

HEALTH, SAFETY & RECLAMATION CODE FOR MINES IN BRITISH COLUMBIA

Ministry of Energy, Mines & Petroleum Resources

Victoria, British Columbia

(Revised June 2017)

A Subset Specific to BC Gravel Pits & Quarries

Not for use in Coal, Mineral or Underground Mines

(updated May 2018)

Presented by



*Consolidated for convenience only,
for a full copy of the HSRC please contact
Ministry of Energy and Mines & Petroleum Resources*



TABLE OF CONTENTS

Mines Act, R.S.B.C. 1996, c. 293

<i>[Updated to February 27, 2017]</i>	1
1. Application of the Code & General Rules	1.1
2. Occupational Health	2.1
3. Personnel Safety & Emergency Preparedness	3.1
4. Building, Machinery & Equipment	4.1
5. Electrical Power System	5.1
6. Mine Design & Procedures	6.1
7. THIS SECTION HAS BEEN REMOVED	
8. Explosives	8.1
9. THIS SECTION HAS BEEN REMOVED	
10. Permitting, Reclamation & Closure	10.1
11. Index	11.1
12. Ministry of Energy & Mines – further information	12.1

This is a subset of the *Health, Safety and Reclamation Code for Mines in British Columbia* for use by *BC Gravel Pits and Quarries*.

The Health, Safety and Reclamation Code for Mines in British Columbia is the law and must be adhered to.

This is an unofficial version reproduced for convenience purposes only.

At any time Text has been added or altered – it is indicated by blue font.

Sections that do not apply to Gravel Pits and Quarries (example, sections specific to Coal mining) have been removed from this book, but remain a part of the Code. This subset is not for use in Underground, Coal or Mineral mines.

MINES ACT

CONTENTS

Section

1. Definitions
2. Application
3. Chief inspector
4. Authority
5. Power to appoint inspectors
6. Delegation of powers
7. Accident investigations
8. Power to compel persons to answer questions and order disclosure
- 8.1 Contempt proceeding for uncooperative person
9. Advisory committee
10. Permits
11. Permits – powers of minister
- 11.1 Acquisition of a mine
12. Mine reclamation fund
13. Variance of regulations or code for individual mine
14. Discrimination
15. Inspections
16. Order not to interfere with public works, etc.
17. Abandoned mine
18. Engineering report
19. Immunities
20. *[Repealed]*
21. Appointment of manager
22. Manager's qualifications and responsibility
23. Manager's absence
24. Compliance
25. Contractors
26. Supervision required
27. Mine plans
28. *[Repealed]*
29. Alternative employment
30. Posting of reports and orders
31. *[Repealed]*
32. Occupational health & safety committee
33. Appeal to chief inspector
34. Health, safety and reclamation code committee
35. Enforcement of Act, regulations, code, permit or order
36. Annual report
- 36.1 Contraventions
- 36.2 Administrative penalties

CONTENTS - *continued***Section**

- 36.3 Notice of contravention or penalty
- 36.4 Due date of penalty
- 36.5 Enforcement of administrative penalty
- 36.6 Limitation period
- 36.7 Appeal
- 37. Offence and penalty
- 38. Power to make regulations

1. Definitions

In this Act:

abandoned mine means a mine for which all permit obligations under this Act have been satisfied and in respect of which the mineral claims have reverted to the government;

agent means a person having control of a mine on behalf of the owner;

authorized person means a qualified person appointed or designated by the manager to perform specified duties;

chief inspector means the Chief Inspector of Mines appointed by the minister and includes a person designated by the chief inspector to act on behalf of the chief inspector;

closed mine means a mine at which all mining activities have ceased but in respect of which the owner, agent, manager or permittee remains responsible for compliance with this Act, the regulations, the code and that person's obligations under the permit for that mine;

code means the health, safety and reclamation code established under this Act;

cultural heritage resource means a cultural heritage resource as defined in the Mineral Tenure Act;

detrimental environmental impact occurs when the quality of air, land or water substantially reduces the usefulness of the environment or its capacity to support life;

inspector means a person appointed by the chief inspector as an inspector of mines;

local union means a union certified under the *Labour Relations Code* as the bargaining agent for employees or a unit of employees at a mine;

management means employees of a mine who act as supervisors;

management co-chair means the co-chair chosen for the occupational health & safety committee by the manager;

manager means the person appointed under section 21 to be responsible for the management and operation of a mine;

mine includes

- (a) a place where mechanical disturbance of the ground or any excavation is made to explore for or to produce coal, mineral bearing substances, placer minerals, rock, limestone, earth, clay, sand or gravel,
- (b) all cleared areas, machinery and equipment for use in servicing a mine or for use in connection with a mine and buildings other than bunkhouses, cook houses and related residential facilities,
- (c) all activities including exploratory drilling, excavation, processing, concentrating, waste disposal and site reclamation,
- (d) closed and abandoned mines, and
- (e) a place designated by the chief inspector as a mine;

mining activity means any activity related to

- (a) the exploration and development of a mineral, a placer mineral, coal, sand, gravel or rock, or
- (b) the production of a mineral, a placer mineral, coal, sand, gravel or rock, and includes the reclamation of a mine;

occupational health & safety committee means the joint worker management committee established for each mine under this Act;

owner includes every person who is the immediate holder, proprietor, lessee, occupier or permittee of a mine or of any part of it, but does not include a person who

- (a) receives only a royalty or rent from a mine that is subject to a lease, grant or other authority for its working, or
- (b) is the owner of the surface rights of land in, on or under which a mine exists but who is not the immediate holder, proprietor, lessee, occupier or permittee;

permit means a permit issued under section 10;

permittee means the holder of a permit issued under section 10;

qualified person means a person who, in the opinion of the manager, is

- (a) qualified because of the person's knowledge, training and experience to design, organize, supervise and perform the duties for which the person is appointed,
- (b) familiar with the provisions of this Act, the code and the regulations that apply to the duties for which the person is appointed, and
- (c) capable of identifying any potential or actual danger to health or safety in the workplace;

supervisor means a person who instructs, directs or controls workers in the performance of their duties and who is authorized by the manager to take or recommend disciplinary action against workers;

worker means a person who is an employee but does not include a supervisor;

worker co-chair means the co-chair chosen for the occupational, health and safety committee by the workers;

workplace means a place where work is carried out in, on or about a mine.

2. Application

This Act applies to all mines during exploration, development, construction, production, closure, reclamation and abandonment.

3. Chief inspector

The minister must designate in writing a person appointed under the *Public Service Act*, as the Chief Inspector of Mines.

4. Authority

The chief inspector has the rights and powers conferred on an inspector under this Act.

5. Power to appoint inspectors

The chief inspector may appoint persons as inspectors for the purposes of this Act.

6. Delegation of powers

The chief inspector may delegate in writing to an inspector any of the powers conferred on the chief inspector under this Act.

7. Accident investigations

An inspector may, and on the direction of the chief inspector must, make an investigation of and report about an accident that has caused serious personal injury, loss of life or property or environmental damage.

8. Power to compel persons to answer questions & order disclosure

- (1) For the purposes of conducting an investigation under section 7, an inspector may make an order requiring a person to do either or both of the following:
 - (a) attend, in person or by electronic means, before the inspector to answer questions on oath or affirmation, or in any other manner;
 - (b) produce for the inspector a record or thing in the person's possession or control.
- (2) An inspector may apply to the Supreme Court for an order
 - (a) directing a person to comply with an order made under subsection (1), or
 - (b) directing any directors and officers of a person to cause the person to comply with an order made under subsection (1).

8.1 Contempt proceeding for uncooperative person

The failure or refusal of a person subject to an order under section 8 to do any of the following makes the person, on application to the Supreme Court by an inspector, liable to be committed for contempt as if in breach of an order or judgment of the Supreme Court:

- (a) attend before the inspector;
- (b) take an oath or make an affirmation;
- (c) answer questions;
- (d) produce records or things in the person's possession or control.

9. Advisory committee

The chief inspector must establish and chair an advisory committee and must establish regional advisory committees to review applications for mine approvals and reclamation permits, referred to them by the chief inspector, to assist the chief inspector in carrying out the duties of the chief inspector under this Act.

10. Permits

- (0.1) In this section, "exempt person" means a person in a class of persons exempt under subsection (1.1)
 - (a) from the requirement under subsection (1) to hold a permit.
- (1) Before starting any work in, on or about a mine, the owner, agent, manager or any other person must hold a permit issued by the chief inspector and, as part of the application for the permit, there must be filed with an inspector a plan outlining the details of the proposed work and a program for the conservation of cultural heritage resources and for the protection and reclamation of the land, watercourses and cultural heritage resources affected by the mine, including the information, particulars and maps established by the regulations or the code.
- (1.1) The Lieutenant Governor in Council, by regulation and on any terms and conditions considered necessary or advisable, may exempt
 - (a) one or more classes of persons, or a person or a ministry of the government respecting one or more classes of work in, on or about a mine;
 - (b) from the requirement under subsection (1) to hold a permit.
- (1.2) Despite subsection (1.1) (a), the chief inspector may require an exempt person to comply with the requirement under subsection (1) to hold a permit if the chief inspector is satisfied that, because of the nature of the proposed work, it is necessary for the exempt person to hold a permit.

- (2) The chief inspector, in writing and on any terms and conditions considered necessary or advisable, may exempt a person from the requirement under subsection (1) to hold a permit if
- (a) the chief inspector is satisfied that, because of the nature of the proposed work, it is not necessary for the person to hold a permit, and
 - (b) the person is not an exempt person.
- (2.01) Without limiting subsection (1.1) or (2), terms and conditions imposed under those subsections may include terms and conditions respecting any or all of the following:
- (a) the provision of security in the manner and for purposes similar to those described in subsections (4) and (5);
 - (b) notification and reporting requirements;
 - (c) the use of qualified professionals;
 - (d) environmental protection and reclamation;
 - (e) public health and safety.
- (2.02) A person exempt from the requirement under subsection (1) to hold a permit must comply with the terms and conditions, if any, imposed under subsections (1.1), (2) and (2.01), as applicable.
- (3) If the chief inspector considers the application for a permit is satisfactory and if the applicant has complied with the regulations, if any, made under section 38 (2) (l) respecting applications for permits, the chief inspector may issue the permit, and the permit may contain conditions that the chief inspector considers necessary.
- (4) The chief inspector may, as a condition of issuing a permit under subsection (3), require that the owner, agent, manager or permittee give security in the amount and form, and subject to conditions, specified by the chief inspector
- (a) for mine reclamation, and
 - (b) to provide for protection of, and mitigation of damage to, watercourses and cultural heritage resources affected by the mine.
- (5) If required by the chief inspector, the owner, agent, manager or permittee, in each year, must deposit security in an amount and form satisfactory to the chief inspector so that, together with the deposit under subsection (4) and calculated over the estimated life of the mine, there will be money necessary to perform and carry out properly
- (a) all the conditions of the permit relating to the matters referred to in subsection (4) at the proper time, and
 - (b) all the orders and directions of the chief inspector or an inspector respecting the fulfillment of the conditions relating to the matters referred to in subsection (4).
- (6) The owner, agent, manager or permittee, or an inspector, may apply to the chief inspector for a revision of the conditions or an extension of the term of a permit issued under this section, and the chief inspector, if the applicant has complied with the regulations, if any, made under section 38 (2) (l) respecting revisions or extensions under this subsection, may revise the conditions or extend the term, as the case may be.
- (7) For the purposes of subsection (6), if the chief inspector considers it necessary, the chief inspector may impose additional conditions or changes in the existing conditions, including changes to the security required or the term of the permit, with or without an application under this section.
- (8) If the owner, agent, manager or permittee fails to perform and complete the program

for reclamation or comply with the conditions of the permit to the satisfaction of the chief inspector, the chief inspector, after giving notice to remedy the failure, may do one or more of the following:

- (a) order the owner, agent, manager or permittee to stop the mining operation;
- (b) apply all or part of the security toward payment of the cost of the work required to be performed or completed;
- (c) close the mine;
- (d) cancel the permit.

(9) *[Repealed 2014-14-52.]*

(10) *[Repealed 2002-25-46.]*

11. Permits – powers of minister

If the minister considers it to be necessary in the public interest, the minister, in respect of the issuing of permits, has and may exercise all the powers that the chief inspector may exercise under this Act.

11.1 Acquisition of a mine

If a person acquires a mine, before the person engages in mining activity the person must apply to the chief inspector to

- (a) obtain a permit, or
- (b) amend an existing permit for the mine to identify the applicant as the holder of the permit.

12. Mine reclamation fund

- (1) In this section, “fund” means the mine reclamation fund.
- (2) The Lieutenant Governor in Council may, by regulation, establish a fund to be known as the mine reclamation fund into which must be paid security, that is in the form of money, given by the owner, agent or manager of a mine under section 10.
- (3) Money received from an owner, agent or a manager must be credited to a separate account in the fund in the name of the mine.
- (4) The minister may requisition payments from an account in the fund
 - (a) to refund money and interest earned on it to the owner, agent or manager of a mine from time to time if in the opinion of the chief inspector it is no longer required for mine reclamation and protection of, and mitigation of damage to, land and watercourses affected by the mine, or
 - (b) to pay for the cost of work required under section 10 (8) (b).

13. Variance of regulations or code for individual mine

- (1) On receiving a written application from the manager, the occupational health and safety committee or the local union requesting the suspension or variance of a provision of the regulations or of the code, the chief inspector may suspend or vary the provision if the chief inspector is of the opinion that the provision does not operate in the best interest of, or is not necessary to, health and safety in an individual mine.
- (2) The chief inspector must ensure that the parties affected by the application are advised of the application for, and the subsequent decision respecting, a variance.
- (3) The chief inspector must maintain a register of all variances.

- (4) At least once every 5 years, the chief inspector
 - (a) must review each variance and advise the manager, occupational health and safety committee and local union that the chief inspector intends to review the variance, and
 - (b) after reviewing any submissions, must advise them whether or not the variance is to continue.

14. Discrimination

- (1) Each manager must ensure that no employee is discriminated against in any manner, including adversely affecting any term or condition of employment, for complying with this Act, the regulations or the code.
- (2) If advised in writing of an alleged case of discrimination against an employee for complying with this Act, the regulations or the code or refusing to work because it would result in a contravention of this Act, the regulations or the code, the chief inspector must investigate and report the findings to the manager and occupational health and safety committee, and the local union, if any.
- (3) If the chief inspector is satisfied that the allegation is true, the chief inspector may make one or more orders requiring the employer to do one or more of the following:
 - (a) cease the discrimination;
 - (b) hire or reinstate the employee;
 - (c) pay the employee any wages lost by reason of the discrimination;
 - (d) pay the employee reasonable and actual out of pocket expenses incurred by the employee by reason of the discrimination.

15. Inspections

- (1) At any time an inspector may inspect
 - (a) a mine, or
 - (b) a site considered by the inspector to be a mining activity site that is operating without a permit.
- (2) If an inspector is making a health and safety inspection, on arrival at the mine the inspector must request the manager to arrange for the worker co-chair or designate and the management co-chair or designate each to appoint a representative to accompany the inspector on the inspection.
- (3) Despite subsection (2), an inspector may perform the inspection without either or both management and worker representatives, if on completion of the inspection the inspector meets with or otherwise communicates with each co-chair or each designate of a co-chair to discuss the inspector's findings and their occupational, health and safety concerns, if any.
- (4) An inspector must complete an inspection report within 7 days and promptly provide the manager, and, in the case of a health and safety inspection, the occupational health and safety committee and local union with a copy of the inspection report on its completion, and the report must
 - (a) list the workplaces inspected,
 - (b) note any contraventions of an order under this section,
 - (c) note any contraventions of the Act, the regulations, the code or a permit, and
 - (d) order remedial action, specify the results to be obtained by the remedial action and specify time limits for compliance with the order or any provision of the Act, the regulations, the code or a permit.

- (4.1) If an inspector believes on reasonable grounds that a person has contravened or is contravening an order under this section or a provision of the Act, the code, the regulations or a permit and that the contravention has a detrimental environmental impact, the inspector may order the owner, agent, manager, permittee or any other person apparently in charge in, on or about a mine to do any of the following:
- (a) take immediate remedial action;
 - (b) suspend regular work until remedial action is taken;
 - (c) close the mine or part of it until remedial action is taken.
- (4.2) An order under this section may be made against an owner, agent, manager, permittee, contractor or other person who carries out mining activity without a permit.
- (5) If an inspector is of the opinion that a delay in remedying a hazard would be dangerous to persons or property, the inspector must issue an order
- (a) for immediate remedial action,
 - (b) to suspend regular work until remedial action is taken, or
 - (c) to close the mine or part of it until remedial action is taken.
- (6) Within 15 days after receiving the inspection report, the manager must
- (a) submit a written report outlining the remedial steps taken and the work still outstanding, and
 - (b) promptly provide a copy to the inspector, and, in the case of health and safety matters, the occupational health and safety committee and the local union.
- (7) The owner, agent, manager, permittee, and all persons in, on or about a mine must provide an inspector with all assistance necessary for the completion of an inspection or investigation.

16. Order not to interfere with public works, etc.

An inspector may order the operation of a mine to be conducted in a manner that will not interfere with a public work, public service, public utility, highway or railway, or with a pipeline as defined in section 1 (2) of the Oil and Gas Activities Act or an adjacent mine property.

17. Abandoned mine

- (1) If an inspector is of the opinion that work may be necessary in, on or about a closed or abandoned mine in order to avoid danger to persons or property or to abate pollution of the land and watercourses affected by the mine, the inspector may enter on or below the surface of the mine and may cause work to be done to remove or alleviate the danger or remedy the pollution.
- (2) The costs incurred for work done under this section must be paid from the consolidated revenue fund without an appropriation other than this subsection.
- (3) The amount expended plus interest at a prescribed rate is a debt due to the government and forms a lien and charge on the mine or mineral title in favour of the government.
- (4) Notice of the debt in the prescribed form may be registered as a charge in the land title office or in the office of the chief gold commissioner, and no transfer of title or other dealing with the mine may take place until the debt is paid and the notice cancelled.
- (5) With or without payment and on conditions the minister may impose, the minister may cancel the notice registered under subsection (4) and, on that happening, the mine may be transferred or otherwise dealt with.

18. Engineering report

An inspector may order the owner, agent or manager to provide at the owner's expense an independent study prepared by an engineer or other licensed professional acceptable to the inspector

- (a) respecting health and safety at the mine or safety of its equipment, buildings, workings or structures, or
- (b) in connection with an accident or a dangerous occurrence that the inspector is investigating.

19. Immunities

- (1) No action for damages may be brought against the chief inspector or an inspector because of anything done or omitted in good faith
 - (a) in the performance or intended performance of any duty under this Act, or
 - (b) in the exercise or intended exercise of any power under this Act.
- (2) Subsection (1) does not absolve the government from vicarious liability for an act or omission of the chief inspector or an inspector for which act or mission the government would be vicariously liable if this section were not in force.

20. *[Repealed 2007-15-80.]*

21. Appointment of manager

An owner or agent must,

- (a) before work begins, appoint a manager and ensure that there is a person acting in that capacity at all times,
- (b) immediately after each appointment, notify the inspector in writing, of the name of the manager, and
- (c) provide the manager or the manager's designate with every facility for conducting the operation of the mine in accordance with the requirements of this Act, the regulations and the code.

22. Manager's qualifications and responsibility

- (1) Each manager and designate must possess qualifications established by the regulations or the code.
- (2) The manager or designate must attend daily at an operating mine.

23. Manager's absence

Each manager must appoint a qualified person to be responsible during the manager's absence to ensure compliance with this Act, the regulations, the code and the permit.

24. Compliance

- (1) The owner, agent or manager must take all reasonable measures to ensure compliance with this Act, orders issued under it, the regulations and the code.
- (2) Every supervisor and employee must take all reasonable measures to ensure that the requirements of this Act, the regulations, the code and orders applicable to the work they perform or over which they have supervision are followed.

25. Contractors

- (1) If work in or about a mine is let to a contractor, the contractor and the contractor's manager, as well as the owner, agent and manager of the mine, must take all reasonable measures to ensure compliance with the provisions of this Act, the

regulations, the code, the permit and orders under this Act pertaining to the work over which they have control.

- (2) In a case of noncompliance with subsection (1), the contractor and the contractor's manager commit an offence that is punishable in the same manner as if the contractor and contractor's manager were the owner, agent or manager of the mine.

26. Supervision required

Each manager must ensure that every person employed at a mine, if required by the regulations or the code, is under the daily supervision of a person who holds a valid and appropriate certificate as required by the regulations or the code.

27. Mine plans

Each manager must keep in the office at the mine site accurate plans that

- (a) are updated every 3 months,
- (b) are prepared on a scale that accords with good engineering practice, and
- (c) contain particulars established by the regulations or the code.

28. [Repealed 2003-1-14.]

29. Alternative employment

If an inspector makes an order under section 15 (5) (b) or (c), and the manager is unable to provide alternate employment, the manager must pay or cause to be paid to each worker the amount that the worker would have earned or been likely to earn for each day the closure continues, up to a maximum of 3 working days.

30. Posting of reports and orders

- (1) Each manager must post in a conspicuous place at the mine all inspection reports and orders issued by an inspector and must maintain them there for 30 days.
- (2) Each manager must ensure that all documents required to be posted are maintained in a legible condition.

31. [Repealed 2003-1-15.]

32. Occupational health and safety committee

- (1) Each manager must ensure that an occupational health and safety committee is established in accordance with the regulations or the code.
- (2) A manager must allow committee members to participate in inspections, investigations and meetings of the committee under this Act, and that participation must be considered as time worked.

33. Appeal to chief inspector

- (1) A person who is adversely affected by a decision, order or ruling of an inspector may appeal the decision, order or ruling in writing to the chief inspector within 30 days after the date of its issue.
- (2) The manager, occupational health and safety committee and local union must be given an opportunity to make a submission on the matter of the appeal, receive copies of all submissions and be notified of the chief inspector's decision on the appeal.
- (3) An appeal taken under this section does not operate as a stay or suspend the operation of the decision being appealed unless the chief inspector orders otherwise.

34. Health, safety and reclamation code committee

- (1) The minister must establish a health, safety and reclamation code committee consisting of the members the minister appoints.
- (2) The chief inspector is a member and the chair.
- (3) The committee must prepare a code dealing with all aspects of health, safety and reclamation in the operation of a mine and may amend the code from time to time as required.
- (4) A provision of the code may specify that the approval or consent of an inspector or some other person is required before a specified action may be taken.
- (5) Without limiting subsection (4), the code may require approval or consent before a specified type of equipment is used at a mine or continues to be used in specified circumstances.
- (6) The code and any amendments to it come into force on approval of the Lieutenant Governor in Council.
- (7) If there is a conflict between a provision of the code and a provision of the regulations, the regulations apply.
- (8) Where there is a conflict between a provision of the code and a provision of the *Freedom of Information and Protection of Privacy Act*, the code applies.
- (9) Subsection (8) does not apply to personal information, as defined in the *Freedom of Information and Protection of Privacy Act*, that has been in existence for 100 or more years or to other information that has been in existence for 50 or more years.

35. Enforcement of Act, regulations, code, permit or order

- (1) If an inspector finds that a mine is not being operated in accordance with an order under section 15 or a provision of the Act, the regulations, the code or a permit, the inspector may order the owner, agent, manager, permittee or person apparently in charge in, on or about a mine to comply with the order or provision.
- (2) If a person fails or refuses to comply with an order of an inspector under subsection (1) of this section or under section 15, the inspector may apply to the Supreme Court for an order directing the person to comply.

36. Annual report

The chief inspector must publish an annual report showing results during the previous year in achieving the purposes of this Act.

36.1 Contraventions

- (1) After giving a person an opportunity to be heard, the chief inspector may find on a balance of probabilities that the person has contravened or failed to comply with any of the following provisions:
 - (a) a prescribed provision of this Act, the regulations or the code;
 - (b) a provision of an order made under this Act;
 - (c) a term or condition imposed under section 10 (1.1), (2), (2.01), (3), (4) or (7), 17 (5) or 38 (4) of this Act.
- (2) If a corporation contravenes or fails to comply with a provision referred to in subsection (1), a director, officer or agent of the corporation who authorized, permitted or acquiesced in the contravention or failure also contravenes or fails to comply with the provision and is also liable to an administrative penalty under section 36.2.
- (3) If an employee, contractor or agent of a corporation contravenes or fails to comply

with a provision referred to in subsection (1) in the course of carrying out the employment, contract or agency, the corporation also contravenes or fails to comply with the provision and is also liable to an administrative penalty under section 36.2.

36.2 Administrative penalties

- (1) If the chief inspector finds that a person has contravened or failed to comply with a provision referred to in section 36.1 (1), the chief inspector may, after considering the prescribed matters, impose an administrative penalty on the person in an amount that does not exceed the prescribed limit.
- (2) A person may be prosecuted under this Act for a contravention or failure in relation to which an administrative penalty has been imposed.
- (3) In imposing a sentence for an offence under this Act, the court may consider an administrative penalty imposed in relation to the same matter.
- (4) If a person is convicted of an offence under this Act, an administrative penalty may not be imposed on the person in respect of the same circumstances that gave rise to the conviction.

36.3 Notice of contravention or penalty

If the chief inspector finds that a person has contravened or failed to comply with a provision referred to in section 36.1 (1) or if the chief inspector imposes an administrative penalty on the person under section 36.2 (1), the chief inspector

- (a) must give to the person a notice of the decision, and the notice must
 - (i) identify the contravention,
 - (ii) advise the person of his or her right to appeal the decision under section 36.7, and
 - (iii) if an administrative penalty is being imposed, specify the amount of the penalty and the date by which the penalty must be paid, and
- (b) may make public the reasons for the decision and the amount of the penalty, if any.

36.4 Due date of penalty

A person on whom an administrative penalty is imposed under section 36.2 must pay the penalty within 40 days after the later of the following dates, as applicable:

- (a) the date on which the notice referred to in section 36.3 is given to the person;
- (b) if the person commences an appeal under section 36.7, the date on which the notice referred to in section 36.7 (4) (b) is given to the person.

36.5 Enforcement of administrative penalty

- (1) An administrative penalty constitutes a debt payable to the government by the person on whom the penalty is imposed.
- (2) If a person fails to pay an administrative penalty as required under section 36.4, the government may file with the Supreme Court or Provincial Courts a certified copy of the notice imposing the penalty and, on being filed, the notice has the same force and effect, and all proceedings may be taken on the notice, as if the notice were a judgment of that court.

36.6 Limitation period

- (1) The time limit for giving a notice under section 36.3 is 3 years after the date on which the act or omission alleged to constitute the contravention or failure to comply first came to the attention of the chief inspector.
- (2) A certificate purporting to have been issued by the chief inspector and certifying the date referred to in subsection (1) is proof of that date.

36.7 Appeal

- (1) In this section, "appeal tribunal" means a tribunal identified by regulation for the purposes of this section.
- (2) A person to whom a notice has been given under section 36.3 may appeal to the appeal tribunal a decision that is the subject of the notice.
- (3) The time limit for a person to commence an appeal is 30 days after the date on which the notice under section 36.3 is given to the person.
- (4) On an appeal under subsection (2), the appeal tribunal
 - (a) may confirm, vary or rescind the decision that is the subject of the notice, and
 - (b) must notify the person of the decision made under paragraph (a) of this subsection.

37. Offence and penalty

- (1) A person who obstructs, impedes or otherwise interferes with an inspector in carrying out the inspector's duties under this Act commits an offence.
- (2) A person who contravenes a provision of this Act, the regulations, the code or an order made under any of them commits an offence.
- (3) A person who commits an offence is liable to a fine of not more than \$1 000 000 or to imprisonment for not more than 3 years or both.
- (3.1) The time limit for laying an information to commence a prosecution for an offence under this Act is 3 years after the date on which the chief inspector learned of the facts on which the information is based.
- (3.2) A certificate purporting to have been issued by the chief inspector certifying the date referred to in subsection (3.1) is proof of that date.
- (4) If an inspector serves a written notice on a person alleging a contravention of this Act, the regulations or the code, or an order under any of them, that person, on conviction, is liable to a penalty, in addition to the penalties provided under subsection (3), not more than \$5 000 and not less than \$500 for every day during which the offence continues to be committed after receipt of the notice.
- (5) If a corporation commits an offence, a director or officer of the corporation who authorized, permitted or acquiesced in the offence is, even if the corporation is convicted, liable to the penalty set out in subsection (3).

38. Power to make regulations

- (1) The Lieutenant Governor in Council may make regulations referred to in section 41 of the *Interpretation Act*.
- (2) Without limiting subsection (1), the Lieutenant Governor in Council may make regulations as follows:
 - (a) governing exploration, development, operation, closure and abandonment of mines and mining property;
 - (a.1) respecting applications for, and the issuance of, permits and

- approvals, including but not limited to prescribing time limits within which specified steps in the application process must be taken;
- (a.2) for the purposes of section 10 (1.1) and (2.01);
- (b) respecting the type, application, use and operation of equipment, machinery and other property in, on or about mines, whether moveable or immovable or whether used in mining operations or not;
- (c) relating directly or indirectly to the health and safety of all persons, including the public, in, on or about mines, either underground or on the surface;
- (d) respecting standards for environmental protection and reclamation;
- (e) respecting the conservation of cultural heritage resources;
- (f) requiring management to give members of the occupational health and safety committee access to relevant records;
- (g) requiring management to give access to the mine and to its records for the purposes of investigation of death or injury, accidents or dangerous or unusual occurrences;
- (h) requiring management to forbid a person to enter or engage in work if the person is impaired or has drugs or liquor in the person's possession;
- (i) requiring management to forbid persons to engage in horseplay;
- (j) & (k) [Not in force.]
- (l) prescribing fees and charges that must be paid in respect of any matter for which a service is provided or a duty performed under this Act and prescribing the time and manner of payment of the fees and charges;
- (m) prescribing provisions for the purposes of section 36.1 (1) (a);
- (n) prescribing matters and limits for the purposes of section 36.2 (1);
- (o) authorizing administrative penalties to be imposed on a daily basis for continuing contraventions or failures;
- (p) prescribing the consequences of failing to pay an administrative penalty, which consequences may include, but are not limited to, imposing additional penalties;
- (q) for the purposes of section 36.7, identifying a tribunal and specifying the provisions of the *Administrative Tribunals Act* that apply to the tribunal for the purposes of hearing appeals under this Act.
- (3) A regulation under subsections (1) or (2) may
- (a) make different provisions for different mines or for different classes or types of mines,
- (b) adopt all or part of a code or standard published by a national or international standards association, as amended from time to time,
- (c) specify that the approval or consent of an inspector or some other person is required before a specified action may be taken, and, without limiting this section, may require approval or consent before a specified type of equipment is used at a mine or continues to be used in specified circumstances,
- (d) delegate to inspectors the power, by order, to vary codes, standards and other prescribed matters in the interests of health and safety in individual mines, and

- (e) limit, restrict or prohibit, for a prescribed period of time, exploration or mining of uranium, if the uranium is more than a prescribed amount or proportion, within any or all mines, and to close, in the interest of health or safety, any mining operation in which more uranium than the prescribed amount or proportion is found.
- (4) If a regulation is made that results in a limitation, restriction or Prohibition on exploration or development or results in the closure of a mining operation, the chief inspector may, on conditions ordered by the chief inspector, consent to
- (a) the recommencement of exploration or development, or
 - (b) the opening of a mining operation that has been closed under that regulation.

MINES ACT

ADMINISTRATIVE PENALTIES (MINES) REGULATION

CONTENTS

Part 1 - Procedures for making determinations

1. Definition
2. Assessment of administrative penalty
3. Enforcement of administrative penalty – permits

Part 2 - Administrative penalties

4. Prescribed provisions of Act
5. Prescribed provisions of Mines Regulation
6. Prescribed provisions of Workplace Hazardous Materials Information System Regulation (Mines)
7. Prescribed provisions of *Health, Safety and Reclamation Code for Mines in British Columbia*

Part 3 - Appeals

8. Definition
9. Appeal tribunal
10. Application of *Administrative Tribunals Act* to appeal tribunal

PART 1 - PROCEDURES FOR MAKING DETERMINATIONS

1. Definition

In this regulation, "Act" means the *Mines Act*.

2. Assessment of administrative penalty

Before the chief inspector imposes an administrative penalty on a person, the chief inspector must consider the following matters, if applicable:

- (a) the gravity and magnitude of the contravention or failure;
- (b) the real or potential adverse effect of the contravention or failure;
- (c) previous contraventions or failures by, administrative penalties imposed on, or orders issued to the following:
 - (i) the person who is the subject of the determination;
 - (ii) if the person is an individual, a corporation for which the individual is or was a director, officer or agent;
 - (iii) if the person is a corporation, an individual who is or was a director, officer or agent of the corporation;
- (d) whether the contravention or failure was repeated or continuous;
- (e) whether the contravention or failure was deliberate;
- (f) any economic benefit derived by the person from the contravention or failure;
- (g) the person's efforts to prevent the contravention or failure;
- (h) the person's efforts to correct the contravention or failure;

- (i) the person's efforts to prevent reoccurrence of the contravention or failure;
- (j) any other factors that, in the opinion of the chief inspector, are relevant.

3. Enforcement of administrative penalty – permits

If a person fails to pay an administrative penalty as required under section 36.4 *[due date of penalty]* of the Act, the chief inspector may refuse to consider applications made by the person for a permit, or for the amendment of a permit, until the penalty is paid in full.

PART 2 - PROCEDURES FOR MAKING DETERMINATIONS

4. Prescribed provisions of Act

- (1) A person who contravenes section 10 (1) *[permits]*, 11.1 *[acquisition of a mine]*, 14 (1) *[discrimination]*, 15 (7) *[inspections]* or 21 *[appointment of manager]* of the Act or an order issued under section 10 (8) (a), 14 (3), 15 (4.1) or (5) or 35 (1) *[enforcement of Act, regulations code, permit or order]* of the Act is liable to an administrative penalty not exceeding \$500 000.
- (2) A person who contravenes section 26 *[supervision required]*, 27 *[mine plans]* or 32 (1) or (2) *[occupational health and safety committee]* of the Act or an order issued under section 15 (4) (d) of the Act is liable to an administrative penalty not exceeding \$100 000.
- (3) A person who contravenes section 30 (1) or (2) *[posting of reports and orders]* of the Act is liable to an administrative penalty not exceeding \$40 000.

5. Prescribed provisions of Mines Regulation

A person who contravenes section 1 *[investigation by inspector]* of the Mines Regulation, respecting the obligations of management, is liable to an administrative penalty not exceeding \$500 000.

6. Prescribed provisions of Workplace Hazardous Materials Information System Regulation (Mines)

A person who contravenes section 3 (1) *[prohibition]* of the Workplace Hazardous Materials Information System Regulation (Mines) is liable to an administrative penalty not exceeding \$500 000.

7. Prescribed provisions of Health, Safety and Reclamation Code for Mines in British Columbia

- (1) A person who contravenes section 1.7.1 (1) *[manager's responsibility]*, 1.11.1 *[training]*, 3.4.1 *[work in confined spaces]*, 3.7.1 (1) *[Mine Emergency Response Plan]*, 10.5.1 *[construction of tailings and water management facilities]*, 10.5.2 *[Operations, Maintenance and Surveillance (OMS) Manual]*, 10.5.3 *[annual dam safety inspection]* or 10.5.4 *[dam safety reviews]* of the code is liable to an administrative penalty not exceeding \$500 000.
- (2) A person who contravenes section 1.12.1 *[open pit]*, 1.12.2 *[underground non coal]*, 1.12.3 *[underground coal mine]* or 1.12.5 *[manager]* of the code is liable to an administrative penalty not exceeding \$100 000.
- (3) A person who contravenes section 1.11.2 *[record of training]* of the code is liable to an administrative penalty not exceeding \$40 000.

PART 3 - APPEALS

8. Definiton

In this Part, "appeal" means an appeal under section 36.7 [appeal] of the Act.

9. Appeal tribunal

For the purposes of section 36.7 of the Act and this Part, the appeal tribunal is the Environmental Appeal Board continued under the *Environmental Management Act*.

10. Application of Administrative Tribunals Act to appeal tribunal

The following provisions of the *Administrative Tribunals Act* apply to the appeal tribunal:

- (a) Part 1 [Interpretation and Application];
- (b) Part 2 [Appointments];
- (c) Part 3 [Clustering];
- (d) Part 4 [Practice and Procedure], except the following:
 - (i) section 23 [notice of appeal (exclusive of prescribed fee)];
 - (ii) section 24 [time limit for appeals];
 - (iii) section 25 [appeal does not operate as stay];
 - (iv) section 34 (1) and (2) [power to compel witnesses and order disclosure];
- (e) Part 6 [Costs and Sanctions];
- (f) Part 7 [Decisions];
- (g) Part 8 [Immunities];
- (h) Part 9 [Accountability and Judicial Review] except section 58 [standard of review with privative clause].



MINES ACT

MINE RECLAMATION FUND REGULATION

1. Fund established

The mine reclamation fund described in section 12 of the *Mines Act* is established.

[Provisions of the Mines Act, R.S.B.C. 1996, c. 293, relevant to the enactment of this regulation: sections 12 and 38]



MINES ACT

MINES FEE REGULATION

CONTENTS

Part 1 - Interpretation

1. Interpretation

Part 2 - Permit fees

2. Prescribed permit fees
3. General rules for regional mines
4. Permit fees for regional mines
5. General rules for mineral or coal mines
6. Permit fees for mineral or coal mines

Part 3 - Inspection fees

7. Prescribed inspection fees
8. Inspection fees for pits or quarries
9. Inspection fees for mineral or coal mines

PART 1 - INTERPRETATION

1. Interpretation

- (1) In this regulation:

Act means the Mines Act;

advisory committee means an advisory committee established for the purposes of section 9 of the Act;

mineral or coal mine means a mine at which mining activities in relation to surface or underground development or production of coal or minerals occur;

Minister of Finance means the minister responsible for the administration of the *Financial Administration Act*;

pit or quarry means a mine at which mining activities in relation to rock, industrial minerals, limestone, earth, clay, sand or gravel occur;

placer mine means a mine at which mining activities in relation to placer minerals occur;

regional mine means a placer mine or a pit or quarry.

- (2) For the purposes of this regulation, each cubic metre of pay dirt moved in a placer mine is deemed to be equivalent to 2 tonnes of pay dirt moved in the mine.

PART 2 - PERMIT FEES

2. Prescribed permit fees

- (1) The prescribed fees for the review of an application for a permit or a revision to a permit are as set out in this Part.
- (2) This Part applies to the following persons:
 - (a) a person who holds a permit on or after April 1, 2015;
 - (b) an applicant for a permit or a revision to a permit, if the application

- (i) is made on or after April 1, 2015, or
- (ii) was in relation to a mineral or coal mine and made before April 1, 2015 but no decision has been made to issue or to refuse the permit as of April 1, 2015.

3. General rules for regional mines

- (1) This section applies to applicants for, and holders of, permits in respect of regional mines.
- (2) An applicant for a permit or a revision to a permit for a placer mine must include with the application both of the following:
 - (a) a statement of the maximum number of tonnes of pay dirt proposed to be moved in the highest producing year of the permit;
 - (b) the applicable permit fee, if any, as determined under section 4 [*permit fees for regional mines*].
- (3) An applicant for a permit or a revision to a permit for a pit or quarry must include with the application all of the following:
 - (a) for the purpose of determining the operating period of the mine referred to in section 4 (3), a statement of the date on which mining activities
 - (i) are proposed to begin under a new permit or began under the current permit, and
 - (ii) are proposed to end;
 - (b) a statement of the maximum number of tonnes of materials proposed to be extracted in the highest producing year of the permit;
 - (c) the applicable permit fee, if any, as determined under section 4.

4. Permit fees for regional mines

- (1) The applicable permit fees for the purposes of section 3 (2) (b) and (3) (c) [*general rules for regional mines*] are as set out in this section.
- (2) No permit fee applies in respect of an application for a revision that, in the opinion of the chief inspector, is merely administrative or clerical in nature.
- (3) Subject to subsection (2) of this section, the permit fee is the fee, if any, set out in Column 3 of the following table opposite the tonnes of pay dirt or materials stated under section 3 (2) (a) or (3) (b), as set out in
 - (a) Column 1, in respect of a regional mine that is proposed to operate under the permit for 5 years or less, or
 - (b) Column 2, in respect of a regional mine that is proposed to operate under the permit for more than 5 years:

5. General rules for mineral or coal mines

- (1) This section applies to applicants for, and holders of, permits in respect of mineral or coal mines.
- (2) On receiving an application for a permit or a revision to a permit, the chief inspector must
 - (a) determine the applicable permit fee, if any, in accordance with section 6 [*permit fees for mineral or coal mines*], and
 - (b) advise the applicant, in writing, of the amount of the permit fee and the date by which the fee must be paid.

PERMIT FEES FOR REGIONAL MINES		
Column 1	Column 2	Column 3
Tonnes proposed to be extracted or moved in highest producing year		Permit fee
Regional mine proposed to operate for 5 years or less	Regional mine proposed to operate for more than 5 years	
< 60 000	< 10 000	\$0
≥ 60 000 – < 125 000	≥ 10 000 – < 60 000	\$4000
≥ 125 000 – < 250 000	≥ 60 000 – < 125 000	\$8000
≥ 250 000 – < 500 000	≥ 125 000 – < 250 000	\$16 000
≥ 500 000	≥ 250 000	\$32 000

- (3) If the chief inspector advised an applicant that the applicable permit fee was that set out under section 6 (3) (a) but the chief inspector subsequently refers the application to an advisory committee, the chief inspector must
- (a) determine, in accordance with section 6, the applicable permit fee,
 - (b) subtract from the amount determined under paragraph (a) the amount of the permit fee already paid, and
 - (c) advise the applicant, in writing, of the amount of the additional permit fee as determined under paragraph (b) and the date by which the fee must be paid.
- (4) An applicant who receives a notice under subsection (2) (b) or (3) (c) must pay the permit fee stated in the notice on or before the date stated in the notice.

6. Permit fees for mineral or coal mines

- (1) The applicable permit fees for the purposes of section 5 [general rules for mineral or coal mines] are as set out in this section.
- (2) No permit fee applies in respect of an application for a revision that, in the opinion of the chief inspector, is merely administrative or clerical in nature.
- (3) Subject to subsection (2), the following permit fees apply:
- (a) \$10 000, if the chief inspector does not refer the application to an advisory committee;
 - (b) \$125 000, if the chief inspector refers the application to an advisory committee.
- (4) Despite subsection (3) (b), the chief inspector may reduce the permit fee for an application referred to an advisory committee to \$60 000 if the chief inspector is of the opinion that
- (a) the application is significantly less complex than usual, and
 - (b) the subject matter of the application is not likely to significantly
 - (i) change the design components of the mine, the mine plan or the reclamation program to be carried out in respect

- (ii) of the mine,
increase the impact on the land, watercourses or cultural heritage resources affected by the mine, or
- (iii) increase risks to the health and safety of any person, including the public, in, on or about the mine.

PART 3 - INSPECTION FEES

7. Prescribed inspection fees

The prescribed fees for inspections are as set out in this Part.

8. Inspection fees for pits or quarries

- (1) This section applies to holders of permits in respect of pits or quarries.
- (2) A permit holder must pay to the Minister of Finance the applicable inspection fee as determined under subsection (4).
- (3) Payment under subsection (2) must be made each year, on or before January 31, in respect of the period beginning January 1 of the previous calendar year.
- (4) The annual inspection fee is the amount set out in Column 2 of the following table opposite the number of tonnes of materials extracted in the previous calendar year, as set out in Column 1:

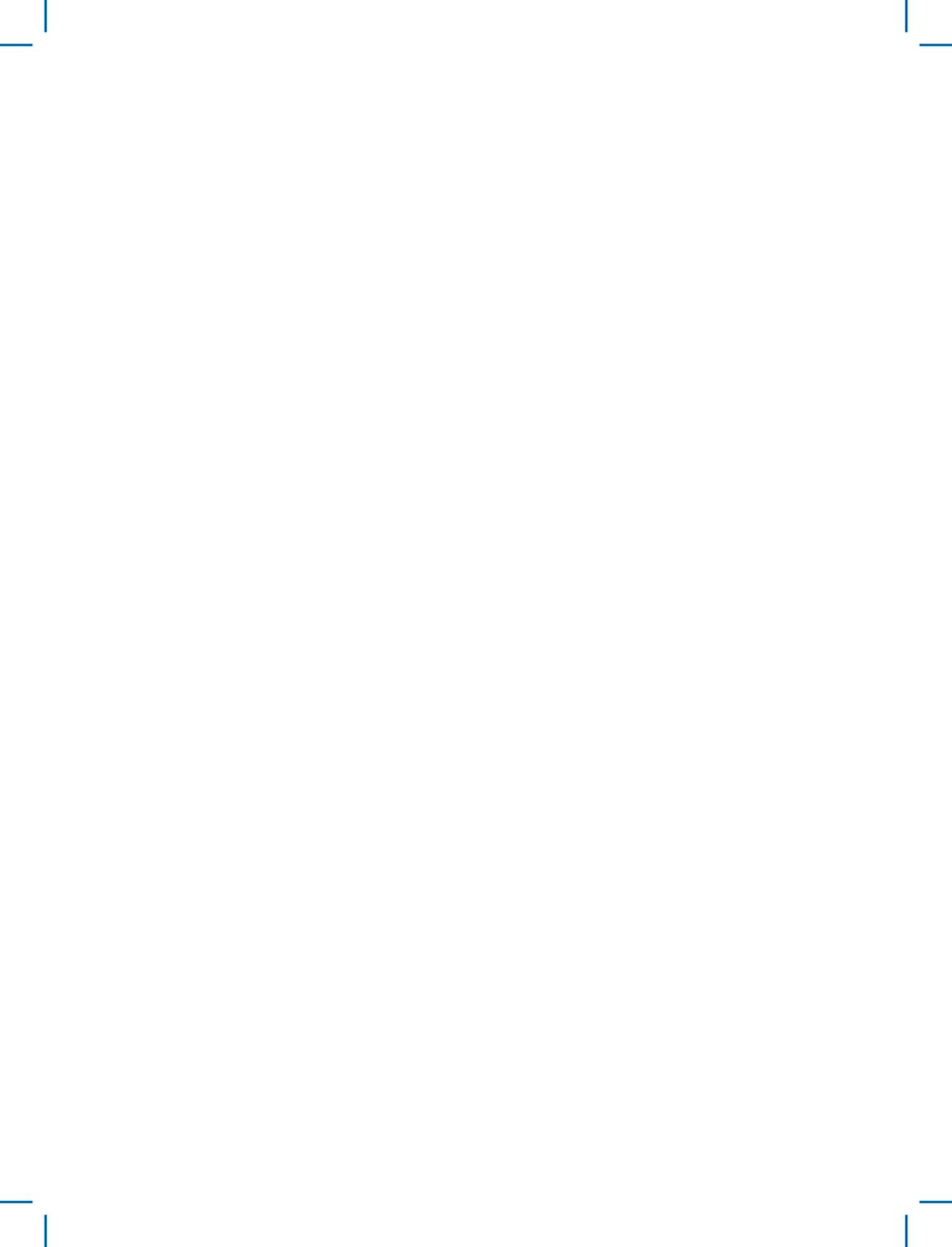
9. Inspection fees for mineral or coal mines

- (1) This section applies to holders of permits in respect of mineral or coal mines.
- (2) A permit holder must pay to the Minister of Finance the applicable inspection fee as determined under subsection (4).
- (3) Payment under subsection (2) must be made as follows:
 - (a) in respect of the period beginning January 1 and ending June 30, on or before July 31 of that year;
 - (b) in respect of the period beginning July 1 and ending December 31, on or before January 31 of the following year.
- (4) Subject to subsection (5), the inspection fee is the amount calculated by multiplying the payroll for the applicable period under subsection (3), as determined for the purposes of the *Workers Compensation Act*, by 0.007.
- (5) If the amount calculated under subsection (4) in respect of a period is less than \$300, no inspection fee is payable for the period.

INSPECTION FEES FOR PITS OR QUARRIES	
Column 1	Column 2
Tonnes extracted	Inspection fee
≤ 10 000	\$150
> 10 000 – ≤ 25 000	\$450
> 25 000 – ≤ 50 000	\$900
> 50 000 – ≤ 100 000	\$1950
> 100 000	\$3750

- (6) The permit holder must, on request of the Minister of Finance and within the time requested, provide to the Minister of Finance payroll and other accounting records for the purpose of verifying the amount calculated under subsection (4).

[Provisions relevant to the enactment of this regulation: Mines Act, R.S.B.C. 1996, c. 293, section 38 (2) (l)]



MINES ACT

MINES REGULATION

1. Investigation by inspector

An inspector may, during the exploration, development, operation, closure or abandonment of a mine, investigate any matter relating directly or indirectly to the health and safety of any person or the public, including an investigation with respect to

- (a) death or injury,
- (b) accidents,
- (c) dangerous or unusual occurrences, or
- (d) complaints or allegations relating to health or safety,

and, for the purposes of an investigation, management must provide the inspector with access to all of the mine, including the underground and surface portions, and all mine records.

[Provisions of the Mines Act, R.S.B.C. 1996, c. 293, relevant to the enactment of this regulation: section 38 (2) (a), (c) and (g)]



MINES ACT

NOTICE OF DEBT FORM REGULATION

1. Notice of Debt

The prescribed form referred to in section 17 (4) of the *Mines Act* for a notice of debt is the applicable form approved by the Director of Land Titles under the *Land Titles Act*. [en. B.C. Reg. 17/2005, Sch. 3, s. 3.]

[Provisions of the *Mines Act*, R.S.B.C. 1996, c. 293, relevant to the enactment of this regulation: sections 17 (4) and 38]



MINES ACT

PERMIT REGULATION

CONTENTS

Part 1 - Definitions

1. Definitions

Part 2 - Deemed authorizations

2. General limits on deemed authorizations
3. Chief inspector may overturn deemed authorization
4. Notices
5. Term extensions
6. IP surveys
7. Producing mines

Part 3 - Exemptions from permitting

8. Exemption for Ministry of Transportation

PART 1 - DEFINITIONS

1. Definitions

Act means the *Mines Act*;

exploration activities has the same meaning as in Part 9 of the code;

IP survey means an induced polarization survey using exposed electrodes.

PART 2 - DEEMED AUTHORIZATIONS

2. General limits on deemed authorizations

- (1) This Part does not apply to a permittee who is subject to
 - (a) an order made under section 35 of the Act, or
 - (b) enforcement proceedings under section 37 of the Act.
- (2) A deemed authorization under this Part is subject to the limits and requirements of this Part.

3. Chief inspector may overturn deemed authorizations

- (1) Despite any provision of this Part, the chief inspector may order that a deemed authorization under this Part does not apply in respect of a particular permit if the chief inspector considers the order necessary to protect health, safety, the environment or a cultural heritage resource.
- (2) An order under subsection (1) may be made on issuing a permit under the Act or within 30 days of receiving a notice under this Part.
- (3) The making of an order under this section does not prevent a person from making an application under section 10 (6) of the Act for a revision to a permit.

4. Notices

Notices submitted under this Part must

- (a) be in the form and manner required by the chief inspector, and
- (b) include the information required by the chief inspector.

5. Term extensions

- (1) A permit for exploration activities is deemed to authorize the permittee to extend the term of the permit by up to 2 years.
- (2) A permittee must give, in accordance with section 4, notice of an intended extension to the chief inspector no less than 30 days before expiry of the permit.
- (3) A permit may be extended under this section only once.

6. IP surveys

- (1) A permit for exploration activities is deemed to authorize the permittee to conduct an IP survey.
- (2) A permittee must give, in accordance with section 4, notice of the intention to conduct an IP survey to the chief inspector no less than 30 days before beginning an IP survey.

7. Producing mines

- (1) In this section:

exploration drill program means a mineral or coal exploration drill program;

producing mine means a mine

- (a) for which a permit has been issued under the Act for production of minerals or coal, and
 - (b) that is currently operating.
- (2) A permit for a producing mine is deemed to authorize the permittee to conduct both an exploration drill program and an IP survey.
 - (3) A permittee must give, in accordance with section 4, notice of the intention to conduct an exploration drill program or IP survey not otherwise referred to in the permit to the chief inspector no less than 30 days before beginning the exploration drill program or IP survey.
 - (4) An exploration drill program or IP survey not otherwise referred to in a permit may be conducted only within the area of land that would be or has been disturbed by a mine or mining activities approved under the permit.

PART 3 - EXEMPTION FROM PERMITTING

8. Exemption for Ministry of Transportation

- (1) In this section, "Ministry of Transportation" means the ministry of the minister charged with the administration of the *Transportation Act*.
- (2) A person or a ministry of the government is exempt under section 10 (1.1)(b) of the Act from the requirement to hold a permit in respect of a mine if both of the following conditions are met:
 - (a) the mine is operated exclusively by or for the Ministry of Transportation;
 - (b) the mine is not within a category prescribed as a reviewable project for the purposes of section 5 of the *Environmental Assessment Act*.

[Provisions relevant to the enactment of this regulation: *Mines Act*, R.S.B.C. 1996, c. 293, section 38]

MINES ACT

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM REGULATION (MINES)

CONTENTS

1. Interpretation
2. Application
3. Prohibition
4. Worker education
5. Worker training
6. Supplier label
7. Workplace label for employer-produced products
8. Workplace label for decanted products
9. Identification of a controlled product in piping systems and vessels
10. Placard identifiers
11. Laboratory label
12. Supplier material safety data sheets
13. Employer material safety data sheets
14. Availability of a material safety data sheet
15. Deletions from a material safety data sheet
16. Confidential business information
17. Confidentiality of information
18. Disclosure in medical emergencies
19. Prohibition against disclosure
20. Transition period

1. Interpretation

In this regulation:

bulk shipment means a shipment of a controlled product that is contained, without intermediate containment or intermediate packaging, in

- (a) a vessel with a water capacity of more than 454 litres,
- (b) a freight container, a portable tank, a road vehicle, a railway vehicle, a ship, barge or other type of vessel or an aircraft, or
- (c) a pipeline;

commission means the Hazardous Materials Information Review Commission established by the *Hazardous Materials Information Review Act* (Canada);

container includes a bag, barrel, bottle, box, can, cylinder, drum, storage tank or similar package or receptacle;

controlled product means a product, material or substance specified by regulations made pursuant to section 15 (1) (a) of the *Hazardous Products Act* (Canada) as products, materials and substances included in any of the classes listed in Schedule II of that Act;

employer means an owner, agent or manager as defined in section 1 of the Act;

hazard information means information on the proper and safe use, storage and handling of a controlled product and includes information relating to its toxicological properties;

hazardous waste means a controlled product that is intended for disposal;

label includes a mark, sign, device, stamp, seal, sticker, ticket, tag or wrapper;

manufactured article means an article that is formed to a specific shape or design during manufacture, the intended use of which, when in that form, is dependent in whole or in part on its shape or design, and that, under normal conditions of use, will not release or otherwise cause a person to be exposed to a controlled product;

material safety data sheet means a document disclosing the information referred to in section 13 (a) (i) to (v) of the *Hazardous Products Act* (Canada) and section 9 (2) of the *Controlled Products Regulations* (Canada);

place of employment⁷ means a mine;

product identifier means, in respect of a controlled product, the brand name, code name or code number specified by a supplier or the chemical name, common name, generic name or trade name;

readily available means, when used in connection with a material safety data sheet, available in a place where a person can easily access and study the information it contains;

risk phrase means, in respect of a controlled product or a class, division or subdivision of controlled products, a statement identifying a hazard that may arise from the nature of the controlled product or the class, division or subdivision of controlled products;

safety and health representative means a worker who carries out, at his place of employment, the functions of a safety committee;

supplier label means a label provided by a supplier that complies with the requirements, discloses the information and displays the hazard symbols referred to in section 13 (b) of the *Hazardous*

Products Act (Canada), section 17 of the *Controlled Products Regulations* (Canada), and section 11 (1) of this regulation;

worker includes a person who works for an employer;

workplace label means a label that discloses a product identifier and information for the safe handling of a controlled product, and that indicates that a material safety data sheet, if supplied or produced, is available.

[am. B.C. Reg. 459/88.]

2. Application

- (1) This section applies to employers and workers in respect of controlled products used, stored or handled at a place of employment.
- (2) Notwithstanding subsection (1), the provisions of this regulation in respect of a supplier label and a material safety data sheet do not apply where the controlled product is an
 - (a) explosive within the meaning of the *Explosives Act* (Canada),
 - (b) cosmetic, device, drug or food within the meaning of the *Food and Drugs Act* (Canada),
 - (c) control product within the meaning of the *Pest Control Products Act* (Canada),
 - (d) prescribed substance within the meaning of the *Atomic Energy Control Act* (Canada), or
 - (e) product, material or substance packaged as a consumer product and in quantities normally used by the consuming public.
- (3) Notwithstanding subsection (1), this regulation does not apply where the controlled product is
 - (a) wood or a product made of wood,
 - (b) tobacco or a product made of tobacco,
 - (c) a manufactured article, or
 - (d) being transported or handled pursuant to the requirements of the *Transportation of Dangerous Goods Act, 1992* (Canada) or the *Transport of Dangerous Goods Act*.
- (4) Notwithstanding subsection (1), this regulation does not apply to a hazardous waste except that the employer shall ensure the safe storage and handling of a hazardous waste generated at that place of employment through the combination of any mode of identification and worker education.

3. Prohibition

- (1) An employer shall ensure that a controlled product is not used, stored or handled in a place of employment unless all the applicable requirements of this regulation in respect of labels, identifiers, material safety data sheets and worker education are complied with.
- (2) Notwithstanding subsection (1), an employer may store a controlled product in a place of employment while actively seeking information required by this regulation.

4. Worker education

- (1) An employer shall ensure that a worker who works with a controlled product or

in proximity to a controlled product is informed about all hazard information received from a supplier concerning that controlled product as well as any further hazard information of which the employer is aware or ought to be aware concerning the use, storage and handling of that controlled product.

- (2) Where a controlled product is produced in a place of employment, an employer shall ensure that a worker who works with that controlled product or in proximity to that controlled product is informed about all hazard information of which the employer is aware or ought to be aware concerning that controlled product and its use, storage and handling.

5. Worker training

- (1) The employer shall ensure that a worker who works with a controlled product or in proximity to a controlled product is instructed in
- (a) the content of the applicable supplier label and workplace label, and the purpose and significance of the information contained on the label,
 - (b) the content required on a material safety data sheet and the purpose and significance of the information contained on the material safety data sheet,
 - (c) procedures for the safe use, storage, handling and disposal of a controlled product,
 - (d) the safe use, storage, handling and disposal of a controlled product contained or transferred in
 - (i) a pipe,
 - (ii) a piping system including valves,
 - (iii) a process vessel,
 - (iv) a reaction vessel, or
 - (v) a tank car, tank truck, ore car, conveyor belt or similar conveyance,
 - (e) procedures to be followed where the controlled product escapes from equipment, or from another product, and
 - (f) procedures to be followed in case of an emergency involving a controlled product.
- (2) An employer shall ensure that the program of worker education required by subsection (1) is developed and implemented
- (a) for that employer's place of employment and related to the employer's program for the prevention of injuries and occupational disease, and
 - (b) in consultation with the joint occupational safety and health committee, if any, or the safety and health representative, if any.
- (3) An employer shall ensure, so far as is reasonably practicable, that the program of worker instruction required by subsection (1) results in a worker being able to apply the information as needed to protect the worker's safety and health.
- (4) The employer shall review at least annually, or more frequently if required by a change in work conditions or available hazard information, and in consultation with the joint occupational safety and health committee, if any, or safety and health representative, if any, the instruction and training provided to workers concerning controlled products.

6. Supplier label

- (1) An employer shall ensure that the container of a controlled product or a controlled product received at a place of employment is labelled with a supplier label.
- (2) Subject to subsection (3) and to section 16, as long as any amount of a controlled product remains in a place of employment in the container in which it was received from the supplier, an employer shall not remove, deface, modify or alter the supplier label.
- (2) Subject to subsection (3) and to section 16, as long as any amount of a controlled product remains in a place of employment in the container in which it was received from the supplier, an employer shall not remove, deface, modify or alter the supplier label.
- (3) Where a label applied to a controlled product or a container of a controlled product becomes illegible or is accidentally removed from the controlled product or the container, the employer shall replace the label with either a supplier label or a workplace label.
- (4) An employer who has received a controlled product in a multi-container shipment where the individual containers have not been labelled by the supplier shall apply to each container a label that meets the requirements of the Controlled Products Regulations (Canada).
- (5) Where the controlled product imported under section 23 of the Controlled Products Regulations (Canada) is received at the place of employment without the supplier label, the employer shall apply a label that meets the requirements of that regulation.
- (6) An employer who has received a controlled product transported as a bulk shipment shall
 - (a) apply a supplier label to the container of the controlled product or to the controlled product at his place of employment, or
 - (b) where, pursuant to section 15 of the Controlled Products Regulations (Canada) the supplier is not required to label a controlled product transported as a bulk shipment, an employer shall apply a workplace label to the container of a controlled product or to the controlled product at his place of employment.

7. Workplace label for employer-produced products

- (1) Where an employer produces a controlled product at a place of employment, the employer shall ensure that the controlled product or the container of the controlled product has applied to it a workplace label.
- (2) For purposes of subsection (1), "produces" does not include the production of a controlled product that escapes from equipment or from another product.
- (3) Subsection (1) does not apply when the controlled product is in a container that is intended to contain the controlled product for sale or distribution and the container is or is about to be appropriately labelled.

8. Workplace label for decanted products

- (1) Where a controlled product in a place of employment is in a container other than the container in which it was received from a supplier, the employer shall ensure that the container has applied to it a workplace label.
- (2) Subsection (1) does not apply to a portable container that is filled directly from a container that has applied to it a supplier label or workplace label

- (a) if the controlled product
 - (i) is under the control of and is used exclusively by the worker who filled the portable container,
 - (ii) is used only during the shift in which the portable container was filled,
 - (iii) the content of the container is clearly identified, or
- (b) if all of the controlled product is required for immediate use.

9. Identification of a controlled product in piping systems and vessels

Where a controlled product in a place of employment is contained or transferred in

- (a) a pipe,
- (b) a piping system including valves,
- (c) a process vessel,
- (d) a reaction vessel, or
- (e) a tank car, tank truck, ore car, conveyor belt or similar conveyance, the employer shall ensure the safe use, storage and handling of the controlled product through worker education and the use of colour coding, labels, placard or any mode of identification.

10. Placard identifiers

Notwithstanding sections 6, 7 and 8 where the controlled product is

- (a) not in a container, or
- (b) in a container in a form intended for export, the employer may fulfill the labelling requirements under sections 6, 7 and 8 by posting a placard which
- (c) discloses the information required for a workplace label, and
- (d) is of a size and in locations so that the information is conspicuous and clearly legible to workers.

11. Laboratory label

- (1) A label of a container for a controlled product that originates from a laboratory supply house and is packaged in quantities of less than 10 kilograms for each container and that is intended for use in a laboratory shall disclose
 - (a) a product identifier,
 - (b) where a material safety data sheet is available, a statement indicating that fact, and
 - (c) the following information that is applicable to the product:
 - (i) risk phrases;
 - (ii) precautionary measures;
 - (iii) first aid measures.
- (2) Notwithstanding section 8 (2), the employer shall ensure that the contents of a container of a controlled product are clearly identified on the container where
 - (a) the container is not the container in which the controlled product was received from the supplier, and
 - (b) the employer intends to use the controlled product, or it is, in the normal course of his business used, exclusively in a laboratory.
- (3) The employer shall ensure that a controlled product undergoing analysis, tests

or evaluations in a laboratory is clearly identified.

12. Supplier material safety data sheets

- (1) An employer who acquires a controlled product for use at a place of employment shall obtain a supplier material safety data sheet in respect of that controlled product.
- (2) Where a supplier material safety data sheet obtained under subsection (1) in respect of a controlled product is 3 years old, the employer shall, if possible, obtain from the supplier an up-to-date supplier material safety data sheet in respect of any of the controlled product that remains in the place of employment.
- (3) Where the employer is unable to obtain a material safety data sheet as required by subsection (2), the employer shall add any new hazard information applicable to that controlled product to the existing supplier material safety data sheet on the basis of the ingredients disclosed in that document.(4) The employer may provide at a place of employment a material safety data sheet in a format different from the format provided by the supplier or containing additional hazard information if the material safety data sheet provided by the employer
 - (a) subject to section 16 contains at least the content of the supplier material safety data sheet, and
 - (b) the supplier material safety data sheet is available at the place of employment and the material safety data sheet provided by the employer indicates that fact.
- (5) Where a supplier is exempted under section 9 or 10 of the Controlled Products Regulations (Canada) from the requirement to provide a material safety data sheet for a controlled product, the employer is exempt from the requirement to obtain and provide a material safety data sheet for that controlled product.
- (6) Where a controlled product is received at a laboratory and the supplier has provided a material safety data sheet, the employer shall ensure that a copy of the material safety data sheet is readily available to the workers in the laboratory.
- (7) Where a controlled product is received or produced at a laboratory and the employer has produced a material safety data sheet, the employer shall ensure that the material safety data sheet is readily available to workers in the laboratory.

13. Employer material safety data sheets

- (1) Where the employer produces a controlled product in the place of employment, the employer shall prepare a material safety data sheet in respect of the product which discloses, subject to section 16, the information required under the Controlled Products Regulations (Canada).
- (2) For the purpose of subsection (1), "produces" does not include the production of a controlled product that escapes from equipment or from another product nor does it include intermediate products undergoing reaction within a reaction or process vessel.
- (3) An employer shall update the material safety data sheet referred to in subsection (1)
 - (a) as soon as practicable after new hazard information becomes available to the employer, and
 - (b) at least every 3 years.

14. Availability of a material safety data sheet

- (1) An employer shall ensure that a copy of a material safety data sheet required by section 12 or 13 is
 - (a) made readily available at the worker's place of employment to workers who may be exposed to the controlled product, and
 - (b) made readily available to the joint occupational safety and health committee, if any, and to a safety and health representative, if any.
- (2) Notwithstanding subsection (1), when an employer is required by subsection (1) to make a material safety data sheet readily available, the material safety data sheet may be made available on a computer terminal if the employer
 - (a) takes all reasonable steps to keep the terminal in active working order,
 - (b) makes the material safety data readily available on the request of a worker, and
 - (c) provides training in accessing computer-stored material safety data sheets to
 - (i) one or more workers working at a place of employment where the material safety data sheet is available on a computer terminal, and
 - (ii) members of the joint occupational safety and health committee if any, or a safety and health representative, if any.

15. Deletions from a material safety data sheet

Where an employer claims an exemption under section 16, the employer may delete the information that is the subject of the claim from the material safety data sheet provided under sections 12 and 13 for the time period in section 16 (4), but may not delete hazard information.

16. Confidential business information

- (1) An employer who is required by this regulation to disclose on a label or a material safety data sheet
 - (a) the chemical identity or concentration of an ingredient of a controlled product,
 - (b) the name of any toxicological study that identifies an ingredient of a controlled product,
 - (c) the chemical name, common name, generic name, trade name or brand name of a controlled product, or (d) information that could be used to identify a supplier of a controlled product, may, if the employer considers such information to be confidential business information, claim an exemption from the requirement to disclose that information.
- (2) The claim under subsection (1) shall be made to the commission established under the *Hazardous Materials Information Review Act* (Canada) and shall be filed in accordance with the procedure established under that Act and the regulations made under it.
- (3) Under section 32 of the *Hazardous Materials Information Review Act* (Canada), the commission shall exercise the powers and perform the functions specified in that Act and the procedures prescribed by regulations under that Act in respect of a claim made under subsection (1).
- (4) Information that an employer considers to be confidential business information is

exempt from disclosure from the time a claim is filed under subsection (1) until the claim is finally determined by the commission and for a period of 3 years after that if the claim is found to be valid.

- (5) An employer who makes a claim under subsection (1) shall abide by decisions of the commission and orders of the commission.
- (6) Appeals from decisions made by the commission under this section may be made under and in accordance with the provisions of the *Hazardous Materials Information Review Act* (Canada) and any regulations made under that Act.

17. Confidentiality of information

- (1) Where a person enforcing this regulation obtains information from the commission under section 46 (2) (e) of the *Hazardous Materials Information Review Act* (Canada), the person to whom the information is communicated shall keep it confidential and shall not disclose such information to any person except for the purposes of the administration of enforcement of this regulation.
- (2) A person to whom information is disclosed pursuant to subsection (1) shall keep the information confidential.

18. Disclosure in medical emergencies

- (1) An employer shall, in respect of a controlled product that is or was present in the place of employment, provide information respecting the controlled product, including confidential business information in the possession of the employer, to
 - (a) a member, in good standing, of the College of Physicians and Surgeons of British Columbia, or
 - (b) a person authorized under an enactment to practice nursing, psychiatric nursing or licensed practical nursing in British Columbia,who requests information on the controlled product for the purpose of making a medical diagnosis of, or rendering medical treatment to, a person who used, handled or was exposed to the controlled product at his place of employment.
- (2) No person to whom information is provided by an employer pursuant to subsection (1) shall communicate or disclose the information to any other person except as may be necessary for the purposes mentioned in that subsection.
- (3) A person to whom information is disclosed under subsection (2) shall keep the information confidential.

[*am. B.C. Reg. 232/2005, App. s. 10.*]

19. Prohibition against disclosure

No person shall use, disclose or release information protected as confidential business information under this regulation except as provided by sections 17 and 18.

20. Transition period

- (1) A controlled product received at a place of employment before October 31, 1988
 - (a) shall bear a workplace label, and
 - (b) the employer is exempt for one year from October 31, 1988 from the provisions of this regulation respecting supplier labels for the product.
- (2) Where a controlled product is received at a place of employment before October 31, 1988, the employer is exempt for a period of 90 days from October 31, 1988 from the provisions of this regulation respecting supplier material safety data sheets for that product

- (a) if the employer is actively seeking a supplier material safety data sheet for the controlled product, or
 - (b) where a supplier material safety data sheet is not available, if the employer is developing a material safety data sheet containing at least the information required for a supplier material safety data sheet.
- (3) An employer is exempt for a period of 90 days from October 31, 1988 from the provisions of this regulation respecting worker education.
- (4) Notwithstanding subsections (1) and (2) where
- (a) the sale of a controlled product by a secondary supplier as defined in the Controlled Products Regulations (Canada) is exempted by that regulation from the requirement to provide a supplier material safety data sheet and supplier label for the controlled product,
 - (b) the controlled product is received in the workplace before March 15, 1989,
 - (c) the controlled product or the container of the controlled product bears a workplace label consistent with the information known to the employer at the time the controlled product is received at the place of employment, and
 - (d) the employer uses a combination of worker education and any visible mode of identification that communicates to the worker that
 - (i) the product is a controlled product that has been received in the place of employment before March 15, 1989, and
 - (ii) the employer is temporarily exempt from requirements to supply a supplier label and supplier material safety data sheet,
- then
- (e) the employer is exempt until October 31, 1989, from the provisions of this regulation respecting supplier labels, and
 - (f) the employer is exempt until June 15, 1989, from the provisions of this regulation respecting supplier material safety data sheets if, after March 15, 1989,
 - (i) the employer is actively seeking a supplier material safety data sheet for the controlled product, or
 - (ii) a supplier material safety data sheet is not available and the employer is developing a material safety data sheet containing at least the information required for a supplier material safety data sheet.

[Provisions of the Mines Act, R.S.B.C. 1996, c. 293, relevant to the enactment of this regulation: section 38]

HEALTH, SAFETY & RECLAMATION CODE FOR MINES IN BRITISH COLUMBIA

Ministry of Energy, Mines & Petroleum Resources

Victoria, British Columbia

(Revised June 2017)

A Subset Specific to BC Gravel Pits & Quarries

Not for use in Coal, Mineral or Underground Mines

(updated May 2018)

Presented by



*Consolidated for convenience only,
for a full copy of the HSRC please contact
Ministry of Energy and Mines & Petroleum Resources*



PURPOSE

The purpose of the Code is to:

- (1) Protect employees and all other persons from undue risks to their health and safety arising out of or in connection with activities at mines.
- (2) Safeguard the public from risks arising out of or in connection with activities at mines.
- (3) Protect and reclaim the land and watercourses affected by mining.
- (4) Monitor the extraction of mineral and coal resources and ensure maximum extraction with a minimum of environmental disturbance, taking into account sound engineering Practice and prevailing economic conditions.



DEFINITIONS

accident means an unintended event that results in physical harm to a person or damage to property. *[Part 1]*

acid rock drainage (ARD) means low pH surface or ground water that results from the oxidation of sulphide minerals or, elemental sulphur, or the dissolution of acid generating minerals found in rocks and coal. *[Part 9]*

asbestos free means containing less than 1% asbestos. *[Part 2]*

bedrock means the rock, usually solid, that underlies soil or other unconsolidated material, superficial material. *[Part 6]*

bench means a horizontal step or floor above which material is excavated from a contiguous face and upon which drilling, blasting, and material haulage may be carried on. *[Part 6]*

best available technology means the site specific combination of technologies and techniques that most effectively reduce the physical, geochemical, ecological and social risks associated with tailings storage during all stages of operation and closure. *[Part 10]*

biological monitoring means the recording of serial medical tests or examinations which indicate the progressing health status of an individual or group of individuals. *[Part 7]*

blast danger zone means an area in which there may be a danger to any person or property from flying material, or any other hazardous condition resulting from a blast. *[Part 8]*

blaster means a person who is qualified under this part of the code to conduct blasting operations at a mine. *[Part 8]*

blasting agent means a relatively insensitive, ammonium nitrate explosive which includes an AN/FO mixture, emulsion, slurry, or watergel. *[Part 8]*

blasting certificate means a certificate issued under this part of the code which authorizes a person to conduct blasting operations at mines. *[Part 8]*

blasting machine means a device used to initiate a blast. *[Part 8]*

board in this part means the Board of Examiners appointed under part 1.13.1 of the Code. *[Part 1]*

Board in the part means the Workers' Compensation Board of British Columbia. *[Part 2]*

bootleg means a remnant of a blasthole that did not properly break when the blast was initiated. *[Part 8]*

bridge means a temporary or permanent structure carrying an exploration access above a stream or other topographic depression. *[Part 9]*

bulk shipment means a shipment of a controlled product that is contained, without intermediate containment or intermediate packaging, in

- (1) a vessel with a water capacity of more than 454 L,
- (2) a freight container, a portable tank, a road vehicle, a railway vehicle, a ship, barge or other type of vessel, or an aircraft, or
- (3) a pipeline. *[Part 2]*

C.S.A. means the Canadian Standards Association. *[Part 1]*

catchment berm means a bench designed to arrest material which sloughs from a face or wall at elevations above the face being worked. *[Part 6]*

certified audiometric technician means a person certified by the Ministry or by an agency or persons acceptable to the chief inspector. *[Part 2]*

certified person means a person who is certified by an agency or board acceptable to the chief inspector. *[Part 1]*

chair means a moveable support arranged to hold a shaft conveyance as required. *[Part 7]*

clay and silt means those soils where more than 50% of the particles, by weight, are finer than the No. 200 (0.074 mm) U.S. standard sieve. *[Part 6]*

clearing width means the width required to be cleared of standing timber to accommodate exploration access construction, maintenance and use. *[Part 9]*

collar in this part, means the start of a drilled blast hole. *[Part 8]*

commission means the Hazardous Materials Information Review Commission established by the *Hazardous Materials Information Review Act* (Canada). *[Part 2]*

community watershed has the same meaning as defined in the *Forest and Range Practices Act*. *[Part 9]*

confined space means an area, other than an underground working, that includes all of the following:

- (a) is enclosed or partially enclosed;
- (b) is not designed or intended for continuous human occupancy;
- (c) has limited or restricted means for entry or exit that may complicate the provision of first aid, evacuation, rescue or other emergency response service;
- (d) is large enough and so configured that a worker could enter to perform assigned work. *[Part 3]*

construction includes any activity involving the erection, modification, or dismantling of any structure or building and any road building associated therewith. *[Part 1]*

container includes a bag, barrel, bottle, box, can, cylinder, drum, storage tank, or similar package or receptacle. *[Part 2]*

controlled product means a product, material or substance specified by regulations made pursuant to section 15(1)(a) of the *Hazardous Products Act* (Canada) as products, materials and substances included in any of the classes listed in Schedule II of that Act. *[Part 2]*

culvert means a transverse drain pipe or log structure buried below the exploration access surface. *[Part 9]*

dam means a barrier on the surface preventing uncontrolled release of either water, slurry or solids or a barrier underground to prevent the uncontrolled flow of water, slurry or solids. *[Part 10]*

deactivation means stabilization of an exploration site or exploration access when active use of the site or access is suspended seasonally or for other reasons for a period up to 3 years or longer if approved by an inspector. *[Part 9]*

deleterious substance means any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man or fish that frequent that water. *[Part 9]*

destructive testing means a test on a sample of a shaft rope where the rope or individual wires from the rope are broken by a testing machine. [Part 7]

detonator means a blasting cap, or other device used to initiate detonation of an explosive. [Part 8]

detonator house means a magazine used to store detonators. [Part 8]

dump berm means a barrier or ridge of materials other than snow or mud, acting as a guide that will indicate the limit of travel of a vehicle from which material is to be dumped. The heights of the ridge shall not be less than one half the height of the tire of the vehicle from which material is dumped. [Part 6]

dump block means a barrier of sufficient size and strength and anchored sufficiently to prevent a vehicle from entering an opening while coasting at a speed of less than 2 km/hr. [Part 6]

dumping position means the position of a haulage vehicle when stopped to dump material and is further defined for section 6.20.4 as the zones of contact between the dump surface and the rear vehicle wheels closest to the dump berm or edge of the bank. [Part 6]

dump material means waste or any material used in the construction of a dump or stockpile. [Part 6]

dump or stockpile means the accumulation of deposited rock fragments or other unconsolidated material. [Part 10]

dump person means a person authorized by the manager and stationed on a dump for the purposes of section 6.10 of the code. [Part 6]

dust exposure occupation means employment

- (1) in an asbestos mine, or
- (2) where a person is normally required to work more than 20% of his working time in any one month
 - (a) underground in a mine,
 - (b) in the mining activity of open pit and glory hole operations,
 - (c) in crushing plants, assay grinding rooms, or coal cleaning plants,
 - (d) in operations that involve dry milling or dry concentrating,
 - (e) in wet concentrating plants where the plant is not adequately separated from dry crushing plants, or
- (3) at other locations designated by the chief inspector. [Part 2]

employees means all persons employed at a mine. [Part 1]

employer means owner, agent, or manager as defined in the *Mines Act*. [Part 2]

engineer of record means the Professional Engineer who is retained under section 10.1.5 (1) of this code. [Part 10]

environmental design flood means the hydrological event that is to be managed without release of untreated water to the environment. [Part 10]

exploration access means trails and roads constructed, modified, excavated, bladed or created through frequent use including any associated structures. [Part 9]

exploration activities are those activities which are undertaken in the search for and development of coal and minerals, as defined in the *Mineral Tenure Act*, with the exception of placer minerals:

- (a) and include
 - (i) disturbance of the ground by mechanical means such as drilling, trenching and excavating;

- (ii) blasting;
 - (iii) construction, modification, deactivation and reclamation of an exploration access and camps;
 - (iv) induced polarization surveys using exposed electrodes; and
 - (v) site reclamation.
- (b) but do not include
- (i) prospecting using hand tools;
 - (ii) geological/geochemical surveying;
 - (iii) airborne geophysical surveying;
 - (iv) ground geophysical surveying without the use of exposed, energized electrodes;
 - (v) hand trenching without the use of explosives; or
 - (vi) establishment of exploration grid lines that do not require the felling of trees, with the exception of trees and shrubs that create a hazard to safe passage and danger trees as defined in the Workers' Compensation Board Regulation. *[Part 9]*

explosive means any chemical compound or mixture which, when detonated, violently decomposes producing a large volume of gas at high temperatures capable of having destructive effects. *[Part 8]*

face means a surface of rock, ore, coal, or other material exposed by blasting or excavation which extends from a bench or floor to an upper bench or to the natural land surface. *[Part 6]*

fill means a deposit of discrete particles, either loose or well-compacted, placed in layers or dumped into a ravine, valley, or depression. *[Part 10]*

fish passage means the movement of fish at all life stages consistent with the natural state of fish streams. *[Part 9]*

fish stream means all streams, unless,

- (a) a report from a qualified professional or technologist with adequate training or knowledge of fish habitat determines that the stream is a non-fish bearing stream, or
- (b) the stream has been identified in a fish inventory carried out in accordance with the Ministry of Forests' publication "Fish Stream Identification Guidebook", as amended from time to time, as not containing any fish, or
- (c) the stream is located upstream of a known barrier to fish passage, identified on a fish and fish habitat inventory map, where all reaches upstream of the barrier are simultaneously dry at any time during the year and no perennial fish habitats occur in any part of the upland drainage. *[Part 9]*

HSRC Guidance Document means the guidance document prepared by the chief inspector in consultation with the health safety and reclamation code committee for the purposes of this code. *[Part 10]*

haulage road means a part of a mine used for the transport of coal, aggregate, minerals, or waste rock. *[Part 6]*

hazard means an unsafe or harmful condition, substance, or circumstance. *[Part 1]*

hazard information means information on the proper and safe use, storage, and handling of a controlled product and includes information relating to its toxicological properties. *[Part 2]*

hazardous means the existence, or reasonable probability of the existence, of an unsafe or harmful condition, substance, or circumstance. *[Part 1]*

hazardous substance means a substance which may be injurious to the health or safety of a worker. *[Part 2]*

hazardous waste means a substance which may be injurious to the health or safety of a worker. *[Part 2]*

impoundment means a body of water, slurry or solids that is confined by natural barriers or constructed dams and includes those barriers, dams and related items. *[Part 10]*

inflow design flood means the flood into the impoundment resulting from the design hydrologic event. *[Part 10]*

label includes a mark, sign, device, stamp, seal, sticker, ticket, tag or wrapper. *[Part 2]*

and capability means the capability of achieving a specified land use estimated by limitations as a result of climate, topography and soils. *[Part 10]*

landform means a designated structure that can be considered to have a risk profile similar to the surrounding environment. *[Part 10]*

leg wires means the wires attached to an electric blasting cap used for initiating its detonation. *[Part 8]*

magazine means a building, storehouse, or structure where explosive materials are kept or stored but does not include containers used for transporting explosives or day storage boxes. *[Part 8]*

major dump means a dump that contains a volume of dumped material that exceeds one million cubic metres, or has a dump height greater than 50 metres, or has an area that is covered by a dump that exceeds one hectare, or is founded upon natural or trimmed slopes that are sometimes steeper than 20 degrees from a horizontal plane, or contains material dumped or placed in a water course having a potential peak flow greater than one cubic metre per second, once in every 200 years, or any other mine dumps so declared the chief inspector. *[Part 10]*

manufactured article means an article that is formed to a specific shape or design during manufacture, the intended use of which, when in that form, is dependent in whole or in part on its shape or design, and that under normal conditions of use will not release or otherwise cause a person to be exposed to a controlled product. *[Part 2]*

material safety data sheet (MSDS) means a document disclosing the information referred to in section 13(a)(i) to (v) of the *Hazardous Products Act* (Canada) and sections 9(2) of the *Controlled Products Regulations* (Canada). *[Part 2]*

mishole (misfire) means a charge or part of a charge which, upon initiation, failed to completely detonate. *[Part 8]*

Musculoskeletal Disorders (MSD) means the term used to describe disorders of the bones, joints, ligaments, tendons, muscles and other soft tissues. These disorders refer to a whole range of conditions affecting different parts of the body. *[Part 1]*

non-destructive test means the examination of a part without subjecting it to physical distortion, damage, or destruction. *[Part 7]*

non-electric cap means a detonator which does not require an electric current to initiate its explosive charge. *[Part 8]*

occupational illness means a condition that results from exposure, in a workplace, to a physical, chemical, or biological agent to the extent that the normal physiological mechanisms are affected

causing impairment to the worker. *[Part 1]*

open pit shiftboss means a supervisor who is responsible for an open pit or part of it and holds an open pit shiftboss certificate granted pursuant to the code. *[Part 6]*

overburden means all unconsolidated naturally occurring material overlying bedrock. *[Part 10]*

permit means a permit issued pursuant to section 10 (3) of the *Mines Act*. *[Part 10]*

primed cartridge means an explosive containing a detonator. *[Part 8]*

probable maximum flood means the hypothetical most severe flood that may credibly be expected to occur at a particular location resulting from the seasonal maximum combination of precipitation and snowmelt. *[Part 10]*

product identifier means, in respect of a controlled product, the brand name, code name, or code number specified by a supplier of the chemical name, common name, generic name, or trade name. *[Part 2]*

Professional Engineer is a person who is registered to Practice in the Province of British Columbia, according to the *Engineers and Geoscientists Act*, or a person working for a Firm which is licensed to practice in the Province of British Columbia, pursuant to the *Engineers and Geoscientists Act* and is qualified to practice in the relevant discipline. *[Part 1]*

provisional blasting certificate means a blasting certificate issued by the manager, valid for a maximum of 90 days. *[Part 8]*

qualified professional means an individual who

- (a) is registered, and in good standing, with a professional organization in British Columbia governed under an enactment, and
- (b) is acting within his or her area of professional expertise. *[Part 10]*

ramp means a sloping roadway and in the case of a surface mine, connects two levels of excavation or benches. *[Part 6]*

reach means a portion of a watercourse that has a consistent channel width, morphology and gradient. *[Part 9]*

readily available means, when used in connection with a material safety data sheet, available in a place where a person can easily access and study the information it contains. *[Part 2]*

regionally significant wildlife habitat means those site specific habitats identified through formal government processes as requiring special management attention. *[Part 9]*

respirable combustible dust – RCD means any dust which is respirable, and which is burned off when subjected to the procedure contained in the CANMET document number PROJ51/ADHOC90.18 which is obtainable from the, Mining Division or from CANMET. *[Part 2]*

riparian setback means an area of land adjacent to a stream, wetland or lake of a width defined in Table 9.1. *[Part 9]*

risk phrase means, in respect of a controlled product or a class, division, or subdivision of controlled products, a statement identifying a hazard that may arise from the nature of the controlled product or the class, division, or subdivision of controlled products.

road prism means cross-section of the ground containing the exploration access surface, including the cut and fill slopes. *[Part 9]*

round means a number of charged blast holes to be fired in a specific sequence. *[Part 8]*

safety catch means a safety appliance or fitting which transfers the weight of the cage onto the shaft guides if the hoisting rope breaks. [Part 7]

safety fuse assembly means a device to convey flame to a non-electric blasting cap. It consists of a train of black powder, tightly wrapped and enclosed with waterproof material, which burns continuously at a constant rate when ignited by means of an attached igniter cord connector. [Part 8]

sand and gravel means those soils where more than 50% of the particles, by weight, are coarser than the No. 200 (0.074 mm) U.S. standard sieve. [Part 6]

sensitive area means any area where the blast including blast vibration or air blast may have an adverse effect on fish or wildlife. [Part 8]

shoulder barrier means a barrier or ridge of material, other than snow or mud, placed along the edge or crest of a surface roadway, ramp, dump or stockpile where the vehicles operate and where there is a drop-off of more than 3 m beyond the edge or crest. The height of the barrier shall not be less than 3/4 of the height of the largest tire on any vehicle used at that location. [Part 8]

socket means a short stub of a drill hole commonly found after a hole has been blasted. [Part 8]

soil means all unconsolidated materials above bedrock. [Part 6]

soil means the naturally occurring, unconsolidated mineral or organic material that is capable of supporting plant life. [Part 9]

standard guardrail means a guardrail structure comprised of a top rail approximately 1070 mm (42") above floor level, a toe-board, and a midrail approximately midway between the underside of the top rail and the upper edge of the toe-board. They shall be designed to withstand a load of 900 N (200 lbs.) applied in any direction and at any point on the top rail. [Part 4]

stream means any naturally occurring reach flowing on a perennial or seasonal basis with a continuous channel bed and banks, whether or not the bed or banks of the reach are locally obscured by overhanging or bridging vegetation or soil mats, if the channel bed

- (a) is scoured by water, or
 - (b) contains any material collection of inorganic alluvium deposited by water.
- [Part 9]

stream width means the horizontal distance between stream banks on opposite sides of the stream measured

- (a) at right angles to the general orientation of the banks, and
- (b) between the points on each bank indicated by a definite change in vegetation and sediment texture marking the normal annual flood level and sometimes shown by the edges of rooted terrestrial vegetation. [Part 9]

suitable means suitable to the satisfaction of the inspector. [Part 1]

supplier label means a label provided by a supplier that complies with the requirements, discloses the information, and displays the hazard symbols referred to in section 12(b) of the *Hazardous Products Act* (Canada), section 17 of the *Controlled Products Regulations* (Canada). [Part 2]

supplier material safety data sheet means a material safety data sheet provided by a supplier. [Part 2]

surface roadway means any part of a mine where vehicles carrying persons, materials, or equipment, regularly travel, and includes a haulage road. [Part 6]

surficial soil material means those soils commonly contained in the upper layers of the overburden

mass, which are suitable for use in reclamation, either as growth medium, soil covers and seals, or other reclamation requirements. *[Part 10]*

temporary bridge means a bridge whose expected life at its current location is 15 years or less. *[Part 9]*

threshold limit value – ceiling (TLV-C) means the concentration that must not be exceeded during any part of the working exposure. *[Part 2]*

threshold limit value – short term exposure limit (TLV – STEL) means the concentration to which workers can be exposed continuously for a short period time, provided the daily TLV-TWA is not exceeded. It must be no longer than 15 minutes, be separated by at least 60 minutes if repeated, and occur no more than 4 times per day. *[Part 2]*

threshold limit value – time weighed average (TLV-TWA) means the time weighed average concentration for a normal 8 hour day and a 40 hour workweek, to which nearly all workers can be repeatedly exposed without adverse effect. *[Part 2]*

toe-board means a metal or wood guard strip, approximately 100 mm in height, placed along the bottom of a guardrail structure, and having a clearance of not greater than 13 mm (1/2") between its lower edge and the walkway or platform to prevent tools or other material from falling off. *[Part 4]*

urban area means an area, within which there are residences or other structures that may be impacted by the adverse effects of a blasting operation. *[Part 8]*

wall means a surface of rock or material exposed by the excavation of one or more faces and benches in successive horizontal layers. *[Part 6]*

watercourse means a natural stream or source of water, whether usually containing water or not, and includes any lake, river, creek, spring, ravine, swamp, and gulch. *[Part 10]*

wetland means an area of 0.25 hectares or greater, unless a smaller area is identified as regionally significant wildlife habitat, that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in wet or saturated soil conditions. *[Part 9]*

workplace label means a label that discloses a product identifier and information for the safe handling of a controlled product, and that indicates that a material safety data sheet, if supplied or produced, is available. *[Part 2]*

PART 1

APPLICATION OF THE CODE & GENERAL RULES

TABLE OF CONTENTS

1.1	Application of Code	63
1.2	Variance	63
1.3	Authority to Enter a Mine	74
1.4	Posting and Distribution of Mines Act, Regulations, and Code	64
1.5	Hours of Employment	64
1.6	Occupational Health and Safety Committee	65
1.7	Accident or Dangerous Occurrences	67
1.8	Personal Protective Equipment	68
1.9	Workplace Conditions	69
1.10	Employees' Right to Refuse Work	69
1.11	Training	71
1.12	Supervision	71
1.13	Certification Procedure	71



APPLICATION OF CODE

Application of Code

1.1.1

This code applies to

- (a) all mines in the Province of British Columbia; and
- (b) the manager shall ensure that all employees who supervise workers are familiar with all appropriate parts of the act, regulations, and the code.

Absence of Code Requirements

1.1.2

Notwithstanding the absence of a specific code requirement, all work shall be carried out without undue risk to the health or safety of any person.

Conflicting Codes

1.1.3

If any conflict should arise between this code and any other code or standard with which compliance is required by this code, the provisions of this code shall prevail.

1.1.4

Where this code adopts in whole or in part a code or standard published by a national or international standards association if directed by the chief inspector shall include amendments to such standards as made from time to time.

1.1.5

Unless otherwise ordered by the chief inspector, equipment and buildings purchased or constructed must be in compliance with the standard in effect at the time of purchase or construction.

VARIANCE

Variance of Code Provision

1.2.1

On application, the chief inspector may, by order, authorize a variance from a provision of the code for a particular mine.

1.2.2

A variance may only be made if the chief inspector has considered any comments subject to 1.2.3(3), and is satisfied that the variance

- (a) affords protection for the workers equal to or greater than the protection established by the provision being varied, or
- (b) has substantially the same purpose and effect as the provision being varied.

1.2.3

The manager, the OHSC, or the local union or worker representative if there is no union, at an individual mine may

- (1) submit a written request to the chief inspector for a variance of a provision of the code,
- (2) shall, when submitting a request for a variance, provide the other two parties at the minesite with copies of the submission, and

- (3) may within 30 days of receiving a copy of the request for a variance, submit to the chief inspector written comments on the request and provide a copy to the other two parties.

Postings

1.2.4

The manager shall ensure that a legible copy of each variance granted is posted and maintained on conspicuously located bulletin boards at the mine.

AUTHORITY TO ENTER A MINE

Authorization

1.3.1

Other than an inspector, only persons authorized by the manager shall enter or be permitted to enter a mine.

Posting

1.3.2

Notice to this effect shall be posted at all road entrances to the mine by the manager and, for non-operating mines, the contact information of a qualified person shall be included in the notice.

Unauthorized Access

1.3.3

Unless authorized by the manager, no persons shall enter or leave a mine except by a recognized means of entry or exit.

POSTING AND DISTRIBUTION OF MINES ACT, REGULATIONS, AND CODE

Manager's Responsibility

1.4.1

- (1) every employee is given a copy of the *Mines Act*, the regulations, and the code, and provided additional copies at cost, and
- (2) a copy of the *Mines Act*, the regulations, and the code is maintained in every safety office and at other suitable locations and available to employee.

HOURS OF EMPLOYMENT

Hours of work

1.5.1

Notwithstanding the provisions of the *Employment Standards Act*, the manager shall ensure that, over the period of any work schedule, no worker shall be scheduled to work more than an average of 50 hours per week.

- (1) The manager shall not permit the employment of a person at a surface mine for a period longer than 16 hours in any 24 hours;
- (3) 1.5.1 does not apply to emergency where life or property is in danger, or
 - (i) where urgent work is essential to the continuation of the ordinary working of a mine, providing it is only on an infrequent basis, or
 - (ii) where work schedules incorporate periodic shift changes within a 24-hour period.

OCCUPATIONAL HEALTH AND SAFETY COMMITTEE

Committee Members

1.6.1

The manager shall establish and maintain a joint management-worker Occupational Health and Safety Committee

- (a) at a mine where 20 or more workers are regularly employed, and
- (b) at any other mine when ordered by an inspector.

1.6.2

The Occupational Health and Safety Committee shall be composed of management and an equal or greater number of worker representatives, and such committee shall have

- (1) two or more worker representatives, chosen by the workers, and
- (2) two co-chairpersons, one of the worker representatives and the other a management representative, and they may alternate chairing the meetings.

Inspection

1.6.3

The committee shall

- (1) inspect as many of the work sites as it considers appropriate every month and as soon as possible after the inspection, meet to discuss its findings and any other matters concerning health and safety, and
- (2) prepare minutes of the meeting including a description of conditions found during the inspection.

1.6.4

The minutes of the meeting referenced in section 1.6.3(2) shall be signed by the OHSC co-chairpersons or their designates and a copy shall without delay

- (1) be filed with the manager, and
- (2) be forwarded to the local union(s), and
- (3) be displayed in a conspicuous location at the mine until replaced by the minutes of the next meeting, and
- (4) be made available to an inspector on request.

Accident Investigation

1.6.5

The OHSC co-chairpersons or their designates shall participate in the investigation of reportable occurrences in accordance with section 1.7.1.

1.6.6

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.

Cooperation With Committee

1.6.7

The manager and all persons working at the mine shall cooperate fully with the OHSC by

- (1) providing it with every reasonable facility for carrying out its inspections and investigations, and

- (2) allowing it access to all reports, plans, records and standards pertinent to the work of the OHSC, and
- (3) correcting the safety hazards noted in the OHSC minutes by the date agreed by the OHSC committee.

OHSC Training

1.6.8

Where 20 or more workers are regularly employed, the manager shall arrange for a qualified person to provide the committee with training sessions on three occasions during the year.

Health and Safety Program

1.6.9

- (1) The manager shall develop a Mine Health and Safety Program which includes the following sections
 - (a) a written policy statement,
 - (b) general safety rules,
 - (c) safe working procedures on a departmental basis,
 - (d) a list of hazardous materials, safe handling procedures and antidotes,
 - (e) provision for the regular monthly crew safety meetings,
 - (f) procedures for accident and serious incident investigation,
 - (g) procedures for safety tour inspections, and
 - (h) a written preventative training program, acceptable to the chief inspector, to educate OHSC members in the recognition, evaluation and prevention of adverse health effects resulting in Musculoskeletal Disorders (MSD) and in reporting related symptoms and injuries.
- (2) The OHSC shall review the Mine Health and Safety Program, including OHSC Training, for completeness and effectiveness on an ongoing basis and submit its findings to the manager.

Entitlement to Time

1.6.10

The manager shall ensure that OHSC representatives are given reasonable time to carry out their duties as prescribed in the code and that time so spent is counted as time worked.

1.6.11

A worker health and safety representative chosen by the workers is required

- (1)
 - (a) at a mine where 9 but less than 20 workers are regularly employed, and
 - (b) at any other mine when ordered by an inspector.
- (2) To the extent practicable, a worker health and safety representative has the same duties and functions as an OHSC.

1.6.12

Where there are 5 or less workers on a shift, or less than 9 workers in total employed at a mine, there shall be a crew safety meeting

- (a) at the commencement of operations at a mine, and
- (b) at least monthly thereafter, and
- (c) minutes of these meetings shall be kept and made available to the inspector on request

ACCIDENT OR DANGEROUS OCCURRENCES

Manager's Responsibility

1.7.1

- (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.
- (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.
- (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-chairperson of the OHSC or their designates.

Accident Investigation

1.7.2

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.

Dangerous Occurrences

1.7.3

Dangerous occurrences to be reported shall include

- (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,
- (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,
- (4) unexpected inrush of water, mud, slurry, or debris,
- (5) premature or unexpected explosion of explosives, gas or any dust,
- (6) significant inflow or release of explosive or other dangerous gas,
- (8) a mine vehicle going out of control,(9) outbreak of fire if it endangers persons or

- threatens or damages equipment and all underground fires,
- (10) electrical equipment failure or incident that causes or threatens to cause injury to persons or damage to equipment or property, and
- (11) any other unusual accident or unexpected event which had the potential to result in serious injury.

PERSONAL PROTECTIVE EQUIPMENT

Dangerous Occurrences

1.8.1

The manager shall

- (1) except for protective footwear and prescription eyeglasses, supply properly fitted personal protective equipment as required by the code,
- (2) ensure that workers are instructed in the use and maintenance of the equipment, the reasons for it, and also on its location and limitations, and
- (3) ensure that the equipment is adequate for its purpose.

Workers' Responsibility

1.8.2

All persons shall wear the personal protective equipment as required by the code.

Protective Hat

1.8.3

A protective hat complying with the relevant requirements of CSA Standard Z94.1-M 1977 "Industrial Protective Headgear," and suitable for the type of work or activity being performed, shall be worn by persons where there is a risk of head injury or where required by the manager or an inspector. Where conditions may cause the hat to be accidentally dislodged

- (1) a device shall be incorporated into the hat and worn in order to prevent the hat being dislodged during a fall.

Protective Footwear

1.8.4

Protective footwear complying with the relevant requirements of CSA Standard Z195-M1984 "Protective Footwear", and suitable for the type of work or activity being performed, shall be worn by persons where there is a risk of foot injury or where required by the manager or an inspector.

Eye Protection

1.8.5

Properly fitting goggles, face shields, or other eye protective equipment complying with the relevant requirements of CAN/CSA Standard Z94.3-M88 "Industrial Eye and Face Protectors," and suitable for the type of work or activity being performed, shall be worn by a person who

- (1) is handling or is exposed to any material which is likely to injure or irritate the eyes,
- (2) is engaged in any work in which there is a risk of eye injury,
- (3) has 20/200 vision or is blind in either eye, or
- (4) is working or passing through an area which the manager or inspector has designated as requiring such protection.

Contact Lenses

1.8.6

No person shall wear contact lenses where prohibited by the manager.

Hearing Protection

1.8.7

Where noise levels exceed the requirements of Table 2-2, Part 2, persons shall wear hearing protectors which are selected, maintained and used in accordance with CSA Standard Z94.2-94 "Hearing Protectors."

Self Rescuer

1.8.9

Notwithstanding section 1.1.4, standards identified in sections 1.8.3, 1.8.4, 1.8.5 and 1.8.7, shall not be amended unless so directed by the chief inspector.

WORKPLACE CONDITIONS

General

1.9.1

The manager shall

- (1) take all reasonable and practicable measures to ensure that the workplace is free of potentially hazardous agents and conditions which could adversely affect the health, safety, or well-being of the workers,

Controls

- (2) where practicable, institute controls at the source to ensure that workers are not exposed to a level of any physical, chemical, or radiation hazard in excess of the limits prescribed in the code or by an inspector, with the exception of unusual short term or emergency situations, and
- (3) require that persons wear effective personal protective equipment in any situation where control at the source, as required by section 1.9.1(2), is impractical.

1.9.2

The manager shall at the end of each month provide the OHSC with a report of all reported first aid cases.

1.9.3

By January 31 of each year, the manager shall forward to the chief inspector a report for the previous calendar year which includes

- (a) the total hours worked at the mine by all mine employees,
- (b) the number of lost time injuries,
- (c) the number of occasions where employees received medical aid,
- (d) the number of days lost, and
- (e) where required by an inspector a contractor shall provide the information required under 1.9.3(a) to (d).

EMPLOYEES' RIGHT TO REFUSE WORK

Unsafe Work

1.10.1

A person shall not carry out any work or operate any equipment, tool, or appliance if he/she has

reasonable cause to believe that to do so would create an undue hazard to the health or safety of any person.

1.10.2

A supervisor shall not knowingly perform or permit a worker to perform work which is, or could create, an undue hazard to the health or safety of any person.

Right to Refuse

1.10.3

A person who refuses to carry out any work or operate any equipment, tool, or appliance, in compliance with section 1.10.1, shall immediately report the circumstances to his/her supervisor.

Supervisor Investigates

1.10.4

The supervisor receiving a report under section 1.10.3 shall investigate the matter and ensure that any hazardous condition is remedied without delay; or if, in his/her opinion the report is not valid, he/she shall inform the person who made the report.

Investigation

1.10.5

If the procedure provided for in section 1.10.4 fails to resolve the issue and the person continues to refuse to carry out the work, the supervisor or other management representative shall forthwith make an investigation in the presence of the person who made the report, together with another person having knowledge of the work in question and who is

- (1) a worker representative or designate of the OHSC if available, or
- (2) designated by the local union to represent the person refusing to carry out the work, or
- (3) a co-worker selected by the person refusing to carry out the work.

Use of Alternate Worker

1.10.6

If the person still refuses to carry out the work after his/her supervisor and the other person have investigated the issue in accordance with section 1.10.5, and are both of the opinion that no undue hazard exists and that

- (1) the refusal is considered to be justifiable for reasons peculiar to that particular person, and
- (2) there is no justification for an alternate person to refuse to carry out the work in question then, the supervisor, after informing the alternate person of the reason for the refusal, may have him/her perform the work

Manager Investigates

1.10.7

If the procedures in sections 1.10.4, 1.10.5 and 1.10.6 fail to resolve the issue, the manager shall

- (1) conduct an investigation and either develop a plan that is acceptable to the persons who will do the work and which will allow the work to proceed safely, or suspend further work, and
- (2) if the work is suspended or allowed to proceed, submit a report to the OHSC, local union, and an inspector, that describes the incident, shows compliance with the code and describes any remedial actions taken.

TRAINING**Training****1.11.1**

The manager shall ensure that

- (1) workers are adequately trained to do their job or are working under the guidance of someone who has competency both in the job and in giving instruction, and
- (2) ensure that all employees receive thorough orientation and basic instruction in safe work practices.

1.11.2

The manager shall maintain a record of all training workers and supervisors have received, and make this record available to an inspector upon request.

SUPERVISION**Open Pit****1.12.1**

- (1) The manager shall ensure that every worker employed in the mining activity of an open pit mine is under the supervision of
 - (a) the holder of an open pit shiftboss certificate where more than 6 persons are employed, or
 - (b) in the case of an open pit mine employing 6 persons or fewer, the holder of a supervisor certificate unless a shiftboss certificate is required by the inspector.
- (2) If the manager is the supervisor, the manager must also hold a supervisor's certificate.

[effective June 1, 2018]

Exploration Supervisor's Certificate**1.12.6**

- (1) The manager of an exploration site shall ensure that every worker employed in exploration activities is under the supervision of the holder of a supervisor's certificate.
- (2) If the manager is a supervisor, the manager must also hold a supervisor's certificate.

[effective June 1, 2018]

Other Work Areas**1.12.7**

- (1) The manager shall ensure that every worker, other than those persons referred to in sections 1.12.1 (1) and 1.12.6, and other than office employees, is under the supervision of the holder of a supervisor's certificate.
- (2) If the Manager is a supervisor, the manager must also hold a supervisor's certificate.

[effective June 1, 2018]

CERTIFICATION PROCEDURE**Board Grants Certification****1.13.1**

Examinations of applicants for underground shiftboss and fireboss certificates, open pit shiftboss

certificates, and certificates of competency shall be carried out by a Board of Examiners, consisting of the chief inspector as chairman and two other inspectors appointed by the chief inspector.

1.13.3

The Board of Examiners shall issue a shiftboss, fireboss or competency certificate when satisfied that the applicant.

- (1) is conversant with the English language,
- (2) is the holder of a first aid certificates to a standard required by the chief inspector,
- (3) has an adequate knowledge of the *Mines Act*, the regulations, and the code and of other information and material considered necessary by the Board of Examiners, including, but not limited to, mine safety, mine rescue, and blasting practices and procedures, and
- (4) has had at least three years' relevant experience in and about the working of a mine, or has obtained a degree or diploma, approved by the Board of Examiners, in engineering from a university or technical institute and has had not less than one year of experience and such experience shall be acceptable to the Board.

1.13.4

Notwithstanding section 1.13.3, the Board of Examiners may grant a restricted shiftboss or fireboss certificate where the type of mine operation would not require the applicant to hold all of the qualifications included in section 1.13.3.

1.13.5

The Board of Examiners may grant a certificate to an applicant who holds a similar certificate granted by a jurisdiction outside the Province, if the Board of Examiners is satisfied that the standard of training and examination is equivalent to that required for the granting of a corresponding certificate under the code and, after oral examination of the applicant, that the applicant is sufficiently qualified.

1.13.6

Notwithstanding sections 1.13.3 and 1.13.4, the manager may issue on a one time basis a provisional shiftboss or fireboss certificate valid for no more than six months to an employee who has acceptable experience and training.

Validity of Certificates

1.13.7

A shiftboss or fireboss certificate or a certificate of competency issued under Part 1 of the code is conditional on the holder maintaining in force the other certificates required under section 1.13.3 (2), or as required by the Board of Examiners.

1.13.8 - [Repealed]

Suspension of Shiftboss, Fireboss or Competency Certificate

1.13.9

- (1) A shiftboss or fireboss certificate or certificate of competency issued under this Part may be suspended by an inspector if the holder fails to comply with the Act, the regulations, or this code, or is by reason of incompetence or negligence, unfit to carry out their duties.
- (2) The inspector shall immediately inform the Board of Examiners of any suspension under subsection (1), and the Board may

- (a) conduct an investigation,
 - (b) interview the holder of the certificate, and
 - (c) vary the suspension or cancel the certificate
- (3) A person whose certificate is cancelled or suspended under this section may appeal the decision to the chief inspector.

Supervisor Certification

1.13.10

- (1) The chief inspector shall issue a supervisor's certificate to an applicant who has passed an examination on the sections of the Mines Act, the regulations, and this code.
- (2) The certificate is valid for five years from date of issuance.

[effective June 1, 2018]

Suspension of Supervisor's Certificate by Inspector

1.13.11

- (1) A supervisor's certificate issued under this Part may be suspended for a stated period of time by an inspector if the holder fails to comply with the Act, the regulations or this code, or is by the reason of incompetence or negligence unfit to carry out their duties.
- (2) The inspector shall inform the chief inspector immediately of any suspension under subsection (1), and the chief inspector may
- (a) conduct an investigation,
 - (b) interview the holder of the certificate, and
 - (c) vary the decision of the district inspector or cancel the certificate



PART 2

OCCUPATIONAL HEALTH

TABLE OF CONTENTS

2.1	Workplace Contaminants	77
2.2	Control of Workplace Hazards	77
2.3	Hazardous Materials & Waste	78
2.4	Harmful Chemical Exposure	80
2.5	Abrasive Blasting	81
2.6	Noise	82
2.7	Use of Lasers	82
2.8	Illumination	82
2.9	Musculoskeletal Disorder	82
2.10	Thermal Environment	83
2.11	Lunchrooms & Sanitary Conveniences	83
2.12	Medical Surveillance Programs	85
2.13	Workplace Hazardous Materials Information Systems (WHMIS)	86
Tables		
	Table 2-1	94
	Table 2-2	95
	Table 2-3	96



WORKPLACE CONTAMINANTS

Maximum Allowable Exposures

2.1.1

Notwithstanding section 1.1.4 of the code, employees shall not be exposed to airborne concentrations of chemical agents or noise in excess of the levels specified in Tables 2-1 and 2-2, or where not specified those listed in the 1994-1995 edition of the American Conference of Governmental Industrial Hygienists' book entitled "Threshold Limit Values and Biological Exposure Indices". Referenced material shall be made available to the OHSC.

Shifts Longer Than 8 Hours

2.1.2

When shifts longer than 8 hours are being worked, the time-weighted average concentration of airborne contaminants shall be based on the "concentration equivalent" (Ceq) which is derived from the following formula:

$$\text{Ceq} = \frac{(\text{8-hour TWA}) \times 8}{\text{shift length in hours}}$$

Monitoring Contaminants

2.1.3

- (1) The manager shall establish a written program, in accordance with the chief inspector's publication "Workplace Monitoring Procedures Manual" for a qualified person to monitor workplace contaminants as often as necessary to ensure compliance with section 2.1.1. The program shall specify the substances and locations to be monitored and the frequency of monitoring. The results of the program shall be available for examination by an inspector.
- (2) A record of the monitoring program shall be kept on file for the life of the mine and transferred to the chief inspector upon abandonment of the mine.

Oxygen Content

2.1.4

Persons shall not work or remain in any part of a mine of Air where they may be exposed to air with an oxygen content less than 19.5% by volume unless provided with an alternate air supply.

CONTROL OF WORKPLACE HAZARDS

Workplace to Be Hazard Free

2.2.1

The manager shall develop and implement an effective housekeeping program to ensure that all workplaces and travelways are maintained in a safe condition, that materials and equipment are stored in a manner so as not to endanger persons, and that appropriate action is taken whenever necessary to maintain a hazard-free environment.

2.2.2

An inspector may require the manager to satisfy him/her that it is not practicable to comply with section 1.9.1(2) with proper engineering controls, and the inspector shall communicate his/her decision to the OHSC.

HAZARDOUS MATERIALS & WASTE

Asbestos Controls and Substitutes

2.3.1

The manager shall ensure that

- (1) as effective, less hazardous, asbestos-free substitutes become available and practical for such items as brake lining, insulation, and fire retardant materials, they shall be used,
- (2) where there is no substitute available for an asbestos-containing material, a procedure acceptable to the chief inspector is developed to protect the health of persons using, maintaining, or exposed to such material,
- (3) notwithstanding subsection (2), items containing crocidolite asbestos are not to be used at a mine,
- (4) spraying of asbestos, or material containing more than 1% of asbestos, is prohibited, and
- (5) protective clothing and equipment made of material containing asbestos is used in such a manner as to prevent the release of asbestos fibers.

Disposal of Asbestos

2.3.2

Where any work involves the use, handling, or disposal of asbestos or materials containing asbestos, the manager shall ensure that the procedures outlined in the manual "Safework Practices for Handling Asbestos Revision 10 1996" published by the Board are followed, and that the inspector and the OHSC are notified of the procedures.

Storage of Hazardous Materials

2.3.3

The manager shall ensure that all dangerous or potentially hazardous materials are stored in designated storage areas, acceptable to an inspector, which are well ventilated to prevent any accumulation of dangerous fumes and so arranged that incompatible materials, which could produce a harmful reaction if combined, are adequately separated.

Proper Containers

2.3.4

The manager shall ensure that all dangerous or potentially hazardous materials are stored in containers that are designed, constructed, and maintained in such a manner as to ensure proper containment of their contents under the environmental conditions in which they are stored.

Hazardous Dust

2.3.5

In a building where dust or other material could by becoming airborne cause a hazard by restricting vision, or could cause a fire or explosion or be potentially hazardous if inhaled or ingested, it shall without delay be removed by suitable means such as vacuuming, wet sweeping, or wet shoveling, or be suppressed.

Hazardous Waste

2.3.6

Waste materials which could be detrimental to a person's health, or could cause a fire or explosion, shall be

- (1) stored in impervious containers, labeled to clearly identify the contents and the nature of the hazard, and where the contents are flammable or capable of producing vapours or gases, the containers shall be covered and located in well-ventilated areas, and
- (2) collected, handled, sorted, and disposed of by persons trained to safely handle the waste material and wearing any necessary protective clothing and equipment to safeguard their own and any other person's health and safety.

Spills

2.3.7

Spills or releases of hazardous waste materials shall be cleaned up as soon as possible by persons trained to safely handle the waste material and wearing any necessary protective clothing and equipment to safeguard their health and safety.

Flammable Waste Storage

2.3.8

Waste materials containing solvents, grease, paints, or other flammable substances shall be stored in appropriate covered containers while awaiting disposal.

Radiation

2.3.9

The manager shall

- (1) ensure that equipment which emits harmful levels of infrared or ultraviolet radiation is shielded to protect employees from exposure to such radiation, and
- (2) supply personal protective equipment to any person who could become exposed to harmful radiation levels and the person shall wear the protective equipment.

2.3.10

Notwithstanding section 1.1.4 of the code, the manager shall ensure that employees are not exposed to non-ionizing radiation which exceeds the recommendations contained in the publication "*Safety Code 6, Recommended Safety Procedures for the Installation and Use of Radio Frequency and Microwave Devices in the Frequency Range of 10 MHz to 300 GHz*", published by Health and Welfare, Canada.

2.3.11

- (1) A worker shall not be exposed to ionizing radiation to a level greater than any of the following:
 - (a) 4.0 Working Level Months (20 millisieverts) of radon decay products per year averaged over 5 years, and 10.0 Working Level Months (50 millisieverts) in a single year;
 - (b) 20 millisieverts (2 Rem) of gamma radiation per year averaged over 5 years, and 50 millisieverts (5 Rem) in a single year;
 - (c) a combination of radon decay products and gamma radiation totaling 20 millisieverts averaged over 5 years or 50 millisieverts in a single year.
- (2) Where there are indicators that uranium or thorium levels are in a grade of 0.05% by weight or greater, the mine manager shall conduct a survey using appropriate calibrated instruments to ensure that worker exposure rates do not exceed those stated in section 2.3.11 (1).
- (3) Where measurements indicate a worker is exposed to gamma radiation greater than 2.5 microsieverts per hour (0.25 millirem per hour) at 0.5 meters from the source, a gamma radiation dosimeter of a type acceptable to the chief inspector shall be

- provided to and worn by each worker who is exposed.
- (4) All radioactive materials shall be used, handled, stored, transported, and disposed of in accordance with the Canadian Nuclear Safety Commission Regulations.

Spraying of Materials Containing Isocyanates

2.3.12

Where paints, protective coatings, adhesives, or insulating materials containing isocyanate compounds or other compounds that have similar sensitizing effects are being applied, persons shall be protected from the airborne contaminants by

- (1) where practicable, performing the work in an isolated enclosure having sufficient exhaust ventilation to ensure that contaminated air is not released from the enclosure into areas where unprotected persons can enter, and
- (2) where methylene bisphenyl isocyanate is used, ensuring that a supplied-air respirator (SAR) approved by NIOSH or MSHA is worn by all exposed persons, in accordance with the following concentrations:
- (i) up to 2 mg/m³ : SAR or SCBA,
 - (ii) up to 5 mg/m³ :SAR operated continuous flow, or SCBA,
 - (iii) up to 10 mg/m³ : positive pressure, full-facepiece SAR,
 - (iv) up to 100 mg/m³ : positive pressure, full-facepiece SCBA, and
 - (v) emergency or planned entry into unknown concentrations or immediately dangerous to life or health: positive pressure, full-facepiece SCBA, or positive pressure full-facepiece SAR with an auxiliary positive pressure SCBA.
- (3) a respirator type shall be selected in accordance with assigned protection factors as outlined in Table 2 of CSA Standard Z94.4-93.

HARMFUL CHEMICAL EXPOSURE

Emergency Wash Facilities

2.4.1

Where persons may be exposed to corrosive or other chemicals harmful to the eyes or skin, the manager shall ensure that eye wash equipment, emergency water baths or showers, or other suitable means are immediately available to effectively cleanse the affected body areas.

- (1) The emergency shower facility shall provide a tempered supply of potable water for a minimum of 15 minutes.
- (2) In cases where it is not practical to install a permanent facility portable eye wash stations and/or portable emergency wash facilities may be installed as applicable.
- (3) Provisions shall be taken to ensure that water supplies and eye wash isotonic fluids are protected from freezing and are adequately maintained.

Protection From Contaminants

2.4.2

- (1) Where the nature of the work causes a person's clothing or skin to be contaminated with substances which could cause injury to, or endanger the health of, the person or contaminate other areas on or off the minesite, the manager shall provide
- (a) shower or wash facilities to enable employees to effectively remove all contaminants, and
 - (b) separate storage areas for street and work clothing to prevent contamination of the street clothing.

- (2) Where contaminated clothing is not to be removed from the minesite, the manager shall provide
 - (a) a means for cleaning the contaminated clothing, or
 - (b) suitable protective clothing.
- (3) A person exposed to contaminants shall
 - (a) cleanse any affected skin areas as soon as practicable,
 - (b) not consume or handle food or tobacco products until his/her hands and face are free of contamination
 - (c) ensure that he removes contaminated clothing and disposes of it, and
 - (d) not leave the mine at the end of his/her shift until all affected areas of his/her skin have been cleansed of contamination.

ABRASIVE BLASTING

No Silica or Lead

2.5.1

Abrasive blasting material containing 1%, or more, free silica or lead shall not be used.

2.5.2

All abrasive blasting and similar operations, when carried out within a building, shall be conducted in an isolated enclosure to prevent injury to persons. The enclosures shall have sufficient exhaust ventilation to ensure that a continuous inward flow of air is maintained at all openings in the enclosure during the blasting operation.

2.5.3

All abrasive blasting and similar operations, when carried out outside a building, shall be conducted in a place and manner to prevent injury to persons.

Protective Equipment

2.5.4

- (1) Where an abrasive blasting operation is being carried out, the manager shall supply and employees shall wear air-supplied hoods or respirators suitable for the work, together with gloves, leggings, and clothing designed to protect the employees from dust, and projected abrasive or other material.
- (2) Air supplied to the hood or respirator shall meet the requirements of CSA Standard CAN3-Z180.1-M85 "Compressed Breathing Air and Systems," as updated from time to time, and the volume of air supplied shall be sufficient for respiration and to prevent the entry of contaminants into the hood or respirator, and shall not be less than 105 L per minute at the mask.

Nozzles and Valves

2.5.5

- (1) Blast cleaning nozzles shall be equipped with an operating valve which must be held open manually, and the normal operation of this valve shall not be defeated. A support shall be provided on which the nozzle can be secured when not in use.
- (2) In addition to the operating valve required by subsection (1), another operating control shall be readily accessible to the operator to enable the flow of abrasive to be stopped immediately.

Workers to be Removed**2.5.6**

Where an abrasive blasting or a similar operation releases harmful substances to the atmosphere, persons who are not required to assist in the operation shall be removed from contaminated areas. Where such removal is not practical, the exposed persons shall be advised of the hazard and supplied with suitable personal protective equipment which they shall wear.

NOISE**Mufflers Required****2.6.1**

Any machinery or equipment which, when operating, exposes the operator or persons in the vicinity to noise levels in excess of those prescribed in Table 2-2, Part 2, for unprotected ears, shall, if practicable, be fitted with a properly maintained muffler or other noise reducing device.

USE OF LASERS**Laser Standard****2.7.1**

Where laser emitting devices are used, they shall be classified and used in accordance with the procedures outlined in ANSI Z136.1 - 1993 – "American National Standard for the Safe Use of Lasers".

Protection Required**2.7.2**

Warning signs shall be posted and properly constructed screens or enclosures used wherever there could be a danger to any person from an inadvertent exposure to a laser beam.

ILLUMINATION**Lighting Standards****2.8.1**

The manager shall ensure that at all working places, suitable and adequate illumination is provided meeting the standards set out in the ANSI/IES Standard RP-7- 1991: "American National Standard Practice for Industrial Lighting", as updated from time to time, unless otherwise authorized by the code.

Surface Illumination**2.8.2**

The manager shall ensure that there is a separate and independent emergency source of illumination at all places where a hazard could be caused by a failure of the normal lighting system, and the emergency lighting system shall

- (1) where it is a part of a permanent installation, turn on automatically when the normal lighting fails,
- (2) provide adequate illumination to allow employees to initiate emergency shutdown procedures and leave their work areas safely, and
- (3) be tested as frequently as necessary to ensure that it will function when required.

MUSCULOSKELETAL DISORDER**2.9.1**

Where the equipment, work procedure, or working condition in a work area has caused injurious

inflammation of muscles, tendons, or bursae of the upper limbs of the persons doing the work, and it is demonstrated to be from repetitive or forceful use, the chief inspector shall, where practicable, require implementation of one or more of the following preventive measures

- (1) modification of work procedures or equipment to reduce physical demands on affected body areas, or
- (2) a rescheduling of work to permit safe adjustment to unaccustomed task requirements.

THERMAL ENVIRONMENT

Heat or Cold Stress

2.10.1

Where it is not reasonably practical to control thermal conditions, and the nature of the work can cause distress or illness to a person, the manager shall institute a program to

- (1) instruct employees in the possible adverse effects of their working environment,
- (2) instruct employees how to recognize symptoms of heat or cold stress and what emergency treatment should be applied, and
- (3) monitor thermal conditions to identify when persons could be adversely affected by heat and cold stress, and if protective measures are required to adequately protect persons, he shall advise an inspector of the measures taken.

LUNCHROOMS & SANITARY CONVENIENCES

2.11.1

The manager shall provide a source of cool, potable drinking water complying with the Safe Drinking Water Guidelines of the Ministry of Health in locations that

- (1) are reasonably accessible to employees,
- (2) are kept clean and in a sanitary condition, and
- (3) are designed to permit the water to be dispensed and drunk in a sanitary manner.

Use of Solder

2.11.2

New installations of pipes and vessels, and changes to existing pipes and vessels which carry water to be used in whole or in part by persons for drinking purposes, shall not be constructed using solder containing more than 1% lead.

Lunchrooms

2.11.3

Where 7 or more persons regularly congregate to eat food, other than where the mining activity of an open pit mine is performed, a lunchroom shall be provided which shall:

- (1) be heated, lighted, and ventilated,
- (2) have or be located near facilities for persons to wash with cold and hot running water and dry their hands,
- (3) not have an entrance through a toilet facility,
- (4) contain sufficient fire retardant receptacles with lids, which shall be used by employees to dispose of all waste food, paper, and other related material, and the containers shall be emptied regularly,
- (5) have suitable seating facilities equipped with backrests and tables with impervious top surfaces which shall be kept in clean and sanitary condition,
- (6) be constructed of materials which can be, and shall be, maintained in a clean condition,

- (7) have the following minimum dimensions

No. of Persons	sq. m/Person
25 or less	1.2 (min. size 6 sq. m.)
26 to 74	1
75 to 149	0.66
150 to 499	0.56
500 or more	0.46

and

- (8) be located in an area away from process chemicals and contaminants.

2.11.4

Where more than 3 persons and fewer than 7 persons regularly congregate to eat food, other than where the mining activity at an open pit mine is performed, an eating area shall be provided which complies with 2.11.3. (1), (4), (5), (6), (7), and (8), and provided with facilities for persons to clean their hands.

Mine Dry

2.11.5

- (1) The manager shall provide separate facilities for male and female employees to wash and shower, and to change and dry their clothing at a surface mine where persons are subject to dusty, dirty, or wet conditions.
- (2) The facilities shall have separate approaches with signs clearly indicating for which gender they have been provided.

Location of Mine Dry

2.11.6

A mine dry shall not be located

- (1) in a boiler room, engine room, bunkhouse, or dining room unless a separate, properly constructed room is provided.

2.11.7

The mine dry shall be adequately heated, lighted and ventilated, kept clean and sanitary, and have one shower for every 7 persons leaving work at the same time.

Temperature of Washing Water

2.11.8

Water that is to be used for personal washing shall not exceed 60 degrees Celsius at any outlet, and shall not be mixed directly with steam.

Toilet Facilities

2.11.9

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.

2.11.10

On the surface of a mine, the manager shall provide washroom facilities that are conveniently located and equipped with:

- (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,

- (2) one wash basin, or equivalent facility, provided with hot and cold running water for every 15 employees or fraction thereof,
- (3) a means for drying hands hygienically, and
- (4) adequate heat, light, and ventilation.

2.11.11

For the purposes of section 2.11.10

- (1) each 600 mm of straight through urinal may be counted as one urinal, and
- (2) each 500 mm of circumference of a circular wash fountain or length of a straight trough wash basin may be counted as one wash basin.

Toilets

2.11.12

A toilet on the surface of a mine shall be

- (1) of the water flushing type or other sanitary design, located in an individual compartment with a door that locks, and with walls and floor of a finish or material that can be easily cleaned,
- (2) fitted with an open-front seat and provided with a reasonable supply of toilet paper,
- (3) provided with a clothes hook and lighting where electricity is available, and
- (4) kept clean and sanitary, and any waste products shall be disposed of regularly.

Toilets Underground or Portable on Surface

2.11.13

Toilets in an underground mine and portable toilets on surface shall be conveniently located in well ventilated areas having regard to the number of employees in the various parts of the mine, and

- (1) they shall be supplied with toilet paper and provide privacy,
- (2) be maintained in a hygienic condition and have all waste material removed regularly, and
- (3) be equipped with facilities for persons to clean their hands.

Seasonal Camps

2.11.15

Sanitary conveniences at seasonal, short-term mining camps shall comply with the Industrial Camps Health Regulations under the *Health Act*.

MEDICAL SURVEILLANCE PROGRAMS

Program Requirements

2.12.1

- (1) The manager shall notify the chief inspector when he believes there is a need for a medical surveillance program, for persons
 - (a) in a dust exposure occupation,
 - (b) exposed to excessive noise, or
 - (c) exposed to any chemical, physical, or radiation agent specified by the chief inspector.
- (2) A medical surveillance program, when required by the chief inspector, shall be modeled after the "Guidelines for Standard Practice for Medical Monitoring Programs" issued by the chief inspector and shall be of a form satisfactory to him/her.

Audiometric Testing

2.12.2

Audiometric testing shall be carried out by a certified audiometric technician.

2.12.3

- (1) The manager shall advise persons working in a dust, excessive noise, chemical, physical, or radiation exposure occupation, of the nature of the health risks and that a medical surveillance program is available, and the person, at his/her option, may choose to participate in the program.
- (2) A person participating in the medical surveillance program may attend the doctor of his/her choice to undergo the examinations and tests required by 2.12.1 (2).

Medical Advice

2.12.4

A medical surveillance program, required by section 2.12.1, shall ensure that

- (1) Each person examined or clinically tested is
 - (a) aware of the nature of the health risks and effects for which he is being examined,
 - (b) advised on his/her medical fitness to work,
 - (c) advised of any work restriction resulting from his/her medical condition,
 - (d) instructed in health precautions required, and
 - (e) provided with a copy of the results of the medical examination.
- (2) A hearing conservation program is developed and followed.

Maintenance of Records

2.12.5

- (1) Personal medical records shall be maintained on a confidential basis by the physician or nurse, and shall not be made available to the manager or any other person, except as required by statute, without the informed written consent of the individual.
- (2) Audiometric information shall be made available to the chief inspector.

Chemical Analysis

2.12.6

Whenever a chemical analysis is required for biological monitoring it shall be carried out at a laboratory acceptable to the chief inspector.

Programs at Owner's or Agent's Expense

2.12.7

All medical examinations and tests performed on a person during a medical surveillance program, shall be done at the owner's or agent's expense and the expense shall not be passed on to that person.

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEMS (WHMIS)

Application

2.13.1

- (1) This section applies to employers and employees in respect of controlled products used, stored, or handled at a mine.
- (2) Notwithstanding subsection (1), the provisions of this code in respect of

- a supplier label and a material safety data sheet do not apply where the controlled product is an
- (a) explosive within the meaning of the *Explosives Act* (Canada),
 - (b) cosmetic, device, drug or food within the meaning of the *Food and Drug Act* (Canada),
 - (c) controlled product within the meaning of the *Pest Control Products Act* (Canada),
 - (d) prescribed substance within the meaning of the *Atomic Energy Control Act* (Canada), or
 - (e) product, material, or substance packaged as a consumer product and in quantities normally used by the consuming public.
- (3) Notwithstanding subsection (1), this code does not apply where the controlled product is
- (a) wood or a product made of wood,
 - (b) tobacco or a product made of tobacco,
 - (c) a manufactured article, or
 - (d) being transported or handled pursuant to the requirements of the *Transportation of Dangerous Goods Act* (Canada) or the *Transport of Dangerous Goods Act*.
- (4) Notwithstanding subsection (1), this code does not apply to a hazardous waste except that the manager shall ensure the safe storage and handling of a hazardous waste generated at that mine through the combination of any mode of identification and employee education.

Use, Storage, Handling

2.13.2

- (1) The manager shall ensure that a controlled product is not used, stored, or handled in a mine, unless all the applicable requirements of this code in respect of labels, identifiers, material safety data sheets, and employee education are complied with.
- (2) Notwithstanding subsection (1), the manager may store a controlled product in a mine while actively seeking information required by this code.

Worker Education

2.13.3

- (1) The manager shall ensure that a person who works with a controlled product or in proximity to a controlled product is informed about all hazard information received from a supplier concerning that controlled product as well as any further hazard information of which the manager is aware or ought to be aware concerning the use, storage, and handling of that controlled product.
- (2) Where a controlled product is produced in a mine, the manager shall ensure that a person who works with that controlled product or in proximity to that controlled product is informed about all hazard information of which the manager is aware or ought to be aware concerning that controlled product and its use, storage, and handling.

Worker Training

2.13.4

- (1) The manager shall ensure that a person who works with a controlled product or in proximity to a controlled product is instructed in

- (a) the content of the applicable supplier label and workplace label, and the purpose and significance of the information contained on the label,
 - (b) the content required on a material safety data sheet and the purpose and significance of the information contained on the material safety data sheet,
 - (c) procedures for the safe use, storage, handling, and disposal of a controlled product,
 - (d) the safe use, storage, handling, and disposal of a controlled product contained or transferred in
 - (i) a pipe,
 - (ii) a piping system including valves,
 - (iii) a process vessel,
 - (iv) a reaction vessel, or
 - (v) a tank car, tank truck, ore car, conveyor belt, or similar conveyance,
 - (e) procedures to be followed where the controlled product escapes from equipment or from another product, and
 - (f) procedures to be followed in case of an emergency involving a controlled product.
- (2) The manager shall ensure that the program of employee education required by section 2.13.4(1) is developed and implemented
- (a) for that mine and related to the manager's program for the prevention of injuries and occupational disease, and
 - (b) in consultation with the occupational health and safety committee.
- (3) The manager shall ensure, so far as is reasonably practicable, that the program of employee instruction required by section 2.13.4(1) results in a person being able to apply the information as needed to protect his/her health and safety.
- (4) The manager shall review at least annually, or more frequently if required by a change in work conditions or available hazard information, and in consultation with the joint Occupational Health and Safety Committee, the instruction and training provided to employees concerning controlled products.

Supplier Label

2.13.5

- (1) The manager shall ensure that the container of a controlled product or a controlled product received at a mine is labeled with a supplier label.
- (2) Subject to subsection (3) and to subsection 2.13.15, as long as any amount of a controlled product remains in a mine in the container in which it was received from the supplier, the manager shall not remove, deface, modify, or alter the supplier label.
- (3) Where a label applied to a controlled product or a container of a controlled product becomes illegible or is accidentally removed from the controlled product or the container, the manager shall replace the label with either a supplier label or a workplace label.
- (4) A manager who has received a controlled product in a multi-container shipment, where the individual containers have not been labeled by the supplier, shall apply to each container a label that meets the requirements of the Controlled Products Regulations (Canada).
- (5) Where the controlled product imported under section 23 of the Controlled Products

Regulations (Canada) is received at the mine without the supplier label, the manager shall apply a label that meets the requirements of that regulation.

- (6) A manager who has received a controlled product transported as a bulk shipment shall
 - (a) apply a supplier label to the container of the controlled product or to the controlled product at the mine, or
 - (b) where, pursuant to Section 15 of the Controlled Products Regulations (Canada) the supplier is not required to label a controlled product transported as a bulk shipment, the manager shall apply a workplace label to the container of a controlled product or to the controlled product at the mine.

Workplace Label for Employer Produced Products

2.13.6

- (1) Where a process produces a controlled product at a mine, the manager shall ensure that the controlled product or the container of the controlled product has applied to it a workplace label.
- (2) For purposes of subsection (1), "produces" does not include the production of a controlled product that escapes from equipment or from another product.
- (3) Subsection (1) does not apply when the controlled product is in a container that is intended to contain the controlled product for sale or distribution and the container is, or is about to be, appropriately labeled.

Workplace Label for Decanted Products

2.13.7

- (1) Where a controlled product in a mine is in a container other than the container in which it was received from a supplier, the manager shall ensure that the container has applied to it a workplace label.
- (2) Subsection (1) does not apply to a portable container that is filled directly from a container that has applied to it a supplier label or workplace label
 - (a) If the controlled product:
 - (i) is under the control of and is used exclusively by the worker who filled the portable container,
 - (ii) is used only during the shift in which the portable container was filled, and
 - (iii) the content of the container is clearly identified, or
 - (b) if all of the controlled product is required for immediate use.

Identification of a Controlled Product in Piping Systems and Vessels

2.13.8

Where a controlled product in a mine is contained or transferred in a pipe, a piping system including valves, a process vessel, a reaction vessel, or a tank car, tank truck, ore car, conveyor belt, or similar conveyance, the manager shall ensure the safe use, storage, and handling of the controlled product through employee education and the use of colour coding, labels, placard, or any mode of identification.

Placard Identifiers

2.13.9

Notwithstanding sections 2.13.5, 2.13.6 and 2.13.7 where the controlled product is not in a container,

or in a container in a form intended for export, the manager may fulfill the labeling requirements under sections 2.13.5, 2.13.6 and 2.13.7 by posting a placard which:

- (1) discloses the information required for a workplace label, and
- (2) is of a size and in locations so that the information is conspicuous and clearly legible to employees.

Laboratory Label

2.13.10

- (1) A label of a container for a controlled product that originates from a laboratory supply house and is packaged in quantities of less than 10 kg for each container and that is intended for use in a laboratory shall disclose
 - (a) a product identifier,
 - (b) where a material safety data sheet is available, a statement indicating that fact, and
 - (c) the following information that is applicable to the product: risk phrases, precautionary measures, or first aid measures.
- (2) Notwithstanding section 2.13.7(2), the manager shall ensure that the contents of a container of a controlled product are clearly identified on the container where
 - (a) the container is not the container in which the controlled product was received from the supplier, and
 - (b) the manager intends to use the controlled product, or it is in the normal course of his/her business, used exclusively in a laboratory.
- (3) The manager shall ensure that a controlled product undergoing analysis, tests, or evaluations in a laboratory is clearly identified.

Supplier Material Safety Data Sheets

2.13.11

- (1) A manager who acquires a controlled product for use at a mine shall obtain a supplier material safety data sheet in respect of that controlled product.
- (2) Where a supplier material safety data sheet obtained under subsection (1) in respect of a controlled product is 3 years old, the manager shall, if possible, obtain from the supplier an up-to-date supplier material safety data sheet in respect of any of the controlled product that remains at the mine.
- (3) Where the manager is unable to obtain a material safety data sheet as required by subsection (2), the manager shall add any new hazard information applicable to that controlled product to the existing supplier material safety data sheet on the basis of the ingredients disclosed in that document
 - (a) the manager may provide a material safety data sheet in a format different from the format provided by the supplier or containing additional hazard information, if the material safety data sheet provided by the manager
 - (b) subject to section 2.13.15, includes at least the content of the supplier material safety data sheet, and
 - (c) indicates that the supplier material safety data sheet is available at the mine.
- (4) Where a supplier is exempted under section 9 or 10 of the Controlled Products Regulations (Canada) from the requirement to provide a material safety data sheet for a controlled product, the manager is exempt from the requirement to obtain and

- provide a material safety data sheet for that controlled product.
- (5) Where a controlled product is received at a laboratory and the supplier has provided a material safety data sheet, the manager shall ensure that a copy of the material safety data sheet is readily available to the employees in the laboratory.
 - (6) Where a controlled product is received or produced at a laboratory and the manager has produced a material safety data sheet, the manager shall ensure that the material safety data sheet is readily available to employees in the laboratory.

Employer Material Safety Data Sheets

2.13.12

- (1) Where a process produces a controlled product in the mine, the manager shall prepare a material safety data sheet in respect of the product which discloses, subject to section 2.13.15, the information required under the Controlled Products Regulations (Canada).
- (2) For the purpose of subsection (1), “produces” does not include the production of a controlled product that escapes from equipment or from another product, nor does it include intermediate products undergoing reaction within a reaction or process vessel.
- (3) The manager shall update the material safety data sheet referred to in subsection (1)
 - (a) as soon as practicable after new hazard information becomes available to the manager, and
 - (b) at least every 3 years.

Availability of a Material Safety Data Sheet

2.13.13

- (1) The manager shall ensure that a copy of a material safety data sheet required by sections 2.13.11 or 2.13.12 is made readily available at the mine to the occupational health and safety committee and persons who may be exposed to the controlled product.
- (2) Notwithstanding subsection (1), when the manager is required by subsection (1) to make a material safety data sheet readily available, the material safety data sheet may be made available on a computer terminal if the manager
 - (a) takes all reasonable steps to keep the terminal in active working order,
 - (b) makes the material safety data readily available on the request of a person, and
 - (c) provides training in accessing computer stored material safety data sheets to
 - (i) one or more employees working at a mine where the material safety data sheet is available on a computer terminal, and
 - (ii) members of the occupational health and safety committee.

Deletions From a Material Safety Data Sheet

2.13.14

Where a manager claims an exemption under section 2.13.15, the manager may delete the information that is the subject of the claim from the material safety data sheet provided under sections 2.13.11 and 2.13.12 for the time period in subsection 2.13.15 (4), but may not delete hazard information.

Confidential Business Information

2.13.15

- (1) An employer who is required by this code to disclose on a label or a material safety data sheet

- (a) the chemical identity or concentration of an ingredient of a controlled product,
 - (b) the name of any toxicological study that identifies an ingredient of a controlled product,
 - (c) the chemical name, common name, generic name, trade name, or brand name of a controlled product, or
 - (d) information that could be used to identify a supplier of a controlled product may, if the manager considers such information to be confidential business information, claim an exemption from the requirement to disclose that information.
- (2) The claim under subsection (1) shall be made to the commission established under the *Hazardous Materials Information Review Act* (Canada) and shall be filed in accordance with the procedure established under that act and the regulations made under it.
- (3) Under section 32 of the *Hazardous Materials Information Review Act* (Canada), the commission shall exercise the powers and perform the functions specified in that act and the procedures prescribed by regulations under that act in respect of a claim made under subsection (1).
- (4) Information that the manager considers to be confidential business information is exempt from disclosure from the time a claim is filed under subsection (1) until the claim is finally determined by the commission and for a period of 3 years after that if the claim is found to be valid.
- (5) The manager who makes a claim under subsection (1) shall abide by decisions of the commission and orders of the commission.
- (6) Appeals from decisions made by the commission under this section may be made under and in accordance with the provisions of the *Hazardous Materials Information Review Act* (Canada) and any regulations made under that act.

Confidentiality of Information

2.13.16

- (1) Where a person enforcing this code obtains information from the commission under section 46 (2)(e) of the *Hazardous Materials Information Review Act* (Canada), the person to whom the information is communicated shall keep it confidential and shall not disclose such information to any person except for the purposes of enforcement of this code.
- (2) A person to whom information is disclosed pursuant to subsection (1) shall keep the information confidential.

Disclosure in Medical Emergencies

2.13.17

- (1) The manager shall, in respect of a controlled product that is or was present in the mine, provide information respecting the controlled product, including confidential business information in the possession of the employer, to
- (a) a member, in good standing, of the College of Physicians and Surgeons of British Columbia, or
 - (b) a person registered or licensed under the *Nurses (Registered) Act*, the *Nurses (Registered Psychiatric) Act* or the *Nurses (Licensed Practical) Act* and authorized to practice nursing in British Columbia,
- who requests information on the controlled product for the purpose of making a

- medical diagnosis of, or rendering medical treatment to, a person who used, handled, or was exposed to the controlled product at a mine.
- (2) No person to whom information is provided by an employer pursuant to subsection (1) shall communicate or disclose the information to any other person except as may be necessary for the purposes mentioned in that subsection.
- (3) A person to whom information is disclosed under subsection (2) shall keep the information confidential.

Prohibition Against Disclosure

2.13.18

No person shall use, disclose, or release information protected as confidential business information under this code except as provided by sections 2.13.16 and 2.13.17.

2.13.19

The manager shall ensure that persons who work with, or in the proximity of, a controlled product or a product described in section 2.13.20, shall comply with the procedures for the safe storage, handling, and use of those products, including the wearing of suitable personal protective equipment, as described in the material safety data sheet for those products.

2.13.20

Notwithstanding section 2.13.1, where persons who work with a substance, or in the proximity of a substance, which is not a controlled product and which substance could cause adverse health effects to those persons, then the manager shall comply with sections 2.13.3, 2.13.4, 2.13.5, 2.13.6, 2.13.7, 2.13.8, 2.13.9 and 2.13.10 as if the substance is a controlled product.

Footnotes for Table 2-1

Units: Exposure limits are reported in ppm, mg/m³ or fibre/cc. In general, contaminants present in air in a vapour or gaseous state are reported in parts per million (ppm). Contaminants present in air as an aerosol (dust, fume, mist) are typically reported in milligrams per cubic metre (mg/m³). To convert the units of a TLV, refer to the calculations in the "Introduction to the Chemical Substances" section of the 1994-1995 ACGIH Threshold Limit Values.

ppm means parts of vapour or gas per million parts of contaminated air volume at 25 degrees Celsius and 760 torr.

mg/m³ means milligrams of substance per cubic meter of air.

fibre/cc means fibre per cubic centimetre.

CAS means Chemical Abstract Series number.

Capital Letter C denotes ceiling limit (TLV-C).

- (c) Simple asphyxiant; see definition in the "Introduction to the Chemical Substances" section of the 1994-1995 ACGIH Threshold Limit Values.
- (e) The value is for total dust containing no asbestos and < 1% crystalline silica.
- (f) Fibres longer than 5 µm and with an aspect ratio equal to or greater than 3:1 as determined by the membrane filter method at 400-450× magnification (4-mm objective) phase contrast illumination.
- (g) The value is for dust containing <5% free silica. For dust containing more than this percentage of crystalline silica, the environment should be evaluated against the TLV-TWA of 0.05 mg/m³ for respirable quartz. The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector, with the characteristics defined in the "C" paragraphs of Appendix D in the 1994-95 ACGIH Threshold Limit Values.

- (j) These TLVs are for the respirable fraction of dust (respirable particulate mass) for the substance listed. The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the "C" paragraph of Appendix D in the 1994-95 ACGIH Threshold Limit Values.

Notations column:

ACGIH notations A1 and A2 and IARC notations 1, 2A and 2B indicate substances designated as carcinogens. The different categories used by the two organizations indicate different levels of certainty of carcinogenic effect, e.g. from confirmed carcinogen to probable or possible. For additional information on the background and rationale for the different categories of carcinogens, refer to the current edition of the ACGIH's Threshold Limit Values and Biological Exposure Indices ("TLV Booklet"), the current edition of the ACGIH's Documentation of TLVs and BEIs, and the current publications of the IARC's Overall Evaluations of Carcinogenicity to Humans. Both agencies provide information on their websites.

ACGIH Carcinogen designation:

A1 Confirmed Human Carcinogen.

A2 Suspected Human Carcinogen.

IARC Carcinogen classification:

1 Carcinogenic To Humans.

2A Probably Carcinogenic To Humans.

2B Possibly Carcinogenic To Humans.

The letter "S" indicates that the substance has been identified by the ACGIH as having the potential to produce a dermal or respiratory sensitizing effect.

The letter "R" indicates that the substance has been identified by the ACGIH as a reproductive toxin.

The term "Skin" indicates that the ACGIH has identified that there is potential significant contribution to the overall exposure by this route, including mucous membranes and the eyes, by contact with vapours, liquids, and solids.

Table 2-2

Maximum permissible noise exposure for unprotected ears on a daily basis:

Lex = 85 dBA average for 8 hours, or equivalent, including peak impulse noise except

- (a) no exposure to steady state noise over 109 dBA, and
- (b) no exposure to peak impulse noise over 140 dBC,

where;

- (1) Lex is the equivalent of 85 dBA for 8 hours (see examples below).
- (2) Steady state noise means noise in which variations of peak pressure levels are one second or less, and
- (3) Peak Impulse means noise in which variations of peak pressure levels are greater than one second apart.

Examples of equivalent levels to 85 dBA for 8 hours:

SUBSTANCE [CAS #]	TLV-TWA	TLV-STEL	NOTATION
Acetone [67-64-1]	750 ppm	1,000 ppm	-
Ammonia [7664-41-7]	25 ppm	35 ppm	-
Asbestos (f)			
Amosite [12172-73-5]	0.5 fibre/cc	-	A1, 1
Chrysotile [12001-29-5]	1 fibre/cc	-	A1, 1
Crocidolite [12001-28-4]	0.2 fibre/cc	-	A1, 1
Other Forms	1 fibre/cc	-	A1, 1
Where type of fiber has not been identified	0.2 fibre/cc	-	A1, 1

TABLE 2-1 *continued*

SUBSTANCE [CAS #]	TLV-TWA	TLV-STEL	NOTATION
Carbon dioxide [124-38-9]	5000 ppm	30,000 ppm	-
Carbon disulphide [75-15-0]	1 ppm	-	Skin
Carbon monoxide [630-08-0]	25 ppm	-	R
Chlorine [7782-50-5]	0.5 ppm	1 ppm	-
Coal Dust	2 mg/m ³ (g),(j)	-	-
Formaldehyde [50-00-0]	1 ppm	2 ppm	A2, 1, S
Hydrogen chloride [7647-01-0]	-	C5 ppm	-
Hydrogen cyanide [74-90-8]	-	C10 ppm	Skin
Hydrogen sulphide [7783-06-4]	10 ppm	15 ppm	-
Lead [7439-92-1] and inorganic compound, as Pb	0.05 mg/m ³	-	Elemental 2B, R; other inorganic 2A, R
Methane [74-82-8]	(c)	-	-
Methylene bisphenyl isocyanate (MDI) [101-68-8]	0.005 ppm	-	Skin, S
Nitric acid [7697-37-2]	2 ppm	4 ppm	-
Nitric oxide [10102-43-9]	25 ppm	-	-
Nitrogen dioxide [10102-44-0]	1 ppm	-	-
Nitrous oxide [10024-97-2]	50 ppm	-	R
Ozone [10028-15-6]	-	C(0.1 ppm)	-
Respirable combustible dust (RCD)	1.5 mg/m ³	-	-
Silica – Crystalline Cristobalite [14464-46-1] α-Quartz [14808-60-7; 1317-95-9]	0.05 mg/m ³ , (j) 0.05 mg/m ³ , (j)	- -	A2, 1 A2, 1
Sulphur dioxide [7446-09-5]	2 ppm	5 ppm	-
Sulphuric acid [7664-93-9]	1 mg/m ³	3 mg/m ³	A2,1
Toluene [108-88-3]	100 ppm	150 ppm	R
Wood dust (certain hard woods as beech and oak)	1 mg/m ³	-	A1, A2,1
Soft wood	5 mg/m ³	10 mg/m ³	1

TABLE 2-2

LENGTH OF EXPOSURE	AVERAGE NOISE LEVEL
16 hours	82 dBA
12 hours	83 dBA
10 hours	84 dBA
8 hours	85 dBA
4 hours	88 dBA
2 hours	91 dBA
1 hours	94 dBA
1/2 hours	97 dBA
1/4 hours	100 dBA

TABLE 2-3

MAXIMUM EQUIVALENT NOISE LEVEL, dBA	REQUIRED RATING OF HEARING PROTECTOR	
	CLASS A, B or C†	NRR ‡
Leq less than 85 dBA	None required	None required
Leq up to 89 dBA	Class C	up to 16
Leq up to 95 dBA	Class B	at least 17
Leq up to 105 dBA	Class A	at least 24
Leq up to 110 dBA	Class A plug plus Class A or B muff	At least 24 plug plus At least 17 muff
Leq more than 110 dBA	As above, with limited exposure	As above, with limited exposure

† Canadian Standards Association standard Z94.2-94.

‡ Noise Reduction Rating (NRR) subject to Canadian Standards Association standard Z94.2-94 frequency requirements.

PART 3

PERSONNEL SAFETY & EMERGENCY PREPAREDNESS

TABLE OF CONTENTS

3.1	Impairment & Conduct	99
3.2	General Safety Rules	99
3.3	Working Conditions	100
3.4	Hazardous Atmosphere - Confined Space	100
3.5	Fire Prevention	103
3.6	Industrial First Aid	103
3.7	Mine Rescue	104
3.8	Emergency Training	105
3.9	Fire Fighting	106
3.12	Gas Detectors	106
3.13	Evacuation	106



IMPAIRMENT & CONDUCT

Impaired Persons

3.1.1

No person shall enter, remain, or be knowingly permitted to enter or remain in any mine if, in the opinion of management, his/her ability is so impaired as to endanger his/her health or safety, or that of another person.

Drugs and Liquor

3.1.2

No person shall possess intoxicating liquor, or illegal drugs in or about a mine.

Improper Conduct

3.1.3

No person shall engage in any improper or foolhardy behavior such as horseplay, scuffling, fighting, playing practical jokes, or other conduct that might create or constitute a hazard to himself/herself or any other person.

Tampering with Safety Devices and Equipment

3.1.4

No person shall, without cause, render ineffective any device, equipment, or material provided for the protection of the health and safety of persons employed in, on or about a mine, or the safety of the public.

GENERAL SAFETY RULES

Age

3.2.1

The manager shall not employ any person under the age of 18 years at a mine except for the purpose of training that person.

Tallying

3.2.2

- (1) The manager shall implement an effective system to account for all persons on the mining property.
- (2) A written copy of the system implemented, in accordance with 3.2.2(1) shall be made available to an inspector on request.

Working Alone

3.2.3

When a worker is working alone and may not be able to secure assistance in the event of an injury or other misfortune, the manager shall ensure that a means exists for checking the well-being of the worker and that the interval between checks does not exceed 2.5 hours.

Transportation of Persons

3.2.4

- (1) No person shall be transported in the box of a pickup truck, and no person shall ride in a standing position.
- (2) No person shall board or leave any vehicle while that vehicle is in motion.

WORKING CONDITIONS

Hazardous Work

3.3.1

The manager or a person authorized by him/her shall personally supervise all work involved in correcting an unusual hazard and such work shall be carried out in accordance with safe working practices and in compliance with this code, and a plan approved by the manager.

Falling Objects

3.3.2

No persons shall be allowed in any location at a mine where persons are working overhead unless adequate protection is provided for their safety.

Drowning Hazard

3.3.3

When persons are required to work or be near water, where drowning could be a risk

- (1) the manager shall provide, at conspicuous locations, life-buoys equipped with heaving lines of adequate length which conform with Ministry of Transport (Canada) standards, and
- (2) if the person is required to work alone at these sites or be transported across water that person shall be provided with and shall wear a personal flotation device conforming to Canadian Government Specifications Board Standard CAN/CGSB-65.7-M88.

Moving Machinery and Electrical Contact

3.3.4

Where there is a risk of a worker coming into contact with moving parts of machinery or with electrically energized equipment, or where the work process is such that a similar hazard exists

- (1) the clothing of the workers shall fit closely about the body,
- (2) dangling neckwear, bracelets, wrist-watches, rings, or similar articles shall not be worn,
- (3) the wearing of medic-alert bracelets is permitted when such bracelets are used with transparent rubber band that fit snugly over the bracelets, and
- (4) cranial and facial hair shall be confined, or worn at a length which will prevent it from being snagged or caught in the work process.

Materials Handling

3.3.5

Where a materials handling task endangers the safety of the persons doing the work, the manager shall ensure that

- (1) the physical parameters of the handling task are redesigned, or
- (2) mechanical lifting aids or personal protective equipment is provided, or
- (3) the work area where the work is carried out is redesigned to eliminate unsafe conditions relating to floor surfaces, lighting, or obstruction to materials handling, or
- (4) a combination of (1), (2), or (3) is implemented.

HAZARDOUS ATMOSPHERE – CONFINED SPACE

Work in Confined Spaces

3.4.1

The mine manager shall ensure that

- (a) written procedures are developed and implemented for work in confined spaces in consultation with the OHSC or worker representative, as applicable,
- (b) an inventory of all confined spaces is maintained,
- (c) each confined space is signed and secured from entry, where practicable, and
- (d) each person who is assigned duties or responsibilities related to entry into a confined space is adequately instructed and trained in confined space entry.

Safe Work Procedures to Include

3.4.2

The procedures required under section 3.4.1 shall include all of the following:

- (a) assignment of responsibilities, including those of the stand-by person;
- (b) a hazard assessment;
- (c) the issuance of suitable entry permits identifying
 - (i) the supervisor of record,
 - (ii) the confined space and the work activities
 - (iii) to which it applies,
 - (iv) the workers who are inside the space,
 - (v) the required precautions for the space,
 - (vi) the time of expiration of the permit, and
 - (vii) the gas readings results and conditions found in the confined space;
- (d) the use of lifelines and harnesses designed for the purpose for which it is intended and that meet the following standards:
 - (i) CAN/CSA-Z259.1-05 Body Belts and Saddles for Work;
 - (ii) CAN/CSA-Z259.2.1-98 (R2004) Fall Arrest Vertical Lifeline and Rails;
 - (iii) CAN/CSA-Z259.2.2-98 (R2004) Self Retracting Device for Personal Fall Arrest Systems;
 - (iv) CAN/CSA-Z259.2.3-79 Descent Control Devices;
 - (v) CAN/CSA-Z259.20-06 Full Body Harnesses;
 - (vi) CAN/CSA-Z259.11-05 Energy Absorbers and Lanyards;
 - (vii) CAN/CSA-Z259.12-06 Connecting Components for Personal Fall Arrest Systems ;
 - (viii) CAN/CSA-Z259.13-04 Flexible Horizontal Lifeline Systems;
 - (ix) CAN/CSA-Z259.16-04 Design of Active Fall Protection Systems;
- (e) when lifelines and harnesses cannot be used, sufficient resources with respiratory equipment capable of performing a rescue shall be stationed outside the confined space;
- (f) maintenance of an effective means of communication between persons inside and outside the confined space, and between the person outside the confined space and emergency services;
- (g) specified time intervals for making visual contact with persons inside the confined space;

- (h) specific procedures to be followed whenever welding or burning operations are to be carried out in the confined space;
 - (i) appropriate breathing apparatus and persons trained in its use and readily available at every confined space in which persons are working,
 - (j) compressed air used for breathing complying with the requirements of CSA Standard CAN-3-Z1 80.1M85 Series;
 - (k) lockout, disconnection, blanking or blinding of pipes carrying substances that could be hazardous to the persons entering the confined space in accordance with section 4.11; blanking and blinding shall comply with engineering standards acceptable to the chief inspector;
- (1) An Emergency Response Plan and, for facilities without onsite rescue capability, the owner, agent or manager shall make arrangements with an emergency response agency, such as a fire department, detailing the services that are to be provided.
 - (2) A cylinder of compressed gas is not permitted inside a confined space except for a cylinder of compressed air supplied to a respirator, medical resuscitation equipment, handheld aerosol spray containers, fire extinguishers, or other equipment acceptable to the chief inspector.
 - (3) If any of the information in section 3.4.2(1)(c) changes, the manager shall amend the permit.
 - (4) Records of the permits shall be kept for a minimum of one year.
 - (5) Electrical tools and equipment used in a confined space shall be
 - (a) grounded or double-insulated and so marked, and
 - (b) protected by an approved ground fault circuit interrupter if wet or damp conditions exist inside the space.
 - (6) Electrical equipment used in a confined space where a hazardous atmosphere is or may be present shall meet the requirements of Section 18 (Hazardous Location) of the *Canadian Electrical Code* Part 1 CAN/CSA C22.1-06.

Test of Confined Space

3.4.3

- (1) A person without self-contained breathing apparatus shall not enter a confined space in which a harmful atmosphere might exist or develop until
 - (a) tests have been made to determine the nature and quantity of harmful vapours, gases, fumes, mists, dusts, and the oxygen content of the atmosphere inside the confined space and these test results shall be recorded by the manager,
 - (b) the written work procedures under section 3.4.1(a) have been read and understood by the person and the required emergency and rescue procedures are in place, and
 - (c) the confined space is being ventilated continuously by a mechanical ventilation system.
- (2) A ventilation system for the control of airborne contaminants shall be designed, installed and maintained in accordance with established engineering practices and specified in the written procedures.
- (3) If a contaminant is produced in the confined space, it shall be controlled at the sources by a local exhaust ventilation system if practicable, by general ventilation, or by a combination of both.

Test of Intervals

3.4.4

Tests of the atmosphere inside the confined space shall be continuous during the work process to ensure that the quality of the air does not deteriorate and the test results shall be recorded as required by section 3.4.3(1)(a).

Confined Space Ventilation

3.4.5

Where tests made under 3.4.3 and 3.4.4 or any other test or examination indicates a harmful atmosphere or the presence of a harmful substance, the confined space shall be ventilated or cleaned, or both, and retested or re-examined to ensure that no person without self-contained breathing apparatus is allowed to enter the confined space unless

- (1) the atmosphere or substance in the confined space is no longer considered harmful according to the acceptable standards prescribed in part 2 of the code, and
- (2) the oxygen content of the atmosphere inside the confined space is not less than 19.5%.

Wearing of Protective Equipment

3.4.6

- (1) Where tests under sections 3.4.3 and 3.4.4 indicate the presence of a hazardous atmosphere and it is not practical to provide a safe, respirable atmosphere
 - (a) the persons entering the confined space shall
 - (i) wear self-contained breathing apparatus and personal protective equipment, or
 - (ii) have an approved supplied air system equipped with an emergency escape bottle, and wear personal protective equipment,
 - (b) the concentration of flammable substances shall be maintained below 20% of the lower explosive limit as determined by continuous testing, and
 - (c) all possible sources of ignition shall be eliminated or controlled, and only non-sparking tools may be used where flammable substances exist.
- (2) If inerting is required or utilized, persons entering the confined space shall adhere to established engineering practices.

FIRE PREVENTION

Designation of Fire Hazard Areas

3.5.3

Fire hazard areas shall be identified by warning signs, and persons shall not smoke, use open flame lamps, matches, or other means of producing heat or fire in designated fire hazard areas.

INDUSTRIAL FIRST AID

First Aid Supplies

3.6.1

The manager shall provide and maintain first aid supplies and services as required by the Workers Compensation Board.

3.6.2

An inspector may order an increase in the first aid supplies or services required by section 3.6.1

Means of Communication

3.6.3

The manager shall provide a means of communication acceptable to an inspector by which the services of a physician can be obtained expeditiously.

MINE RESCUE

Mine Emergency Response Plan

3.7.1

- (1) The manager shall develop, and file with the chief inspector, a Mine Emergency Response Plan (MERP), which shall be kept up to date and followed in the event of an emergency.
- (2) The Mine Emergency Response Plan must
 - (a) outline the response procedures that are essential for effective and timely management of an emergency situation,
 - (b) contain all of the elements required in the "*Mine Emergency Response Plan Guidelines for the Mining Industry*", as amended from time to time,
 - (c) include the emergency preparedness and response plans as required under section 10.4.2 (1) (e) of this code regarding tailings storage facilities, and
 - (d) include affected communities and First Nations in the identification of potential hazards, emergency communications and responses.
- (3) The manager shall ensure that annual testing of the effectiveness of the Mine Emergency Response Plan is conducted and that First Nations are included in the annual testing of the plan for hazards identified.
- (4) A record of the annual testing referred to in subsection (3) must be included in the annual report submitted to the chief inspector.

Open Pit

3.7.5

The manager of an open pit mine employing more than 25 persons per shift shall ensure that

- (1) there is one fully trained and equipped mine rescue team, and
- (2) on every shift where more than 10 persons are working, there are four persons trained in mine rescue procedures.

Team Complement

3.7.6

The normal complement of a mine rescue team shall be 6 qualified members, one of whom shall be the team captain, one the vice captain, and one the coordinator who shall remain at the fresh air base at all times.

Mine Rescue Teams

3.7.7

A person shall not be considered as a qualified member of a mine rescue team unless

- (1) the person possesses a valid mine rescue certificate and a valid St. John standard first aid certificate and transportation endorsement or an equivalent standard acceptable to the chief inspector, free from a beard, moustache, or sideburns that could interfere with the facepiece seal of any breathing apparatus,

- (2) considered competent to act as a mine rescue team member by the person appointed as a trainer under section 3.7.9, and
- (3) medically fit for the nature of the work required.

Mine Rescue Records

3.7.8

The manager shall ensure a record of all mine rescue training is maintained at the mine site, and shall

- (1) ensure the logbook is maintained by the qualified person appointed by the manager, to conduct the training,
- (2) contain the particulars of the training, including the names of those participating and the trainer,
- (3) shall note the condition of all equipment used during the training.

3.7.9

The manager shall

- (1) appoint a qualified person as a trainer for mine rescue team members,
- (2) ensure that all mine rescue team members practice as a team for not less than 8 hours during each 3 month the mine operates, and
- (3) ensure that all mine rescue personnel are not underground at any one time except for rescue work or training.

Type of Breathing Apparatus

3.7.10

Where self-contained breathing apparatus is required it shall be of a type approved by a recognized certification agency, and suitable for the intended work.

Mine Plans for Rescue Purposes

3.7.11

The manager shall ensure that the plans required under part 6 of the code are readily available for the use of mine rescue teams.

3.7.12

The manager shall appoint a qualified person

- (1) to be responsible for the care and maintenance of all rescue apparatus,
- (2) the entries into a logbook to be kept at the mine recording the condition of all equipment used for mine rescue or fire fighting, and
- (3) the care of the rescue equipment storage room, and equipment caches.

Rescue Station

3.7.13

The chief inspector may establish mine rescue stations at places the chief inspector considers necessary, all of which shall be equipped and maintained by the government under the direction of the chief inspector.

EMERGENCY TRAINING

Instructor Emergency Procedures

3.8.3

The manager of a mine shall appoint a qualified person to instruct and establish a training program

for all employees in basic emergency response, and fire fighting.

FIRE FIGHTING

Fire Fighting Equipment

3.9.1

- (1) The manager shall ensure that fire fighting equipment is provided and maintained at all locations at the mine where fire may endanger life.
- (2) Unless specified otherwise in this code, *The British Columbia Fire Code* 1998 and subsequent supplements and revisions shall apply in determining the level of fire fighting equipment and maintenance as prescribe in subsection (1).

GAS DETECTORS

Approved Detector

3.12.1

Every device used for the detection of flammable or noxious gas at a surface or underground mine shall be of a type approved for such use by a recognized testing agency.

Servicing Detectors

3.12.2

The manager shall appoint a qualified person to be responsible for maintaining the appliances used for detection of flammable or noxious gases.

EVACUATION

Procedures and Instructions

3.13.1

The manager of a mine shall

- (1) prepare procedures for the safe evacuation of personnel from the mine, or part of the mine, if necessitated by an emergency,
- (2) post copies of the procedure in conspicuous places at the surface and underground, and
- (3) ensure that each employee receives instruction in the procedures prepared under subsection (1) and that he/she can recognize the emergency warning system and is familiar with the emergency escape routes from the mine.

Emergency Warning System

3.13.2

The manager shall develop and maintain a system acceptable to an inspector for warning all employees, whether underground or in buildings on surface, of an emergency requiring prompt evacuation of their work places.

Test of System

3.13.3

A test of the warning system required under section 3.13.2 that does not involve evacuation of key process personnel shall be carried out at least once every 12 months on a production shift, and the manager shall ensure that key process personnel unable to evacuate are knowledgeable with the warning system, and the evacuation procedure.

Report of Test

3.13.4

A report of all emergency warning system tests, including their effectiveness, shall be produced in a timely manner by the manager, reviewed by the OHSC and kept on file at the mine.



PART 4

BUILDING, MACHINERY, AND EQUIPMENT

TABLE OF CONTENTS

4.1	Buildings - General	111
4.2	Buildings - Surface	113
4.3	BC Fire Code 2018 - Excerpt	113
4.4	Fixed Equipment (Plant and Machinery)	113
4.5	Elevating Work Platforms and Aerial Devices	118
4.8	Flammable Materials	119
4.9	Mobile Equipment	119
4.10	Railways	124
4.11	Lock-Out Procedures	125
4.12	Lifting Devices - General	126
	(Bridge and Overhead Traveling Cranes, Monorails and Underhung Cranes)	
4.14	Temporary Work Platforms - General	128
4.15	Construction - General	129
4.16	Tilt-Up and Pre-Cast Building Construction	129
4.17	Excavations	129
4.18	Miscellaneous Hoisting Equipment	133
4.19	Miscellaneous Hoisting Equipment - Operation	135
4.20	Rigging	138
4.21	Slings	139
Tables		
	Table 17.1 Excavations Over 1.2M In Depth – Imperial Units ...	132
	Table 17.2 Excavations Over 1.2M In Depth – Metric Units	133



BUILDINGS - GENERAL

Design and Construction

4.1.1

- (1) All buildings shall be constructed in accordance with the *British Columbia Building Code*.
- (2) Where a building or structure is to be constructed, altered, dismantled, moved, or where major repairs are to be made, the manager shall ensure that
 - (a) drawings are prepared clearly showing all required field connections and any other information necessary for the safe completion of the work, or
 - (b) the work is supervised by a professional engineer.
- (3) Drawings of the completed building or structure shall be kept at the mine and any revisions to the drawings shall be noted.

Portable Heaters

4.1.3

Every portable heater shall conform to the relevant sections of the following code, as amended from time to time

- (1) CSA Standard B 139-00 "*Installation Code for Oil Burning Equipment*,"
- (2) CSA Standard B 149.1-00 "*Natural Gas and Propane Installation Code*,"
- (3) *Canadian Electrical Code*, and
- (4) CSA Standard B51-97 "*Boiler, Pressure Vessel, and Pressure Piping Code*."

Access to Work Areas

4.1.4

- (1) The manager shall ensure that all places where work is performed have safe means of access and egress and if necessary an alternate means of escape appropriate to the conditions of the work, and workers shall not use any other means that are, or may be, hazardous.
- (2) Where required by an inspector, aisles and passageways in work and in storage areas shall be clearly delineated by floor markings. Such markings shall be maintained in a clearly visible condition.
- (3)
 - (a) Emergency exits shall be clearly marked and designed to provide quick and unimpeded exit.
 - (b) doors shall not open directly onto stairways, but shall open onto floors or landings having a width in excess of the swing of the doors,
 - (c) double-acting swing doors shall be designed and installed to permit an adequate view through the doors, and
 - (d) transparent glass doors and glass panels shall be constructed of laminated, tempered, or wired safety glass meeting the current requirements of the *British Columbia Building Code*.

Equipment Entranceways to Buildings

4.1.5

- (1) Any entranceway, other than for persons, through which equipment is moved shall
 - (a) exceed in width by at least 500 mm the width of the equipment where the width of the equipment is less than 3 m,
 - (b) exceed in width by at least 1 m the width of the equipment where the width of the equipment is 3 m or greater, and

- (c) exceed in height by at least 300 mm the height of the equipment.
- (2) All power-operated vertical doors installed in equipment entranceways shall have devices along the lower edge which will automatically stop movement of the door upon sensing an intermediate obstruction or when it reaches floor level.

Storage of Materials

4.1.6

- (1) No material or equipment shall be so placed, stacked, or stored as to constitute a hazard to persons.
- (2) No person shall enter a bin, stockpile area, or any place where there is a danger of becoming trapped in loose material unless safe access has been provided by catwalks, walkways, or other means, or unless he/she is equipped with a safety belt and a secured lifeline and is attended by another person who is capable of effecting an immediate rescue.
- (3) Any area upon which materials may be dropped or dumped shall be barricaded and posted with warning signs to prevent persons from inadvertently entering

Handrails and Guardrails

4.1.7

- (1) Every flight of stairs having more than 4 risers shall be equipped with handrails on all open sides of the stairways, and on one side of an enclosed stairway 1.12 m or less in width, and on both sides of an enclosed stairway over 1.12 m in width.
- (2) The top of a handrail shall be at a height of 810 mm to 910 mm above the stair tread, measured vertically from the nose of the tread, and the height shall not vary on any flight or succession of flights of stairs.
- (3) Handrails on open-sided stairways shall be fitted with midrails located approximately equidistant from the top of the handrail and the nose of the stair tread.
- (4) When a stairway ends in direct proximity to dangerous traffic or other hazards, detour guardrails shall be installed.

Standard Guardrails

4.1.8

- (1) Standard guardrails shall be installed where any open-sided floor, working platform, runway, walkway, or balcony is more than 1 m above grade or floor level.
- (5) When persons are employed around open tanks, containing liquids or harmful substances, the sides of the tanks shall be constructed to extend at least 1 m above any working platform, or standard guardrails shall be provided to prevent persons from falling into the tanks.

Floor Openings

4.1.9

Openings or pits in floors, roofs, walkways or work areas accessible to persons, shall be securely covered or fitted with fixed, removable or collapsible guardrails.

Toe-boards

4.1.10

- (1) Notwithstanding section 4.1.8, toe-boards are not required to be installed with a standard guardrail

- (a) where persons do not or cannot work underneath, or
 - (b) where there is no machinery located below.
- (2) Where materials are stored nearby, toe-boards shall be increased in height, or solid or mesh panels of appropriate height shall be installed to prevent any material from falling.

Walkways and Vehicle Curbs

4.1.11

- (1) Walkways shall not be less than 500 mm in width and shall be provided with safe access by stairways or fixed ladders.
- (2) Where necessary, curbs or bullrails not less than 250 mm in height, or similar means, shall be used to prevent vehicles or other equipment from running off the edge of an elevated surface.

BUILDINGS – SURFACE

Repair Shops

4.2.1

- (1) A repair shop shall be located such that site conditions favour adequate drainage away from the shop.
- (2) Designated parking areas in the vicinity of the repair shop shall be clearly marked.

BC FIRE CODE 2018 - Excerpt

Fire Protection and Control

4.3.8

Every fuel storage tank shall

- (1) have a means of accurately determining the amount of fuel it contains,
- (2) be identified as to its contents and that it is a fire hazard area, and
- (3) be surrounded by a dike or curb capable of containing 110% of its storage capacity.

FIXED EQUIPMENT (PLANT AND MACHINERY)

Fall Arresting Devices

4.4.1

- (1) Subject to subsection (5), where a person is exposed to the hazard of falling more than 3 m, a fall arresting device shall be used.
- (2) The fall arresting device required by subsection (1) shall comply with the relevant design and performance requirements of
 - (a) CSA Z259.1-95 "Safety Belts and Lanyards", or
 - (b) CSA Z259.2.1-98 "Fall Arresters, Vertical Lifelines and Rails", or
 - (c) CSA Z259.2.2-98 "Self-Retracting Devices for Personal Rail-Arrest", or
 - (d) CSA Z259.2.3-98 "Descent Control Devices."
- (3) Safety belts, harnesses, lanyards and lifelines shall not be knotted or allowed to become knotted.
- (4) When in use with a fall arresting device, a lifeline shall be anchored so that a person cannot fall, free of arrest, for more than 1220 mm, and it shall be connected to an object that is free from sharp edges and capable of resisting the force of an arrest.

Moving Parts of Machinery

4.4.2

Unless situated so as to prevent a person coming into accidental contact with it, every drive belt, chain, rope or pulley, sprocket, flywheel, geared wheel and every opening through which any belt, pulley or wheel operates, and every bolt, key, set screw and every part of any wheel or other revolving part that projects unevenly from the surface shall be effectively enclosed, covered, or guarded.

Grinders

4.4.3

- (1) A grinder shall be assembled, adjusted and operated in accordance with the manufacturer's specifications.
- (2) The maximum speed at which a grinding wheel may be operated shall be indicated on the grinding wheel or be easily obtainable.
- (3) A grinding wheel shall be
 - (a) enclosed by a protective hood except for the area at the workrest,
 - (b) stored where it will not be damaged by impact, extreme heat or cold, and
 - (c) stopped when the grinder or workrest is being adjusted.
- (4) The operator of a grinder shall wear a face shield complying with the relevant requirements of CSA Standard Z94.3.99.
- (5) The workrest on a grinder shall be mounted above the centre line of the grinding wheel and not more than 3 mm from the wheel unless otherwise specified by the manufacturer.
- (6) An air-operated grinder shall have a governor to prevent it operating in excess of the rated speed of the grinding wheel.
- (7) The governor required by subsection (6) shall be inspected regularly and maintained in proper condition.
- (8) Powered grinding wheels, other than portable hand held machines, shall be equipped with an exhaust system or other means for removing dust produced during the grinding operation.

Chain Saws

4.4.4

Chain saws shall meet the requirements of CSA Z62.1-95 "Chain Saws".

Pneumatic Tools

4.4.5

- (1) Portable pneumatic nailing and stapling tools capable of driving a fastener having a nominal diameter exceeding 1.2 mm (18 gauge ASWG), shall be designed so that the operator is required to make not less than two separate operations to activate the tool. One of these operations shall be to place the tool against the work surface.
- (2) Under no circumstance shall the operating trigger be taped or otherwise secured in the "on" position, or held in the "on" position while moving between operations.
- (3) The air supply shall be disconnected before the tool is serviced or any adjustments made.
- (4) The safe operating air pressure specified by the manufacturer for tools, hoses and fittings shall not be exceeded.

Servicing of Running Machinery

4.4.6

- (1) Where machinery requires that it be serviced while in motion
 - (a) it shall be so constructed that the servicing may be performed without removing any protective fence or guard, and
 - (b) only that part of the machinery which is vital to the process shall be energized, and
 - (c) only qualified persons shall be employed in such operations, and
 - (d) the manager shall establish a safe procedure, which shall be available to employees and posted in suitable locations.
- (2) Where it is necessary to remove guards or fences from machinery for servicing purposes, the machinery shall be stopped and locked-out in accordance with sections 4.11.1 to 4.11.7.

Welding and Burning Equipment

4.4.7

- (1) Whenever torches or welding equipment are being transported or used, the manager shall require that safe procedures are developed and followed.
- (2) Every compressed gas cylinder containing fuel gas or other gas, when not in use, shall
 - (a) be stored in an upright position and kept in a well ventilated area free from flammable material and electrical apparatus, and
 - (b) have a securely fastened, approved valve protection cap, and be adequately secured by chains or other acceptable means to prevent it from being knocked over.
- (3) At any time that compressed gas cylinders are being transported, they shall be secured on a special carrier or container designed for the purpose, and unless the carrier or container is of a type intended for safely moving gas cylinders, the cylinders shall be fitted with securely fastened, approved valve protection caps.

Powder-actuated Tools

4.4.8

A powder-actuated fastening system, consisting of the tool, power loads and fasteners shall meet the requirements of ANSI Standard A10.3-1995, "American National Standard for Construction and Demolition Operations - Safety Requirements for Powder-Actuated Fastening Systems"

Lifting Devices

4.4.9

- (1) A lifting device shall be designed, constructed and installed in accordance with recognized standards and good engineering practice, provided with overwind protection if power operated, and provided with an identification plate.
- (2) The maximum load that a lifting device may carry shall be established by its designer.
- (3) A notice showing the maximum established load shall be posted in a location visible to the operator and, except during testing, it shall not be exceeded.
- (4) Each component that may affect the safe operation of a lifting device shall be examined and tested by a qualified person before initial use and thereafter at intervals not exceeding one year, and a record shall be kept showing the dates, findings and names of the qualified persons performing the examinations and tests and the record shall be kept available for inspection.

- (5) Where a combination of lifting devices is used simultaneously, the work shall be supervised by a qualified person.

Install Fire Production

4.4.10

- (1) Fire extinguishing equipment of suitable type and size shall be provided at all fire hazard areas.
- (2) A fire suppression system consisting of sprinklers, foam or other suitable means of suppressing fire shall be provided
 - (a) in an underground mine on fixed equipment containing more than 10 L of flammable fluids actuation of the fire suppression system shall also cause power shut off, and
 - (b) on the surface, in a building or structure, except a fan house, located above or adjacent to an opening to an underground mine.

Engine Exhausts

4.4.12

- (1) The exhaust of an internal combustion engine which is temporarily or permanently installed within a building on the surface shall be conducted to a point outside the building and prevented from re-entering the building, entering the intake of any compressor, contaminating the atmosphere of another building and contaminating mine workings.
- (2) No internal combustion engine shall be used in potentially hazardous areas, as defined in the Canadian Electrical Code, Part 1, of surface mine buildings, unless the manager has obtained permission, in writing, from an inspector.

Conveyor Belts

4.4.16

- (1) No person shall ride on a conveyor belt.
- (2) No person shall cross a conveyor belt except at an established foot bridge not less than 500 mm in width equipped with guardrails.
- (3) Every conveyor way shall be provided with a walkway or other acceptable access for maintenance and inspection purposes.
- (4) Every accessible section of a conveyor shall be provided with a pull cord to stop the conveyor in an emergency and the controls shall be arranged so that they have to be reset manually before the conveyor can be restarted after an emergency stop.
- (5) On every conveyor which can be started automatically by remote control or where the operator has limited visibility of the whole conveyor, an audible start up warning device shall be installed and there shall be a time delay of at least 10 seconds between the end of a minimum 10 second warning and conveyor start up.
- (6) All head, tail, drive, and tension pulleys of a conveyor shall be effectively guarded at their nip points and the guards shall extend for a distance of at least 1 m from the nip point.
- (7) A belt conveyor used underground, or a belt conveyor more than 15 m in length installed in a building, or other closed-in structure, shall be provided with a belt slip detection device to stop the drive motor in the event of belt blockage or slippage, and when required by the inspector, with an effective sprinkler system and plugged chute switches which shall stop the conveyor when a plugged chute condition occurs.

Cleaning Up Spillage

- (8) Servicing, or cleaning up spillage, on or around a moving conveyor belt shall only be carried out
 - (a) where the conveyor system is so constructed that the work can be done safely and without removing any protective fences or guards, and
 - (b) by persons who have been fully trained and authorized by the manager to do the work.
- (9) When it is necessary to remove protective fences or guards for servicing or cleanup, the conveyor shall be stopped and locked out in accordance with sections 4.11.1 to 4.11.7 of this code.
- (10) All guards or fences removed during cleanup or servicing shall be replaced before the locks are removed and the conveyor is started.
- (11) The manager shall develop safe work procedures for any work near moving conveyors and submit any major or significant changes to established safe work procedures to the chief inspector for approval and these procedures shall
 - (a) address specific problems associated with each conveyor at the mine and indicate the speed at which each conveyor travels, and
 - (b) for cleanup of spillage, include a safe procedure or mechanism for return of material to a moving belt, and a procedure or mechanism to allow the removal of materials lying below the conveyor that protects persons from contact with the moving parts of the conveyor and any material that may fall from the conveyor.
- (12) Conveyor belting for use in the transportation of coal or in an explosive atmosphere and in all underground locations shall meet the requirements of CSA Standard CAN/CSA-M422-M87 "Fire Performance and Antistatic Requirements for Conveyor Belting" or an equivalent standard subject to approval by the chief inspector.

Portable Ladders

4.4.20

Portable ladders shall meet the requirements of CSA Standard CAN3-Z1 1-M81 "Portable Ladders" or other equivalent standard.

Construction of Portable Ladders

4.4.21

Where portable wooden ladders are constructed and used at a mine

- (1) the side rails shall measure not less than 38×89 mm (nominal 2"×4") for ladders up to 5 m in length and not less than 38×140 mm (nominal 2"×6") for ladders over 5 m in length,
- (2) the cleats (rungs) shall be solid lumber not less than 21×89 mm (nominal 1"×4") spaced not more than 300 mm apart, secured in place by nails and with filler blocks of equal thickness to the cleat,
- (3) the width between the side rails shall not be less than 380 mm or more than 500 mm,
- (4) a double cleat ladder shall have 3 side rails, evenly spaced, be not less than 1070 mm and not more than 1270 mm in total width, and have cleats that extend the full width of the ladder, and
- (5) material used for a ladder shall be of #2 grade or better from the following groups: Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir or Coast-Sitka-Spruce; all lumber shall be graded to the National Lumber Grades Authority Rules or other approved grading rules.

4.4.22

Only transparent, protective coatings shall be applied to wooden ladders.

4.4.23

A portable single or extension ladder shall be held, tied or otherwise secured against slipping. The ladder shall extend at least 1 m above any upper landing to which it provides access.

Fixed Ladders**4.4.24**

Fixed ladders shall meet the requirements of the American National Standards Institute (ANSI) Standard A14-3-1992 "Safety Requirements for Fixed Ladders" or other equivalent standards.

Piping Systems Buried Lines**4.4.25**

- (1) Piping systems containing substances hazardous to workers because they are corrosive, toxic, flammable or containing an expansible fluid, as defined in the Safety Standards Act, Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation, under pressure shall be identified by a labeling or marking system.
- (2) Workers shall be trained to identify the labeling.
- (3) The marking or labeling shall be maintained in a legible condition.

4.4.26

Any new installations and where identifiable, any existing buried pipelines, power cables and storage tanks shall be plotted on accurate surface mine plans and where required by the inspector, identified by a system of stakes or signs on the surface.

ELEVATING WORK PLATFORMS AND AERIAL DEVICES**Standards****4.5.1**

Except as otherwise specified, all elevating work platforms, other than fire-fighting aerial devices, shall be designed, fabricated, operated, inspected, tested and maintained in accordance with the following standards:

- (1) CSA Standard CAN/CSA-C225-00 "Vehicle-Mounted Aerial Devices,"
- (2) CSA Standard CAN3-B354.1-M82 "Elevating Rolling Work Platforms,"
- (3) CSA Standard CAN3-B354.2-01 "Self-Propelled Elevating Work Platforms,"
- (4) CSA Standard CAN3-B354.4 "Boom-Type Elevating Work Platforms,"
- (5) CSA Standard B335.1-1994 "Low Lift and High Lift Trucks,"
- (6) manufacturer's instructions, and
- (7) other standards acceptable to the chief inspector.

Forklift Truck Platforms**4.5.2**

Work platforms mounted on forklift trucks and not conforming to section 4.5.1 may be used for emergency or infrequent operations if they are secured to the fork carriage and meet the requirements of section 4.5.3.

Guard Rails**4.5.3**

Elevating work platforms and all similar aerial platforms shall have

- (1) standard guardrails on all open sides or be enclosed to provide equivalent protection (toe-boards may be omitted at the access openings),
- (2) guards to protect the occupants from the elevating machinery, and
- (3) signs clearly indicating the safe maximum working load.

Nondestructive Testing

4.5.4

All vehicle mounted aerial devices and self-propelled boom-type elevating work platforms shall have critical components non-destructively tested by a qualified person prior to their introduction to a minesite, and at intervals not to exceed 12 months.

Electrically Insulated Aerial Device

4.5.5

Any aerial device or component thereof that is stated by the manufacturer as being electrically insulated shall be tested annually to ensure that it meets the requirements of CAN/CSA-C225-00 "Vehicle- Mounted Aerial Devices".

4.5.6

Any defects found during the tests required by sections 4.5.4 and 4.5.5, shall be repaired in accordance with instructions issued by a professional engineer before being returned to service.

Logbook

4.5.7

A logbook shall be maintained for each vehicle- mounted aerial device and self-propelled boom-type elevating platform in which any defect, operating difficulty, inspection, test, maintenance, modification and repair work is to be recorded. All entries shall be dated and signed by the person responsible for the work.

FLAMMABLE MATERIALS

4.8.3

Flammable materials shall only be stored in areas approved by the manager and designed for such storage.

MOBILE EQUIPMENT

Rubber-tired and Tracked Mobile Equipment Maintenance

4.9.01

- (1) The manager shall ensure that brake and steering systems on tracked or rubber-tired mobile equipment are maintained in safe operating condition through a regularly scheduled preventative maintenance program.
- (2) Maintenance on braking and steering systems on tracked or rubber-tired mobile equipment shall be performed by or under the supervision of a certified person.
[effective June 1, 2018]
- (3) Records of the maintenance under subsection (1) must be readily available for review by an inspector upon request.

Back-up Alarm

4.9.1

- (1) The manager shall ensure that every unit of rubber tired mobile equipment in regular use at a mine in excess of 7000 kg gross vehicle weight is equipped with a "back-up" alarm which meets the requirements of SAE J-1446 and SAE J-994. Underground

mobile equipment designed for bi-directional use shall be excluded from this requirement.

- (2) The alarm shall be clearly audible above the background noise at the workplace and it shall continue as long as the equipment is moving in reverse.
- (3) Mobile equipment operating in a mine may use a visual back-up alarm in place of an audible back-up alarm providing that the visual back-up alarm complies with the following criteria:
 - (a) the light shall be clearly visible above the usual daily light levels,
 - (b) actuation of the alarm shall be completely independent of the operator, and
 - (c) the light shall flash as long as the vehicle transmission is in the reverse position.

Transmission Interlock

4.9.2

Every unit of mobile equipment having a fluid drive transmission shall be equipped with an interlocking system, maintained in working condition, to prevent the unit from being started and put into motion unless the transmission selector is returned through the neutral position.

Fire Extinguisher

4.9.3

Every vehicle shall carry at least one fire extinguisher of adequate size and of the proper type.

Vehicle Requirements

4.9.4

- (1) All rubber tired mobile equipment over 7000 kg gross vehicle weight shall have a minimum of two wheel chocks which shall be used whenever necessary.
- (2) All mobile equipment shall have, maintained in working condition, the following:
 - (a) a firmly secured seat for the operator and any authorized passenger, well maintained in a comfortable, shock absorbing condition;
 - (b) approved safety seat belts;
 - (c) suitable clearance lights and reflectors;
 - (d) if an operator cab was provided as part of the original equipment package, or subsequently fitted, windshields, side and rear windows, and rear vision mirrors maintained to provide clear visibility, and the glazing material shall meet the specifications of ANSI Standard Z26.1 - 1990 "Safety Glazing Materials for Glazing Motor Vehicles".

4.9.5

A vehicle, other than a vehicle used directly for production in an operating open pit, shall, additional to that equipment required for highway driving, be equipped with

- (1) a whip antenna that is fitted with a flag and lamp high enough to be visible to the drivers of all production vehicles, or
- (2) a flashing light mounted above the cab of the vehicle.

Transportation of Persons

4.9.7

The manager shall ensure that vehicles regularly or primarily used as personnel carriers are suitable for the intended purpose.

Personnel Carriers and Hazardous Materials

4.9.8

- (1) Every personnel carrier shall be inspected each day by an authorized person before being used to transport persons, and if any defects are found which could affect the safe operation of the vehicle they shall be corrected before it is used.
- (2) Where it is necessary to transport hazardous materials on a personnel carrier at the same time as persons, the materials shall be in an isolated compartment, adequately ventilated and drained, and accessible only from outside of the vehicle. If the compartment is inside the vehicle, it shall be separated from the passenger section by an approved firewall.

Data Plate

4.9.9

- (1) No truck or loader shall be operated within a mine unless there is affixed to the inside of the cab, at a place clearly visible to the operator, a nameplate of the vehicle manufacturer showing the serial number and maximum rated load capacity of the vehicle.
- (2) Where a truck, scraper or any other rubber tired vehicle, has a gross vehicle weight in excess of 45,000 kg, the name plate referred to in subsection (1) shall also show the maximum allowable speeds at the rated gross vehicle weight that the retarder and/or braking system is designed to accommodate when traveling on
 - (a) the maximum downgrade on which the vehicle is designed to operate, and
 - (b) not less than 2 other specified slopes between such maximum downgrade slope and level ground.

Braking and Steering Modifications

4.9.10

Every truck, loader or other rubber tired vehicle having a manufacturer's gross vehicle weight in excess of 45,000 kg shall have any modification affecting the braking, steering or resulting in an increase to the gross vehicle weight be approved by the chief inspector.

Rollover Protective Structures

4.9.11

- (1) A loader, grader, scraper, tractor, compactor roller, skidder, rough terrain fork lift, bulldozer, and off-highway haul truck introduced into service after July 1, 1991, shall be equipped with a rollover protective structure that conforms with any of the following standards
 - (a) Society of Automotive Engineers, Standard SAE-J1040 April 1988 "Performance Criteria for Rollover Protective Structures (ROPS) For Construction, Earthmoving, Forestry and Mining Machines,"
 - (b) "Earthmoving Machinery Rollover Protective Structures – Laboratory Tests and Performance Requirements ISO 3471, or
 - (c) Canadian Standards Association, Standard B352.095 "Rollover Protective Structures (ROPS) for Agricultural, Construction, Earthmoving, Forestry, Industrial, and Mining Machines."
- (2) Where the mobile equipment referred to in subsection (1) is designed mainly for underground use,

- (a) a ROPS designed by a professional engineer shall conform to Clause 6 of CSA B352-M1980 but does not require physical testing, or

Falling Object Protective Structures (FOPS)

- (b) a FOPS (Falling Object Protective Structures) canopy may be substituted for a ROPS canopy provided it is specifically approved by the chief inspector.
- (3) Side-by-side utility task vehicles (UTVs) or side-by-side all-terrain vehicles (ATVs) shall have a ROPS that conform to OSHA29 BFR1928.53 certified ROPS or Canadian Standards Association, Standard B352.095 or another standard as accepted by the chief inspector.

4.9.12

- (1) The following information shall be permanently marked on rollover protective structures
 - (a) the name and address of the manufacturer or the registered professional engineer who certified the ROPS,
 - (b) the model,
 - (c) the make, model, and series of the machine for which the rollover protective structure is designed, and
 - (d) where the ROPS has been designed and constructed in accordance with section 4.9.11 (2), the notation "Underground Use Only" shall be added.
- (2) Seat belts of a type conforming with the recommended Practice of the Society of Automotive Engineers SAE-J-386 "Operator Restraint Systems for Off-Road Work Machines" shall be installed in all mobile equipment fitted with a rollover protective structure and the operator of the equipment shall wear the seat belt when operating the equipment.

Rollover Protective Structures ROPS

4.9.13

- (1) No addition, modification, welding or cutting of a ROPS shall be permitted except in accordance with the instructions of a registered professional engineer and all modified ROPS shall be permanently marked to show the modifications made, the date of recertification and the name and address of the certifying engineer.
- (2) A registered professional engineer may re-certify a damaged, deformed or deteriorated ROPS, after repairs have been made, if he/she is satisfied that the structural integrity has not been impaired.
- (3) ROPS shall be designed and fitted so as not to restrict the operator's field of vision

Tires and Rims

4.9.14

- (1) The manager shall ensure that procedures are in place for the inspection and any work on tires and rims of equipment.
- (2) A tire shall not be installed on any damaged, broken, bent or heavily rusted rim assembly and mismatched parts of rims and wheels shall not be used.
- (3) No person shall work on tires and rims unless qualified.

Securing of Equipment

4.9.15

- (1) Trucks with dump boxes shall be equipped with a permanently attached device for securing or locking the box in a raised position, or carry suitable equipment on board for this purpose.
- (2) No person shall place himself/herself beneath the raised box of a dump truck, bulldozer blade, scraper blade, loader bucket or similar equipment unless it is securely and adequately blocked or otherwise secured independently of the normal operating controls.

Brakes

4.9.16

- (1) Mobile equipment must have braking systems meeting the requirements of the following applicable standard, or other standard acceptable to the chief inspector:
 - (a) Society of Automotive Engineers (SAE) Standard J/ISO3450 JAN 98, Earthmoving Machinery – Braking Systems of Rubber-Tired Machines – Systems and Performance Requirements and Test Procedures;
 - (b) Society of Automotive Engineers (SAE) Standard J1026 APR 90, Braking Performance – Crawler Tractors and Crawler Loaders;
 - (c) Society of Automotive Engineers (SAE) Standard J1472 JUN 87, Braking Performance – Roller Compactors;
 - (d) ANSI Standard ANSI/ASME B56.6-1992, Safety Standard for Rough Terrain Forklift Trucks;
 - (e) ANSI Standard ASME B56.1-1993, Safety Standard for Low Lift and High Lift Trucks.
- (2) When required by the inspector, an independent means of retardation shall be provided in addition to the requirements of subsection (1).

Parking Brake

4.9.17

Every motor vehicle shall be equipped with an effective, mechanically activated parking brake, the holding power of which is not affected by loss of fluid or air pressure from the braking system.

Common Components

4.9.18

On any vehicle where components that apply the service brakes and the emergency brakes are common, the components shall be arranged so that a failure in a common component does not reduce the capability of one of the systems to stop the vehicle safely.

Brake Testing (Annual)

4.9.19

- (1) Trucks having a manufacturer's rated gross vehicle weight in excess of 45,000 kg shall be subjected to downgrade braking tests such that at least once a year 50% of the fleet is tested, and every truck in the fleet is tested at intervals not exceeding 3 years. The tests shall be as follows:
 - (a) the vehicle shall be loaded to the manufacturer's maximum permissible gross vehicle weight,
 - (b) the tests shall be conducted on a well-graded hard packed downgrade

- slope of uniform grade of between 8% and 10% or where there is no downgrade slope satisfying this condition, tests shall be conducted on the maximum downgrade slope over which the trucks are operated,
- (c) auxiliary retarding devices shall not be used during the brake tests, and
- (d) stopping distances shall be measured from the initial point of application of the service brakes to the final stopping position, from an initial speed of 40 km/h, and the minimum acceptable brake performance shall be as follows:

INITIAL SPEED 40 KM/H	
Grade	Stopping Distance
10%	84 m
9%	76 m
8%	68 m (2)

- (2) Where a vehicle fails to meet the minimum brake performance standards specified under subsection (1) (d), it shall be removed from service until corrective measures have been taken and the vehicle meets the standard.

Auxiliary Steering

4.9.20

- (1) If wheeled mobile equipment having rated speed capability exceeding 20 km/h depends on engine power for steering and power failure will prevent the vehicle from being steered manually, a supplementary system shall be provided to enable the operator to steer to a controlled stop.
- (2) The supplementary steering system required by subsection (1) shall meet the requirements of Society of Automotive Engineers (SAE) Standard J151 1 ISO5010 FEB 94, Steering For Off-Road, Rubber-Tired Machines.
- (3) When hydraulic accumulators are used to provide power to supplemental steering systems, they shall depressurize when the engine is deliberately shutdown.

Automatic Engine Shutdown

4.9.21

Where automatic engine shutdown devices are employed on vehicles, audible and visual alarms shall be installed in the operator's cab to pre- warn the operator that an automatic engine shutdown is imminent.

RAILWAYS

Trains – Fitments

4.10.1

- (1) All trains shall be equipped with suitable tail lights and clearance lights.
- (2) If trains are required to reverse, they shall be equipped with a suitable beam or flashing tail light and if they are to be reversed frequently and for lengthy distances, a procedure shall be followed which is acceptable to the inspector.
- (3) Every trolley locomotive shall be operated with the trolley pole in the trailing position, unless there is no room to reverse the pole, in which case speed shall not be more than walking speed.
- (4) A car shall not be pushed by a locomotive if material extends beyond the length of the car.

- (5) Each locomotive shall be equipped with suitable fire extinguishers.
- (6) Nothing shall be placed on the top of a locomotive unless it is necessary for its operation and, in that case, it shall be adequately secured, must not extend beyond the ends or sides of the locomotive or into the cab area, and must not obstruct the operator's view.

4.10.2

An engine, locomotive, or trolley car used for hauling material shall be equipped with

- (1) properly maintained headlights and clearance lights, and
- (2) an audible warning system, which shall be sounded by the operator to warn persons when they may be endangered by movement of the locomotive or train, and whenever the locomotive or train is about to move.

Control Levers

4.10.3

Every storage battery and trolley haulage locomotive shall be equipped with a "deadman" control switch and with a control lever so installed that the lever cannot be removed when the power is on.

Unattended Locomotives

4.10.4

- (1) No person shall leave an electric haulage locomotive unattended unless the brakes have been set, the control lever placed in the park position, and the main switch placed in a non-operating position.
- (2) Subsection (1) does not apply if the locomotive is on automatic control and approval has been obtained from the chief inspector.
- (3) When operated by remote control or by an automated system, it shall be arranged that in the event of any failure of the control or system, the locomotive and cars will be brought to a stop immediately.

LOCK-OUT PROCEDURES

Lock-Out Procedures

4.11.1

- (1) The manager shall develop a lock-out procedure which includes but, is not limited to, the requirements of section 4.11.2 to section 4.11.7 inclusive, and he/she shall ensure that all persons required to lock-out machinery or equipment are adequately trained in the procedure and that a written copy of it is made available to them.
- (2) Notwithstanding subsection (1) where a large number of persons is involved, the manager may develop a lock-out procedure, acceptable to an inspector that modifies the requirements of sections 4.11.4 and 4.11.5.
- (3) The lockout procedure developed in section 4.11.1(1) should address the event that a lock has not been removed and the shift has ended.

Power to Be Cut Off

4.11.2

- (1) Before any work is performed on electrical equipment, the main power source shall be disconnected, lock-out and tagged.
- (2) Where equipment to be worked on is powered by a source other than electricity, the power supply shall be shut off, locked-out and tagged. A means shall be provided to safely release the stored energy from the equipment before any work begins. If a

valve in a pipe could leak and allow water, steam, compressed air or other potentially hazardous substance to reach persons working on the equipment, the pipe shall be blanked off, or otherwise isolated, in accordance with the lockout procedure.

Locks and Tags

4.11.3

- (1) Locks and tags shall be issued to each person who works on machinery or equipment that has to be locked-out.
- (2) A lock issued to any person shall only be capable of being opened by that person's key except that where a number of locks are issued to a person for his/her sole use, they may be mastered to a single key.
- (3) Tags issued to individual persons shall contain space for the recording of the person's name, the type of work being performed, the date and time the work was started and the name of the supervisor in charge.

Affixing and Removal of Locks and Tags

4.11.4

- (1) Each person who works on machinery or equipment requiring to be locked out shall be responsible for affixing his/her own lock and tag to the lock-out device and for removing them on the completion of his/her work.
- (2) The person who affixes the first lock in the lockout procedure shall, before the work begins, attempt to start the equipment or machinery to ensure that it is properly locked-out.
- (3) A lock shall only be removed by the person who affixed it to the lock-out device.

Overlap Between Shifts

4.11.5

- (1) When machinery or equipment is locked-out, employees coming on shift shall place their own locks on the lock-out device before the employees going off shift remove theirs.
- (2) A supervisor may lock-out the machinery or equipment during a shift change to allow employees going off shift to remove their locks.

Procedure Before Work Recommences

4.11.6

When work is completed on locked-out machinery or equipment, and before any locks or tags are removed, all guards, fences and other safety devices shall be replaced.

Watchman's Responsibilities

4.11.7

In the event that the machinery or equipment cannot be locked-out, a tag shall be affixed and a watchman shall be posted at a location where he/she can prevent anyone from re-energizing the power supply and starting the machinery or equipment. The watchman shall have no other duties at the time and he/she shall remain at his/her post until told by the supervisor that he/she may leave.

LIFTING DEVICES – GENERAL**(Bridge & Overhead Traveling Cranes, Monorails & Underhung Cranes)****4.12.1**

Electrical bridge and trolley conductors shall be located or guarded to prevent accidental contact by persons.

4.12.2

Each hoist shall have a device to prevent hook travel beyond the safe upper limit at all designed speeds.

4.12.3

Where electrically powered hoisting equipment is operated from cabs, means shall be provided in the cab for the operator to safely disconnect the main power supply under any load condition.

Manually-Operated Hoists and Winches**4.12.4**

- (1) A hand-operated hoist shall have a ratchet and pawl mechanism, load brake, or other means of safely holding the load at any height.
- (2) Crank operated winches, not fitted with automatic load brakes, shall have a means of preventing the crank handle from slipping off the crank shaft while hoisting. On such winches, under free wheel conditions, the crank handle shall be removed before the load is lowered.

Mobile Cranes**4.12.5**

Mobile cranes shall be operated with their turntables level, except as permitted by the manufacturer. Level indicating devices shall be provided and used for this purpose.

4.12.6

- (1) Outriggers, when deployed to meet load capacity chart requirements, shall be fully extended and secured against retraction. Outrigger beams shall be marked to indicate their fully extended position and jacks shall be extended sufficiently to bear the whole weight of the crane.
- (2) Outrigger floats shall be secured to the outrigger jacks when in use.

4.12.7

Mobile cranes shall be securely chocked on firm ground before any hoisting or lowering begins.

4.12.8

Where required by an inspector, any mobile crane that has a lifting capacity exceeding 10 t shall be equipped with a load weight indicator.

Powered Hoists and Winches**4.12.9**

Air operated hoists & winches shall be supplied with air at sufficient pressure to ensure safe operation. Inadvertent disconnection of air supply hoses shall be prevented.

Rigging and Slings – General**4.12.10**

All rigging and slinging work shall be conducted by, or under the supervision of, qualified persons who are familiar with all aspects of the work and with the proper signals.

Cranes General

4.12.11

A suitable non-destructive test shall be made by a person certified in accordance with the applicable standards of the Canadian General Standards Board 48-GP-4M, 48-GP-7M, 48-GP-8M, and 48-GP-13M on all rigid load carrying components of mobile cranes and bridge cranes greater than 10,000 kg capacity and any other cranes when required by the inspector, before being put in to service and at subsequent intervals not exceeding 12 months.

Automotive Lifts and Other Vehicle Supports

4.12.12

- (1) An automotive lift or hoist shall meet the requirements of ANSI Standard ANSI/ALI B 153.1-1990, American National Standard for Automotive Lifts – Safety Requirements for the Construction, care, and Use, or other equivalent standard.
- (2) A shop crane, jack, axle stand, ramp or other type of vehicle support shall meet the requirements of the applicable section of ANSI Standard ASME PALD-1993, Portable Automotive Lifting Devices, or other equivalent standard.
- (3) The rated load capacity shall be marked on each automotive lift, hoist, axle stand, ramp, or other vehicle support and must not be exceeded.
- (4) If a device listed in subsection (3) is modified, or if the manufacturer's rated load capacity is not known, the rated load capacity shall be established by a professional engineer.

TEMPORARY WORK PLATFORMS – GENERAL

Scaffold Requirements

4.14.1

Where scaffolding or temporary work platforms are used, they shall be constructed and maintained in accordance with WCB Occupational Health & Safety Regulation 13.

Persons Not Allowed to Ride

4.14.2

No person shall ride on loads, slings, hooks, work platforms, or other similar equipment, unless specifically authorized by the manager, and the authorization shall not be granted for reasons of expediency or personal convenience, but only where it is necessary to the work process, and only when the provision of the normal means of access or conveyance is impracticable.

Requirements

4.14.3

- Unless provided elsewhere in the code, work platforms suspended from hoisting equipment shall
- (1) be designed by a professional engineer and copies of the design and fabrication drawings shall be kept at the mine,
 - (2) be equipped with standard guardrails and toe boards on all open sides or be enclosed to give equivalent protection,
 - (3) be clearly marked with an identification number, the weight of the platform and rigging and the safe working load of the platform,
 - (4) have supporting hooks and shackles latched or moused to prevent dislodgement, and
 - (5) not use spreader bars between the load hook and the platform.

Requirements

4.14.4

Work platforms suspended from hoisting equipment shall

- (1) be such that the weight of the platform and rigging plus the safe working load of the platform shall not exceed 1/4 of the safe working load of the hoisting equipment,
- (2) have all suspension slings and attachments rigged to provide a safety factor of not less than 10. The platform shall be designed with a safety factor of 4,
- (3) be suspended from cranes having power booms or fixed booms and from hoisting gear capable of lowering under power, and hoisting and lowering speeds shall be kept as low as practicable and lowering of persons shall only be performed under power,
- (4) have power hoists and winches of a type approved for such purpose by the manufacturer,
- (5) have dogs in the hoisting equipment drive mechanism secured against inadvertent disengagement,
- (6) have a designated person on the platform direct all movement of the platform, and
- (7) have persons on the platform wear safety harnesses with lanyards secured to a substantial anchorage on the platform.

Crane or Hoist Operations

4.14.5

A crane or hoist shall be operated by a qualified and authorized person whenever a person is on a suspended platform and the operator shall remain at the controls while the platform is suspended.

Boom Cranes

4.14.6

- (1) Telescoping-boom cranes used to suspend a work platform shall incorporate an "Anti-Two Block" device referenced in CSA Standard Z150-1974 "Safety Code for Mobile Cranes."
- (2) Non-telescoping boom cranes used with suspended work platforms shall be equipped with an anti-two block warning device which alerts the crane operator before a two block situation occurs. The warning shall be activated when the load hook from which the platform is suspended is within 2 m of the boom sheave.

Inspection

4.14.7

Every suspended work platform shall be regularly inspected by an authorized person, as often as necessary to ensure that it can safely handle its rated load, and if any defect or doubtful condition is noted, the platform shall not be used until

- (1) repairs or corrective action has been taken, and
- (2) the load carrying components have been nondestructively tested and the platform re-inspected.

Logbooks

4.14.8

A logbook shall be maintained for suspended work platforms in which all tests, inspections, maintenance work and repairs shall be recorded. All entries shall be dated and signed by the person responsible for the work.

CONSTRUCTION – GENERAL**4.15**

Construction shall be carried out in accordance with instructions of a qualified person and in compliance with WCB Occupational Health and Safety Regulations, Part 20.

TILT-UP AND PRE-CAST BUILDING CONSTRUCTION**4.16**

Tilt-Up construction is planned and carried out in accordance with good engineering Practice.

EXCAVATIONS**Crane or Hoist Operations****4.17.1**

All excavation work shall be carried out in accordance with the written instructions of a professional engineer where

- (1) the excavation is more than 6 m deep,
- (2) timber shoring is used in excavations exceeding 3.7 m in width, or
- (3) improvements or structures adjacent to the excavation could endanger persons, or
- (4) the excavation is subjected to vibration or hydrostatic pressure.

Certification by a Professional Engineer**4.17.2**

The written instructions required by section 4.17.1 shall be signed and certified by the professional engineer and be available at the workplace. They shall describe the supporting or sloping requirements and indicate the sub-surface conditions likely to be encountered.

Manager's Requirement**4.17.3**

The manager shall ensure that no person enters any excavation over 1.2 m in depth unless

- (1) the sides of the excavation are sloped to a safe angle not exceeding 3 horizontal to 4 vertical, or
- (2) the sides have been supported in accordance with the minimum requirements specified in Tables 17.1 and 17.2 of this part, or
- (3) the sides have been sloped or supported in accordance with the written instructions of a professional engineer.

Combination of Sloping and Shoring**4.17.4**

When a combination of sloping and shoring is used, the protection provided to persons shall be equivalent to that meeting the minimum code requirements for the overall depth of the excavation.

Use of Lumber for Shoring and Timbering**4.17.5**

Lumber used for shoring and timbering shall be #2 grade and better, and species to be limited to the following groups: Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir or Coast Sitka Spruce. All lumber shall be graded to the National Lumber Grades Authority Rules or other grading rules approved by the chief inspector.

Shoring Contact With Faces of Excavation

DIAMETER	NOMINAL STRUT SIZE INCHES (mm)	NOMINAL PIPE INCHES (mm)
(38)	4x4 (89x89)	1.5 Standard
(50)	4x6 (89x140), 6 x 6 (140x140)	2.0 Standard
(76)	6x8 (140x184), 8x8 (184x184)	3.0 Standard

4.17.6

Shoring or manufactured or prefabricated support systems shall be installed in firm contact with the faces of the excavation. Any voids shall be backfilled or blocked.

Hydraulic or Pneumatic Jacks**4.17.7**

Hydraulic or pneumatic jacks shall have devices which maintain the jacks at their installed length in the event of a loss of internal pressure.

Steel Trench Jacks**4.17.8**

Steel trench jacks, with minimum equivalent sizes as shown below, may be substituted for timber struts:

Use of Plywood**4.17.9**

Plywood may be substituted for 50 mm (2") shoring elements provided that

- (1) the plywood is not less than 19mm (3/4") in thickness,
- (2) the trench is not over 2.7 m in depth,
- (3) uprights are installed at no more than 600 mm center to center, and
- (4) struts do not bear directly on to plywood

Ladder to Be Kept**4.17.10**

A ladder shall be kept in the immediate area of persons working in any excavation over 1.2 m deep.

Requirements Prior to Starting Excavation or Drilling**4.17.11**

Prior to starting excavating or drilling, the location of underground utility services in the area shall be accurately determined to ensure persons are not endangered.

Pointed Tools**4.17.12**

Pointed tools shall not be used to probe for underground gas and electrical services.

Surrounding Equipment and Objects

4.17.13

Trees, utility poles, rocks and similar objects near an area to be excavated, shall be removed or secured before excavation is commenced.

Excavated Material

4.17.14

Excavated material shall be kept back a minimum distance of 1 m from the edge of any trench excavation less than 3.6 m wide. In any other excavation, the minimum distance shall be 1.5 m.

Danger of Persons Falling Into Excavation

4.17.15

Where there is a danger of persons falling into an excavation, it shall be covered, or standard guardrails or barriers shall be placed along the exposed sides.

EXCAVATIONS OVER 1.2 M IN DEPTH

TABLE 17.1

Size and Spacing of Members (Imperial Units)

UPRIGHTS			WALES		STRUTS			
Trench Depth (feet)	Minimum Dimensions (inches)	Maximum Spacing (feet)	Minimum Dimensions (inches)	Maximum Vertical Spacing (feet)	Min. Dimension (inches)		Maximum Spacing	
					Trench Width up to 6'	Trench Width 6'-12'	Vertical (feet)	Horizontal (feet)
Hard and Solid Soils								
4-10	2x10	6	4x6	4	4x4	6x6	4	6
10-15	2x10	3	6x6	4	4x6	6x8	4	6
Soils Likely to Crack or Crumble								
4-10	2x10	3	4x6	4	4x6	6x6	4	6
10-15	2x10	3	6x8	4	6x6	6x8	4	6
Soft, Sandy, Filled or Loose Soils								
4-10	2x10	Close tight	6x8	4	6x6	6x8	4	6
10-15	2x10	Close tight	8x8	4	6x8	6x8	4	6

Notes:

- (1) Wales may be omitted in trenches not exceeding 8 feet (2.44 m) in depth provided the soil is sufficiently hard and solid to safely permit wale deletion and the trench is not in proximity to previously excavated ground.
- (2) At least 2 struts shall be installed in each vertical plane where struts are required.

EXCAVATIONS OVER 1.2 M IN DEPTH**TABLE 17.2****Size and Spacing of Members (S.I. [Metric] Units)**

UPRIGHTS			WALES		STRUTS			
Trench Depth (metres)	Minimum Dimensions (mm)	Maximum Spacing (metres)	Minimum Dimensions (mm)	Maximum Vertical Spacing (metres)	Min. Dimension (inches)		Maximum Spacing	
					Trench Width up to 1.8mm	Trench Width 1.8-3.7mm	Vertical (metres)	Horizontal (metres)
Hard and Solid Soils								
1.2-3	38x235	1.8	89x140	1.2	89x89	140x140	1.2	1.8
3-4.6	38x235	0.9	140x140	1.2	89x140	140x191	1.2	1.8
Soils Likely to Crack or Crumble								
1.2-3	38x235	0.9	89x140	1.2	89x140	140x140	1.2	1.8
3-4.6	38x235	0.9	140x191	1.2	140x140	140x191	1.2	1.8
Soft, Sandy, Filled or Loose Soils								
1.2-3	38x235	Close tight	140x191	1.2	140x140	140x191	1.2	1.8
3-4.6	38x235	Close tight	191x191	1.2	140x191	140x191	1.2	1.8

Notes on Table 17.1 apply to Table 17.2

MISCELLANEOUS HOISTING EQUIPMENT**Miscellaneous Hoisting Equipment Requirements****4.18.1**

Except as otherwise specified in the code, all cranes, derricks and similar hoisting equipment, shall be designed, constructed, erected, disassembled, maintained, and operated in accordance with the requirements of the manufacturer's specifications and instructions, and the following applicable standards, as amended from time to time

- (1) Crane Manufacturers' Association of America, Inc. "Specifications for Electric Overhead Traveling Cranes", CMAA Specification #70, 1988,
- (2) ANSI B-30.2-1990, "Overhead and Gantry Cranes,"
- (3) ANSI B 30.11-1993, "Monorail Systems and Underhung Cranes,"
- (4) CSA Standard Z248-1975 "Code for Tower Cranes,"
- (5) CSA Standard Z150-1974 "Safety Code for Mobile Cranes,"
- (6) ANSI ASME B30.7, 1994, "Base Mounted Drum Hoists,
- (7) ANSI B30.16,-1993, "Overhead Hoists,"
- (8) ANSI B30.6,-1990, "Derricks,"
- (9) CSA Standard CAN/CSA-Z256-M87, "Safety Code for Material Hoists."

Safe Working Load**4.18.2**

Where the origin or the safe working load of a crane, derrick, or similar hoisting equipment cannot be ascertained, or its continued safe use cannot be assured, the equipment shall be re-certified by a professional engineer.

Professional Engineer's Certification

4.18.3

Any modification, manufacture, or repair of a structural element or component of a crane, derrick, or hoist shall be approved by the original manufacturer, or carried out under the direction of a professional engineer who shall certify the work performed.

Manufacturer's Manual

4.18.4

The manufacturer's manual for cranes, derricks, and similar hoisting equipment shall be available at the place where the equipment is used. The manual shall show the approved methods of erection, dismantling, operation, adjustment, and maintenance of the component parts and the assembled equipment.

Maintenance History

4.18.5

The manager shall maintain, or obtain a copy of, a file or record of the maintenance history of the following powered hoisting equipment used at the minesite

- (1) overhead traveling bridge and gantry cranes,
- (2) tower cranes,
- (3) stiff leg, guy, A-frame and gin-pole derricks,
- (4) material hoists, and
- (5) mobile cranes, draglines, and other hoisting equipment of more than 1800 kg (4,000 lbs.) capacity.

Logbook

4.18.6

- (1) A logbook shall be provided and maintained for each unit of equipment listed in section 4.18.5. All inspections, modifications, maintenance and repair work shall be recorded in the logbook, and dated and signed by the person who did the work.
- (2) Any person involved in the operation of the hoisting equipment shall be responsible for recording in the logbook, any defect or operating difficulty that he/she notices, and reporting the matter to his/her supervisor.
- (3) The supervisor shall examine, date and sign the logbook, at least weekly, to ensure the required entries have been made.

Name, Model and Serial Number

4.18.7

The name, model, and serial number assigned by the manufacturer shall be clearly visible and legible on every crane, hoist, and derrick.

Permanent Sign

4.18.8

- (1) A permanent, clearly visible, and legible sign shall be affixed to each crane, derrick, and hoist showing the safe working load.
- (2) The safe working load shall be marked on the load block and superstructure of hoisting equipment and shall be maintained in a legible condition.
- (3) The safe working load shall not exceed the safe working capacity of any component in the hoisting system, including the supporting structure.

- (4) Subsections (1) and (2) do not apply when the safe working load is affected by
 - (a) the length of a boom or jib, or its vertical or horizontal angle, or
 - (b) the position of a load-supporting trolley, or
 - (c) the use or position of outriggers to increase the stability of the unit.
- (5) Where the safe working load is affected by the factors listed in subsection (4), a separate load chart showing the safe working loads in all possible working positions and configurations shall be permanently posted on the equipment or issued to the operator of the equipment. The operator shall keep the load chart in a legible condition and have it available at all times when operating the equipment.

Angle of Boom and Radius Lift

4.18.9

- (1) Every crane, derrick, and similar hoisting equipment with a boom that can be moved in a vertical plane shall be provided with a device to indicate the angle of the boom or the radius of the lift.
- (2) Telescoping booms shall be suitably marked to indicate the amount of boom extension or be provided with boom extension indicators.
- (3) Devices installed in accordance with subsections (1) and (2) shall be clearly visible from the operator's location.

Controls

4.18.10

- (1) Each control for a crane, derrick, or hoist shall be clearly marked to show its function.
- (2) All bridge, gantry, and overhead traveling cranes operated by pendant or radio controls shall have signs on the crane structure, visible to an operator, clearly indicating the direction of hook, bridge, and trolley motions, compatible with those marked on the controls.

Radio Control Systems

4.18.11

Radio control systems shall meet the following requirements:

- (1) they shall be designed to prevent movement of hoisting equipment except in response to actuation of the control devices, and only when all safety circuits are closed,
- (2) provisions shall be made to maintain a signal-to-noise ratio of 10 to 1,
- (3) multiple signals shall be generated by a minimum of two channels or by a coded single channel,
- (4) where a code is used, two parts of the code shall be required for safety, neither of which can be easily generated from ambient signals, and a further information bit shall also be required to distinguish each signal,
- (5) where two or more units may be operated in contact with each other, a further code signal shall be required to identify each unit and prevent response by other than the instructed unit, and
- (6) the system manufacturer shall certify that the radio controlled system meets the above requirements.

Protection of Hoisting Equipment Operators

4.18.12

- (1) Hoisting equipment operators shall be protected against heat, cold, flying, or falling objects or other adverse or dangerous conditions that could endanger them.
- (2) Operator cabs shall afford protection from the weather and from overhead hazards. Windows shall be of safety glass or other material providing equivalent protection.
- (3) A fire extinguisher, having a ULC rating of at least 5BC shall be immediately available to the operator of each cab-equipped crane.

MISCELLANEOUS HOISTING EQUIPMENT – OPERATION

Crane Operations

4.19.01

- (1) On or before June 1, 2018 operators of mobile cranes, boom trucks, folding boom and tower cranes performing critical lifts as defined in section 14.1 of the Occupational Health and Safety Regulation, B.C. Reg. 296/97, shall have a valid crane operator certification issued by a certifying agency acceptable to the chief inspector.
- (2) On or before June 1, 2018, the manager shall ensure that worker performing occasional hoisting operations using mobile cranes, boom trucks, folding boom and tower cranes with a rated capacity equal to or greater than five tons or with a boom length of 25 feet or greater at a mine site are certified to Level D or equivalent of the British Columbia Crane Safety Association.
- (3) The certification documents referred to in subsections (1) and (2) must be readily available for review by an inspector.

Operator's Inspection

4.19.1

The operator shall inspect the hoisting equipment at the beginning of his/her shift and test the limit switches, brakes, circuit breakers, and other control and safety devices. If any defects or problems are noted, the operator shall notify his/her supervisor and the equipment shall not be operated until the defects or problems have been corrected and authorization received from the supervisor.

Audible Warning Signal

4.19.2

An effective audible warning signal shall be provided on any hoisting equipment and operators shall ensure the signals are used as required.

Boom Stops

4.19.3

Where the design of a crane, derrick, or similar hoisting equipment is such that the boom could fall over backwards, positive boom stops shall be installed. In addition, a device shall be provided to automatically stop the hoisting of a boom when it reaches a predetermined angle.

Operator's Requirements

4.19.4

The operator of hoisting equipment shall

- (1) not attempt to hoist any load if he/she has any doubt that it can be safely handled, but he/she shall inform his/her supervisor who will determine what action is required,

- (2) ensure a load being handled does not contact the boom and that the boom does not contact any structure or equipment,
- (3) ensure the load block is suspended directly over any load being handled,
- (4) ensure the loads shall be safely landed, supported, and stabilized before being unhooked, and
- (5) not leave the controls of any hoisting equipment while a load is suspended.

Traveling With a Suspended Load

4.19.5

- (1) When a crane is traveling with a suspended load, the operator shall ensure that the load is carried as close to the ground as possible and rigged, as necessary, to control swinging of the load.
- (2) When necessary, a person designated as a signaler shall walk ahead of the moving load to warn persons to keep clear.

Authorized Person

4.19.6

- (1) All loads shall be slung or hooked by an authorized person.
- (2) Whenever the operator does not have an unobstructed view of the load hook and load throughout the whole range of the hoisting operation, he/she shall act only on the directions of an authorized signaler.
- (3) Effective communication systems shall be used when weather conditions or distance render the use of hand signals impracticable or unsafe.

Contact With an Energized Electrical Conductor

4.19.7

Hoisting equipment, which has been in contact with an energized electrical conductor or struck by lightning shall be removed from service and not returned until safe use has been assured by a professional engineer.

Distance From High Voltage Conductors

4.19.8

No work shall be performed nor shall machinery, equipment, tools, or materials be used or stored within the following specified minimum distances from any high voltage electrical conductor or equipment capable of energizing the material or equipment.

Voltage (phase to phase)	Min. Distance
751 v to 75 kv	3 m (10 ft)
Over 75 kv to 250 kv	4.6 m (15 ft)
Over 250 kv to 550 kv	6 m (20 ft)

Two or More Cranes Used on a Lift

4.19.9

Where the use of two or more cranes, derricks and similar hoisting equipment is required in a lifting operation

- (1) the operation shall be under the direct supervision of an authorized person, be fully planned in advance and the plans communicated to all persons involved in the operation, and

- (2) effective communications shall be established and maintained between all persons involved, during the complete lifting operation.

Loads Not To Be Passed Over Persons

4.19.10

Loads shall not be passed over persons unless there is no practicable alternative, and then only after the persons have been warned of the danger.

RIGGING

Use of Riggings and Fittings

4.20.1

Riggings and fittings shall be used only for the purposes for which they were designed and manufactured.

Maximum Rated Loads

4.20.2

Except as otherwise specified by this code

- (1) the maximum rated load of any rigging or rigging assembly shall be warranted by the manufacturer of the equipment or by a professional engineer, and
- (2) the maximum rated loads shall not exceed
 - (a) one-fifth of the ultimate breaking strength of the weakest component of the rigging, or
 - (b) one-tenth of the ultimate breaking strength of the weakest component of the rigging, when the rigging is used as a means of supporting workers.

Wedge Socket Connectors

4.20.3

When a wedge socket connector is used as a wire rope terminal, the end of the rope shall be secured to prevent release of the wedge, or rope slippage at the socket.

Open Hooks Not To Be Used

4.20.4

Open hooks shall not be used where dislodgement of the load from the hook would endanger persons.

Securement Against Dislodgement

4.20.5

Shackle pins, heel pins, and similar devices shall be secured against dislodgement.

Sheaves for Running Lines

4.20.6

Sheaves for running lines shall have a means of retaining the rope in the sheave groove.

Protection of Rigging Lines

4.20.7

Rigging lines, slings, and other components shall be protected against cutting, chaffing, and abrasion.

U-bolt Type Cable Clips

4.20.8

When U-bolt type cable clips are used for fastening wire ropes, the U-bolt shall be installed so that it bears on the short or “dead” end of the rope and in accordance with the manufacturers specifications.

Rope to Be Securely Fastened to the Drum

4.20.9

Unless a rope is required to automatically disengage from a winding drum, it shall be securely fastened to the drum and not less than three full turns of rope shall remain on the drum at all times. A rope shall not be secured to the inside of a drum by knotting or by affixing cable clips.

Removal of Hook from Service

4.20.10

A hook shall be removed from service when

- (1) the original throat opening has increased by more than 15% as measured at the narrowest point, or
- (2) it has twisted more than 10 degrees from its original plane, or
- (3) it has cracks or other defects.

Rigging Removal From Service

4.20.11

Rigging shall be removed from service if it has contacted an electric arc, molten metal or other source of excessive temperature.

Safe Working Load

4.20.12

The safe working load of spreader bars and specialized lifting devices shall be certified by a professional engineer and clearly marked on the equipment.

SLINGS

Requirements

4.21.1

Except for slings which are field assembled in construction operations and which do not have swaged or pressed fittings, all slings made of chain, fiber webbing, wire rope, or which use swaged or pressed fittings, shall at the time of their assembly be permanently and legibly marked with the safe working load and the manufacturer’s identification.

Lang’s Lay Wire Rope Not to Be Used

4.21.2

Lang’s Lay wire ropes shall not be used for slings.

Chain and Chain Slings

4.21.3

Chain and chain slings which have stretched or have links that are deformed, cracked, nicked, gouged, corroded, pitted, or burnt, shall be removed from service.

Fiber Webbing Slings**4.21.4**

Fiber webbing slings with nicks, cuts, burns, or other damage or defect shall be removed from service.

Removal of Wire Ropes From Service**4.21.5**

Wire ropes shall be removed from service when

- (1) in running ropes, 6 randomly distributed wires are broken in 1 rope lay, or 3 wires are broken in 1 strand in any 1 lay, or
- (2) in standing ropes and slings, there are more than 2 broken wires in 1 lay in sections between the end fittings

PART 5

ELECTRICAL POWER SYSTEM

TABLE OF CONTENTS

5.1	Application of Electrical Rules	143
5.2	Notices and Information	143
5.5	Trailing Cable Use and Repair	143
5.6	Submersible Pumps	144
5.7	Supply Systems for Mobile Electrical Equipment	144



APPLICATION OF ELECTRICAL RULES

Codes and Standards

5.1.1

Unless modified by this code, all electrical equipment shall be installed, maintained and operated in accordance with CSA Standard M421 Use of Electricity in Mines, in conjunction with the *Canadian Electrical Code*, as amended from time to time.

Electrical Work

5.1.2

Installation, alteration and maintenance work performed under section 5.1.1 shall only be performed by, or under the supervision of, a certified person.

[effective June 1, 2018]

NOTICES AND INFORMATION

All Mines

5.2.1

- (1) The manager shall develop a plan, approved by a registered electrical engineer, for the use of electrical energy at any mine, and the plan shall be forwarded to the chief inspector prior to the introduction of electricity at the mine. A plan shall also be required for any increases in capacity of an existing installation by more than 500 kva.
- (2) The plan referred to in subsection (1) shall show the areas at the mine where the electrical energy is to be transmitted and used, including schematic drawings.

Hazardous Locations

5.2.4

The manager shall ensure that all electrical equipment used in a hazardous location, as defined in the Canadian Electrical Code, is approved for use in such a location and for the specific gas, vapour, or dust that is or may be present.

TRAILING CABLE USE AND REPAIR

Protective Equipment

5.5.1

Whenever a person is handling an energized trailing cable, he/she shall use suitable protective equipment.

Defective Cable

5.5.2

Damaged cables shall be inspected by a qualified person before they are returned to service, to ensure that they are in safe operating condition and defective cables shall be removed from service.

Cable Repair

5.5.3

All permanent repairs to damaged trailing cables shall be made by a qualified person who shall examine and test the trailing cables before they are allowed to go back into service.

SUBMERSIBLE PUMPS**Ground Fault Protection****5.6.1**

A submersible pump that is supplied by a portable trailing cable shall be provided with ground fault protection to limit ground fault current to a maximum of 25 amps and automatically isolate the supply in the event of a ground fault.

SUPPLY SYSTEMS FOR MOBILE ELECTRICAL EQUIPMENT**System Testing****5.7.1**

Supply systems for mobile electrical equipment shall be tested before being put into service, and at least once a year thereafter, in order to prove the effectiveness of the ground fault tripping and the ground conductor monitoring circuits.

Record of Testing**5.7.2**

A record of the tests required under part 5.7.1 shall be kept at the mine and shall be available for examination.

PART 6

MINE DESIGN AND PROCEDURES

TABLE OF CONTENTS

6.1	Work System Approval	147
6.2	Notification.....	147
6.4	Mine Shiftboss - General Rules	147
6.5	Shiftboss - Surface Mine	147
6.8	Mine Plans	148
6.9	Mine Haul Road Design	148
6.10	Dumps	149
6.15	Track Haulage Systems	150
6.18	Remote Control Operations	150
6.19	Equipment Operations - General	151
6.20	Haulage Vehicle Operations - Surface	152
6.21	Battery Charging	153
6.23	Surface Mines	153
6.24	General Mine Rules	153
6.27	Stairways	154
6.28	Ladders	154
6.42	Flammable Gas	155



WORK SYSTEM APPROVAL

Qualified Persons

6.1.1

- (1) The mine manager shall ensure the design of the mine excavations, openings, support systems, fixtures, features, methods of operation and all other works necessary to operate a mine meet acceptable standards of practice and are carried out under the authority of a qualified person or persons.
- (3) The chief inspector may for the purposes of 6.1.1 require the qualified person to be a professional engineer or other licensed professional as may be appropriate.

NOTIFICATION

Notice To Start Work

6.2.1

The manager shall give 10 days' notice to an inspector of Work intention to start work in, at, or about a mine, including seasonal reactivation.

Notice to Stop Work

6.2.2

The manager shall give notice to an inspector of intention to stop work in, at, or about a mine, permanently, indefinitely, or for a definite period exceeding 30 days, and except in an emergency, the notice shall be not less than seven days.

MINE SHIFTBOSS – GENERAL RULES

Examination of Workings

6.4.1

- (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.

Daily Examination and Report Book

6.4.2

The person making the examination under section 6.4.1 shall before going off shift record all unusual and hazardous conditions and corrective actions taken or proposed in a daily examination and report book, and sign the report as a record of the conditions found. For underground mines the record shall include a report on each working place examined.

6.4.3

The report made under section 6.4.2 shall be read and countersigned by the corresponding supervisor on the oncoming shift and the unusual and/or hazardous conditions discussed with the workers before they are permitted to resume operations in the areas indicated in the record.

SHIFTBOSS – SURFACE MINE

Pit Face Area Safety

6.5.1

No work shall be carried on, at, or below a face or wall of a surface mine until that face or wall has been examined and declared safe by the shiftboss or, in the case of a mine with fewer than 6 employees, the supervisor.

Dump Block

6.5.2

A dump or stockpile area on the surface of a mine shall be examined by either the open pit shiftboss or a qualified person

- (1) before material is permitted to be dumped where dumping has not been carried on for a period of 4 hours or more, and
- (2) at least once and at intervals of not more than 4 hours during each shift when material is being dumped, and
- (3) the person who conducts the examination shall record the details of the examination and any reports from a dump person in the daily examination and report book referred to in section 6.4.2, and
- (4) communicate verbally any abnormal or hazardous conditions to the dump person.

MINE PLANS

Duty to Keep Plans Surface

6.8.1

The manager shall keep at the mine site accurate plans that are updated in accordance with good engineering practice and are prepared on a scale that accords with good engineering practice, as follows:

- (1) A surface plan showing the claims, licences or leases on which mining is being carried out, and all lakes, watercourses, naturally unstable ground, such as peat bogs or sloughs, main roads, railways, power transmission lines, buildings, shaft opening, adits, surface workings, diamond drill holes collared on the surface, dumps, dams, tailings ponds and their overflow channels, topographic contours, and any abandoned, adjacent or historical workings.
- (2) The manager shall ensure that a thorough search has been completed for the existence of the abandoned, adjacent or historical workings, the results of this search shall be provided to an inspector and a copy maintained at the minesite for inspection.

Failure to Post Plans

6.8.2

If the manager fails to provide the plans required by section 6.8.1, the chief inspector may have the mine surveyed and the plans prepared, and the costs of the survey and the preparation of the plans may be recovered from the owner or agent.

Traffic Control

6.8.3

The manager shall prepare traffic control procedures, showing the maximum allowable speeds for the vehicles in use, rules for passing, "stop" and "yield rules," priority rules for various vehicles, rules for night operation, maximum operating grades, emergency run-off protection, shoulder barriers, and any other information that may be required to ensure the safe operation of all types of vehicles on the mine site.

MINE HAUL ROAD DESIGN

Haulage Road Width

6.9.1

The manager shall prepare a plan pursuant to section 10 (1) of the *Mines Act* which

- (1) Shows the type and method of construction for haulage roads that are to be constructed at the mine site.
- (2) Except for roads constructed prior to 1990, the manager shall ensure that haulage roads are designed, constructed and maintained to provide
 - (a) a travel width where dual lane traffic exists, of not less than 3 times, or where single lane traffic exists, of not less than 2 times the width of the widest haulage vehicles on the road, and
 - (b) a shoulder barrier
 - (i) at least 3/4 of the height of the largest tire on any vehicle hauling on the road,
 - (ii) of a construction or a specification that is in general conformance to accepted engineering practice,
 - (iii) located and maintained along the edge of the haulage road wherever a drop-off greater than 3 m exists, and
 - (iv) incorporating breaks that do not exceed the width of the blade of the equipment constructing and maintaining the breaks to allow for drainage and snow clearance.
- (3) For the purpose of subsection (2) (a), the width of the barrier referred to in subsection (2) (b) shall be excluded from the travel width.

Vehicle Runaway Protection

6.9.2

On roadways where the grade exceeds 5% the manager shall have installed and maintained runaway lanes or retardation barriers where conditions/risk warrant.

DUMPS

Dumps, Roads and Ramps Manager's Responsibility

6.10.1

The manager shall require a qualified person to

- (1) prepare and maintain a plan pursuant to section 10 (1) of the *Mines Act*, consistent with good engineering practice for dumps, stockpiles, minor impoundments, roads, or ramps that are to be constructed as part of a dumping operation, the plan shall include monitoring for safety,
- (2) ensure that the construction is in accordance with the plan and any modification to the plan that has been approved by the manager,
- (3) communicate the accepted plan and any modifications to those persons responsible for and employed in the construction,
- (4) where material is to be dumped from a vehicle into a bin, raise, or other opening, provide and maintain a barrier of sufficient size and strength and anchored sufficiently to prevent the vehicle from inadvertently entering the bin, raise, or opening,
- (5) where dumping is prohibited or hazardous, prevent dumping by placing across the entrance a barrier sufficient to prevent access and a sign that reads "No entry for dumping purposes,"
- (6) appoint qualified persons to act as dump persons, and
- (7) prepare a procedure for controlling access to areas within the potential run-out zone of all dumps; this procedure will prohibit extended activities below active dumps and provide for a program of monitoring to allow work below inactive and dormant

dumps, the procedure will include provisions for signage, work under adverse conditions and shall be reviewed annually.

Respiratory Hazards

6.10.2

- (1) The mine manager shall ensure that there are no confined spaces connected to or in close proximity of waste dumps.
- (2) If the requirement of section 6.10.2(1) is impracticable, the mine manager shall have the structure, earthworks or culvert designed in accordance with established engineering practices such that no workers are at risk of exposure to deficient atmospheric oxygen.

TRACK HAULAGE SYSTEMS

6.15.1

A track haulage system may be designated by the chief inspector as a railway and in that case, it shall be maintained and operated in accordance with the standards established under the *Railway Act*.

REMOTE CONTROL OPERATIONS

6.18.1

Before any equipment that can be moved by remote control is introduced at a mine, the manager shall

- (1) Provide, and have approved by the chief inspector, a plan showing that the system, device or controller is capable of operating only the specific piece of equipment it is designed to operate.
- (2) Ensure that other forms of energy are not capable of rendering the equipment inoperative causing uncontrolled activation or operation of the equipment.
- (3) The controller be equipped with a lock-out device that renders it inoperative when not in use.
- (4) Ensure the transmitter is equipped with an emergency stop mechanism that when activated applies the brakes and shuts down the equipment.
- (5) For mobile equipment, if the transmitter is hand held, is equipped with a device that automatically works in the same manner as the emergency stop mechanism if the transmitter is tilted more than 15% from the level position.
- (6) For fixed or tracked equipment a device which causes the machine to cease operating if controls are returned to the neutral position.

6.18.2

Where remote controlled equipment is to be used at a mine the manager shall have established operating procedures which shall include

- (1) safe location for the operator,
- (2) allows for a clear view of the working area,
- (3) safe interaction between mechanical and remotely controlled equipment,
- (4) a method for recovering equipment which has broken down, and
- (5) if applicable, procedures to ensure contiguous operations do not interfere with remote signals.

EQUIPMENT OPERATION - GENERAL

Operator's Responsibility

6.19.1

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.

Logbook to be Maintained

6.19.2

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.

Examination of Equipment

6.19.3

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

Name of Person

6.19.4

Every notation made in the logbook, maintenance record, and every other record relating to the condition of the equipment shall show the time and date of the entry and the name of the person who made the entry.

Restricted Vision

6.19.5

No person shall operate a unit of mobile equipment where his/her field of vision is restricted unless he/she

- (1) has inspected the area into which the equipment is to be moved and, without delay, proceeds to operate the equipment, or
- (2) is directed by a signal man who is located in a safe position and in continuous contact with the operator of the equipment, or
- (3) is directed by a traffic control or warning system.

Disabled Vehicle

6.19.6

When a vehicle or a unit of mobile equipment is disabled or parked in the traveled portion of a roadway

- (1) a warning to approaching traffic shall be given by means of flashing lights, flares, lamps, or reflectors, or
- (2) a person, equipped to be clearly visible and identifiable, shall direct other vehicles using that section of roadway.

HAULAGE VEHICLE OPERATIONS – SURFACE

Fly Spreading

6.20.1

Where it is proposed to discharge material from the elevated box of a moving haulage truck, the manager shall prepare a safe operating procedure.

Dump Stability

6.20.2

No person shall drive or operate a haulage vehicle in such a manner as to

- (1) dump from the vehicle at a location where he/she has reasonable cause to believe that the ground is not capable of supporting the loaded vehicle, or
- (2) remove material from the bottom of a dump or stockpile if he/she has reasonable cause to believe that a person may be injured as a result of the removal.

Dumping Over Bank

6.20.3

No person shall drive or operate a haulage vehicle, in such a manner as to dump material from the vehicle over a bank that is more than 3 m high, or dump within 3 m of the dump berm crest when the bank is more than 3 m high, except as described in section 6.10.1(4), unless a dump person is directing vehicles to the dumping position and a dump berm is in place.

Reverse When Dumping

6.20.4

The driver of a haulage truck shall not

- (1) where the bank is more than 3 m high and the dumping position is within 3 m of the dump berm crest, move the vehicle backward to the dumping position or begin dumping until he/she has received directions from the dump person,
- (2) operate the vehicle in reverse for a distance greater than 4 truck lengths on a dump other than a bin, raise, or other opening referred to in section 6.10.1 (4), or
- (3) operate the vehicle in reverse for a distance greater than 4 truck lengths, on a stockpile, ramp, road, or a ramp or road that is under construction, unless the ramp or road has a positive gradient of more than 5% or the procedure is accepted as part of a permit application or work system approval.

Dump Person

6.20.5

A dump person who is responsible for directing vehicles at a dump point shall

- (1) continually inspect the condition of the dump site and if abnormal or hazardous conditions are observed take corrective action to alleviate any danger to workers assigned to the dump, and
- (2) communicate immediately any abnormal or hazardous conditions found to the open pit shiftboss or, in the case of a mine with fewer than 6 employees, the supervisor.

BATTERY CHARGING

Battery Charging Stations

6.21.1

A battery charging station in a mine or mine shop shall be located in a well-ventilated location to prevent the accumulation of flammable gases.

SURFACE MINES

Removal of Unconsolidated Material

6.23.1

All trees and other vegetation, clay, earth, sand, gravel, loose rock, or other unconsolidated material lying within 2 m of the rim of a working face or wall in a surface mine shall be removed, and beyond this distance all unconsolidated material shall be sloped to an angle less than the natural angle of repose.

Bench and Berm Widths

6.23.2

Where a surface mine is worked in benches

- (1) each catchment berm shall be designed so that its final width will not be less than 8 m, notwithstanding section 10.5.8, loose rock and soil shall not be allowed to accumulate on a bench or catchment berm in a manner that endangers any person working on a lower bench, and
- (2) where loose rock accumulates and where access cannot be gained to clean the catchment berm, and a danger exists to a person working below, a safe working procedure shall be developed.

Surface Mine Faces and Bench Heights

6.23.3

No part of a face or wall of a surface mine shall overhang.

6.23.4

Where material is being worked or removed, the vertical component of the mining face shall not be greater than 2 meters beyond the reach of the loading equipment.

6.23.5

Section 6.23.4 does not apply

- (1) where material is removed by backhoe, excavator, dragline or similar equipment operating from above the face that it is excavating, or
- (2) where a multiple bench system of mining is being carried on in accordance with conditions authorized by the chief inspector, or
- (3) where the material is free running and the slope does not exceed 60 degrees or 30 meters in length.

GENERAL MINE RULES

6.24.1

Surface excavations shall be securely fenced against inadvertent access when fencing is considered necessary by an inspector.

6.24.2

Wherever practicable, water sprays or other dust suppression means and devices shall be used at

every dusty place where work is carried out and where it is impractical to do so, personal protective equipment shall be supplied and worn by all persons working in that location.

Drilling

6.24.3

A powered rock drill shall not be used in a mine unless it is equipped with a water jet or other device capable of suppressing dust.

STAIRWAYS

Requirements

6.27.1

Stairways shall be provided in shafts or manways inclined at 50 degrees from the horizontal or less where necessary to ensure safety.

Handrail

6.27.2

Every stairway greater than 1.5 m in height located in a shaft or manway shall be equipped with a suitably placed handrail.

Tread Size

6.27.3

The rise and tread width of the steps within a stairway shall be uniform and tread widths shall not be less than 250 mm.

Guardrails

6.27.4

When a stairway ends in direct proximity to dangerous traffic or other hazards, detour guardrails shall be installed.

LADDERS

General Standards

6.28.1

A ladder used in a mine shall

- (1) be of strong construction,
- (3) be maintained in good repair,
- (4) have rungs that are equally spaced,
- (5) be installed so that rungs shall be more than 100 mm from the wall or timbering of a shaft, raise or stope, and
- (6) be erected at an inclination of not more than 80 degrees from the horizontal unless equipped with safety hoops.

Handrails

6.28.2

Every ladder must project at least 1 m above its landing platform, except where

- (1) strong suitable handrails are provided on the platform, and
- (2) the ladder is securely fastened to its platform.

Platforms

6.28.3

Where a shaft or manway, driven after the proclamation of this code, is inclined at over 50 degrees from the horizontal, it shall be provided with a ladderway containing platforms erected at vertical intervals not exceeding 7.5 m in the ladderway. Each platform shall have an opening which permits a person wearing a self-contained breathing apparatus to pass through.

6.28.4

Where a shaft or manway is inclined at over 70 degrees from the horizontal, the ladderway, in addition to the requirements of section 6.28.3, shall have the individual ladders between each platform so located that they act as shields or protections to cover the holes in the platforms

Doors in Platforms

6.28.5

Where it is possible for a person to fall from one platform to a lower platform in a ladderway, the platform openings shall be covered by suitable doors which can be easily opened from above or below.

Ladderways in Other Mine Workings

6.28.6

A landing platform shall be installed at all points where ladders are offset.

6.28.7

All ladderways in raises, stopes and manways shall be installed and maintained to reduce the hazard of a person falling.

Flexible Ladders

6.28.9

No person shall use, or allow to be used, a flexible ladder except

- (1) in a shaft sinking operation,
- (2) in an emergency rescue operation, and
- (3) provided that the ladder is safe and secure.

FLAMMABLE GAS

Gas Detection

6.42.1

Where it may be reasonable to expect that there is a hazard due to the presence of flammable gas, an inspector may require that a sufficient number of appliances of an approved type be provided for the determination of the percentages of flammable gas.

Electrical Equipment

6.42.4

If any person finds more than 1.25% of flammable gas in the air in the general vicinity of electrical machinery or equipment he/she shall cut off the electrical power supply from the machinery or equipment and report the circumstances to the supervisor in charge of that part of the mine.



PART 8 EXPLOSIVES

TABLE OF CONTENTS

8.1	Magazines	159
8.2	Blasting Certificates	160
8.3	Use, Care and Handling of Explosives	161
8.4	Transportation of Explosives	162
8.5	Loading and Printing	163
8.6	Firing Explosives	164
8.7	Drilling Near Explosives	167
8.8	Misfires	168
8.9	Removal and Disposal	169
8.10	Adjacent Workings	169



MAGAZINES

Permit Required

- (1) apply for and receive an Explosives Storage and Use Permit from the inspector before a magazine is located, erected, built, put into service, or modified, or before carrying out any maintenance work including the installation of lighting or heating, and
- (2) ensure that the magazine meets the regulations and standards of the *Explosives Act* (Canada).

Magazine Location

8.1.2

- (1) The manager shall select the site for a magazine in accordance with *Explosives Act* (Canada) and NRC Explosives Branch.
- (2) The manager shall cease to use the magazine for the storage of explosives if the conditions under which the permit was issued are no longer valid.
- (3) Upon taking a magazine out of service the manager shall
 - (a) return to the inspector, by registered mail, the storage and use permit for the magazine taken out of service,
 - (b) remove all explosives from the magazine, and
 - (c) dispose of all unused explosives in a suitable manner.

Electrical Specifications

8.1.3

In every magazine the electrical equipment and wiring shall meet the requirements of CSA Standard M421-00 and NRCan "Storage Standards for Industrial Explosives".

Flammable Material

8.1.4

Gasoline, oil, or other flammable material shall not be stored in a magazine, or nearer to a magazine than the distance required by the Table of Distances in NRC Explosives Branch "Blasting Explosives and Detonators Storage, Possession, Transportation, Destruction and Sale," or as directed by the chief inspector.

Magazine Signs

8.1.5

All magazines must have suitable signs

- (a) located in a manner that does not attract undue attention, and
- (b) prohibiting open flames, or any ignition source including smoking within 10 metres.

Magazine Rules

8.1.6

Every magazine shall be operated and maintained in accordance with the NRC regulation and the following rules

- (1) it shall be in the charge of a authorized person who shall carry out a weekly inspection of the magazine,
- (2) it shall be locked at all times, except when explosives are being moved, and only the authorized person(s) are in possession of the key,
- (3) it shall have an up to date inventory of its contents in a special logbook and all entries shall be signed by the authorized person in charge,

- (4) it shall be kept clean, dry, and free from grit at all times,
- (5) it shall be kept free of broken explosives packages or spilled explosives, and when necessary, the shelves and floors shall be treated with a suitable neutralizing agent to remove all traces of explosive substances,
- (6) it shall have its contents arranged in a tidy and organized manner, including any explosives returned from a workplace,
- (7) it shall not contain any exposed iron or steel except in fixtures, and
- (8) stock shall be rotated, so for each type and size of explosive, the oldest stock is used first.

Posting Rules

8.1.7

A copy of the rules for magazine operation and maintenance, required by section 8.1.6, shall be posted inside every magazine.

Storage of Detonators

8.1.8

- (1) Detonators shall be stored in a special, separate building designated as a “Detonator House”, to which the rules for magazines required by section 8.1.6 shall apply.
- (2) Detonators shall not be kept or stored with explosives or taken into any magazine containing explosives.

No Smoking

8.1.9

No person shall smoke while handling, transporting or using explosives.

BLASTING CERTIFICATES

Blasting Certificate Required

8.2.1

- (1) No person shall conduct, or be permitted to conduct, a blasting operation unless he/she holds a provisional or valid blasting certificate granted under this part of the code.
- (2) No person shall be granted a provisional or valid blasting certificate unless he/she is able to give and receive orders in the English language.

Assistance for Blaster

8.2.2

A person who does not hold a blasting certificate shall not prepare a blast, but a certificated blaster may be assisted by a reliable person not holding a blasting certificate. The blaster shall ensure that the person assisting him/her remains under his/her supervision.

Provisional Blasting Certificates

8.2.3

A provisional blasting certificate, valid for a period not exceeding 90 days, may be granted by the manager, on a one time basis, and a copy of the certificate shall be sent to the inspector.

Blasting Certificate Examination

8.2.4

An applicant for a blasting certificate shall pass a written examination, and satisfy the inspector that he/she is qualified to perform the duties of a blaster.

Certificate Restrictions

8.2.5

- (1) A blasting certificate may contain any restriction deemed necessary by the inspector.
- (2) The blaster shall deliver his/her certificate to the manager when he/ she commences employment at the mine and the manager shall return it to the blaster when his/her employment is terminated, unless the certificate has been suspended under section 8.2.6 or 8.2.7.
- (3) The blasting certificate shall be valid for a period of 5 years.

Blasting Certificate Suspension by Manager

8.2.6

The manager shall suspend a person from working with explosives if, in his/her opinion, the person fails to comply with any section of the code related to blasting, commits a careless act with explosives or detonators, or is unfit to perform his/her duties as a blaster, and the manager shall notify the inspector of the suspension without delay.

Blasting Certificate Suspension by Inspector

8.2.7

An inspector may suspend or cancel a blasting certificate if, in his/her opinion, the holder fails to comply with any section of the code related to blasting, commits a careless act with explosives or detonators, or is unfit to perform his/her duties.

USE, CARE AND HANDLING OF EXPLOSIVES

Acceptable Explosives

8.3.1

Explosives used in a mine shall be licensed, as per the Explosives Act (Canada), and they shall be used in accordance with the manufacturers recommendations.

Identification of Explosives

8.3.2

All explosives shall have plainly marked or printed on the exterior of every original package.

- (1) the name and place of business of the manufacturer and the date of its manufacture,
- (2) the type and strength of the explosive, and the dimensions of the cartridge,
- (3) the UN classification number and the dangerous goods classification, and
- (4) when full cases of detonators, detonating cords, and boosters are received, the inner cartons are immediately marked with the magazine license number.

Opening Containers

8.3.3

Only implements made of non-sparking material shall be used to open cases containing explosives.

Defective Explosives

8.3.4

Any explosives believed to be defective shall

- (1) if in a workplace, be immediately removed,
- (2) be reported to the manager and the inspector, and
- (3) be destroyed in a safe manner in accordance with the manufacturer's recommendations.

Safety Fuse Assemblies

8.3.5

The manager must provide a written procedure for the use of safety fuse Frozen Explosives

8.3.6

Frozen explosives shall not be loaded until the product has been thawed in a manner recommended by the manufacturer. They shall not be warmed near an open fire or a steam boiler, nor by direct contact with steam or hot water.

Blasting Heated Rock

8.3.7

Where the temperature of the rock or material to be blasted exceeds 65 degrees Celsius, the manager shall ensure that special procedures and precautions are developed and these procedures shall be forwarded to the OHSC.

Transporting Explosives

8.3.8

Explosives and detonators

- (1) shall be carried or transported in the manner prescribed in this code, and
- (2) if not used, shall be returned to the magazine or storage box, and shall not be hidden in or about the mine.

Careless Acts

8.3.9

- (1) No person shall
 - (a) commit a careless act with explosives or detonators, or
 - (b) having discovered that such an act has been committed, neglect or omit to report immediately the incident to the shiftboss, who shall report the matter forthwith to the manager.
- (3) The manager shall report the offence, without delay, to the inspector and to the OHSC.

Blasters Medical Surveillance

8.3.10

Blasters that are continually handling nitro-glycerine based explosives shall have a medical examination on a frequency of less than 3 year intervals to determine sensitivity to and any harmful health effects from the continued exposure to nitroglycerine.

8.3.11

Electric detonators shall not be used when extraneous currents (stray currents) exceed 50 milliamps (.05 amps).

TRANSPORTATION OF EXPLOSIVES

Supervision by a Competent Person

8.4.1

- (1) Only a person authorized by the manager, shall remove explosives from a magazine and transport them to a workplace, and such a transfer shall be made without undue delay.
- (2) No person shall smoke or have open-flame lights within 10 m of a vehicle transporting explosives.

Vehicle Requirements

8.4.2

A vehicle used to transport explosives shall

- (1) have a separate compartment for the explosives which prevents them from coming into contact with any metal that could produce a spark,
- (2) be constructed so that the explosives cannot fall from the vehicle,
- (3) when carrying explosives, be provided with orange diamond-shaped placards and clearly visible signs marked "Explosives" in letters not less than 150 mm in height which are posted on the front, rear, and sides of the vehicle,
- (4) not be refueled when carrying explosives, except in an emergency,
- (5) have its engine shut off while loading or unloading explosives except where the vehicle uses an engine-powered device for loading and unloading the explosives,
- (6) only be operated by an authorized person, and
- (7) be equipped with suitable fire extinguishing equipment.

Transport of Detonator

8.4.3

A vehicle used to transport explosive material at a mine shall only carry detonators when the detonators are separated from other explosives by a solid partition of wood 15 centimetres thick and extending at least 15 centimetres above the highest level to which explosives are packed in the vehicle.

Separate Containers

8.4.6

Explosives and detonators shall be transported in separate containers.

LOADING AND PRIMING

Care in Loading

8.5.1

- (1) Only loading tools made of non-sparking materials shall be used.
- (2) Explosive shall not be loaded into a hole
 - (a) of insufficient size, or
 - (b) by hitting, pounding, ramming, or applying undue pressure.

Cartridge Wrapper

8.5.2

Cartridge explosives shall not be removed from their wrappers except for water-gel or emulsion explosives that are to be used for blasting oversize rock or bringing down hung-up material.

Priming Nitroglycerine Explosives

8.5.3

Primers shall be made up only as required and, when priming with nitroglycerine type explosives, only a non-sparking implement shall be used to punch a hole in the explosive.

Priming Detonating Devices

8.5.4

Every primed charge shall

- (1) contain a properly prepared detonating device sufficient to initiate the explosion reliably,
- (2) have the detonator inserted into the cartridge in such a manner that it cannot be separated or pulled out of the cartridge during the loading operation, and
- (3) be fired electrically or by approved non-electric means acceptable to the inspector.

Carrying Capped Fuses

8.5.5

A person may carry capped fuses with explosives from the nearest storage place to a point of use, without placing them in a container, provided that they are kept separate from each other. In no case, however, shall primed cartridges be transported.

Pneumatic Loading

8.5.6

Pneumatic loading of explosives into blastholes shall only be carried out

- (1) with explosives licensed for that purpose, as per the *Explosives Act* (Canada), and electricity or hazards from stray electric currents.
- (2) where the procedures and equipment used will prevent any dangerous build-up of static electricity or hazards from stray electric currents.

8.5.7

The written approval of an inspector shall be obtained before any pneumatic loading of explosives is carried out over the leg wires of detonators.

Extraction of Explosives

8.5.8

No person shall extract, or attempt to extract, any primer or explosives of the nitroglycerine type from a loaded blasthole.

- (1) Explosives of the ammonium nitrate type may only be removed from a blasthole by washing.
- (2) Insensitive water-gel or emulsion type explosives may be blown out of a blasthole by an authorized person using moderate air pressure and a blowpipe made of non-sparking material.

Vehicles Prohibited

8.5.9

A blast area shall be clearly identified by posted signs to prevent the inadvertent access of vehicles.

8.5.10

No equipment shall be allowed within 8 m of any charged blasthole except

- (1) authorized explosives vehicles,
- (2) explosive vehicles which have the exhaust directed above the cab of the vehicle, and
- (3) other equipment authorized in writing by the chief inspector.

FIRING EXPLOSIVES

Time for Blasting

8.6.1

The time for blasting shall be set so as to protect persons from exposure to dust, fumes, and smoke.

Guarding

8.6.2

Before blasting, the blaster, or person designated responsible for blasting, shall

- (1) clear the blast danger zone of all persons,
- (2) ensure that all entrances to the blast danger zone are guarded to prevent access, and not rely only on signs for the purpose, and
- (3) when blasting on the surface of a mine, ensure that an effective audible warning is given.

Firing Procedure

8.6.3

- (1) Every charged hole shall be fired in its proper sequence, and where any blast could affect other charged blastholes, all of the holes shall be fired in one operation.
- (2) When required, a waterspray shall be used during blasting of development headings.

Waiting Time

8.6.4

- (2) A worker shall not return, or be permitted to return, to a workplace after a blasting operation until the worker is sure that the gases produced by the explosives have been removed or diluted to a "safe degree". If the worker has reasonable grounds to believe that this has not been achieved, the worker shall request the shiftboss to test the air with a suitable instrument and explain the results to the worker.

Reporting Misfires

8.6.5

A blaster shall

- (1) when possible, count the number of shots exploding,
- (2) report to the shiftboss if he/she believes that any shot did not fire, and
- (3) identify any misfired hole by inserting a conspicuous, non-metal marker at its outer end, or by roping the area off or by any other manner approved by the shiftboss.

Misfires

8.6.6

In the event of a misfired shot, the shiftboss shall

- (1) determine the location, direction and depth of any hole necessary for blasting the misfired shot, supervise its drilling, and
- (2) record in the daily examination and report book, the location of any misfired shot remaining at the end of the shift.

Procedures for Explosives and Accessories

8.6.8

Written procedures shall be established for the use of all explosives accessories and blasting machines following the manufacturer's recommended specifications.

Blasting Machines

8.6.9

- (1) All blasting machines shall be suitable for their applications, kept in a cool, dry, storage place and maintained in serviceable condition, in accordance with the

manufacturers recommendations.

- (2) The power output of every electric blasting machine shall be tested by an authorized person, in the manner prescribed by the manufacturer, at least once each month, and immediately before being returned to use after having been taken out of service.
- (3) The results of the tests carried out in compliance with subsection (2), shall be entered in a logbook, dated, and signed by the authorized person who made the tests.

Condenser Discharge Machines

8.6.10

Condenser discharge machines shall be examined to ensure that any residual charge remaining on the capacitors after use is discharged in accordance with the manufacturer's instructions.

Connection to the Blast Circuit

8.6.11

- (1) A blasting machine shall not be connected to the blasting cables until immediately before firing the charges.
- (2) A blasting machine shall be immediately disconnected from the blasting cables after firing or attempting to fire the charges.

Blasting From Power Lines

8.6.12

- (1) Electric power from lighting or power circuits shall not be used for firing charges unless
 - (a) the blasting circuit has an isolating transformer, and
 - (b) a special firing device that opens the blasting circuit by gravity is used.
- (2) The blasting circuit conductors between the firing device and the blast site shall be No. 12 AWG, or better, and readily identifiable as blasting cable.
- (3) Where expendable connecting wire is used, it shall not be less than No. 20 AWG.

Blasting Switches

8.6.13

Every electric power line blasting switch shall

- (1) have the live side of the device installed in a box which is fixed, locked, and accessible only to the blaster, and
- (2) incorporate a lightning gap of at least 1.5 m between the blasting switch and the service switch. This gap shall only be closed by a twist-type plug and cord assembly immediately before firing.

Branch Circuits

8.6.14

Where a blasting circuit is used for more than one working place, each branch circuit shall be isolated by means of a locked isolating switch that automatically short circuits the branch circuit.

Circuit Testing

8.6.15

Where more than one shot is fired electrically, the blaster shall test the electrical circuit with an approved circuit testing device immediately before blasting.

Electric Storms

8.6.17

A blaster shall not connect an electric blasting circuit during an electrical storm. Once an electric blasting circuit is connected, and should an electric storm occur, all persons shall be withdrawn to a safe distance from the blast site. Access to the blast site shall be guarded until the storm has passed.

Radio Transmitters

8.6.18

The blaster shall ensure that signs are posted to ensure mobile radio transmitters shall be turned off when within 20 m of a site where an electric blasting system has been connected.

Blasting Cables Near Electrical Conductors

8.6.19

Blasting circuit conductors shall be kept at least 150 mm away from power and lighting cables and from any other electrical conductors.

Blasting Lead Wires

8.6.20

All blasting circuit conductors leading to a blasting site shall be insulated and, except when firing the blast, shall be short circuited.

Return to the Work Area

8.6.21

When blasting by electricity, the blaster shall not enter, or allow any other person to enter the area until

- (1) the firing cables have been disconnected from the firing device and short circuited, or
- (2) in the case of a blasting operation using a power or lighting circuit, the switches of the blasting circuit have been locked in the open position.

Firing in Multiple Work Places

8.6.22

Blasting cables or wires that have been used for blasting in one workplace, shall not be used for blasting in another workplace until all proper precautions have been taken to ensure that the blasting cables or wires have no electrical connection with the leads from the first workplace.

Central Blasting

8.6.23

A written summary of the procedure to be followed and a layout of the system shall be submitted to an inspector for approval before a central blasting system is used or modified. The procedure shall include a provision for post blast inspection.

DRILLING NEAR EXPLOSIVES

Misfired Holes and Bootlegs – Drilling Precautions

8.7.1

Drilling shall not be carried out

- (1) within 300 mm of a bootleg on the surface or within 150 mm underground, or
- (2) where any part of the hole to be drilled could come within 5 m of a hole containing explosives unless it is drilled under the direct supervision of a shiftboss to clear a blocked hole, or to place an additional hole for blasting a misfired charge in accordance with section 8.6.6 (1).

8.7.2

- (1) Notwithstanding section 8.7.1 the manager may develop procedures for drilling within 300 mm of a bootleg or a hole containing explosives on the surface or within 150 mm underground.
- (2) The manager shall submit these procedures to the inspector and to the OHSC at least 15 days in advance of implementing these methods and procedures.

Drilling in Loose Rock

8.7.3

No person shall drill in a loose rock produced by blasting unless

- (1) the rock has been thoroughly examined to ensure that it does not have any holes containing explosives, or
- (2) an engineered offset pattern is utilized to prevent overlaying of holes, and
- (3) if a hole containing explosives is discovered, the drilling shall be carried out in accordance with section 8.6.6 (1).

8.7.4

Where it is impracticable to make the examination required by section 8.7.3 (1), or use an offset pattern as per 8.7.3 (2), a remotely controlled drilling procedure shall be employed.

MISFIRES

Surface Misfires

8.8.1

- (1) A misfired hole on the surface shall be clearly marked off for a distance of 8 m around the collar of the hole.
- (2) The use of equipment shall be restricted within this 8 m distance except as provided in section 8.7.1, or under a procedure approved by the inspector.

Time to Return

8.8.2

No person shall return or be allowed to return to the scene of a blast until the following times have elapsed

- (1) when a blast is initiated with safety fuse assemblies, after a number of minutes equal to 7 times the number of metres in the longest fuse used,
- (2) when safety fuse is involved and a misfire occurs, or is suspected, and after a reblast, a minimum of 30 minutes, and
- (3) when no safety fuse is involved and a misfire is suspected, or when two or more detonators are used and the blaster cannot visually establish that all shots have fired, a minimum of 10 minutes from the time the blasting cable was disconnected and short circuited.

REMOVAL AND DISPOSAL

Removal of Explosives

8.9.1

No person shall take away or attempt to take away explosives, detonators, or fuse from a mine except as provided for in sections 8.9.2 and 8.9.3.

8.9.2

Explosives shall be removed or destroyed prior to the closure of a mine.

8.9.3

Section 8.9.1 does not apply

- (1) to an explosive plant at a mine, operated under a licence issued by the Explosives Branch, E.M.R. (Canada), or
- (2) if explosives are being returned to a registered explosives vendor, or
- (3) if explosives are taken from the mine for a purpose authorized by the inspector.

ADJACENT WORKINGS

Blasting at Adjacent Mines

8.10.1

Where parties are working on adjacent surface mines or underground mines having connected workings, they shall agree to a mutually acceptable blasting time and procedure.

Connection to Existing Workings

8.10.2

When an active heading is within 8 m of another mine opening or drill hole, the shiftboss shall before any round is fired

- (1) make a thorough examination of the other mine opening, drill hole collar or the nearest point of intersection,
- (2) satisfy himself/herself that the heading can be advanced in a safe manner, and
- (3) ensure that any access to the nearest point of intersection with the other opening or drill hole is guarded.



PART 10

PERMITTING, PLAN AND RECLAMATION PROGRAM INFORMATION

TABLE OF CONTENTS

10.1	Mine Plan and Reclamation Program Information	173
10.1	Proposed Coal and Mineral Mines, Major Modifications to Existing Mines & Major Explorations and Development.....	173
10.2	Notice of Filing	173
10.3	Referral of Permit Application to Other Agencies	173
10.4	Permitted Sites	174
10.5	Operations	174
10.6	Mine Closures	175
10.7	Reclamation Standards	177



MINE PLAN AND RECLAMATION PROGRAM INFORMATION

Proposed Placer Mines, Gravel Pits and Quarries

10.1.1

- (1) The proposed mine plan and reclamation program filed with the inspector in compliance with section 10 (1) of the *Mines Act*, shall consist of the appropriate Notice of Work forms together with such other information as the inspector may require, for approval of placer mining, sand and gravel pits, rock quarries and industrial mineral quarries.
- (2) No work shall proceed without the inspector granting a permit or authorization or the chief inspector granting an exemption under section 10 (2) of the *Mines Act*.

PROPOSED COAL AND MINERAL MINES, MAJOR MODIFICATIONS TO EXISTING MINES & MAJOR EXPLORATION AND DEVELOPMENT

Departure from Approval

10.1.18

The owner, agent or manager shall notify the chief inspector in writing of any intention to depart from the mine plan and reclamation program authorized under sections 10.1.1 or 10.1.2 of this code to any substantial degree, and shall not proceed to implement the proposed changes without the written authorization of the chief inspector.

Exceptions

10.1.19

- (1) Sections 10.1.2 through 10.1.17 of this code do not apply to placer mines, sand and gravel pits, and quarries unless required by the chief inspector
- (2) Sections 10.1.8, 10.1.9 and 10.1.10 of this code do not apply to mines with respect to which the chief inspector has received an application for a permit before the date on which this subsection comes into force.

NOTICE OF FILING

Publication

10.2.1

When required by an inspector, notice of filing an application under section 10 (1) of the *Mines Act* shall be published, by the person filing it, in the Gazette and in local newspapers.

Written Response

10.2.2

Where a notice of filing has been published under section 10.2.1 of this code, a person affected by, or interested in, the application has 30 days after the last date on which the notice was published to view the application and make written representations to the chief inspector.

REFERRAL OF PERMIT APPLICATION TO OTHER AGENCIES

Mine Development Review Committee

10.3.1

- (1) The chief inspector may refer to the advisory committee or the regional advisory committee established pursuant to section 9 of the *Mines Act*, applications submitted under section 10.1.2 of this code and may, where the chief inspector considers it to be appropriate, refer any Notice of Work submitted under section 10.1.1 of this code.

- (2) The advisory committee or regional advisory committee shall review every application referred to them and make recommendations to the chief inspector within 60 days following application.
- (3) If no recommendations under subsection (2) have been received within 60 days, the chief inspector will deem that there are no concerns.

Circulation of Application

10.3.2

- (1) If a permit application under section 10.1.1 of this code is not referred to a committee for review under section 10.3.1, an inspector may circulate it to other ministries and agencies and they will have 30 days following referral to make written representations to the inspector.
- (2) If no written representations have been received within 30 days, the inspector will deem that there are no concerns.

Permit

10.3.3

A permit issued under section 10 (1) of the *Mines Act* shall take into consideration

- (a) any written representations received under section 10.2.2 of this code,
- (b) any recommendations made by a committee under section 10.3.1 of this code, and
- (c) any written representations received under section 10.3.2 of this code.

PERMITTED SITES

Updated Plans

10.4.1

- (1) After commencement of operations, mine plans, including programs for reclamation and closure, shall be updated, at a minimum, every 5 years.
- (2) Reclamation plans shall outline progressive reclamation activities for the 5 years following the date on which the plans are updated in accordance with subsection (1).

Other Reporting

10.4.5

The owner, agent or manager shall submit the following periodic reports with the annual reporting in a form specified by the chief inspector or by the conditions of the permit by March 31 of the year following their completion:

- (a) mine plan, reclamation plan and closure plan updates under section 10.4.1 of this code;

OPERATIONS

Materials Inventory

10.5.7

- (1) Where required for the control of metal leaching and acid rock drainage, the owner, agent or manager shall maintain an inventory of identified material that includes
 - (a) composition, mass, volume, surface area, and storage locations,
 - (b) history and timing of excavation,
 - (c) monitoring data, and

- (d) any other information required by the chief inspector.
- (2) Upon closure, the manager shall submit the material inventory to the chief inspector.

Excavations Near Property Boundaries

10.5.8

The excavation of soil material such as clay, silt, earth, sand or gravel, in a surface mine shall not be carried on within a setback distance of at least 5 metres horizontal from the vertical plane of the property boundary, and

- (a) there shall be no excavation of soil material below a surface sloping downwards into the property from the inside edge of the setback no steeper than 1.5 horizontal to 1 vertical, and
- (b) material that sloughs from within this distance shall not be removed without the written approval of the inspector.

Excavation before April 1, 1997

10.5.9

The chief inspector may direct that any excavation that exists in soil materials on or before April 1, 1997 will not be considered to be out of compliance for not meeting setback requirements providing that all further excavation is conducted in a manner consistent with the requirements of section 10.5.8 of this code.

Alternative setbacks and slopes

10.5.10

Notwithstanding sections 10.5.8 and 10.5.9 of this code, the chief inspector may approve a mine plan, prepared by a Professional Engineer, with alternative setbacks and slopes that ensure that the property boundary will be adequately protected.

Rock excavation

10.5.11

Rock shall not be excavated within a distance of 5 m from the property boundary.

Waiver by adjoining property owners

10.5.12

The owners of adjoining properties may, by agreement in writing, waive the provisions of sections 10.5.8, 10.5.9 and 10.5.11 of this code.

MINE CLOSURES

Notice Required

10.6.1

The owner, agent, or manager shall provide written notice of not less than 7 days to an inspector of intention to stop work in, on, or about a mine.

Cessation of operations

10.6.2

- (1) If a mine ceases operation, the owner, agent, or manager shall
 - (a) continue to carry out the conditions of the permit, and
 - (b) carry out a program of site monitoring and maintenance.

- (2) If a mine ceases operation for a period longer than one year, the owner, agent, or manager shall
- (a) apply for an amendment to the permit setting out a revised program for approval by an inspector,
 - (b) identify the hazards and provide detailed engineered plans and drawings respecting the hazards to local emergency agencies, and update the drawings as required, and
 - (c) if practicable, make the plans and drawings available on site in a conspicuous location.

Filing of Plans

10.6.3

- (1) On the closure of a mine, the owner, agent or manager shall, within 90 days, file with the chief inspector accurate drawings, on a scale consistent with good engineering practice, showing
- (a) on a plan view
 - (i) the surface and underground workings of the mine up to the time of closure and the boundaries of the mineral claims, licenses, or leases in which the workings are situated, and
 - (b) a general long section and several cross section views of the surface and underground mine workings, and
 - (c) any other plans that may be requested by the chief inspector.
- (2) The filed plans shall be preserved as a permanent record in the office of the chief inspector.

Securing of Openings

10.6.4

When a mine is closed for an indefinite period, or otherwise left unattended for any length of time, the owner, agent or manager shall take all practicable measures to prevent inadvertent access to mine entrances, pits and openings that are dangerous by reason of their depth or otherwise, by unauthorized persons and ensure that the mine workings and fixtures remain secure.

On-going Management Requirements

10.6.9

Where a mine requires on-going mitigation, monitoring or maintenance, the owner, agent, or manager shall submit a closure management manual that

- (a) describes and documents key aspects of the ongoing mitigation, monitoring and maintenance requirements, and
- (b) tracks important changes to components of the system that effect long-term mitigation, monitoring and maintenance requirements.

Security

10.6.15

On the closure of a mine, and on the chief inspector being satisfied that some or all the conditions of the permit have been complied with, the person who deposited a security under section 10 (4) or 10 (5) of the *Mines Act* shall be entitled to refund of some or all of the security and any accumulated interest, less any amount paid out under section 10 (8) of the *Mines Act*.

Application for security release

10.6.16

An application for security release or a partial security release, that details the reclamation activities that have been completed under the requirements of the act, the code, and approved reclamation plan, shall be submitted to the chief inspector.

RECLAMATION STANDARDS

Reclamation Defined

10.7.1

It is the duty of every owner, agent, and manager to institute and, during the life of the mine, to carry out a program of environmental protection and reclamation, in accordance with the standards described in section 10.7.4 to 10.7.21 of this code.

Pre-legislation Disturbances

10.7.2

Where environmental disturbance occurred at a site prior to the enactment of reclamation legislation in 1969, and has remained inactive since this time, the portion of environmental disturbance, which occurred before the enactment of reclamation legislation in 1969, is exempt from the re-vegetation provisions.

Exclusions

10.7.3

A reclamation standard prescribed under section 10.7.4 to 10.7.21 of this code does not apply where

- (a) a mine is specifically excluded by a condition of its permit from complying with a particular standard, or
- (b) a disturbance created by a mining activity has been reclaimed inspected, and found to be satisfactory to an inspector.

Land Use

10.7.4

The land surface shall be reclaimed to an end land use approved by the chief inspector that considers previous and potential uses.

Capability

10.7.5

Excluding lands that are not to be reclaimed, the average land capability to be achieved on the remaining lands shall not be less than the average that existed prior to mining, unless the land capability is not consistent with the approved end land use or compromises long-term physical and/or geochemical stability.

Long Term Stability

10.7.6

Land, watercourses and access roads shall be left in a manner that ensures long-term physical and geochemical stability.

Re-vegetation

10.7.7

On all lands to be re-vegetated, land shall be re-vegetated to a self-sustaining state using

appropriate plant species.

Growth Medium

10.7.8

On all lands to be re-vegetated, the growth medium shall satisfy land use, capability, and water quality objectives. All surficial soil materials removed for mining purposes shall be saved for use in reclamation programs unless these objectives can be otherwise achieved.

Landforms

10.7.9

Where practicable, land and watercourses shall be reclaimed in a manner that is consistent with the adjacent landforms.

Structures and Equipment

10.7.10

Prior to abandonment, and unless exempted by the chief inspector,

- (a) all machinery, equipment and building superstructures shall be removed,
- (b) concrete foundations shall be covered and re-vegetated, and
- (c) all scrap material shall be disposed of in a manner acceptable to an inspector.

Dumps

10.7.11

Dumps shall be reclaimed to ensure long-term stability, and long-term erosion control.

Watercourses

10.7.12

Watercourses shall be reclaimed to a condition that ensures

- (a) drainage is restored either to original watercourses or to new watercourses that will sustain themselves without maintenance, and the level of productive capacity shall not be less than existed prior to mining, unless the owner, agent or manager can provide evidence which demonstrates, to the satisfaction of the chief inspector, the impracticality of doing so.
- (b)

Open Pits

10.7.13

- (1) Pit walls constructed in overburden shall be reclaimed in the same manner as dumps unless an inspector is satisfied that to do so would be unsafe or conflict with other proposed land uses.
- (2) Pit walls including benches constructed in rock, or steeply sloping footwalls, are not required to be re-vegetated.
- (3) Where the pit floor is free from water, and safely accessible, vegetation shall be established.
- (4) Where the pit floor will impound water and it is not part of a permanent water treatment system, provision must be made to create a body of water where use and productivity objectives are achieved.

Blocking Access Roads

10.7.14

All access roads to surface areas of the mine that may be dangerous shall be effectively blocked to prevent inadvertent vehicular access.

Metal Uptake

10.7.17

When required by the chief inspector, vegetation shall be monitored for metal uptake.

Ecological Risk Assessment

10.7.18

- (1) When required by the chief inspector, the owner, agent or manager shall commission an ecological risk assessment.
- (2) Where there is a significant ecological risk, reclamation procedures shall ensure that levels are safe for plant and animal life and, where this cannot be achieved, other measures shall be taken to protect plant and animal life.

Disposal of Chemicals and Reagents

10.7.19

Chemicals or reagents, which cannot be returned to the manufacturer, shall be disposed of in compliance with municipal, regional, provincial and federal statutes.

Water Quality

10.7.20

If water quality from any component of the mine results in exceedances of applicable provincial water quality standards in the receiving environment, when required by the chief inspector, remediation strategies shall be implemented for as long as is necessary to mitigate the problem.

Monitoring

10.7.21

The owner, agent, or manager shall undertake monitoring programs, as required by the chief inspector, to demonstrate that reclamation and environmental protection objectives including land use, productivity, water quality and stability of structures are being achieved.

Release of Obligations

10.7.22

If all conditions of the Act, code and permit have been fulfilled to the satisfaction of the chief inspector and there are no on-going inspection, monitoring, mitigation or maintenance requirements, the owner, agent or manager will be released from all further obligations under the *Mines Act*.



INDEX

THIS IS NOT A COMPREHENSIVE COMPILATION OF ALL CODE REQUIREMENTS.

If required a searchable version of the Code is available at:

<http://www.em.gov.bc.ca/subwebs/mining/heaSAFE/mxready/mxcode01.htm>

Abandoned Mine or Old Workings

see also **Reclamation and Closure**

definition	Mines Act §1
duty to keep plans	6.8.1
posting, authority to enter mine	1.3.2
posting of identified hazards	10.6.2(3)(a)
reclamation and closure	Part 10
remediation and recovery of costs of.....	Mines Act §17

Aboriginal and Treaty Rights

Abrasive Blasting

indoors	2.5.2
lead	2.5.1
nozzles and valves	2.5.5
outdoors	2.5.3
protective equipment	2.5.4
removal of workers	2.5.6
silica.....	2.5.1

Access

blast area, prevention of access	8.5.9; 8.6.2; 8.6.17
definition	Part 9
reclamation, access to pit.....	10.7.15
reclamation, prevent access to mine openings ...	10.7.21
roads	10.7.6; 10.7.20
to adjacent workings	8.10.2
to conveyor belts	4.4.16
to hazardous material carried in personnel carriers	4.9.8(2)
to live side of electric power line blasting switch	8.6.13
to mine	1.3.1-3; Mines Regulation §1; Mines Act §38(2)(g)
to mine records	Mines Regulation §1; Mines Act §38(2)(f)-(g)
to Mines Act, Regulation, and code	1.4.1
to MSDS	2.13.13
to potential run-out zone of all dumps	6.10.1(7)
to reports, by OHSC	1.6.7
to stored material or equipment	4.1.6
to surface excavations.....	6.24.1
to walkways, by stairway or fixed ladder	4.1.11
to work areas.....	4.1.4
unauthorized access to mine	1.3.3

Accidents

dangerous occurrence	1.7.1; 1.7.3
definition	Part 1
engineering report.....	<i>Mines Act</i> §18
fatality notification.....	1.7.1(1)(b)
investigations	<i>Mines Act</i> §7; 1.6.5-6; 1.7.2
investigation, by inspector	<i>Mines Regulation</i> §1
investigation, access to mine	<i>Mines Act</i> §38(2)(g)
loss of life	1.7.1
manager's responsibilities	1.7.1
procedures for accident investigation	1.6.9

Acid Rock Drainage (ARD)

definition	Part 9
materials inventory	10.5.7
Acquisition, of Mine.....	<i>Mines Act</i> §11.1

Acquisition, of Mine

Mines Act §11.1

Advisory Committee

establishment of	<i>Mines Act</i> §9
mine development review	10.3.1
response to applications within 60 days	10.3.2

Aerial Devices

see **Elevating Work Platforms**

Agent

definition	<i>Mines Act</i> §1
------------------	---------------------

Alarm

see **Audible Warnings**

mobile equipment, back-up alarms.....	4.9.1
mobile equipment, automatic engine shutdown.....	4.9.21

Angle of Repose

unconsolidated material	6.23.1
-------------------------------	--------

Annual Report

chief inspector's annual report	<i>Mines Act</i> §36
---------------------------------------	----------------------

Application of Code and Mines Act

application of code	<i>Mines Act</i> §2; 1.1.1
application of part 2 section 13, controlled products	2.13.1
application of electric rules.....	5.1.1
absence of code requirements.....	1.1.2
conflicting codes	1.1.3
amendments to adopted standards	1.1.4
purchased equipment/buildings	1.1.5

As Built

10.4.5

Asbestos

asbestos-free, definition	Part 2
asbestos controls and substitutes	2.3.1
disposal of asbestos	2.3.2
maximum allowable exposure	2.1.1

Audible warnings

Railway requirements	4.10.2
Hoisting equipment	4.19.2
Blasting - required	8.6.2
Back up alarm	4.9.1

Audiometric Technician, Certified

definition	Part 2
audiometric testing	2.12.2

Audiometric Testing

see Medical Surveillance Programs	2.12.2
--	--------

Authorized Person

see also Certified Person	
see also Qualified Person	
authority to enter mine.....	1.3.1
definition	<i>Mines Act</i> § 1
explosives, extraction of	8.5.8
inspection of magazine	8.1.6
inspection of personal carrier	4.9.8
inspection of power output on electric blasting machine	8.6.9
inspection of suspended work platform.....	4.14.7
magazine, possession of key.....	8.1.6(2)
magazine, log book	8.1.6(3)
operation of crane or hoist, suspended platform.....	4.14.5
operation of crane, derrick or hoist, two or more	4.19.9
operation of vehicle used to transport explosives.....	8.4.2(6)
suspended loads, attachment of	4.19.6

Back-up Alarm

mobile equipment traveling in reverse	4.9.1
---	-------

Battery Charging Station

.....	6.21.1
-------	--------

Bedrock

definition	Part 6
------------------	--------

Bench

bench heights and mine faces	6.23.3-5
definition	Part 6
multiple bench system	6.23.5
reclamation of	10.7.14
width of.....	6.23.2

Berm

see also Catchment Berm	
--------------------------------	--

see also Shoulder Barrier	
definition of catchment berm	Part 6
definition of dump berm	Part 6
dumping over bank	6.20.3
shoulder barrier.....	6.9.1
width of.....	6.23.2
Best Available Technology	Glossary (definitions)
Biological Monitoring	
see also Medical Surveillance Programs	
see also Monitoring definition	Part 2
chemical analysis	2.12.6
Blaster	
definition	Part 8
assistance for blaster	8.2.2
Blasting	
see also Abrasive Blasting	
see also Misfire	
see also Magazine	
at adjacent mines	8.10.1-2
definition of blast danger zone	Part 8
definition of blasting agent	Part 8
definition of blasting machine	Part 8
definition of bootleg	Part 8
definition of collar	Part 8
definition of sensitive area	Part 8
definition of urban area.....	Part 8
Blasting Cap	
definition of detonator	Part 8
definition of non-electric cap	Part 8
Blasting Certificate	
assisting certified blaster.....	8.2.2
definition of blasting certificate	Part 8
definition of provisional blasting certificate	Part 8
examination for.....	8.2.4
provisional	8.2.3
requirements	8.2.1
restrictions on	8.2.5
suspension of, by inspector.....	8.2.7
suspension of, by manager	8.2.6
Board of Examiners	
definition	Part 1
certification procedure	1.13.1-6
Boilers	
portable heaters.....	4.1.3

Bond

see Paid Security

Boom Stops

see Hoisting Equipment, Operation 4.19.3

Bootlegdefinition Part 8
drilling precautions 8.7.1-2**Boundary Setback**boundary setback 10.5.8
boundary setback, alternative 10.5.10
boundary setback, limits 10.5.11
boundary setback, pre-existing 10.5.9
boundary setback, waiver of 10.5.12**Brakes**hoists
inspection 4.19.1
load brake for hand-operated hoist 4.12.4
mobile equipment
annual testing 4.9.19
asbestos free brake lining 2.3.1
common components 4.9.18
minimum acceptable brake performance 4.9.19(d)
modifications on vehicles over 45,000 kg 4.9.10
parking brake 4.9.17
standards 4.9.16
remote control of mobile equipment 6.18.1(4)**Breakthroughs**blasting at adjacent mines 8.10.1
connection between mine workings 8.10.2**Bridge**foot bridge to cross a conveyer 4.4.16
electrical bridge and trolley conductors 4.12.1**Bridge Cranes**

see Lifting Devices

Buildingssee also Coal Preparation Plants
see also Magazine
see also Construction
abrasive blasting within a building 2.5.2
compliance with standards 1.1.5; 4.1.1(1)
conveyor belts, belt slip detection device 4.4.16
curbs and bullrails 4.1.11
design and construction 4.1.1
drawings 4.1.1

dust removal	2.3.5
emergency evacuation, warning system	3.13.2
engine exhaust	4.4.12
engineering report.....	<i>Mines Act</i> §18
equipment entranceways.....	4.1.5
fire protection.....	4.4.10
guardrails	4.1.7-9
handrails	4.1.7
openings, floor	4.1.9
plans.....	6.8.1
portable heaters in.....	4.1.3
removal of.....	10.7.10
repair shops.....	4.2.1
storage of materials.....	4.1.6
toe-boards	4.1.10
walkways	4.1.11
work areas, access to	4.1.4
Bulk Shipment	
definition	Part 2
supplier label	2.13.5(6)(a)
workplace label.....	2.13.5(6)(b)
Buried Lines	
labeling/marketing pipes with hazardous agents	4.4.25
stakes or signs on the surface	4.4.26
C.S.A.	
definition	Part 1
Camps	
seasonal camps, sanitary conveniences	2.11.15
Capability, Land	
definition	Part 10
reclamation, land capability.....	10.7.5
Cartridge	
definition of primed cartridge	Part 8
dimensions of cartridge marked on package	8.3.2
primed cartridges shall not be transported.....	8.5.5
priming detonating devices.....	8.5.4
wrapper	8.5.2
Catchment Berm	
definition	Part 6
minimum width	6.23.2(1)
accumulation of loose rock or soil.....	6.23.2(2)-(3)
Cease of Operations	
see also Reclamation and Closure	
hazard identification	10.6.2
owner obligations	10.6.2

remote control of fixed or tracked equipment	6.18.1(6)
Certification Procedure	
board grants certification	1.13.1-6
manager may issue provisional certification	1.13.6
suspension of certificates	1.13.8-9
validity of certificates	1.13.7
Certified Person	
see also Authorized Person	
see also Qualified Person	
definition	Part 1
Chain Saws	4.4.4
Chemical Exposure	
see also Hazardous Materials	
emergency wash facilities.....	2.4.1
protection from	2.4.2
Chief Inspector	
accident investigations.....	<i>Mines Act §7</i>
advisory committee	<i>Mines Act §9; 10.3.1</i>
annual report	<i>Mines Act §36</i>
appeals to	<i>Mines Act §33</i>
appointment of	<i>Mines Act §3</i>
authority.....	<i>Mines Act §4</i>
board of examiners	1.13.1
definition	<i>Mines Act §1</i>
delegation of powers.....	<i>Mines Act §6</i>
establishment of provincial mine rescue stations	3.7.13
Health, safety and reclamation code committee	<i>Mines Act §34</i>
immunities	<i>Mines Act §19</i>
musculoskeletal disorders.....	1.6.9(h)(1)
permits	<i>Mines Act §10</i>
power to appoint inspectors	<i>Mines Act §5</i>
variance from a provision of the code	1.2.1-2
Chocks, Vehicle	4.9.4
Clay and Silt	
angle of slope.....	6.23.1
definition	Part 6
excavation of	10.5.8
Closed Mine	
see Reclamation and Closure	
definition	<i>Mines Act §1</i>
Closure	
see Reclamation and Closure	
Closure Plan	10.4.5(a)

Co-chair

accident investigation	1.6.5-6
definition of management co-chair	<i>Mines Act</i> §1
definition of worker co-chair	<i>Mines Act</i> §1
inspections	<i>Mines Act</i> §15(2)-(3)
investigation of dangerous occurrences.....	1.7.1(3)
occupational health and safety committee (OHSC).....	1.6.2(2)
OHSC meeting minutes, signed by	1.6.4

Code

see also Application	
absence of code requirements.....	1.1.2
application of	1.1.1-5
boiler, pressure vessel, and pressure piping code	4.1.3
British Columbia building code.....	4.1.1
British Columbia fire code	3.9.1
Canadian electrical code	4.1.3; 4.4.12; 5.1.1; 5.2.4
code for tower cranes.....	4.18.1
compliance with	<i>Mines Act</i> §24
conflicting codes	1.1.3-5
contractors, compliance with code	<i>Mines Act</i> §25
contravention of	<i>Mines Act</i> §37
definition	<i>Mines Act</i> §1
enforcement of	<i>Mines Act</i> §35
equipment and building standards	1.1.5
installation code for oil burning equipment.....	4.1.3;
natural gas and propane installation code.....	4.1.3;
posting and distribution of	1.4.1
preparation of.....	<i>Mines Act</i> §34; <i>Mines Act</i> §38
purpose of	<i>Mines Regulation</i> § 1
safety code 6, devices from 10 MHz to 300 GHz	2.3.10
safety code for material hoists	4.18.1
safety code for mobile cranes	4.14.6; 4.18.1
variance of	<i>Mines Act</i> §13; 1.2.1-4

Cold Stress

see **Thermal Environment**

Combustible Dust

see **Dust**

see also **Explosion Barriers**

Community Watershed

see **Watershed Compliance** *Mines Act* §24

Compressors

engine exhaust not to enter compressor intake 4.4.12

Confined Spaces

atmospheric testing	3.4.3-4
definition	Part 3
electrical equipment and tools	3.4.2(5)-(6)

emergency response.....	3.4.2
entry permits	3.4.2
inerting	3.4.6(2)
instruction and training	3.4.1(d)
inventory	3.4.1(b)
lifelines and harnesses	3.4.2
oxygen content of	3.4.3; 3.4.5(2)
permits, records of	3.4.2(4)
protective equipment	3.4.6
safe work procedures	3.4.2(1)
assignment of responsibilities	3.4.2(1)(a)
breathing apparatus	3.4.2(1)(i)
compressed air, requirements.....	3.4.2(1)(j)
effective means of communication	3.4.2(1)(f)
emergency response plan	3.4.2(1)(l)
hazard assessment	3.4.2(1)(b)
lifelines and harness requirements	3.4.2(1)(d)
lockout disconnection and blanking	
or blinding	3.4.2(1)(k)
respiratory equipment for rescue	3.4.2(1)(e)
suitable entry permit	3.4.2(1)(c)
visual contact	3.4.2(1)(g)
welding and burning procedures	3.4.2(1)(h)
signed and secured.....	3.4.1(c)
ventilation of.....	3.4.3(2-3); 3.4.5
waste dumps	6.10.2(1)-(2)
working in	3.4.1-2
written procedures	3.4.1(a)
Conflicting Codes	1.1.3-5
Connection	
see Breakthroughs	
Construction	
buildings, compliance with standards	1.1.5
buildings, design and construction	4.1.1
definition	Part 1
general	4.15
haulage roads	6.9.1
portable wooden ladders	4.4.21
Tilt-Up, precast	4.16
Contact Information	1.3.2
mine manager	1.3.2
qualified persons	1.3.2
signage	1.3.2
Container	
capped fuses, container not required	8.5.5
definition	Part 2
explosives and detonators, separate containers	8.4.6

labeled with a laboratory label.....	2.13.10
labeled with a supplier label	2.13.5
labelled with workplace label	2.13.6-7
moving gas cylinders	4.4.7
storage of detonators.....	8.1.8
storage of explosives, opening containers	8.3.3
storage of flammable waste	2.3.8
storage of hazardous or dangerous materials.....	2.3.4
storage of hazardous waste	2.3.6

Contractors

about	<i>Mines Act</i> §25
order against	<i>Mines Act</i> §15(4.2)
report of total hours worked and lost time.....	1.9.3

Controlled Products

see also Workplace Hazardous Materials Information System (WHMIS)	
application of code with respect to	
controlled products	2.13.1
confidential business information	2.13.15-18
definition	Part 2
in piping systems and vessels, identification of.....	2.13.8
label	2.13.5-8; 2.13.10
material safety data sheet.....	2.13.11-14
placard identifiers	2.13.9
use, storage, handling	2.13.2
worker education	2.13.3
worker training	2.13.4
working with or near	2.13.19-20

Conveyance

see **Shaft Conveyance**

Conveyor Belts

about	4.4.16
underground illumination, conveyer galleries	2.8.3

Coroners Act

designation under.....	<i>Mines Act</i> §20
------------------------	----------------------

Cranes

see **Lifting Devices**

Crew Safety Meetings

requirements	1.6.12
provision for regular monthly meetings	1.6.9(1)(e)

Cultural Heritage Resource

definition	<i>Mines Act</i> §1
permits, conservation of	<i>Mines Act</i> §10
regulations respecting the conservation of	<i>Mines Act</i> §38(2)(e)

Dangerous Occurrences

dangerous occurrences to be reported include	1.7.3
--	-------

engineering report.....	Mines Act §18(b)
manager's responsibility.....	1.7.1
Data Plate	
vehicle mounted.....	4.9.9
Decommissioning	
see Reclamation and Closure	
Design, Mine	
mine designed by a qualified person	6.1.1(1)
methods of operation designed by a qualified person.....	6.1.1(1)
plans.....	6.8.1-3
professional engineer required by chief inspector	6.1.1(3)
track haulage systems	6.15.1-2
Detector, Gas	
see Gas Detector	
Detonator	
careless acts	8.3.9
definition of detonator	Part 8
definition of detonator house	Part 8
definition of non-electric cap	Part 8
electric detonators.....	8.3.11
identification of.....	8.3.2(4)
pneumatic loading over the leg wires of detonators	8.5.7
priming detonating devices	8.5.4
removal of.....	8.9.1
storage of	8.1.8
suspension by manager of blasting certificate	8.2.6
suspension by inspector of blasting certificate	8.2.7
transportation of.....	8.3.8; 8.4.3; 8.4.6
two or more detonators, time to return	8.8.2
Detrimental Environmental Impact	
definition	<i>Mines Act §1</i>
contravening an order & actions that cause.....	<i>Mines Act §15(4.1)</i>
Diesel Vehicles	
see Mobile Equipment, Underground Mining	
Discrimination	<i>Mines Act §14</i>
Dogs, Safety	
requirements for suspended work platforms	4.14.4(5)
Doors	
British Columbia building code.....	4.1.1
double-acting swing doors.....	4.1.4(3)(c)
glass doors	4.1.4(3)(d)
platforms	6.28.5

power-operated vertical doors	4.1.5
stairways, doors shall not open onto.....	4.1.4(3)(b)
toilets	2.11.12
Drilling	
in loose rock	8.7.3-4
near explosives	8.7.1-2
powered rock drill, dust suppression	6.24.3
requirements prior to drilling.....	4.17.11
shiftboss to supervise drilling after misfire	8.6.6
Drill Holes	
see also Collar	
connection to existing workings	8.10.2
definition of collar	Part 8
definition of socket	Part 8
surface plans, diamond drill holes collared on surface.....	6.8.1
Drills	
powered rock drill, dust suppression	6.24.3
Dump	
see also Stockpiles	
see also Dumping	
annual report	10.5.5
closure and	10.7.11
confined space	6.10.2(1)-(2)
definition of dump	Part 10
definition of dump berm	Part 6
definition of dump block	Part 6
definition of dump material	Part 6
definition of major dump	Part 10
entrance barrier	4.1.6(3); 6.10.1(5)
examination of dump block	6.5.2
manager responsibilities	6.10.1
reclamation of	10.7.11
stability	6.20.2
surface plans to include dumps.....	6.8.1
Dumping	
see also Stockpiles	
see also Dump	
definition of dump person.....	Part 6
definition of dumping position	Part 6
dump person shall	6.20.5
examination of dump block	6.5.2
manager responsibilities	6.10.1
over a bank	6.20.3
people below box.....	4.9.15(2)
reverse when dumping.....	6.20.4
secure box in raised position	4.9.15(1)

Dust

advise employees of health risk	2.12.3
blasting, time for.....	8.6.1
confined space, test for dust.....	3.4.3
definition of dust exposure occupation	Part 2
definition of respirable combustible dust	Part 2
drilling, power rock drill and dust suppression	6.24.3
hazardous dust, removal of	2.3.5
hazardous dust, electrical equipment.....	5.2.4
medical surveillance	2.12.1; 2.12.3
personal protective equipment.....	6.24.2
personal protective equipment, abrasive blasting.....	2.5.4
suppression of	6.24.2-3
threshold limit values	Table 2-1

Dust Exposure Occupation

see also Dust	
advise employees of health risk	2.12.3
definition	Part 2
medical surveillance	2.12.1; 2.12.3
threshold limit values	Table 2-1

Electrical

aerial device, electrically insulated.....	4.5.5
blasting by electricity, return to work area	8.6.21
blasting circuit conductors.....	8.6.19-20
blasting, electric circuit test	8.6.15
blasting, electric storms	8.6.17
blasting, firing in multiple work places	8.6.22
blasting from power lines	8.6.12
blasting machine	8.6.9
blasting, radio transmitters turned off.....	8.6.18
blasting switches.....	8.6.13
cable and trailing cable, use and repair of	5.5.1-3
codes and standards	5.1.1
combustion engine, not used in hazardous areas	4.4.12
detonators	8.3.11
distance from high voltage conductor	4.19.8
equipment, power to be cut off	4.11.2
equipment electrically energized, contact with	3.3.4
equipment failure, dangerous occurrence	1.7.3(10)
ground, bag type dust collecting system	4.2.2
ground fault protection, submersible pump	5.6.1
haulage locomotive.....	4.10.4
hazardous locations	5.2.2; 5.2.4; 5.3.2; 6.42.4
hoisting equipment, contact with conductor.....	4.19.7
lifting devices, power supply.....	4.12.3
magazines, electrical specifications	8.1.3
plan	5.2.1

pneumatic loading, prevent buildup of charge	8.5.6
pointed tools	4.17.12
portable heaters, adherence to code	4.1.3
pumps, submersible	5.6.1
supply systems for mobile electrical equipment, testing of	5.7.1-2
switchgear, isolating circuits	5.4.1
welding and burning equipment, stored away from	4.4.7

Elevating Work Platforms

electrical insulation, aerial devices	4.5.5
forklift truck platforms	4.5.2
guard rails	4.5.3
definition of work platform	Part 7
logbook	4.5.7
non-destructive testing.....	4.5.4
repair	4.5.6
vehicle mounted aerial devices, standards.....	4.5.1
scaffolding	
scaffold requirements	4.14.1
suspended from hoists	
boom cranes	4.14.6
crane or hoist operations	4.14.5
guardrails	4.14.3(2)
identification plate	4.14.3(3)
inspection of	4.14.7
logbook	4.14.8
persons riding on hoisting equipment	4.14.2
requirements	4.14.3-4
safe working load	4.14.4
safety factors	4.14.4
warning device, boom cranes	4.14.6

Emergency and Emergency Preparedness

see also Mine Rescue	
communities	3.7.1(2)
conveyor, pull cord to stop and reset manually	4.4.16(4)
disclosure in medical emergencies	2.13.17
emergency exits shall be clearly marked	4.1.4
First Nations	3.7.1(2)(d)
flexible ladders, use of	6.28.9
forklift truck platforms used for emergency	4.5.2
hours of work when life or property is in danger	1.5.1
means of communication.....	3.6.3
methylene bisphenyl isocyanate, respirator type	2.3.12(2)(v)
remote control operations, emergency stop	6.18.1
source of illumination	2.8.2
warning system	3.13.2
warning system, test of	3.13.3-4
wash facilities	2.4.1

Emergency Plan

confined space, emergency and	
rescue procedures	3.4.3(2)
duty to post	3.13.1
mine emergency response plan.....	3.7.1
procedures for safe evacuation	3.13.1
traffic control procedures, emergency run-off	
protection	6.8.3

Emergency Training

all employees trained in basic	
emergency response	3.8.3
all employees trained in fire fighting	3.8.3
familiarization with emergency escape routes	3.13.1(3)
recognition of the emergency warning system	3.13.1(3)
worker training, emergency involving	
controlled product	2.13.4(1)(f)
worker training, emergency treatment for	
heat/cold stress	2.10.1(2)

Employee

see also Worker	
air quality after blast, worker may request test	8.6.4(2)
definition of employee	Part 1
distribution of the Mines Act, Regulations,	
and Code	1.4.1
duty to comply with Act, Code & Regulations	<i>Mines Act</i> §24
duty to wear appropriate clothing	3.3.4
failure to comply with Act, Code & Regulations	1.13.8
hours of employment	1.5.1
lockout, overlap between shifts	4.11.5
personal protective equipment,	
worker responsibility.....	1.8.2
right to refuse work	1.10.1-7
training & education, general	1.11.1-2
training & education, emergency procedures	3.8.3
training & education, evacuation procedures	3.13.1
training & education, hazardous agents	2.13.3-4; 2.13.8; 4.4.25
training & education, use & maintenance	
of equipment	1.8.1
use of alternate worker	1.10.6
workers to be removed from abrasive	
blasting area	2.5.6
working alone	3.2.3

Employer

definition	Part 2
------------------	--------

Employment

alternative	<i>Mines Act</i> §29; 1.10.6
-------------------	------------------------------

Enforcement

of Act, regulations, code, permit, or order Mines Act §35

Engine

exhaust 4.4.12
 equipped with 4.10.2
 shut off while loading or unloading explosives 8.4.2
 shutdown, automatic 4.9.21

Engineering Report

Mines Act §18

Equipment Locking

see also **Lock-Out Procedures**
 vehicle mounted dump boxes, blades, buckets 4.9.15

Ergonomics

see **Musculoskeletal Disorders**

Evacuation

emergency warning system 3.13.2
 procedures and training 3.13.1
 testing, reporting of 3.13.4
 testing, warning system 3.13.3

Excavations

combination, sloping and shoring 4.17.4
 excavated material 4.17.14
 guardrails or barriers 4.17.15
 jacks, hydraulic or pneumatic 4.17.7
 jacks, steel trench 4.17.8
 ladder, access to 4.17.10
 nearby objects, securing of 4.17.13
 plywood, use of 4.17.9
 pointed tools, use of 4.17.12
 professional engineer, certification by 4.17.2
 professional engineer, instruction of 4.17.1
 responsibilities of manager 4.17.3
 shoring and timbering, use of lumber in 4.17.5
 shoring, installation of 4.17.6
 size and spacing of members Tables 17.1-2
 trench depth Tables 17.1-2
 utility services, locating 4.17.11

Explosives, Firing

see also **Misfires**
 blasting circuit safety 8.6.12
 blasting machines 8.6.8-9
 branch circuits 8.6.14
 cables 8.6.19
 central blasting 8.6.23
 condenser discharge machines 8.6.10
 connection to blast circuit 8.6.11
 electrical storms and 8.6.17

guarding and evacuation	8.6.2
lead wires	8.6.20
misfires	8.6.5
misfires, reporting	8.6.6
multiple sites and	8.6.22
procedures.....	8.6.3
procedures, written	8.6.8
return to work area.....	8.6.21
switches	8.6.13
testing, circuits.....	8.6.15
timing of	8.6.1
transmitters, radio	8.6.18
waiting time	8.6.4(2)
Explosives, Loading	
care in	8.5.1
cartridges	8.5.2
equipment access	8.5.10
extraction	8.5.8
fuses, capped.....	8.5.5
loading, pneumatic	8.5.6-7
priming, detonators	8.5.4
priming, nitroglycerine	8.5.3
vehicle access	8.5.9
Explosives, Misfires	
see Misfires	
Explosives, Priming	
see Explosives, Loading	
Explosives, Removal	8.9.1-3
Explosives, Storage	
see Magazine	
Explosives, Transporting	
see Explosives, Use of	
Explosives, Use of	
see also Explosives, Loading	
see also Explosives, Firing	
see also Misfires	
adjacent workings and	8.10.1
careless acts in	8.3.9
defective explosives.....	8.3.4
detonator, transport of.....	8.4.3; 8.4.6
detonators, electrical	8.3.11
existing workings, connection to	8.10.2
Explosives Act and	8.3.1
explosives, acceptable	8.3.1
frozen explosives	8.3.6
heated rock, blasting of.....	8.3.7

identification	8.3.2
implements, for opening containers.....	8.3.3
medical surveillance	8.3.10
safety fuse procedures in	8.3.5
smoking and.....	8.1.9
transport, explosives & detonators in separate containers.....	8.4.6
transporting	8.3.8
transporting, supervision	8.4.1
transporting, vehicle	8.4.2
Face	
definition	Part 6
pit face area safety	6.5.1
removal of unconsolidated material	6.23.1
shoring contact with faces of excavation.....	4.17.6
surface mine faces and bench heights.....	6.23.3-5
face shields	1.8.5; 4.4.3(4)
Fall Arresting Devices	4.4.1
Falling Object Protective Structures	4.9.11(2)(b)
Fatality	1.7.1(a); 1.7.1(1-3)
Fencing	
conveyer belt, removing fences for servicing	4.4.16(8-10)
procedure before recommencing work	4.11.6
servicing of running machinery	4.4.6
surface excavations.....	6.24.1
Fire Extinguisher	
vehicle mounted.....	4.9.3
Fire Extinguishing Equipment	4.4.10
Fire Fighting	
see also Mine Rescue	
firefighting equipment	3.9.1
Fire Prevention	
designation of fire hazard areas	3.5.3
First Aid	
access to physician	3.6.3
certificate, qualified member of mine rescue team	3.7.7(1)
certificate, shiftboss or fireboss	1.13.3(2)
laboratory label, requirements	2.13.10
OHSC provided with all reported first aid cases	1.9.2
supplies	3.6.1-2
Fixed Equipment	
buried lines, marking	4.4.26
chain saws.....	4.4.4

conveyor belts.....	4.4.16
engine exhaust	4.4.12
fall arresting devices	4.4.1
fire extinguishing equipment	4.4.10
grinders	4.4.3
ladders, fixed.....	4.4.24
ladders, portable	4.4.20-23
lifting devices	4.4.9
machinery, moving parts.....	4.4.2
mine plan	4.4.26
pipeline systems.....	4.4.25
pneumatic tools.....	4.4.5
powder-actuated tools.....	4.4.8
servicing of running machinery	4.4.6
welding/burning equipment	4.4.7
Fly Spreading	
see Haulage Vehicle Operations	
Fuel	
refuelling vehicles carrying explosives	8.4.2(4)
transport of compressed cylinder with fuel gas	4.4.7
Fuel/Gases storage and use	
compressed gas cylinder containing fuel gas	4.4.7(2)
distance from explosive storage	8.1.10
Gas Detectors	
approved equipment	3.12.1
detector servicing.....	3.12.2
Grinders	4.4.3
Growth Medium, Reclamation	10.7.8
Guardrails	
definition	Part 4
elevating work platforms	4.1.8; 4.5.3; 4.14.3
floor openings	4.1.9
danger of persons falling into an excavation	4.17.15
stairways	4.1.7
stairway ends in direct proximity to hazard.....	6.27.4
standard guardrails shall be installed.....	4.1.8
Handrails	
ladders.....	6.28.2
stairways	4.1.7; 6.27.2
Haul Roads	
definition	Part 6
design and construction	6.9.1
mine plans.....	6.8.1
runaway vehicle protection.....	6.9.2
width	6.9.1

Haulage Vehicle Operations, Surface

driving in reverse	6.20.4
dump stability	6.20.2
dumping, over bank	6.20.3
fly spreading	6.20.1
responsibilities, dump person	6.20.5

Hazard

definition	Part 1
------------------	--------

Hazard Information

definition	Part 2
------------------	--------

Hazardous

definition	Part 1
------------------	--------

Hazardous Atmosphere

see **Confined Spaces**

Hazardous Conditions

falling objects	3.3.2
materials handling	3.3.5
moving machinery and electrical contact	3.3.4
unsafe work	1.10.1-3; 3.3.1
workplace conditions, manager's responsibility	1.9.1
workplace hazards, control of.....	1.9.1-2; 2.2.1
workplace hazards, housekeeping	2.2.1-2
water hazard.....	3.3.3

Hazardous Materials

see also **Workplace Contaminants**

asbestos control	2.3.1
asbestos disposal.....	2.3.2
containers for	2.3.4
control of	1.9.1-2; 2.2.1
dust	2.3.5
flammable waste	2.3.8
isocyanates in sprays	2.3.12
radiation	2.3.9-11
spills.....	2.3.7
storage of	2.3.3
waste	2.3.6
waste dumps, respiratory hazards	6.10.2

Hazardous Substance

definition	Part 2
------------------	--------

Hazardous Waste

see **Hazardous Materials**

definition	Part 2
------------------	--------

Health and Safety Program

1.6.9

Health, Safety and Reclamation Code Committee.....

Mines Act §34

Heat Stress

see Thermal Environment

Heaters

portable heaters..... 4.1.3

Hoisting Equipment, Miscellaneous

see also Lifting Devices

angle of boom, radius lift..... 4.18.9
 controls 4.18.10
 equipment requirements and standards..... 4.18.1
 hook travel limits 4.12.2
 label, name/model/serial number..... 4.18.7
 logbook 4.18.6
 maintenance history 4.18.5
 manually operated hoists and winches 4.12.4
 manufacturer's manual 4.18.4
 professional engineer, certification by 4.18.3
 protection 4.18.12
 radio control systems 4.18.11
 safe working load 4.18.2
 safe working load, signage 4.18.8

Hoisting Equipment, Operation

boom stops 4.19.3
 electrical conductor, contact with 4.19.7
 electrical conductor, safe working distance..... 4.19.8
 load slinging, visibility, communications 4.19.6
 loads passing over persons 4.19.10
 multiple cranes, use of in single lift..... 4.19.9
 operator inspection 4.19.1
 operator requirements 4.19.4
 suspended load, traveling with 4.19.5
 warning signal, audible..... 4.19.2

Illumination

materials handling 3.3.5(3)
 of back-up alarms 4.9.1(3)(a)
 of engine, locomotive, or trolley car used to haul 4.10.2(1)
 of lunchrooms 2.11.3(1)
 of mine dry 2.11.7
 of mobile equipment 6.19.1; 6.19.6
 of trains 4.10.1(1)-(2)
 of washroom facilities 2.11.10(4); 2.11.12(3)
 standards 2.8.1
 surface lighting 2.8.2

Impairment and Conduct

drugs 3.1.2
 impaired persons..... 3.1.1
 improper conduct 3.1.3

liquor.....	3.1.2
safety devices, tampering with	3.1.4
Inspector	
authority to enter mine.....	<i>Mines Act § 15</i>
definition	<i>Mines Act §1</i>
Interlock, Fluid Drive Transmissions	4.9.2
Investigation	
access to mine and records	<i>Mines Regulation §1</i>
Isolating Switchgear	
see also Electrical	
Label	
see also Materials Safety Data sheet	
confidential business information	2.13.15
controlled product, exceptions (label not required)	2.13.1(2)
controlled product in piping systems, identification of	2.13.8
controlled product, label required.....	2.13.2
definition of label.....	Part 2
definition of supplier label	Part 2
definition of workplace label	Part 2
hazardous waste, label required.....	2.3.6
laboratory label	2.13.10
piping systems, buried lines	4.4.25
placard identifiers	2.13.9
supplier label, requirements for	2.13.5
worker training	2.13.4
workplace label for employer produced products	2.13.6
workplace label for decanted products	2.13.7
Ladders	
access to walkways	4.1.11
coating on wooden ladders	4.4.22
excavation over 1.2 m deep, ladder to be kept	4.17.10
fixed	4.4.24
flexible	6.28.9
handrails	6.28.2
landings.....	6.28.6
platforms and openings.....	6.28.3-5
portable	4.4.20-23
standards	6.28.1
Lasers	
protection	2.7.2
standards and safe use	2.7.1
Lifting Devices	
see also Hoisting Equipment	

air-operated hoists/winches	4.12.9
chocking, mobile cranes	4.12.7
electrical conductors	4.12.1
hook travel, limiter	4.12.2
lifts, vehicle	4.12.12
load and crank lock, hand-operated hoists.....	4.12.4
load weight indicator	4.12.8
mechanical lifting aids provided for	
handling materials	3.3.5
mobile cranes, operation.....	4.12.5
non-destructive testing, bridge and crane arms	4.12.11
outriggers	4.12.6
power disconnect, cab-mounted	4.12.3
requirements	4.4.9
rigging and slings	4.12.10
safe working load	4.18.8; 4.20.12
Lifts, Vehicle	4.12.12
Load Slinging	
see Hoisting Equipment, Operation	4.19.6
Local Union	
definition	<i>Mines Act</i> §1
discrimination, to receive copy of report.....	<i>Mines Act</i> §14
receive copy of response to inspection report	<i>Mines Act</i> §15(6)
may request for a variance.....	1.2.3
receive copy of accident investigation	1.7.1-2
receive copy of health & safety inspection report	<i>Mines Act</i> §15
receive copy of manager's report re: work refusal	1.10.7
representation of employee during work refusal	1.10.5
request for variance	<i>Mines Act</i> §13; 1.2.3
to receive copy of OHSC meeting minutes	1.6.4
to be informed about accidents or	
dangerous events	1.7.1
designates an individual to make.....	1.10.5
submission on the matter of the appeal	<i>Mines Act</i> §33
Lock-Out Procedures	
electrical power.....	4.11.2
locks and tags	4.11.3
overlap between shifts	4.11.5
procedures.....	4.11.1
procedures, before work recommences	4.11.6
procedures, locks and tags	4.11.4
remote control equipment, controller	
equipped with.....	6.18.1(3)
responsibilities, watchman	4.11.7
servicing or cleanup of conveyor.....	4.4.16(9)-(10)
servicing of machinery	4.4.6(2)
water, steam, and compressed air lines.....	4.11.2(2)

Logbook

blasting machines	8.6.9
hoisting equipment	4.18.6
magazine	8.1.6
mine rescue records	3.7.8; 3.7.12(2)
misfires, daily examination and report book	8.6.6(2)
mobile equipment	6.19.2-4
self-propelled boom-type elevating platform	4.5.7
suspended work platforms	4.14.8
test of confined space.....	3.4.3
vehicle-mounted aerial device	4.5.7
workings, daily examination & report book	6.4.2-3; 6.5.2(3)

Lunchrooms and Sanitary Conveniences

drinking water.....	2.11.1-2
lunchrooms	2.11.3-4
mine dry	2.11.5-8
seasonal camp requirements	2.11.15
toilets	2.11.9-13

Machinery, Moving Parts

contact with moving parts, appropriate dress	3.3.4
contact with moving parts, prevention of	4.4.2

Magazine

definition of detonator house	Part 8
definition of magazine	Part 8
detonators, storage	8.1.8
flammable material	8.1.4
license number marked on inner cartons of detonators	8.3.2(4)
location	8.1.2
permit.....	8.1.1
proximity to underground refuge station	6.13.3(4)(a)
rules, operating	8.1.6
rules, posting of	8.1.7
signs	8.1.5
specifications, electrical.....	8.1.3

Management

definition	<i>Mines Act §1</i>
------------------	---------------------

Manager

absence	<i>Mines Act §23</i>
appointment of	<i>Mines Act §21</i>
definition	<i>Mines Act §1</i>
qualifications and responsibilities.....	<i>Mines Act §22</i>

Manager Responsibilities

see also Shiftboss Responsibilities	
ensure compliance with Act/Regulation/Code.....	<i>Mines Act §24</i>
other Manager Responsibilities, (non-comprehensive)	

accidents or dangerous occurrences and	1.7.1-3
contact information	1.3.2
contractors.....	<i>Mines Act</i> §25
controls, implementation of	1.9.1(2); 2.2.2
develop mine health and safety program	1.6.9
dump design and operations and.....	6.10.1
ensure supervisors are familiar with code.....	1.1.1(b)
ensure no employee is discriminated against.....	<i>Mines Act</i> §14
fatal accident, in case of.....	1.7.1(3)(c)
fatality, notification of	1.7.1(1)(b)
first aid and lost time injuries, notification of	1.9.3
mine plan.....	<i>Mines Act</i> §27; 6.3.1-3
mine plans, abandoned and historical workings and	6.8.1
mine plans, absence of	6.8.2
monitoring contaminants	2.1.3
number of days lost, notification of	1.9.3
OHSC, cooperation with	1.6.7; 1.6.10
OHSC, establish and maintain	<i>Mines Act</i> §32; 1.6.1; 1.6.8
OHSC, report all first aid cases to	1.9.2
personal protective equipment and	1.8.1
post and distribute Mines Act, Regulation, and code	1.4.1
post inspection reports	<i>Mines Act</i> §30
post variances.....	1.2.4
qualifications and responsibilities	<i>Mines Act</i> §22
response to inspection report	<i>Mines Act</i> §15(6)
supervision of workers	1.12.1
work schedules.....	1.5.1
workers adequately trained	1.11.1-2
workplace conditions and	1.9.1; 2.2.1
workplace conditions, investigation of	1.10.7
Manufactured Article	
definition	Part 2
Material Safety Data Sheet (MSDS)	
see also Workplace Hazardous Materials Information System (WHMIS)	
availability of	2.13.13
controlled products: use, handling and storage of	2.13.2
definition of material safety data sheet	Part 2
definition of supplier material safety data sheet	Part 2
deletions from	2.13.14
disclosure of confidential business information	2.13.15
employer MSDS	2.13.12
supplier MSDS	2.13.11
worker training	2.13.4(b)
Medical Surveillance Programs	
audiometric testing	2.12.2-3

chemical analysis	2.12.6
costs of	2.12.7
medical advice	2.12.4
records, maintenance of	2.12.5
requirements	2.12.1
Mine Closure	
see Reclamation and Closure	
Mine Face	
see also Face	
definition	Part 6
height, maximum	6.23.4-5
overhang and	6.23.3
pit face, examination of	6.5.1
removal of unconsolidated material	6.23.1
shoring of faces.....	4.17.6
Mine Plan	
availability	3.7.11
closure of mine, filing plans	10.6.3-4
definition	<i>Mines Act</i> §27
duty to post	6.8.1
electrical energy, plan for use of.....	5.2.1
failure to post	6.8.2
for rescue purposes	3.7.11
mine plan	Part 10
pipng and power lines.....	4.4.26
permit, application to include	<i>Mines Act</i> §10
reclamation program and	10.1.1
surface plan.....	6.8.1
traffic control	6.8.3
Mine Rescue	
access to mine plans	3.7.11
breathing apparatus.....	3.7.10
emergency response plan.....	3.7.1
maintenance of equipment, qualified person for	3.7.12
manager responsibilities	3.7.9
open pit	3.7.5
qualifications.....	3.7.7
record keeping	3.7.8
rescue station	3.7.13
team complement.....	3.7.6
Mining Activity	
definition	<i>Mines Act</i> §1
Misfire	
definition	Part 8
drilling precautions	8.7.1-2
in the event of a misfire	8.6.6

reporting	8.6.5
surface misfires	8.8.1
time to return	8.8.2

Mobile Equipment

see also Haulage Vehicle Operations	
back-up alarms.....	4.9.1
brake testing, annual	4.9.19
brakes.....	4.9.16
braking and steering modifications.....	4.9.10
common braking components.....	4.9.18
data plate.....	4.9.9
engine shutdown, automatic	4.9.21
equipment locking, dump boxes, blades, buckets	4.9.15
falling object protective structures	4.9.11
fire extinguisher	4.9.3
inspection.....	6.19.3-4
interlock, fluid drive transmissions.....	4.9.2
logbook	6.19.2
parked or disabled.....	6.19.6
parking brake	4.9.17
personnel carriers.....	4.9.8
required equipment	4.9.4
responsibilities, operator.....	6.19.1
restricted vision and.....	6.19.5
rollover protective structures	4.9.11
rollover protective structures, repair.....	4.9.13
rollover, markings and seat belts	4.9.12
steering, auxiliary	4.9.20
tire and rim maintenance	4.9.14
transporting persons.....	4.9.7
vehicle warning flag and light	4.9.5

Monitoring

see also Biological Monitoring	
see also Medical Surveillance Programs	
acid rock drainage and metal leaching	10.5.7(3)
contaminants	2.1.3
dumps, monitoring for safety	6.10.1(1); 6.10.1(7)
impoundment, post-operational monitoring	10.7.18
mine closure, ongoing monitoring.....	10.6.2(2)
thermal conditions	2.10.1(3)
Workplace Monitoring Procedures Manual.....	2.1.3

Monorails

see **Lifting Devices**

Musculoskeletal Disorders

definition	Part 1
materials handling	3.3.5

preventive measures	2.9.1
written preventative training program	1.6.9(1)(h)
worker training	1.11.1
workplace conditions	1.9.1
Noise	
audiometric testing	2.12.2-3
exposure limits.....	2.1.1; Table 2-2
hearing protection	1.8.7; Table 2-3
monitoring of	2.1.3
mufflers required.....	2.6.1
shifts longer than 8 hours	2.1.2
Non-Destructive Testing	
bridge cranes and crane arms.....	4.12.11
definition	Part 7
self-propelled boom-type elevating	
work platforms	4.5.4
vehicle mounted aerial devices	4.5.4
Non-Electric Cap	
definition	Part 8
Notice of Work	
see Permits	
Notification	
accident and dangerous occurrences	1.7.1-3
fatalities	1.7.1(1)(b)
first aid cases.....	1.9.2
lost time	1.9.3
start work, stop work	6.2.1-2
Occupational Health and Safety Committee	
accident investigations.....	1.6.5-6
alternatives at small mines.....	1.6.11-12
cooperation with	1.6.7
definition of OHSC	<i>Mines Act</i> §1
definition of management co-chair	<i>Mines Act</i> § 1
definition of worker co-chair	<i>Mines Act</i> § 1
discrimination, to receive copy of report.....	<i>Mines Act</i> §14
establishment of	1.6.1
exposure levels, referenced material available	
to OHSC	2.1.1
inspections	1.6.3
manager's responsibilities	<i>Mines Act</i> §32
membership of	1.6.2
minutes of meetings.....	1.6.4
receive copy of accident investigation.....	1.7.1-2
receive copy of health & safety inspection report	<i>Mines Act</i> §15
receive copy of manager's report re: work refusal	1.10.7
receive copy of response to inspection report	<i>Mines Act</i> §15(6)

receive report of all reported first aid cases	1.9.2
receive report of careless act	8.3.9
representation of employee during work refusal	1.10.5
request for variance	<i>Mines Act</i> §13; 1.2.3
review of health and safety program	1.6.9
review report of emergency warning system tests	3.13.4
submission on the matter of the appeal	<i>Mines Act</i> §33
time entitlement	1.6.10
training.....	1.6.8; 2.13.4(2)(b); 2.13.4(4)
Occupational Illness	
see Musculoskeletal Disorders	
see Medical Surveillance definition	Part 1
Offence and Penalty	<i>Mines Act</i> §37
Old Workings	
see Abandoned Mine or Old Workings	
Openings	
see also Mine Openings	
barrier when dumping in	6.10.1(4)
connection to adjacent workings, guard access to.....	8.10.2
floor openings	4.1.9
platforms in ladderway, openings in.....	6.28.3
platforms, doors to cover openings	6.28.5
Operator Cab, Vehicle	4.9.4
Operator Responsibilities	
inspection, mobile equipment.....	6.19.3-4
mobile equipment	6.19.1
Order	
not to interfere with public works	<i>Mines Act</i> § 16
Outriggers	4.12.6
Overburden	
definition	Part 10
Overhangs	6.23.3
Overhead Traveling Cranes	
see Lifting Devices	
Owner	
definition	<i>Mines Act</i> §1
Oxygen Content of Air	
see also Confined Spaces	
limits	2.1.4
Paid Security	
reclamation bond, owner's obligations	<i>Mines Act</i> § 10
mine reclamation fund	<i>Mines Act</i> §12

security deposit	10.6.15
Permits	
about	<i>Mines Act</i> § 10
application for permit to operate	
notice of filing	10.2.1
referral, to advisory committee	<i>Mines Act</i> §9; 10.3.1
referral, to other agencies.....	10.3.3
responses, consideration of	10.4.1; 10.3.2
closure.....	10.6.2
definition	<i>Mines Act</i> §1, Part 10
enforcement of	<i>Mines Act</i> §35
magazines	8.1.1; 8.1.2(2-3)
power of Minister	<i>Mines Act</i> § 11
power of Lieutenant Governor in Council.....	<i>Mines Act</i> §38(2)(a.1)
proposed placer mines, gravel pits and quarries	10.1.1
Permittee	
definition	<i>Mines Act</i> §1
Personal Protective Equipment	
contact lenses	1.8.6
eye protection	1.8.5
fall arresting devices	4.4.1
footwear	1.8.4
for abrasive blasting	2.5.4; 2.5.6
for confined space	3.4.6
for controlled products	2.13.19
for dust	6.24.2
for handling energized trailing cable	5.5.1
for materials handling	3.3.5
for radiation	2.3.9
headgear.....	1.8.3
hearing protection	1.8.7
manager's responsibilities	1.8.1
requirement for use of.....	1.9.1(3)
training in use of	1.11.1; 9.3.2
self-contained breathing apparatus	3.4.6
wearing of	3.4.6
worker's responsibilities.....	1.8.2
Personnel Carriers	
inspection of	4.9.8(1)
isolation of hazardous materials	4.9.8(2)
suitable for intended purpose.....	4.9.7
Pipeline Systems	
buried lines	4.4.25-26
identification of controlled products.....	2.13.4; 2.13.8
order not to interfere with public works	<i>Mines Act</i> §16
water, use of solder	2.11.2

worker training	2.13.4
safe work procedures	3.4.2
Platform, Work	
see Elevating Work Platforms	
in ladderways	6.28.3-5
Pneumatic Tools	4.4.5
Powder-Actuated Tools	4.4.8
Product Identifier	
definition	Part 2
Professional Engineer	
definition	Part 1
Professional Engineer	Glossary (definitions), 10.1.4,10.5.10
Pumps, Submersible	5.6.1
Qualified Person	
see also Authorized Person	
see also Certified Person	
blaster	8.2.4
cables, inspection of damaged cables	5.5.2
cable repair, permanent repairs to trailing cables	5.5.3
construction	4.15
contact information.....	1.3.2
definition	<i>Mines Act</i> §1
design of mine	6.1.1
design of methods of operation	6.1.1
dump	6.5.2; 6.10.1
emergency response and fire fighting training	3.8.3
elevating work platforms, non-destructive testing	4.5.4
equipment, examination of	6.19.3
examination/testing of lifting device	4.4.9
flammable/noxious gases, servicing detectors	3.12.2
manager's absence	<i>Mines Act</i> §23
mechanical and electrical maintenance	4.13.13
mine rescue records, training and equipment	3.7.8-9; 3.7.12
Occupational Health & Safety Committee training.....	1.6.8, 1.6.9(1)(h), 1.6.9(2)
rigging and slinging work.....	4.12.10
role in mine design	6.1.1
servicing machinery in motion	4.4.6
vehicle logbook	6.19.2
workplace contaminants, monitoring of	2.1.3
Quantifiable Performance Objectives	10.1.13, 10.4.2(1)
Radiation	
advise persons of health risk.....	2.12.3
BC Radiation Protection Guidelines for Exploration	2.3.11(6)
controls	1.9.1

gamma radiation dosimetry, requirements.....	2.3.11(3)
industrial hygiene standards	2.3.11(5)
ionizing radiation	2.3.11
materials, use/handling/storage/transportation	2.3.11(4)
medical surveillance program requirements.....	2.12.1
permissible exposure doses	2.3.11(1)
personal protective equipment.....	2.3.9(2)
shield equipment.....	2.3.9(1)
survey requirements, minimum grades.....	2.3.11(2)

Railways

see also [Track Haulage Systems](#)
see also [Audible Warnings](#)

audible warning system	4.10.2
control levers	4.10.3
equipment and operation	4.10.1
headlights.....	4.10.2
unattended locomotives	4.10.4

Ramps

definition	Part 6
manager's responsibilities	6.10.1

Readily Available

definition	Part 2
------------------	--------

Reclamation and Closure

see also [Closed Mine](#)

see also [Abandoned Mine or Old Workings](#)

closure	
departure from approved reclamation plan	10.6.2(3)
dumps	10.7.11
hazard identification.....	10.6.2(2)(b-c)
notice of intention to stop work	10.6.1
obligation to carry out permit	10.6.2(1)
ongoing monitoring.....	10.6.2(2)
open pits	10.7.13-14
openings, securing.....	110.7.20-22
plan	10.1.3(h), 10.1.17, 10.4.5(a),
plans, filing of	10.6.3-4
posting, authority to enter mine	1.3.2
posting of identified hazards	10.6.2(2)(a)
release of obligations	10.7.31
notice of work, filing	
material inventory	10.5.7
notice of filing an application, publication	10.2.1
notice of filing an application,	
written response	10.2.2
notice of intention to stop work	10.6.1
plans, filing of	10.6.3-4
revised program upon ceasing operation	10.6.2(3)

paid security	
mine reclamation fund	<i>Mines Act</i> §12
reclamation bond, owner's obligations	<i>Mines Act</i> §10
security deposit	10.6.15
reclamation plan, application for permit	
notice of filing for permit, publication	10.2.1
notice of filing for permit, response to	10.2.2
permit to operate	<i>Mines Act</i> §10
permit to operate, consideration	
of responses	10.4.1
permit to operate, notice of work	10.1.1
referral for review, response to	10.3.2
referral for review, to advisory committee	10.3.1
referral for review, to other agencies	10.3.3
reclamation standards	
definition	10.7.1
dumps	10.7.11
exemption from requirements	10.7.2-3
land capability	10.7.5
land use	10.7.4
landforms	10.7.9
mine roads, securing	10.7.20
open pits	10.7.14
re-vegetation	10.7.7-8
stability, long-term	10.7.6
structures and equipment	10.7.10
watercourses.....	10.7.9
Regulations, Power to Make	<i>Mines Act</i> §38
Repetitive Stress	
see Musculoskeletal Disorders	
Reports and Orders	
posting of	<i>Mines Act</i> §30
Rigging	
see also Slings	
cable clips, U-bolt.....	4.20.8
connectors, wedge socket	4.20.3
fittings, use of	4.20.1
hook, removal from service	4.20.10
hooks, open	4.20.4
loads, maximum rated	4.20.2
protection of rigging	4.20.7
rigging, removal from service	4.20.11
rope, fastening to drum	4.20.9
safe working load	4.20.12
securing equipment.....	4.20.5
sheaves.....	4.20.6
supervision of rigging and slings.....	4.12.10

Right to Refuse Work

investigation of	1.10.4-5; 1.10.7
right to refuse work	1.10.3
supervisor's responsibilities	1.10.2; 1.10.4
unsafe work	1.10.1
use of alternate worker	1.10.6

Risk Phrase

definition	Part 2
------------------	--------

Road Width

6.9.1

Roads

see Dumps
see Haul Roads

Rollover Protective Structures

markings and seat belts.....	4.9.12
repair	4.9.13
standards	4.9.11

Round

definition.....	Part 8
-----------------	--------

Safety

age	3.2.1
notwithstanding clause	1.1.2
tallying	3.2.2
transporting persons.....	3.2.4
working alone	3.2.3

Safety Fuse Assembly

definition	Part 8
------------------	--------

Safety Harnesses

see Fall Arresting Devices

Sand and Gravel

definition	Part 6
------------------	--------

Sand Blasting

see Abrasive Blasting

Scaffolds

see also Elevating Work Platforms	
scaffold requirements.....	4.14.1

Seat, Vehicle

4.9.4

Seat Belts, Vehicle

4.9.4

Security

see Paid Security

Sensitive Area

definition	Part 8
------------------	--------

Servicing of Running Machinery	4,4,6
Shiftboss	
definition	Part 6
Shiftboss Responsibilities	
see also Manager Responsibilities	
dump block	6.5.2
general rules for	6.4.1
open pit, workers under supervision	1.12.1
pit face area safety	6.5.1
responsibilities, shift change	6.4.3
surface mine.....	6.5.1-2
unusual and hazardous conditions, reporting	6.4.2
Shoring	
see Excavations	
Shoulder Barrier	
definition of shoulder barrier	Part 6
design and construction of	6.9.1(2)(b)
dumping, barrier to prevent inadvertent	
vehicle entry	6.10.1(4)
excavation, barrier to prevent inadvertent entry	4.17.15
traffic control procedures	6.8.3
vehicle runaway protection	6.9.2
Shoulder Berm	
see Shoulder Barrier	
Showers	
see Lunchrooms and Sanitary Conveniences	
Silt	
angle of slope.....	6.23.1
definition	Part 6
excavation of	10.5.8
Slings	
see also Rigging	
chain	4.21.3
fiber webbing	4.21.4
Lang's Lay wire rope, use of	4.21.2
requirements	4.21.1
wire rope, removal from service.....	4.21.5
suspension slings	4.14.4
supervision of rigging and slings.....	4.12.10
Socket	
definition	Part 8
Soil	
definition	Part 6

Soil Material, Surficial

definition Part 10

Sprays, Water

dust suppression..... 6.24.2

Stability

definition Part 10

Stairways

guardrails 6.27.4

handrail 6.27.2

requirements 6.27.1

tread size 6.27.3

Steering

auxiliary 4.9.20

modification on vehicles over 45,000 kg..... 4.9.10

examination of 6.5.2

planning and operations..... 6.10.1

Suitable

definition Part 1

Supervisor

see also **Shiftboss**

definition *Mines Act* §1

open pit 1.12.1

requirements *Mines Act* §26

suspension of certification 1.13.8-9

Surface Roadway

definition Part 6

Suspended Platforms

see **Elevating Work Platforms**

Thermal Environment

..... 2.10.1

Thorium

see also **Radiation**

safe limits..... 2.3.11

Threshold Limit Value

definition Part 2

hazardous substance limits Table 2-1

Tires and Rims

maintenance 4.9.14

Toe-board

definition Part 4

Toilets

see **Lunchrooms and Sanitary Conveniences**

Tools	
see Fixed Equipment	
Track Haulage Systems	
clearances, minimum	6.15.2
designation by chief inspector	6.15.1
Traffic Control	
traffic control	6.8.3
Trailing Cable	
use of and repair	5.5.1-3
Training	
manager's responsibilities	1.11.1-2
musculoskeletal disorders.....	1.6.9(h)
Transmitters	
emergency stop mechanism	6.18.1(4)-(5)
radio transmitters	8.6.18
Transporting Persons	
manager's responsibilities	4.9.7
Trench Jacks	
see Excavations	
Trenches	
see Excavations	
Unconsolidated Material, Removal	6.23.1
Underhung Cranes	
see Lifting Devices	
Union	
see Local Union	
Uranium	
see also Radiation	
exposure limits.....	2.3.11
limit, restrict or prohibit mining of	<i>Mines Act</i> §38(3)(e)
Urban Area	
definition	Part 8
Variances	
authorization of.....	1.2.1-3
in regulations or code for individual mine.....	<i>Mines Act</i> §13
posting of	1.2.4
Vegetation, Removal	6.23.1
Vehicles	
see also Mobile Equipment	
logbook	6.19.2
runway protection	6.9.2

Ventilation	
of confined space	3.4.3
Vibration Injury	
see <i>Musculoskeletal Disorders</i>	
Wall	
see also <i>Face</i>	
see also <i>Mine Face</i>	
definition	Part 6
Warning Flag and Light	
vehicle mounted.....	4.9.5
Water	
hazard	3.3.3
Watercourse	
definition	Part 10
Watershed, Community	
mine plans.....	6.8.1(1)
Welding/Burning Equipment	4.4.7
WHMIS	
see <i>Workplace Hazardous Materials Information System (WHMIS)</i>	
Wires, Leg	
definition	Part 8
Work Hours	
limitations	1.5.1
Work Platforms	
see <i>Elevating Work Platforms</i>	
Worker	
see <i>Employee</i>	
definition of worker	<i>Mines Act</i> §1
Workers' Compensation Board	
definition of board	Part 2
first aid supplies and services	3.6.1
safe handling of asbestos	2.3.1
WorkSafeBC	
see <i>Workers' Compensation Board</i>	
Working Alone	3.2.3
Working Plans at Mine Site	
see also <i>Mine Plan</i>	
buried pipelines, power cables and storage tanks	4.4.26
duty to keep plans	6.8.1
failure to provide plans	6.8.2
surface	6.8.1

Workplace

definition *Mines Act* §1

Workplace Contaminants

see also **Hazardous Materials**

see also **Workplace Hazards**

emergency wash facilities 2.4.1
 exposure to contaminants 2.4.1-2
 maximum allowable exposures 2.1.1-2
 monitoring of 2.1.3
 oxygen content of air 2.1.4
 protection from contaminants 2.4.2
 shifts longer than eight hours 2.1.2
 workplace hazards, control of 1.9.1-2; 2.2.1
 workplace hazards, housekeeping 2.2.1-2

Workplace Hazardous Materials Information System (WHMIS)

application 2.13.1
 confidential business information and 2.13.15
 confidentiality of information 2.13.16
 definition Part 2
 disclosure 2.13.18
 disclosure in emergencies 2.13.17
 education of workers and 2.13.3
 exemptions 2.13.1
 laboratory labels 2.13.10
 manager responsibilities 2.13.19-20
 material safety data sheets, availability 2.13.13
 material safety data sheets, employer 2.13.12
 material safety data sheets, exemptions 2.13.14-15
 material safety data sheets, supplier 2.13.11
 MSDS 2.13.11-14
 non-controlled products, requirements 2.13.20
 occupational health and safety committee 1.6.9
 placard identifiers 2.13.9
 product in vessels or piping 2.13.8
 supplier labels 2.13.5
 training of workers and 2.13.4
 use, storage, handling 2.13.2
 worker education 2.13.3
 worker training 2.13.4
 workplace labels 2.13.6-7

Workplace Hazards

see also **Hazardous Conditions**

see also **Hazardous Materials**

see also **Musculoskeletal Disorders**

see also **Workplace Contaminants**

control of 1.9.1-2; 2.2.1
 housekeeping 2.2.1-2

Workrests, Grinder

..... 4.4.3



MINISTRY OF ENERGY AND MINES & MINISTER RESPONSIBLE FOR CORE REVIEW

HONOURABLE BILL BENNETT

Minister

ELAINE MCKNIGHT

Deputy Minister

Ministry Contacts

Telephone: 1-800-663-7867

E-mail: EnquiryBC@gov.bc.ca

Media Enquiries

Government Communications & Public Engagement

PO Box 9060, Stn Prov Govt

Victoria, BC V8W 9E2

Telephone: 250 952-0628

Fax: 250 952-0627

Website

<http://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/energy-and-mines>