

# Health, Safety and Reclamation Code for Mines in B.C.

## Summary of 2022 Code Revisions

### Definitions

Term	Definition
<b>Autonomous [NEW]</b>	<i>“autonomous”</i> means designed to perform the full job cycle without operator interaction or direct control by a person
<b>Reportable incident [NEW]</b>	<i>“reportable incident”</i> means an incident referred to in section 1.7.1
<b>Risk assessment [NEW]</b>	<i>“risk assessment”</i> means a systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking
<b>Semi-autonomous [NEW]</b>	<i>“semi-autonomous”</i> means designed to perform a subset of tasks within the full job cycle without operator interaction or direct control by a person
<b>Serious injury [NEW]</b>	<i>“serious injury”</i> means an injury that can reasonably be expected at the time of an incident to endanger life or cause permanent injury
<b>Health professional [UPDATED]</b>	<p>Previous definition:  <i>“health professional”</i> means            (a) a physician who is registered, and entitled under the laws of a province to practise medicine and who is practising medicine under those laws in that province, and            (b) a nurse who is registered or licensed and entitled under the laws of a province to practise nursing and who is practising nursing under those laws in that province.</p> <p>Updated definition:  <i>“health professional”</i> means a person registered in a health profession, as defined in the Health Professions Act, in which a person exercises skill or judgment or provides a service related to            (a) the preservation or improvement of the health of individuals, or            (b) the treatment or care of individuals who are injured, sick, disabled or infirm.</p>

## Code Revisions

### Autonomous and Semi-autonomous Machine Systems

Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
<b>1.6.9</b> (1) The manager shall develop a Mine Health and Safety Program which includes the following sections (c) safe working procedures on a departmental basis,	<b>1.6.9</b> (1) The manager shall develop a Mine Health and Safety Program which includes the following sections (c) safe working procedures on a departmental basis, (c.1) if autonomous or semi-autonomous mobile tracked or rubber-tired equipment is in use at the mine, safe working procedures for the equipment,	Nov 30, 2022
<b>4.6.1</b> (4) (a) No piece of mobile diesel equipment shall be left unattended while the engine is running. (b) On parking a piece of mobile diesel equipment, there shall be a cool down period as established by the OHSC or the manufacturer's specification. (c) Once the operator leaves the piece of equipment the master switch shall be turned off.	<b>4.6.1</b> (4) Mobile diesel-powered equipment must not be left unattended while the engine is running.  (5) When the operator parks mobile diesel-powered equipment, there must be a cool down period as established by the OHSC or the manufacturer's specification.  (6) Subject to subsection (7), when the operator leaves a piece of diesel-powered equipment the master switch must be turned off.  (7) If autonomous or semi-autonomous tracked or rubber-tired mobile equipment is parked in a designated parking area and the engine or power source is turned off, the master switch may be left on.	Nov 30, 2022

Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
<p><b>6.4.1</b></p> <p>(1) All active workings shall be examined by the certified shiftboss or supervisor with assigned responsibility to ascertain that they are in a safe working condition, as often as the nature of the work necessitates.</p> <p>(2) All persons working underground shall have their work areas inspected by a shiftboss or supervisor at least twice per shift.</p>	<p><b>6.4.1</b></p> <p>(1) All active workings shall be examined by the certified shiftboss or supervisor with assigned responsibility to ascertain that they are in a safe working condition, as often as the nature of the work necessitates.</p> <p>(2) All persons working underground shall have their work areas inspected by a shiftboss or supervisor at least twice per shift.</p> <p>(3) Subject to subsection (4), work areas containing underground autonomous or semi-autonomous tracked or rubber-tired mobile equipment must be inspected by the shiftboss or supervisor prior to employees entering the work area, or at least once per shift.</p> <p>(4) In an underground coal mine, the fireboss must conduct the workplace inspections required by subsection (3).</p>	Nov 30, 2022
N/A - NEW	<p><b>6.18.3</b></p> <p>(1) Prior to the use of autonomous or semi-autonomous tracked or rubber-tired mobile equipment, the manager must submit to the chief inspector an Autonomous Mining Project Management Plan prepared by a qualified professional.</p> <p>(2) The plan must contain the following elements, as described in the BC Guideline for Safe Mobile Autonomous Mining:</p> <p>(a) a detailed risk assessment for the purpose of identifying, assessing and managing hazards;</p>	Nov 30, 2022

Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
	<p>(b) a summary of the health and safety plan that includes general safety rules and safe working procedures for autonomy as required in section 1.6.9 of this code;</p> <p>(c) a summary of the project plan, project milestones and scope;</p> <p>(d) details on location, access, infrastructure, and equipment;</p> <p>(e) a summary of key roles and responsibilities associated with the project;</p> <p>(f) a summary of system functionality, redundancy, limitations and safety features;</p> <p>(g) an autonomous or semi-autonomous mine and operations plan;</p> <p>(h) an interaction plan for human operated equipment and personnel;</p> <p>(i) a commissioning plan;</p> <p>(j) maintenance and inspection plan;</p> <p>(k) training program and competence assessment for working with and around autonomous and semi-autonomous machine systems as required in section 1.11.1 and 1.11.2 of this code;</p> <p>(l) the process for investigating failures;</p> <p>(m) a Mine Emergency Response Plan as required by section 3.7.1 of this code;</p> <p>(n) an assessment of this code to identify any variances or additional project specific considerations that may be required;</p> <p>(o) a summary of critical controls as identified in the risk assessment.</p> <p>(3) The OHSC must be provided with an opportunity to review and provide comments relating to worker health</p>	

Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
	<p>and safety within the plan and risk assessment, and associated updates as required in subsection (5), prior to submission to the chief inspector.</p> <p>(4) The manager must implement and adhere to the plan once the chief inspector confirms that it meets the requirements of this code and is appropriate for the site.</p> <p>(5) If the manager wants to change the operational use of autonomous or semi-autonomous tracked or rubber-tired mobile equipment set out in the Autonomous Mining Project Management Plan, the manager</p> <p>(a) must have an update of the plan prepared by a qualified professional and submit the updated plan to the chief inspector, and</p> <p>(b) must not make operational changes until the chief inspector confirms that the updated plan meets the requirements of this code.</p>	
<p><b>6.19.1</b></p> <p>The operator of any unit of mobile equipment shall be directly responsible for its safe operation and for maintaining full control of the unit and complying with all provisions of the Mines Act, the regulations, and the code insofar as the operation of the equipment is concerned, and operators shall wear their seatbelts and drive with their headlights on and, where required, a flag equipped whip antenna light or a flashing light on at all times.</p>	<p><b>6.19.1</b></p> <p>(1) The operator of a unit of mobile equipment</p> <p>(a) is directly responsible for its safe operation and for maintaining full control of the unit and complying with the Mines Act, the regulations and this code insofar as the operation of the equipment is concerned, and</p> <p>(b) must wear a seatbelt and drive with the headlights and, where required, a flag equipped whip antenna light or a flashing light on at all times.</p> <p>(2) A person who enters commands or inputs information into an autonomous or semi-autonomous system that governs the behavior of tracked or rubber-tired mobile equipment, must do so in a manner that ensures the safe</p>	Nov 30, 2022

Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
	operation of the equipment and that the system can maintain full control of the mobile equipment.	
<b>6.19.2</b> The manager shall provide and maintain an effective logbook system for each unit of mobile equipment over 7000 kg gross vehicle weight where (a) the vehicle operator notes the operating condition prior to operating of the vehicle (b) note any unsafe conditions, and (c) a qualified person making repairs, notes any repairs made and if the vehicle is safe to operate.	<b>6.19.2</b> The manager must provide and maintain an effective logbook system for each unit of mobile equipment over 7000 kg gross vehicle weight in which the vehicle operator prior to operating of the vehicle, or the qualified person examining the equipment under 6.19.3 (2), (a) notes the condition, (b) notes any unsafe conditions, and (c) in the case of a qualified person making repairs, notes any repairs made and if the vehicle is safe to operate.	Nov 30, 2022
<b>6.19.3</b> The operator of any equipment shall examine and check the equipment and read the logbook before putting it into use, and if an unsafe condition is discovered, he/she shall (1) not operate the equipment until repairs have been made, or (2) a qualified person has assured him/her it is safe to operate the equipment and noted the reason in the logbook.	<b>6.19.3</b> (1) The operator of equipment must examine and check the equipment and read the logbook before putting the equipment into use and, if an unsafe condition is discovered, the operator must not operate the equipment until (a) repairs have been made, or (b) a qualified person has assured the operator that it is safe to operate the equipment and noted the reason in the logbook.  (2) In the case of autonomous or semi-autonomous tracked or rubber-tired mobile equipment, the manager must (a) when the unit is serviced, or at a minimum of every 24 operating hours, ensure that a qualified person examines and checks the equipment and reads the logbook, and (b) if an unsafe condition is discovered, ensure that the equipment is not put into operation until (i) repairs have been made, or	Nov 30, 2022

Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
	(ii) a qualified person has assured the manager that the equipment is safe to put into operation and noted the reason in the logbook.	

## Reportable Incidents (Dangerous Occurrences)

Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
<b>1.6.5</b> The OHSC co-chairpersons or their designates shall participate in the investigation of reportable occurrences in accordance with section 1.7.1.	<b>Repealed</b>	Nov 30, 2022
<b>1.6.6</b> The OHSC co-chairpersons or their designates shall be informed as soon as possible, but within 4 hours of the event, of accidents that cause injuries which require medical aid and, if they deem it necessary, they shall participate in the investigation.	<b>Repealed</b>	Nov 30, 2022
<b>1.7.1</b> (1) In the event of (a) any accident resulting in loss of life, or (b) any dangerous occurrence as specified in section 1.7.3, The manager shall inform an inspector, the OHSC, and the local union or worker representative as soon as practicable, but no later than 4 hours after an event under paragraph (a) or 16 hours after an event under paragraph (b), and within one week send a written notification to an inspector for an event under paragraph (a) or (b).  (2) In the case of any accident resulting in a worker seeking medical aid, the manager shall provide a monthly report to an inspector, the OHSC, and the local union or worker representative.	<b>1.7.2</b> (1) In the event of a reportable incident, the manager must (a) in the case of a reportable incident referred to in section 1.7.1. (1) (a), within 4 hours of the reportable incident, provide a verbal notification of the incident to an inspector, the management co-chair and the worker co-chair of the OHS committee or their designates and the local union, (b) within 16 hours of a reportable incident, provide a written notice of the incident to an inspector, the management co-chair and the worker co-chair of the OHS committee or their designates and the local union, and (c) within 60 days of a reportable incident, or within any longer time that may be specified by the chief inspector, submit the investigation report required under section 1.7.4 (2) to the chief inspector.  (2) The manager must engage with First Nations that may be affected by reportable incidents to determine which reportable incidents must be reported to the First Nations.	Nov 30, 2022



Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
<b>1.7.1</b> (3) For an event under section 1.7.1(1)(a) or (b) the manager shall ensure that, except for the purpose of saving life or relieving human suffering, the scene of the accident or occurrence is not disturbed without approval of (a) the OHSC, (b) an inspector, or (c) in the case of a fatal accident, the chief inspector.	<b>1.7.3</b> Subject to any order under section 15 of the Act, the manager must ensure that, except for the purpose of saving life or relieving human suffering, the scene of a reportable incident is not disturbed without approval of (a) the OHSC worker representative, (b) an inspector, or (c) in the case of an incident resulting in loss of life, the chief inspector.	Nov 30, 2022
<b>1.7.1</b> (4) The manager shall ensure that an investigation is carried out by persons knowledgeable in the type of work involved as well as the co-chairpersons of the OHSC or their designates.	<b>1.7.4</b> (1) The manager must ensure that an investigation into every reportable incident is carried out by persons knowledgeable in the type of work and in collaboration with the management co-chair and the worker co-chair of the OHS committee or their designates.	Nov 30, 2022
<b>1.7.2</b> On completion of the investigation, the manager shall prepare a report that (1) to the extent practicable identifies the causes of the accident, and (2) identifies any unsafe conditions, acts, or procedures which contributed in any manner to the accident, and (3) makes recommendations which may prevent similar accidents, and (4) is forwarded to the OHSC and an inspector.	<b>1.7.4</b> (2) On completion of the investigation, the manager must prepare a report, signed by all participants listed in subsection (1), that includes the following: (a) a description of the incident; (b) a description of the work conducted at the time and place of the incident; (c) an identification of the causes of the incident and any unsafe conditions, acts, or procedures which may have contributed to the incident; (d) an identification of any corrective actions that are necessary to prevent the recurrence of similar incidents, including a projected timeline for implementation of the corrective actions; (e) any additional information required by the chief inspector.	Nov 30, 2022

<p><b>1.7.3</b></p> <p>Dangerous occurrences to be reported shall include</p> <ul style="list-style-type: none"> <li>(1) unexpected major groundfall or subsidence, whether on surface or underground, which endangers people or damages equipment or poses a threat to people or property,</li> <li>(2) cracking or subsidence of a dam or impoundment dike, unexpected seepage or appearance of springs on the outer face of a dam or dike; loss of adequate freeboard, washout or significant erosion of a dam or dike, any of which might adversely affect the integrity of such structures,</li> <li>(3) any accident involving a mine hoisting plant and including sheaves, hoisting rope, shaft conveyance, shaft, shaft timber, or headframe structure,</li> <li>(4) unexpected inrush of water, mud, slurry, or debris,</li> <li>(5) premature or unexpected explosion of explosives, gas or any dust,</li> <li>(6) significant inflow or release of explosive or other dangerous gas,</li> <li>(7) unplanned stoppage of the main underground ventilation system,</li> <li>(8) a mine vehicle going out of control,</li> <li>(9) outbreak of fire if it endangers persons or threatens or damages equipment and all underground fires,</li> <li>(10) electrical equipment failure or incident that causes or threatens to cause injury to persons or damage to equipment or property, and</li> <li>(11) any other unusual accident or unexpected event which had the potential to result in serious injury</li> </ul>	<p><b>1.7.1</b></p> <p>(1) The following incidents are classified as dangerous occurrences and must be reported in accordance with section 1.7.2:</p> <ul style="list-style-type: none"> <li>(a) an incident that causes serious injury or loss of life;</li> <li>(b) an incident that had the potential to cause serious injury or loss of life.</li> </ul> <p>(2) In addition to an incident referred to in subsection (1), the following incidents are classified as dangerous occurrences and must be reported in accordance with section 1.7.2:</p> <ul style="list-style-type: none"> <li>(a) unexpected major groundfall, slope failure or subsidence;</li> <li>(b) unexpected structural failure or collapse of any part of the mine;</li> <li>(c) for dams or dikes: <ul style="list-style-type: none"> <li>(i) unexpected cracking, subsidence, seepage, springs;</li> <li>(ii) loss of freeboard;</li> <li>(iii) washout, structural erosion, or any other deficiency that may adversely affect the integrity of the structure.</li> </ul> </li> <li>(d) equipment going out of control or an unexpected movement of equipment;</li> <li>(e) unexpected inrush of water, mud, slurry or debris;</li> <li>(f) unexpected significant inflow or release of explosive, flammable, toxic or other dangerous gas, or ignition or explosion of gas or dust;</li> <li>(g) any of the following if it has the potential to cause, or causes, injury to persons or damage to equipment or property: <ul style="list-style-type: none"> <li>(i) an incident involving explosives;</li> <li>(ii) outbreak of fire;</li> <li>(iii) an incident involving electrical equipment;</li> </ul> </li> </ul>	<p>Nov 30, 2022</p>
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Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
	<ul style="list-style-type: none"> <li>(iv) failure of a pressure vessel or boiler;</li> <li>(v) unintentional contact with a falling object or drilling or other rotational equipment;</li> <li>(vi) exposure to hazardous environmental conditions;</li> <li>(h) for underground mines, <ul style="list-style-type: none"> <li>(i) unexpected cracking, seepage, failure or pressure on a bulkhead;</li> <li>(ii) an incident involving a mine hoisting plant including, without limitation, sheaves, hoisting rope, shaft conveyance, shaft, shaft timber or headframe structure,</li> <li>(iii) unplanned stoppage of the main underground ventilation system, or</li> <li>(iv) an underground fire.</li> </ul> </li> </ul>	
<b>1.9.2</b> The manager shall at the end of each month provide the OHSC with a report of all reported first aid cases.	<b>1.9.2</b> At the end of each month, the manager must provide <ul style="list-style-type: none"> <li>(1) a report of all reported first aid cases to the OHSC and local union or worker representative, and</li> <li>(2) a report of all reported medical aid cases to the Chief Inspector, the OHSC and local union or worker representative.</li> </ul>	Nov 30, 2022

## Gender Neutral Language

*NOTE: All Code references to gendered language have been changed to remove he/him, she/her and replaced with references to they/them or the position responsible (e.g., "the supervisor," "the employee," etc.).*

Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
<p><b>2.11.9</b> The manager shall provide separate toilet facilities for male and female employees, having separate entrances with signs clearly indicating for which gender they have been provided.</p> <p><b>2.11.10</b> On the surface of a mine, the manager shall provide washroom facilities that are conveniently located and equipped with:</p> <p>(1) one toilet and one urinal for every 25 male employees or fraction thereof, and one toilet for every 9 female employees or fraction thereof, except where the maximum number of employees on any shift is fewer than 6 when one toilet is required,</p> <p>(2) one wash basin, or equivalent facility, provided with hot and cold running water for every 15 employees or fraction thereof,</p> <p>(3) a means for drying hands hygienically,</p>	<p><b>2.11.9</b> (1) The manager must provide separate washroom facilities for male and female employees.</p> <p>(2) The washroom facilities must be conveniently located and equipped with</p> <p>(a) subject to subsection (3),</p> <p>(i) one toilet and one urinal for every 25 male employees or fraction thereof, and</p> <p>(ii) one toilet for every 9 female employees or fraction thereof,</p> <p>(b) one wash basin, or equivalent facility, provided with hot and cold running water for every 15 employees or fraction thereof,</p> <p>(c) a means for drying hands hygienically, and</p> <p>(d) adequate heat, light, and ventilation.</p> <p>(3) Despite subsection (1), for a mine that has 6 employees or less,</p> <p>(a) the manager must provide at least one universal washroom facility, and</p> <p>(b) if the manager provides additional washroom facilities, some or all of them may be universal washroom facilities.</p> <p>(4) The washroom facilities must have separate entrances with signs clearly indicating for which gender they have been provided or indicating that they are a universal washroom facility.</p>	<p>Nov 30, 2022 unless specified</p>

Previous Code Section and Language	Updated or NEW Code Section and Language	In-force Date
N/A - NEW	<b>2.11.9</b> (5) With respect to new mines or substantial renovations to the permanent washroom area of an existing mine on and after May 1, 2023, in addition to the washroom facilities referred to in subsection (1), for a mine that has more than 6 employees, the manager must provide at least one universal washroom facility.	May 1, 2023