspector may address in the workplace. It provides a general overview of the ministry's focus. However, each workplace is unique and the circumstances found by an inspector may result in a different inspection focus. It also contains additional background information on hazards as well as tools and resources relevant for those hazards.

Additionally, there is an overview of the number of critical injuries and fatalities reported to the ministry for each sector in Ontario. Also included are the number of work refusals and complaints reported to the MOL's Health and Safety Contact Centre and the number of field visits and orders issued by MOL inspectors for each sector.

You are encouraged to familiarize yourself with this plan and share it with others in your workplace.

Ontario provides a toll free province-wide telephone number to report unsafe work practices and workplace health and safety incidents. Call the MOL Health & Safety Contact Centre at 1-877-202-0008 .

Call any time to report critical injuries, fatalities or work refusals.

Contact the ministry from 8:30 a.m. to 5 p.m., Monday to Friday, for general inquiries about workplace health and safety.

In an emergency, **always call 911 immediately**.

The mining sector

Ontario's mining sector varies in location, setting and activity. It includes:

- large and small firms
- unionized and non-unionized workplaces
- underground and surface operations
- processing plants, including mills, smelters and refineries
- sand and gravel operations
- mineral exploration sites and
- oil and gas extraction facilities.

The key mining subsectors are listed as follows:

Underground mines
: Includes ramp or shaft (conveyance) access mines and can involve a variety mining methods such as bulk or narrow-vein mining.

Open pit mines and quarries
: Surface operations that typically involve large scale drilling, blasting, crushing, sizing and trucking.

Sand and gravel pit operations
: Range from small open pits to large scale operations with hundreds of pieces of mobile equipment. Typically, these operations do not involve blasting.

Mineral exploration sites
: Surface operations that typically involve diamond drilling and bulk sampling to determine ore reserve potential.

Oil and gas extraction sites and facilities
: This sector is tied to both onshore and offshore locations. Offshore locations are governed by *Regulation 855 – Oil and Gas*, and onshore activities are governed by *Regulation 854 – Mines and Mining Plants*.

Activities

The ministry's Mining Health and Safety Program (MHSP) will collaborate with its safety partners on several occupational health and safety initiatives between April 1, 2017, and March 31, 2018. Communication with the public on the sector plan and health and safety focuses are facilitated through Workplace Safety North (WSN) and the Infrastructure Health & Safety Association (IHSA).

Mining review

The following bullet points provide a high-level description of the status of the implementation of the Mining Health, Safety and Prevention Review's (MHSPR) 18 recommendations:

- Practical implementation of the MHSPR recommendations began in July 2015 in accordance with a formal work plan.
- All 18 recommendations of the MHSPR were formally prioritized to ensure the implementation of those recommendations that would have the biggest impact on health and safety in the mining sector were implemented as soon as possible.
- On January 1, 2017 amendments to *Regulation 854 – Mines and Mining Plants* came into force as per the recommendations made from the MHSPR. These amendments included requirements for:
    - Risk Mangement Program Section 5.1
    - Water Mangement Program Section 87.1
    - Traffic Control Program Section 105.1
    - Record of Occurrence related to seismic events Section 72.

The Ministry is committed to completing the work required to implement all the recommendations from the MHSPR to further enhance worker health and safety in Mines and Mining Plants.

Mining inspector video

The plan this year is to develop a surface operation video to cover aspects of conveyor guarding based on some of the new requirements in Section 196 that came into force on July 1, 2016. The video will provide information to stakeholders to aid in compliance with the requirements. This will add to the collection posted on the Ministry of Labour website.

Webinars

The MHSP will continue to collaborate with WSN in the development of webinars to support the mining enforcement blitzes planned for 2017-2018.

Mining enforcement statistics

Ministry of Labour (MOL) inspectors enforce the *Occupational Health and Safety Act* (OHSA) and its regulations at provincially regulated workplaces across the province. As part of the Safe At Work Ontario strategy, they focus on specific sectors where there are:

- high injury rates
- history of non-compliance, or
- certain workplace hazards.

Occupational health and safety inspectors:

- conduct proactive and reactive field visits, in either a lead or a support role
- investigate each reported event, in part by conducting reactive field visits and issuing orders, as required. This may include multiple field visits, including workplaces not categorized within their own occupational health and safety program.

The ministry maintains a database where inspectors record their visits to workplaces in conducting inspections, consultations and investigations, along with orders issued. Events that are reported to the ministry, including fatalities, critical injuries, complaints, work refusals, etc., are also recorded.

The MOL analyzes available data when planning for enforcement initiatives and blitzes such as those outlined in this sector plan. A breakdown of the field visit activities conducted by inspectors and key categories of reported events for the past five fiscal years are presented in the tables below.

A summary of activities of inspectors within this program, including those conducted as part of the Safe At Work Ontario blitzes and initiatives, is provided in Table 1.

Table 1: Mining inspector field visit activities and orders issued

Program inspector activities	**2012-2013**	**2013-2014**	**2014-2015**	**2015-2016**	**2016-2017**
Proactive — consultations	94	80	86	152	131
Proactive — inspections	1,580	1,645	1,655	1,472	1,189
Total proactive field visit activities	1,674	1,725	1,741	1,624	1,320
Total reactive field visit activities — investigations	445	448	475	532	580
Total field visit activities	2,119	2,173	2,216	2,156	1,900
Orders issued	2,930	3,480	4,378	3,696	3,768

Notes:

- Proactive field visits are either inspections or consultations.
- Reactive field visits are investigations made in response to events reported to the MOL. Events and injuries are listed in Table 2.
- Orders issued represent all those issued by ministry inspectors within this occupational health and safety program.
- Data are subject to change due to updates in the enforcement database.

Occupational health and safety events and injuries reported to the Ministry of Labour are summarized in Table 2. Only events reported to the ministry are included here. Except for fatalities, event categories in the ministry's data set are based on what was assigned at the time of the initial report to the ministry. The reported event category may not represent what actually occurred at the workplace.

Table 2. Mining health and safety program events and injuries

Occupational health and safety events and injuries	**2012-2013**	**2013-2014**	**2014-2015**	**2015-2016**	**2016-2017**
Complaints	152	106	106	104	147
Work refusals	10	7	7	5	15

Occupational health and safety events and injuries	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Fatalities	2	3	6	4	2
Critical injuries	40	31	34	32	32
Other injuries (i.e., non-critical)	85	67	54	53	49

Notes:

- Fatalities: The Ministry of Labour tracks and reports fatalities at workplaces covered by the OHSA. This excludes death from natural causes, death of non-workers at a workplace, suicides, death as a result of a criminal act or traffic accident (unless the OHSA is also implicated) and death from occupational exposures that occurred many years ago.
- Critical injuries: The critical injury numbers represent critical injuries reported to the ministry and not necessarily critical injuries as defined by *Regulation 834 – Critical Injury* under the OHSA. Non-workers who are critically injured may also be included in the ministry's data.
- Data are subject to change due to updates in the enforcement database.

Table 3. Workplace Safety Insurance Board (WSIB) allowed lost-time injuries

Mining industry sector	2012	2013	2014	2015
Allowed lost-time claims	261	231	184	181
Lost Time Injury (LTI) rate	0.87	0.79	0.64	0.63

Notes:

- The Workplace Safety and Insurance Board (WSIB) reports additional injury/illness experience data in the WSIB Statistical Report: By The Numbers. The WSIB reports separately for employers in:
  - Schedule 1
  - Schedule 2

Priorities

System priorities

The Healthy and Safe Ontario Workplaces Strategy guides the efforts of the:

- Workplace Safety and Insurance Board (WSIB)
- Health and Safety Associations (HSAs), and
- MOL enforcement staff.

Safe At Work Ontario:

- is aligned with the priorities in the Healthy and Safe Ontario Workplaces Strategy, and
- delivers on the Healthy and Safe Ontario Workplaces Strategy's overall goals, which are to target the areas of greatest need and to enhance service delivery.

The priorities are set out in the Healthy and Safe Ontario Workplaces Strategy:

1. Assist the most vulnerable workers
2. Support occupational health and safety improvements in small businesses
3. Address the highest hazards that result in occupational injuries, illnesses or fatalities
4. Build collaborative partnerships
5. Integrate service delivery and system-wide planning
6. Promote a culture of health and safety.

To support the Safe At Work Ontario strategy, what follows is a brief overview of 2017-2018 enforcement focus areas for inspectors who will visit workplaces.

Enforcement focus

Assist the most vulnerable workers

During the ministry's annual Safe At Work Ontario consultation sessions, stakeholders stressed the importance of improving general occupational health and safety awareness and communication to workplaces. They highlighted the challenges facing vulnerable groups such as new immigrants and young workers, and raised concerns surrounding changing workplaces, including the aging workforce and precarious employment.

The ministry's Healthy and Safe Ontario Workplaces Strategy includes activities to target those at greatest risk. While all workers are vulnerable to injury, illness and fatality, some workers are at greater risk than others. Those who are at greatest risk may experience vulnerability through a combination of individual, workplace and work activity characteristics.

The ministry's Prevention Division led the development of a comprehensive Vulnerability in the Workplace Action Plan to:

- address recommendations of the Vulnerable Worker Task Group, and
- support the needs of vulnerable workers in Ontario's workplaces.

The Vulnerable Worker Task Group provided advice on how to improve outreach to increase awareness of the *Occupational Health and Safety Act* (OHSA) and its regulations among vulnerable workers and their employers.

The Occupational Health and Safety Branch at the Ministry of Labour collaborates with the Prevention Division. The ministry will continue to place a strong emphasis on assisting workplaces to:

- maintain a functioning internal responsibility system (IRS)
- provide training to all workers, and
- ensure workers understand their rights under the OHSA.

Resources/compliance support

- New and Young Workers — Keep Them Safe
- Health and Safety Awareness Training for Workers and Supervisors

Support occupational health and safety improvements in small businesses

Small businesses face unique occupational health and safety challenges.

The ministry's Healthy and Safe Ontario Workplaces Strategy includes a Small Business Action Plan that contains activities to support health and safety improvements at small businesses. The plan was developed in collaboration with the ministry's occupational health and safety partners and a Small Business Task Group.

An update on the plan is included in the Occupational Health and Safety in Ontario 2015-2016 Annual Report.

During annual Safe At Work Ontario consultations, stakeholders noted that small businesses may be less aware of the legislation and may have fewer resources for complying with the legislation. They suggested that the ministry should continue developing simple resources and tools to assist small businesses.

The Small Business Task Group provided advice on how to improve small business outreach to help create healthy and safe workplaces. Emphasizing outreach and awareness, their report focuses on small businesses that lack the necessary knowledge to comply with the *Occupational Health and Safety Act* and its regulations.

The ministry will continue to support the Small Business Action Plan.

Resources/compliance support

The MOL and the occupational health and safety system partners have many resources available to assist small businesses on a variety of topics.

The ministry continues to work with its system partners to develop new fact sheets, online tools and information guides. For updates on small business products and resources, please refer to the Small Business Topic section on the MOL website.

- Health and Safety Checklist
- Small Business Resources and Tools
- Health and Safety System Partners

Address the highest hazards that result in occupational injuries, illnesses or fatalities

Regardless of size, almost all Ontario workplaces employ workers who may be at risk of serious injury, illness or fatality.

Every year, the ministry plans provincial blitzes and enforcement initiatives based on stakeholder consultations, analysis of WSIB information and internal enforcement data. These planned activities are intended to raise awareness among workplace parties and mobilize the ministry's inspectorate to target workplace hazards in Ontario.

When blitzes or other enforcement initiatives are not under way, inspectors will still inspect workplaces for high hazards and workplace parties' compliance with the OHSA at provincially regulated workplaces.

In 2017, as a follow up to one of the recommendations from the Mining Health, Safety and Prevention Review final report, the Ministry of Labour will be conducting a root cause analysis of the top four hazards with industry representatives from management and labour. The root cause analysis will include:

- four root-cause analysis sessions (i.e. one for each of the top four hazard themes identified through the risk-ranking component);
- an analysis and compilation of the findings from each session.

Enforcement initiatives

Enforcement initiatives are part of the province's Safe At Work Ontario compliance strategy.

They may be announced to sectors in advance although individual workplaces are not identified in advance.

Results from province-wide initiatives are posted on the ministry's website. The initiatives are intended to raise awareness of workplace hazards and promote compliance with the *Occupational Health and Safety Act* (OHSA) and its regulations.

Inspectors' findings may influence the frequency and level of future inspections of individual workplaces. Inspectors may also refer employers to health and safety associations for compliance assistance and training.

Ground control

In 2017-2018, the Mining Health and Safety Program (MHSP) will continue to focus on surface and underground mines, including:

- review ground control plan (*Mining Regulation section 6*)
- unsupported underground openings (*Mining Regulation section 6.1*)
- ground support quality control (*Mining Regulation section 73*), and
- ground instability record keeping (*Mining Regulation section 72*).

Inspectors will check that a ground support quality control program:

- has been developed to cover all types of ground support in use at a mine and meets the requirements of mine design under *Mining Regulation section 6*
- has properly installed and has effective ground support and meets the mine design requirements
- is being implemented, as required by the Mining Regulations
- has test records available for review
- has test records available to the mine's Joint Health and Safety Committee (JHSC)

In addition, the inspector will check:

- that the mine has a complete, up-to-date record of all occurrences of rockbursts and uncontrolled falls of ground at the mine
- who maintains and updates the record and that the record is used to update the mine design
- that all record entries (reportable under *Mining Regulation sections 21(5)(e) and (f))* have been reported to the Ministry of Labour.
- that ground left unsupported complies with section 6.1

Joint Health and Safety Committee

In 2017-2018, the MHSP will focus on mines and mining plants, including:

- a functioning JHSC or health and safety representative (HSR) exists in the workplace where required and safety training has been provided to committee members and representatives, as required by the OHSA
- consultation with JHSC or HSR where required by the OHSA and its regulations
- election of the certified members of the JHSC representing employers and workers as required by the OHSA [subsection 9(12) of the OHSA]
- functions of the JHSC as described in [subsection 9(18) OHSA]

- requirement to establish a committee under this section and post and keep posted the names and work locations of the committee members in a conspicuous place or places where they are most likely to come to the attention of the workers [subsection 9(32) OHSA]
- maintaining and keeping minutes of its proceedings and make the same available for examination and review by an inspector [subsection 9 (22) OHSA]
- inspecting the physical condition of the workplace at least once a month [sections 8, 9 of the OHSA]
- if not practical to inspect the workplace at least once a month the member designated or health and safety representative shall inspect the physical condition of the workplace at least once a year, inspecting at least a part of the workplace in each month [sections 8, 9 of the OHSA]
- acCommittee shall meet at least once every three months at the workplace and may be required to meet by order of the Minister [subsection 9 (33) OHSA]

Inspectors will also check:

- compliance for JHSC training requirements, including new requirements for certified workers.
- required JHSC or HSR involvement in the development of programs under OHSA.
- building on the key concepts of the internal responsibility system in the workplace

Noise

In 2017-2018, Mining inspectors along with Specialized Professional Service (SPS) staff will focus on the *Noise regulation*.

This initiative will look at workplace exposures to noise to ensure they are eliminated or properly controlled to protect workers from noise-induced hearing loss.

When the prescribed exposure limit would be exceeded, employers are required to put in place protective measures to proactively reduce workers' noise exposure. Inspectors and SPS staff will look at measures to prevent noise induced hearing loss. These include:

- engineering controls to reduce noise at the source or along the path of transmission;
- work practices such as equipment maintenance (to keep it quieter) or scheduling to limit a worker's exposure time;
- personal protective equipment in the form of hearing protection devices (HPDs), subject to the restrictions stated in the Regulation.
- where it is practicable to do so, employers must post a clearly visible warning sign at every approach to an area in the workplace where the sound level regularly exceeds 85 dBA.

Inspectors and SPS staff will also focus on worker training and selection of HPDs. Employers who provide workers with HPDs must provide them with adequate training and instruction on their care and use that include:

- limitations of the device(s)
- proper fit
- inspection and maintenance, and, if applicable
- cleaning and disinfection.
    - the regulation requires HPDs to be selected with regard to the:
    - sound levels to which a worker is exposed;
    - attenuation or reduction in sound level provided by the HPD;
    - manufacturer's information about its use and limitations.

  The Regulation also requires HPDs to be used and maintained in accordance with the manufacturer's instructions.

Resources/compliance support

- A Guide to the *Noise Regulation (O. Reg. 381/15)* under the *Occupational Health and Safety Act*
- Noise Measurement Equipment
- Selection of Hearing Protection Devices and De-Rating Schemes
- Noise Exposures in Construction

Electrical/Mechanical — Mine Hoist Plant

For 2017-2018, Electrical/Mechanical (E/M) inspectors will continue to focus on mine hoisting plants to ensure requirements are being met.

Inspectors will check the following critical points:

- shaft inspection procedures
- shaft log book entries
- conveyance guides are being measured for wear
- frequency of measurements

In addition, inspectors will focus on other areas, including:

- a review of the shaft design and ensure that it has been certified by a certified professional engineer
- a review of the shaft log book and the required entries as required by the *Mining Regulations*
- a review of the communication system in place that will allow communication between persons at the shaft collar, shaft and hoist room
- design and maintenance of shaft lining and infrastructure.

Inspectors will check that:

- there is sufficient height to provide a distance for an overwind at the headframe that exceeds twice the stopping distance of the hoist at the speed permitted by the hoist controls or that at least three metres' distance be maintained
- there are sufficient clearances at the shaft bottom for the conveyances for an underwind
- shaft obstructions identified and displayed on depth indicators
- a barrier or an obstruction has been installed to prevent the conveyances being lowered into water shaft bottom
- there is a high-water probe alarm installed in the hoist room.

Also, inspectors will check that shaft loading and dump zones

- are being maintained and as per design
- there is adequate access to the area for workers
- barriers and lighting are adequate
- controls are in place to prevent accidental operation of the loading cycle, and
- lock-and-tag procedures are in place to protect workers.

Inspectors will also focus on the automation of mine hoists.

The initiative will focus on:

- Training for hoist trades (electrical and mechanical). Checking the level of understanding of the control systems and the level of understanding. E/M inspectors will review requirements for safety circuits. Accessibility of programmable logic control (PLC) — access to automated systems (level of protection).
- Focus on training of maintenance personnel for hoists, hoist plants, adequately trained supervisors and workers.
- Focus on hoist operators workload. Hoist instructions between workers while the hoist is in operation, conveyance chairing practices.

Tools

- Blitz topic (Mining Program)
- Workplace Safety North (WSN) Resources
- Mines and Mining Plant Safety
- Workplace Safety North

Regional initiatives

Each Ministry of Labour region may conduct its own local initiative(s) to raise awareness of and help address health and safety issues that:

- are specific to particular geographic areas of Ontario and/or
- have a higher rate of occurrence than the rest of the province.

The table below outlines planned regional enforcement initiatives for April 1, 2017 to March 31, 2018.

Region	Name of Initiative	Date
Eastern Region	Quarry blasting operations	May 1, 2017 – October 2017
Northern Region	Four point-in-time (PIT) inspections at mines and mining plants Engineering reviews of ground control, water management and ventilation programs in underground mines	April 1, 2017 – March 31, 2018

Inspection blitzes

MOL inspectors are responsible for enforcing the *Occupational Health and Safety Act* (OHSA) and its regulations at workplaces across the province. As part of the Safe At Work Ontario strategy, they focus on specific industry sectors where there are high injury rates, a history of non-compliance and specific workplace hazards. They will also continue to verify overall compliance with the OHSA and its regulations. Inspectors are not limited to inspecting the issues identified in this document as Safe At Work Ontario areas of focus, and will take enforcement action as appropriate to the situation at each workplace inspected.

Note: Injury and illness trends: The program uses Workplace Safety and Insurance Board (WSIB) data to identify injury and illness trends. Trend analyses of the number of fatalities, critical injuries, lost-time injuries (LTIs), LTI rates and the costs associated with WSIB claims for each sector are used by the program to identify sectors for blitz initiatives. In addition to this information, inspectors also review the compliance history and known hazards inherent to the type of work to select which workplaces to visit.

In addition to their general inspection duties, mining inspectors will conduct three province-wide blitz campaigns in 2017-2018. The first will be Occupational Disease, July 1, 2017 – August 31, 2017; Slips, Trips and Falls and Musculoskeletal Disorders in Mines and Mining Plants, October 2, 2017 – November 30, 2017; Compliance on personal protective equipment PPE and high visibility clothing, February 1, 2018 – March 31, 2018.

Month, year	Enforcement campaign/blitz topic	Review points
July 1, 2017 – August 31, 2017	Occupational disease	• underground mine ventilation • worker exposure to diesel exhaust • exposure sampling • surface operations for exposure to silica • mill and smelter assessments for designated substances
October 2, 2017 – November 30, 2017	Slips, trips and falls and musculoskeletal disorders in mines and mining plants	• looking at work where workers are performing manual materials handling tasks or exposed to hand-arm vibration (to prevent musculoskeletal disorders). Conducting an administrative review (risk assessments, injuries, joint health and safety committee minutes) • looking at access to workplaces that are adequate to prevent slips, trips and falls • check joint health and safety committee minutes to see if any musculoskeletal disorder hazards have been identified • check to see if workers have been provided with information and instruction regarding musculoskeletal disorder hazards in their work
February 1, 2018 – March 31, 2018	Compliance on personal protective equipment and high visibility clothing	• review the correct personal protective equipment selection to protect workers from dust and fumes • compliance with high visibility clothing requirements, surface and underground • distracted drivers at surface mines

Tips on how to prepare for an MOL blitz/initiative inspection

Before the inspector's visit

- Check your accident experience in relation to the blitz/initiative topic.
- Review OHSA sections and regulations that may apply based on the blitz's/initiative's focus.
- Determine whether you are currently meeting or exceeding the minimum legal requirements in those areas.
- Consult with MOL Health and Safety Partners for specific information and services that may help you prepare.
- Review the ministry's blitz-related material.

- Discuss compliance strategies with your Joint Health and Safety Committee (JHSC) or Health and Safety Representative (HSR).

During the visit

- Ensure all required documentation is available to the ministry inspector.
- Ensure supervisor and worker health and safety representative are available.
- Ensure the workplace parties co-operate with the ministry inspector.

The inspector will focus on:

- compliance with the OHSA and its regulations
- health and safety programs and policies related to the blitz topic, if applicable
- internal responsibility system (IRS) training requirements and any deficiencies
- record of injuries, including blitz/initiative related issues/hazards
- workplace specific hazards related to the blitz/initiative.

Note: Inspectors can legally enter a project or workplace at any time without warrant or prior notice (OHSA section 54(1)(a)). An inspector will identify himself/herself by means of ministry identification. No person shall hinder, obstruct, molest or interfere with or attempt to hinder, obstruct, molest or interfere with an inspector in the exercise of a power or the performance of a duty under this act or the regulations or in the execution of a warrant issued under this act or the *Provincial Offences Act* with respect to a matter under this act or the regulations.

Occupational disease blitz

Date: July 1, 2017 – August 31, 2017

Type: Mining provincial

Ministry mining inspectors will check for hazards that lead to occupational disease. This will include but not be limited to exposures to diesel exhaust, silica and other designated substances, chemical or biological hazards at mines and mining plants.They will check that employers comply with the OHSA and its regulations.

Rationale

Occupational disease is one of the biggest contributors to workplace fatalities in mines and mining plants.

Between 2011 and 2015, 106 workers died in Ontario's mining sector as a result of occupational diseases.

Occupational disease can occur when workers are exposed to chemical, biological or physical hazards.

The blitz's goals are to:

- raise awareness of hazards involving occupational disease hazards at underground and surface mining operations
- increase worksite compliance with the law
- prevent injuries and illnesses that could arise from unsafe work practices.

Inspectors will focus on the following key priorities:

Ventilation systems

Inspectors will check to ensure employers maintain the minimum requirements for ventilation in the workplace, including but not limited to ventilation for operation of underground diesel equipment, auxiliary ventilation in work headings, dilution or removal of contaminants to prevent worker exposure above the prescribe limits, accurate plans and records of ventilation system.

Diesel exhaust

Inspectors will check that diesel equipment is being maintained; they will also check to see that the required diesel emission testing is performed as per the requirements.

Surface mine exposures to silica

Inspectors will check that Occupational Exposure Monitoring, including personal sampling, is completed in areas of known or expected exposures. They will also check to ensure that, where required, assessments and control programs are in place and have been developed in consultation with the Joint Health and Safety Committee or worker health and safety representative (if any in the workplace).

Mill and smelter assessments for designated substances

Typical designated substances found in mine and mill include arsenic, asbestos (tramp material), isocyanates (maybe bolting), lead and silica. Inspectors will check:

- Assessment(s)
  - any increase in production or changes in the process that may affect the current conclusions of the assessment
  - re-assessments
- Control program(s)
  - should include engineering controls, work practices, hygiene facilities
  - methods and procedures used to monitor airborne concentrations and worker exposure
  - worker training

Exposure sampling (personal, area):

Inspectors will check to see that employers are sampling workers who may be at risk of exposure as required by OHSA and its regulations.

- Does the sampling program match what is in the control program?
- How many occupations are part of the program?
- What is the frequency of personal and area sampling?
- Is there any description of activities during worker sampling?
- What happens if a sample exceeds limits?
- Are there any other substances that are sampled (nitrogen dioxide, carbon monoxide, cyanide, SO_2)?

Tools

- Workplace Safety North (WSN)
- Workplace Safety North Resources
- *Regulation 854 – Mines and Mining Plants*
- Occupational Disease
- Sampling for Diesel Particulate in Mines
- Testing Undiluted Exhaust in Underground Mines

Slips, trips and falls and musculoskeletal disorders in mines and mining plants

Date: October 1, 2017 – November 30, 2017

Type: Mining provincial

Ministry mining inspectors will check for hazards that lead to musculoskeletal disorders (MSDs). This will include but not be limited to manual materials handling and hand-arm vibration. They will also be checking that employers have completed risk assessments which include assessing MSD hazards, and reviewing MSDs that have occurred and JHSC minutes. Inspectors will further check to see that access to workplaces is adequate in order to prevent slips, trips and falls. The blitz will be in conjunction with Global Ergonomics Month which takes place each year in October.

Rationale

MSDs continue to be the leading type of injury in the mining sector. In 2015, MSDs accounted for 36% of all lost time injuries .

Hand-arm vibration syndrome is the second most common occupational disease and falls account for 16% of all lost time injuries in the mining sector, according to Workplace Safety North.

Blitz focus

The blitz's goals are to:

- raise awareness of MSD and slips, trips and falls hazards at underground and surface mines and mining plants
- increase workplace compliance with the law
- prevent MSDs arising from unsafe work practices, equipment or work areas and
- prevent injuries from slips, trips and falls due to inadequate access to workplaces.

Mining inspectors will visit mines and mining plants to:

- ensure MSD risk assessments have been completed where necessary
- check if and where MSDs are occurring
- check JHSC minutes to see if any MSD hazards have been identified
- check to see in workers have been provided with information and instruction regarding MSD hazards in their work
- ensure manual materials handling duties are being performed in a safe manner
- check if workers are being exposed to hand-arm vibration and if so, what precautions are being taken
- ensure that access to workplaces are adequate to prevent slips, trips and falls.

Tools

- Prevent Musculoskeletal Disorders (MSDs) in Mines
- Prevent Slips, Trips and Falls in all Workplaces
- Workplace Safety North – Tips for Eliminating and Controlling MSD Hazards
- Workplace Safety North – Guideline for Musculoskeletal Disorder (MSD) Prevention Program
- Centre for Research Expertise in Occupational Disease — Hand-Arm Vibration Syndrome (HAVS)

Compliance on personal protective equipment and high visibility clothing

Date: February 1, 2018 – March 31, 2018

Type: Mining provincial

Mining inspectors will check during visits to mines and mining plants that workers have the necessary personal protective equipment (PPE) to perform their work; this includes high visibility safety apparel. Inspectors will also check that new requirements for traffic management programs have taken into consideration distracted driving as one risk that workers may be exposed to while operating equipment.

Rationale

In 2016/2017 there were amendments made to *Regulation 854 – Mines and Mining Plants* that included stricter requirements for work visibility, requiring workers to wear high visibility safety apparel. Occupational disease is a focus of the Ministry of Labour, to ensure workers have the necessary protection to perform their work without being exposed to dangerous biological or chemical hazards. This focus includes PPE where required by the OHSA and its regulations. Risk assessments must be completed and will require consultation with the Joint Health and Safety Committee or the health and safety representative (if any in the workplace) when developing the controls and measures to mitigate the risks incorporating the hierarchy of controls. The hierarchy of controls includes the use of PPE as a measure to protect workers where so prescribed. The Ministry of Labour will check to ensure that the PPE selected does comply with the OHSA and its regulations.

Distracted driving was one of the top risks identified in the surface mining risk assessment completed in 2016 with industry and labour representatives.

Inspectors will follow up with employers to ensure that requirements are being complied with.

Blitz focus

Mining inspectors will visit mines and mining plants to ensure workers:

- have been trained on the care and use of the personal protective equipment
- that the selected personal protective equipment is adequate to protect workers for work being performed
- have high visibility safety apparel that meets the requirements set out in *Regulation 854 – Mines and Mining Plants*
- are aware that traffic management programs have identified distracted driving as a high risk to operators of equipment.

Tools

- Workplace Safety North (WSN)
- Workplace Safety North Resources
- High Visibility Safety Apparel for Mines and Mining Plants
- *Regulation 854 – Mines and Mining Plants*

Resources

Legislation

- *Occupational Health and Safety Act*
- *Regulation 854 – Mines and Mining Plants*
- *Regulation 833 – Control of Exposure to Biological or Chemical Agents*
- *Regulation 490 – Designated Substances*
- *Ontario Regulation 297/13 – Occupational Health and Safety Awareness and Training Regulation*

Note: Regulations made under the *Occupational Health and Safety Act*, Revised Statutes of Ontario, 1990, Chapter O.1 as amended. For the complete Table of Regulations, please see:

- E-laws (updated every two weeks)
- Ontario Gazette (published January and July).

Mining review

- Mining Review Final Report
- Mining Report Final Report Addendum

Publications

- A Guide for Joint Health and Safety Committees and Health and Safety Representatives in the Workplace
- Guide to the *Occupational Health and Safety Act*
- Prevention Starts Here Poster
- Internal Responsibility System (IRS)
- Awareness Training Regulation (Material for training)
- Safe Mining in Underground Mines
- Prevent Musculoskeletal Disorders in Mines
- Safe Mining in Pits and Quarries
- Occupational Lung Cancer Symposium: Causes and Screening

External resources

Infrastructure Health and Safety Association (IHSA)

- Rate Group Statistical Data

Workplace Safety North (WSN)

- Free Resources

Workplace Safety and Insurance Board (WSIB)

- WSIB Statistical Report

More information

- Canadian Centre for Occupational Health and Safety (CCOHS)
- Mines Safety and Health Administration (USA)
- Workplace Safety North (WSN)

Section 21 committee

The ministry benefits from the input of the Mining Legislative Review Committee (MLRC), one of a number of MOL partnerships. This committee is established under section 21 of the OHSA to provide advice to the Minister of Labour on occupational health and safety in the mining sector.

Meeting regularly, the committee:

- provides a forum for dialogue by industry management and labour on safety issues and
- submits joint recommendations to the Ontario labour minister for improvements.

Health and Safety System Partners

- Ministry of Labour (MOL)
- Workplace Safety and Insurance Board (WSIB)
- Occupational Health Clinics for Ontario Workers (OHCOW)
- Workers Health and Safety Centre (WHSC)
- Institute for Work and Health (IWH)
- Infrastructure Health & Safety Association (IHSA)
- Public Services Health and Safety Association (PSHSA)
- Workplace Safety North (WSN)
- Workplace Safety and Prevention Services (WSPS)

Key hazards in mining health and safety

This section provides additional background information on hazards as well as tools and resources relevant for those hazards.

Ground control

Workers face health and safety risks from hazards found in mines that can result in occupational diseases or fatal injuries. Ground instability has been one of the biggest causes of fatalities in underground mines in Ontario. Since 2000, 10 workers have died and nearly 50 workers have been critically injured in underground mines in Ontario as a result of falls of ground or rockbursts.

Falls of ground or rockbursts occur when rock becomes dislodged from the roof or walls of an underground excavated site. The amount of rock displaced can vary from hundreds of thousands of tonnes of material. If workers happen to be where that occurs, it can lead to severe injuries or fatalities.

As underground mines become older and deeper, they are generally more prone to incidents of ground instability. There are several underground mines in Ontario operating at depths approaching 3,000 metres.

The Mining Health and Safety Program (MHSP) will continue to focus on underground mines through enforcement activities, including those directed towards ground control hazards.

Tools

- Ground Control in Mines
- MOL – Notice of Reportable Incident
- Ground Control Blitz Bulletin

- Ground Control Blitz Results

Resource (video)

- Working at the Rock Face in Underground Mines

Water management

Workers face health and safety risks from hazards associated with the accumulation of water in the workplace. These hazards can result in serious injuries, and even death, to workers.

Three workers died in Ontario mines between 2000 and 2016, and there have been many more significant incidents and occurrences related to water management reported to the Ministry of Labour.

These hazards can be prevented by ensuring:

- a water management program is developed and maintained in the workplace
- pumping systems (sumps) have the means to conduct the removal of excess water from the workplace
- the associated infrastructure related to pumping system is maintained and kept free of obstructions (drain holes, drain lines)
- there is workplace awareness of how the improper use of water can have very dangerous and catastrophic outcomes
- the area is adequately barricaded to prevent access. The employer and the supervisor shall not permit any worker to enter that area unless the purpose of the work directly relates to the management and removal of the water, and all reasonable precautions in the circumstances have been taken for the protection of such workers.

Employers are responsible for protecting workers from hazards associated with the improper use or accumulation of water.

Some of the hazards workers could be exposed to include:

- an unexpected or unannounced run of material caused by the infiltration of water into material handling systems
- drowning caused while maintaining pumping system or during the clearing of obstructions from a drain hole which then creates very powerful suction through hole
- musculoskeletal disorder (MSD) injuries caused by hidden hazards underneath accumulated water.

Water has many uses in the underground environment; however, it still remains one of the top hazards associated with this work. Inspectors continue to write numerous orders under *Regulation 854 – Mines and Mining Plants*, sections 46, 64, 68, and 87. These sections relate to the accumulation of water in the workplace, use of proper barricades to warn workers of hazards, as well as documenting these hazards in the supervisor's log book.

Water management will continue to be a focus as it has been identified as a serious underground mining hazard.

Tools

- Water Management in Underground Mines
- MOL-Notice of Reportable Incident
- Water Management Blitz Bulletin

- Water Management Blitz Results

Resources

- WSN Water Management Blitz Material

Remote control equipment

Remote control radio technology is widely used to operate equipment in mines. This technology can also be used in close proximity to where the equipment is operating or may be operated at locations that are totally isolated from the equipment (operated from surface control room). One benefit of using remote control technology has been the ability to remove workers from unsafe conditions where risk to personal injury cannot be reduced through other means.

Workers face health and safety risks from hazards associated with remote controlled equipment. Workers can be seriously injured or killed if proper methods and procedures are not utilized when operating this type of equipment.

Between 2000 and 2015, 13 workers died in Ontario mines as a result of incidents involving motor vehicles and mobile equipment. These incidents included remote controlled equipment.

Hazards can include:

- being struck by, or run over by, equipment
- crushed between equipment
- contacting unsecured work platform with equipment
- equipment runaways.

Remote controlled equipment is a subset of mobile equipment, described in more detail below. “Remote controlled” and “remotely controlled” refers to equipment where a person remotely operates equipment with “joystick” controls. The larger category, mobile equipment, typically means equipment that moves under its own power and has an operator at the wheel, such as trucks, personal carriers and other types of mining related equipment. This equipment may be operated remotely as well, depending on the needs of the owner.

Remote controlled equipment was the focus of the MHSP 2015-2016 provincial initiative.

Tools

- WSN-Safe Operation of Remote Control Equipment

Explosives

The quality and safety of explosives and blasting methods have greatly improved over the years. However, serious hazards still exist involving the storage, transport and use of explosives.

Explosives must be stored so as to protect them from the elements and from conditions that could cause degradation and loss of safety and reliability. An explosives storage area must be constructed with safeguards to:

- minimize inadvertent ignition and
- provide protection to nearby workers, the general public and structures in case of ignition.

The public must also be protected by ensuring stored explosives are accessible only to authorized workers and used solely for their intended purpose.

Explosives can be dangerous if proper precautions are not taken to protect workers. Only competent and trained workers should handle explosives and extreme care must be used.

Safe practices must include the following:

Maintenance/inspection of explosives magazines and equipment

Magazines (buildings, locations or containers) that store explosives must be maintained in a clean and orderly condition. Mobile equipment and tools must also be maintained in good and safe condition if they are used in processes involving the handling of explosive products.

Explosives inventory methods

Employers must use measures, such as keeping log books, to control inventories of explosive products underground and on the surface. They must also have procedures in place to ensure the oldest explosives are used first. In addition, inspection reports must include details on the quantities of explosives stored at the time of inspection. These measures are required because the quality of explosives can be degraded if they aren't used in a timely fashion. Age can make them volatile and hazardous. Workers can also be at risk if incompatible products are improperly mixed during blasting operations.

Procedures for safe disposal of damaged explosives

Employers and their Joint Health and Safety Committees develop written procedures for the safe disposal of damaged explosives. These procedures must be communicated to workers and are needed to ensure workers don't attempt to use damaged explosives. They are also needed so that workers assigned to dispose of them are aware of their condition. Damaged explosives can be dangerous.

Proper handling during transport and use

Employers must develop proper procedures for workers' handling of explosives when the explosives are being used and transported. The movement of explosives between magazines and workplaces must occur without delay. Vehicles carrying explosives must always have the right of way. Measures must be taken to ensure explosives are never left unattended and/or improperly disposed of.

Ministry reporting requirements

Employers must notify the Ministry of Labour of:

- the use of explosives and installation of surface explosives magazines
- any incident involving the mishandling of explosives
- an uncontrolled or unexpected explosion and any defective explosive products.

Worker training

Any worker that uses or handles explosive products, or who may be affected by their use, must be trained in all the relevant safety procedures. Workers must successfully complete the relevant Common Core Training modules set out in section 11 of the *Mining Regulations*. The training must ensure all workers are familiar

with the appearance of explosive products and the procedures to be followed if any are found in incorrect places.

The hazards associated with explosive contributed to the development of the MHSP provincial explosives enforcement initiative in 2015-2016. Also, hazards associated with explosives contribute to the development of the MHSP regional workplace inspection initiative in 2016-2017 for the eastern region of the province. Inspectors will continue to ensure workers are accredited in the training modules that pertain to the tasks being performed.

Tools

- WSN-Explosives Checklist

Resources

- WSN-Explosives Blitz Presentation

Mobile equipment

Workers can be at risk of injury or even death if hazards involving motor vehicles and mobile equipment exist at underground and surface mines.

Between 2000 and 2016, 13 workers died in Ontario mines as a result of incidents involving motor vehicles and mobile equipment. These incidents included collisions. Mobile equipment has displaced ground control issues as the major source of fatal injuries in underground mining.

These hazards can be prevented by developing traffic management programs that put traffic control policies, measures and procedures in place to protect workers. Such measures can include proper reflective clothing, effective illumination, monitoring work conditions and education and training.

Employers are responsible for protecting workers from motor vehicles and mobile equipment hazards in mines.

Hazards can include workers:

- being struck by or run over by equipment
- being crushed between equipment
- falling off mobile equipment while performing maintenance
- driving into an unguarded open hole underground.

Inspector orders written under *Regulation 854*, sections 105, 174 and 263 during the past year suggest that equipment maintenance related to visibility, such as broken or shattered windows, missing mirrors or inoperative lights, must be a focus of mine operators, thus ensuring equipment is safe to operate. Equipment operators should also ensure that the equipment is safe to use. Where required, illumination in work areas should be in place and maintained.

Amendments to section 105.1 require employers to develop a traffic management program in consultation with the Joint Health and Safety Committee or worker health and safety representative if any in the workplace.

The hazards associated with mobile equipment will continue to be a focus of the Ministry of Labour in 2017/2018, including hazards associated with distracted driving.

Tools

- Vehicle/Mobile Equipment and Visibility Hazards in Mining Workplaces
- Mobile Equipment in Underground Mines
- High Visibility Safety Apparel Guideline

Resources

- Mobile Equipment Traffic Control Measures Blitz Bulletin

Modular training

Modular training is comprised of individual training modules developed by the Ministry of Advanced Education and Skills Development (MAESD) in consultation with industry and the Mining Tripartite Committee (MTC).

Employers must register workers in the appropriate training program. Completed training is accredited by the MAESD as a permanent record of the training.

To ensure a safe workplace for all mine workers, employers are required to develop specific training, based on the Ontario government's standardized course materials. This is to ensure a safe workplace for all mine workers.

Training programs are required for:

- hard rock mines such as nickel, copper, gold and diamond mines
- soft rock mines such as salt and gypsum mines
- surface mines such as sand and gravel operations and pits and quarries
- diamond drill exploration sites underground and on surface
- supervisory training program for mine supervisors.

The training requirements are set out in section 11 of the *Mining Regulations*.

The Ministry of Labour (MOL) is responsible for enforcing the training requirements at all Ontario mines under the *Regulations for Mines and Mining Plants*. Proof of this training must be made available by employers to MOL inspectors on request.

During the 41 months from April 1, 2011 and August 20, 2014, inspectors issued 259 orders for training violations under section 11 of the *Regulations for Mines and Mining Plants*.

The infractions related to many of these orders could have resulted in serious injuries to workers in mines, mining plants and at exploration sites.

Training has also been raised by coroner's juries at mining inquests as an issue on which Ministry of Labour inspectors should focus.

Mines can prevent incidents by ensuring that proper training programs are developed and maintained by employers. Properly trained workers have a better chance of staying safe on the job.

Tools

- Contact Employment Ontario

Resources

- Ministry of Advanced Education and Skills Development

Occupational disease

While traumatic fatality incidents in the mining sector have declined substantially over the past several decades, deaths related to occupational illness have not.

Working in a closed underground environment, miners can be exposed to airborne hazards, such as diesel emissions and silica, putting them at higher risk of developing occupational illness.

Recent research revealed that some components of emissions from diesel powered equipment are carcinogenic. Over the past 20 years, significant continuing research has been done to develop filters to eliminate the harmful effects of diesel exhaust and to identify the optimum diesel fuel type for producing the least harmful emissions.

In terms of occupational disease hazards, the Mining Review focused on airborne hazards such as diesel particulate matter and silica in underground mines. It identified opportunities to:

- raise awareness among workers and employers of the importance of controlling risks to health in underground mines
- increase understanding of the health effects of exposure to diesel emissions in underground mines and improve controls
- review and update occupational exposure limits for airborne hazards in underground mines
- identify and publicize available options for monitoring ventilation in underground mines in order to reduce concentrations of airborne hazards.

Inspector orders written under *Regulation 854*, sections 183.1, 253, 254, 257, and 266 over the past year suggest that mine operators must focus on controlling dust, maintaining ventilation systems and providing enough ventilation in areas where diesel equipment is operating. Mine operators must ensure that enough ventilation is available to dilute contaminants in the workplace, and that maintenance and good work practices are used to control mining process dusts.

Occupational disease in underground and surface plants will be the focus of a province-wide enforcement blitz for surface and underground mines in July and August 2017. A similar blitz was previously conducted in February and March 2016. The mining program conducted a mining-plant focused inspection during February and March 2017 and occupational disease was be part of the blitz focus.

Tools

- Ventilation Hazards in Underground Mines
- Sampling for Diesel Particulate Matter in Mines
- Testing Undiluted Exhaust in Underground Mines
- Current Occupational Exposure Limits for Ontario Workplaces

Resources

- American Conference of Governmental Industrial Hygienists

Mining subsector trends

Underground mines

Underground mines include ramp or shaft access and can involve a variety of mining methods such as bulk or narrow vein mining. They also include the surface buildings (surface plants at mine sites) associated with the underground operations.

Trends

Table 1: Fatalities and injuries in underground mines by fiscal year

Events	2012-13	2013-14	2014-15	2015-16	2016-17
Fatalities	1	3	3	3	1
Critical injuries	11	20	20	16	22

Notes:

- Only critical injury events reported to the ministry are included here.
- This represents data that was reported to the ministry and may not represent what actually occurred at the workplace.
- The critical injury numbers represent critical injuries reported to the ministry and not necessarily critical injuries as defined by the *Occupational Health and Safety Act* (OHSA).
- Non-workers who are **critically injured** may also be included in the ministry's data.
- The Ministry of Labour tracks and reports **fatalities** at workplaces covered by the OHSA. This excludes deaths from natural causes, deaths of non-workers at a workplace, suicides, deaths as a result of a criminal act or traffic accident (unless the OHSA is also implicated) and deaths from occupational exposures that occurred many years ago.
- Data subject to change because of inspectors' updates to the database.

Table 2: Events and activities in underground mines by fiscal year

Events and activities	2012-13	2013-14	2014-15	2015-16	2016-17
Field visits	528	645	707	640	858
Orders	1,190	1,223	1,932	1,846	1,732
Work refusals	4	2	5	2	7
Complaints	31	28	45	31	65

From April 1, 2016 to March 31, 2017, the most common orders issued under the OHSA were for violations of employer duties, including the general duty to ensure the equipment, materials and protective devices provided by the employer are maintained in good condition [clause 25(1)(b)], and the duty to take every precaution reasonable in the circumstances for the protection of a worker [clause 25(2)(h)]. and the duty to provide information, instruction and supervision to a worker to protect the health or safety of the worker [clause 25(2)(a)].

Inspectors also wrote orders requiring the production of drawings, specifications, licence, document, record or report, and inspect, examine and copy the same [clause 54 (1)(c)].

Stop work orders were also common within the Mining Program. Stop work orders are orders issued by an inspector where the contravention of the act or the regulations endangers a worker [clause 57(6)(a)].

In addition, there were also a number of orders written under *Regulation 854 – Mines and Mining Plants* concerning:

- good electrical practices [section 155]
- workplace examinations [subsection 66(1)].
- the isolation of hazardous areas [section 68]
- safe access to workplaces [subsection 46(1) and (2)]
- accumulation of flammable refuse [section 29].

More information

- Workplace Safety North

Mining plants

Mining plants include mills, blast furnaces, smelters and refineries.

Trends

Table 3: Fatalities and injuries in mining plants by fiscal year

Events	2011-12	2012-13	2013-14	2014-2015	2016-17
Fatalities	0	0	1	1	0
Critical injuries	0	4	3	4	0

Notes:

- Only critical injury events reported to the ministry are included here.
- This represents data that was reported to the ministry and may not represent what actually occurred at the workplace.
- The critical injury numbers represent critical injuries reported to the ministry and not necessarily critical injuries as defined by the OHSA.
- Non-workers who are **critically injured** may also be included in the ministry's data.
- The Ministry of Labour tracks and reports **fatalities** at workplaces covered by the OHSA. This excludes deaths from natural causes, deaths of non-workers at a workplace, suicides, deaths as a result of a criminal act or traffic accident (unless the OHSA is also implicated) and deaths from occupational exposures that occurred many years ago.
- Data subject to change because of inspectors' updates to the database.

Table 4: Events and activities in mining plants by fiscal year

Events and activities	2012-13	2013-14	2014-15	2015-16	2016-17
Field visits	60	115	126	108	95
Orders	66	143	301	198	169
Work refusals	2	1	1	0	3
Complaints	6	10	19	11	10

From April 1, 2016, to March 31, 2017, the most common orders issued under the OHSA were for violations of employer duties, including:

- the general duty to take every precaution reasonable in the circumstances for the protection of a worker [clause 25(2)(h)]
- the general duty to ensure the equipment, materials and protective devices provided by the employer are maintained in good condition [clause 25(1)(b)] provide information, instruction and supervision to a worker [clause 25(2)(a)]
- the general duty to ensure the measures and procedures prescribed are carried out in the workplace [25 (1)(c)]

Inspectors also wrote orders requiring the production of drawings, specifications, licence, document, record or report, and inspect, examine and copy the same [clause 54 (1)(c)].

Stop work orders were also common within the Mining Program. Stop work orders are issued by an inspector where the contravention of the act or the regulations endangers a worker [clause 57(6)(a)].

In addition, there were also a number of orders written under *Regulation 854* concerning:

- installation of electrical equipment [section 155]
- a safe means of access to a workplace [section 46], and
- guarding or fencing of exposed moving parts [subsection 185(2)]

More information

- Workplace Safety North

Open pit mines and quarries

Open pit mines and quarries include surface operations that typically involve large-scale drilling, blasting, crushing, sizing and trucking.

Trends

Table 5: Fatalities and injuries in open pit mines and quarries by fiscal year

Events	2012-13	2013-14	2014-2015	2015-16	2016-17
Fatalities	1	1	1	0	1
Critical injuries	4	2	3	4	1

Notes:

- Only critical injury events reported to the ministry are included here.
- This represents data that was reported to the ministry and may not represent what actually occurred at the workplace.
- The critical injury numbers represent critical injuries reported to the ministry and not necessarily critical injuries as defined by the OHSA.
- Non-workers who are **critically injured** may also be included in the ministry's data.
- The Ministry of Labour tracks and reports **fatalities** at workplaces covered by the OHSA. This excludes deaths from natural causes, deaths of non-workers at a workplace, suicides, deaths as a result of a criminal act or traffic accident (unless the OHSA is also implicated) and deaths from occupational exposures that occurred many years ago.
- Data subject to change because of inspectors' updates to the database.

Table 6: Events and activities in open pit mines and quarries by fiscal year

Events and activities	2012-13	2013-14	2014-15	2015-16	2016-17
Field visits	317	457	418	371	340
Orders	389	435	800	722	746
Work refusals	1	0	1	0	2
Complaints	16	18	11	19	22

From April 1, 2016 to March 31, 2017, the most common orders issued under the OHSA were for violations of employer duties including:

- the duty to ensure the equipment, materials, and protective devices provided by the employer are maintained in good condition [clause 25(1)(b)], and the duty to provide information, instruction and supervision to a worker to protect the health or safety of the worker [clause 25(2)(a)], and
- including the general duty to take every precaution reasonable in the circumstances for the protection of a worker [clause 25(2)(h)]

Inspectors also wrote orders requiring the production of drawings, specifications, licence, document, record or report, and inspect, examine and copy the same [clause 54 (1)(c)].

Stop work orders were also common within the Mining Program. Stop work orders are issued by an inspector where the contravention of the act or the regulations endangers a worker [clause 57(6)(a)(b)].

In addition, there were also a number of orders written under *Regulation 854* concerning:

- guarding on a conveyor of any pinch point that is or may become accessible [clause 196(2)(d)]
- guarding or fencing of exposed moving parts [subsection 185(2)]
- safe use of a motor vehicle [section 105], and
- electrical equipment installed, modified and operated in accordance with good electrical practices [section 155].

More information

- Workplace Safety North

Sand and gravel pits

Sand and gravel pits operations range in size from small open pits to large-scale operations with hundreds of pieces of mobile equipment. Typically, these operations do not involve blasting.

Trends

Table 7: Fatalities and injuries in sand and gravel pits by fiscal year

Events	2012-13	2013-14	2014-2015	2015-16	2016-17
Fatalities	0	1	0	0	0
Critical injuries	3	0	1	1	1

Notes:

- Only critical injury events reported to the ministry are included here.
- This represents data that was reported to the ministry and may not represent what actually occurred at the workplace.
- The critical injury numbers represent critical injuries reported to the ministry and not necessarily critical injuries as defined by the Occupational Health and Safety Act (OHSA).
- Non-workers who are **critically injured** may also be included in the ministry's data.
- The Ministry of Labour tracks and reports **fatalities** at workplaces covered by the OHSA. This excludes deaths from natural causes, deaths of non-workers at a workplace, suicides, deaths as a result of a criminal act or traffic accident (unless the OHSA is also implicated) and deaths from occupational exposures that occurred many years ago.
- Data subject to change because of inspectors' updates to the database.

Table 8: Events and activities in sand and gravel pits by fiscal year

Events and activities	2012-13	2013-14	2014-15	2015-16	2016-17
Field visits	671	888	836	731	524
Orders	655	1,424	1,375	1,173	906
Work refusals	0	0	0	1	0
Complaints	4	2	8	10	14

From April 1, 2016 to March 31, 2017, the most common orders issued under the OHSA were for violations of employer duties, including:

- the duty to ensure that the equipment, materials, and protective devices provided by the employer are maintained in good condition [clause 25(1)(b)] and
- the general duty to take every precaution reasonable in the circumstances for the protection of a worker [clause 25(2)(h)].

Stop work orders were also common within the Mining Program. Stop work orders are issued by an inspector where the contravention of the act or the regulations endangers a worker [clause 57(6)(a)(b)].

In addition, there were also a number of orders written under *Regulation 854* concerning:

- guarding on a conveyor of any pinch point that is or may become accessible [clause 196(2)(d)]
- safe use of a motor vehicle [section 105], and
- the open side of a ramp haulage road in a surface mine shall be provided with a suitable protective barrier [section 116(2)]
- the guarding or fencing of exposed moving parts [subsection 185(2)]
- the requirement for work to be done in accordance with good electrical practices [section 155], and
- the requirement to provide a safe means of access to a workplace [subsection 46(1)].

More information

- Workplace Safety North

Oil and natural gas

Oil and natural gas extraction sites and facilities includes sites and facilities both on land and water.

Trends

Table 9: Fatalities and injuries in oil and natural gas by fiscal year

Events	2012-13	2013-14	2014-2015	2015-16	2016-17
Fatalities	0	0	0	0	0
Critical injuries	0	1	0	0	0

Notes:

- Only critical injury events reported to the ministry are included here.
- This represents data that was reported to the ministry and may not represent what actually occurred at the workplace.
- The critical injury numbers represent critical injuries reported to the ministry and not necessarily critical injuries as defined by the OHSA.
- Non-workers who are **critically injured** may also be included in the ministry's data.
- The Ministry of Labour tracks and reports **fatalities** at workplaces covered by the OHSA. This excludes deaths from natural causes, deaths of non-workers at a workplace, suicides, deaths as a result of a criminal act or traffic accident (unless the OHSA is also implicated) and deaths from occupational exposures that occurred many years ago.
- Data is subject to change because of inspectors' updates to the database.

Table 10: Events and activities in oil and natural gas by fiscal year

Events and activities	2012-13	2013-14	2014-15	2015-16	2016-17
Field visits	8	10	9	6	11
Orders	10	8	10	11	15
Work refusals	0	0	0	0	0
Complaints	1	1	2	2	2

From April 1, 2016 to March 31, 2017 the most common orders issued under the OHSA included:

- the duty to provide information, instruction and supervision to a worker [clause 25(2)(a)], and the duty to ensure that the equipment, materials, and protective devices provided by the employer are maintained in good condition [clause 25(1)(b))]

More information

- Workplace Safety North

Diamond drilling

Mineral exploration sites include surface operations that typically involve diamond drilling and bulk sampling to determine ore reserve potential.

Trends

Table 11: Fatalities and injuries in diamond drilling by fiscal year

Events	2012-13	2013-14	2014-2015	2015-16	2016-17

Events	2012-13	2013-14	2014-2015	2015-16	2016-17
Events	**2012-13**	**2013-14**	**2014-2015**	**2015-16**	**2016-17**
Fatalities	0	0	1	0	0
Critical injuries	2	2	1	0	0

Notes:

- Only critical injury events reported to the ministry are included here.
- This represents data that was reported to the ministry and may not represent what actually occurred at the workplace.
- The critical injury numbers represent **critical injuries** reported to the ministry and not necessarily critical injuries as defined by the OHSA.
- Non-workers who are critically injured may also be included in the ministry's data.
- The Ministry of Labour tracks and reports **fatalities** at workplaces covered by the OHSA. This excludes deaths from natural causes, deaths of non-workers at a workplace, suicides, deaths as a result of a criminal act or traffic accident (unless the OHSA is also implicated) and deaths from occupational exposures that occurred many years ago.
- Data is subject to change because of inspectors' updates to the database.

Table 12: Events and activities in diamond drilling by fiscal year

Events and activities	2012-13	2013-14	2014-15	2015-16	2016-17
Field visits	98	58	46	21	23
Orders	285	151	181	107	49
Work refusals	0	0	0	0	0
Complaints	1	0	0	0	4

From April 1, 2016 to March 31, 2017, the most common orders issued under the OHSA were for violations of employer duties, including the general duty to take every precaution reasonable in the circumstances for the protection of a worker [clause 25(2)(h)], the duty to ensure that the equipment, materials, and protective devices provided by the employer are maintained in good condition [clause 25(1)(b))], and stop work orders issued where the contravention of the act or the regulations endangered a worker [clause 57(6)(a)].

In addition, there were also orders written under *Regulation 854* concerning:

- the employers responsibility to establish and maintain components of the underground Diamond Driller training program, and
- the guarding or fencing of exposed moving parts [subsection 185(2)]

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Not elsewhere classified/mining

These are events that have occurred in mining but may not provide enough information in the description to identify a subsector when entered into the Ministry of Labour reporting system. The data collected could be from various mining subsectors.

Trends

Table 13: Fatalities and injuries in not elsewhere classified/mining by fiscal year

Events	2012-13	2013-14	2014-2015	2015-16	2016-17
Fatalities	0	0	0	0	0
Critical injuries	2	2	2	1	3

Notes:

- Only critical injury events reported to the ministry are included here.
- This represents data that was reported to the ministry and may not represent what actually occurred at the workplace.
- The critical injury numbers represent critical injuries reported to the ministry and not necessarily critical injuries as defined by the OHSA.
- Non-workers who are **critically injured** may also be included in the ministry's data.
- The Ministry of Labour tracks and reports **fatalities** at workplaces covered by the OHSA. This excludes deaths from natural causes, deaths of non-workers at a workplace, suicides, deaths as a result of a criminal act or traffic accident (unless the OHSA is also implicated) and deaths from occupational exposures that occurred many years ago.
- Data subject to change because of inspectors' updates to the database.

Table 14: Events and activities in not elsewhere classified/mining by fiscal year

Events and activities	2012-13	2013-14	2014-15	2015-16	2016-17
Field visits	75	106	104	69	55
Orders	93	175	176	74	90
Work refusals	1	1	0	0	0
Complaints	3	7	11	8	4

From April 1, 2016 to March 31, 2017 the most common orders issued under the OHSA were for violations of employer duties, including the general duty to take every precaution reasonable in the circumstances for the protection of a worker [clause 25(2)(h)], the duty to ensure the equipment, materials, and protective devices provided by the employer are maintained in good condition [clause 25(1)(b)], and the duty to provide information, instruction, and supervision to a worker to protect the health or safety of the worker.

In addition, there were also orders written under *Regulation 854* concerning:

- electrical equipment shall be operated in accordance with good electrical practices [subsection 155(2)]
- the guarding or fencing of exposed moving parts [subsection 185(2)]
- the guarding of pinch points on a conveyor [subsection 196 (3.1)]
- the requirement to provide a safe means of access to a workplace [subsection 46(1)]

More information

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Footnotes

- [1] ^ WSIB Schedule 1 mining industry sector classification
- [2] ^ WSIB Schedule 1 mining industry sector classification
- [3] ^ Industry Sector Allowed Lost Time Claims by Injury/Illness year (Schedule 1 of the WSIB Statistical Report)
- [4] ^ LTI rate is allowed LTIs per 100 workers in that year. (Schedule 1 of the WSIB Statistical Report)
- [1] ^ Source: WSIB Enterprise Information Warehouse