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PART II/PARTIE II

REVISED REGULATIONS OF SASKATCHEWAN/ RÈGLEMENTS RÉVISÉS DE LA SASKATCHEWAN

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REVISED REGULATIONS OF SASKATCHEWAN

CHAPTER S-15.1 REG 8

The Saskatchewan Employment Act

Sections 3-83 and 9-12

Order in Council 170/2018, dated March 29, 2018

(Filed March 29, 2018)

PART 1

Preliminary Matters

Title

1-1 These regulations may be cited as *The Mines Regulations, 2018*.

Definitions

1-2(1) In these regulations:

“**Act**” means *The Saskatchewan Employment Act*;

“**adit**” means a horizontal or nearly horizontal opening into an underground mine;

“**approved**” means, unless stated otherwise:

(a) in relation to equipment:

(i) approved by an agency acceptable to the chief mines inspector for use under the conditions prescribed by the agency; or

(ii) approved conditionally or otherwise by a certificate of the chief mines inspector; and

(b) in relation to any other matter, approved by the chief mines inspector;

“**balance rope**” means a rope that is used to counterbalance a conveyance by extending from the bottom of the conveyance to the bottom of another conveyance or a counterweight;

“**barrier**” means a safeguard that restricts or prevents approach or access;

“**berm**” means an embankment or ridge of earth that functions as a protective barrier;

“**cage**” means a vertically-moving enclosed platform, with 1 or more decks, that is used in a shaft for transporting workers and materials;

“**chair**” means any device installed for the purpose of landing a conveyance at any point in a shaft;

“**committee**” means an occupational health committee;

“**conveyance**” means a cage, a skip or a sinking bucket;

“**crosshead**” means a runner or framework that:

(a) runs on guides; and

(b) is placed approximately 1 metre above a conveyance to prevent the conveyance from swinging excessively;

“day box” means a box with a cover for temporary storage of explosives underground;

“detonator” means any device for initiating the detonation of explosives that contains a maximum of 10 grams of explosive by weight and includes a safety-fuse assembly;

“direct supervisor” means a supervisor who personally directs or oversees workers underground at a mine or in the pit of an open pit mine but does not include a lead hand;

“drawpoint” means a point where gravity-fed ore or waste from a higher level is withdrawn for loading onto hauling units;

“dredge” means a machine that floats on water and is equipped with a scoop, a series of buckets or similar devices to remove mud, sand or other materials from the bottom of a body of water;

“drift” means a horizontal or nearly horizontal underground work passage in a mine;

“explosive” means a chemical compound or mixture that, if detonated, violently decomposes, producing a large volume of gas at high temperatures;

“former regulations” means *The Mines Regulations, 2003*, as those regulations existed on the day before the coming into force of these regulations;

“guide rope” means a stationary rope that is used to position a conveyance in the shaft;

“headframe” means the steel or timber frame or building over a shaft that:

- (a) contains the sheave or pulley for the hoisting ropes used to raise or lower a conveyance; and
- (b) may contain the hoist;

“hoist” means a drum or friction hoist used for transporting persons or materials in an underground mine;

“hoist operator” means a person who operates a hoist to transport workers or materials in a shaft;

“hoist signalling system” means a system for exchanging separate and distinct conveyance control signals between the hoist operator and the worker in charge of the conveyance;

“hoisting rope” means a rope that is used to lift and lower a conveyance in a shaft;

“loading pocket” means an area adjacent to the shaft where the skip is loaded;

“locomotive” means a vehicle that operates on rails and that is used to propel a train of railway cars;

“magazine” means a building, structure or place in which an explosive or detonator is kept, but does not include a day box;

“manway” means a vertical compartment of a shaft or raise containing a ladder that is used as a passage for workers;

“mine”:

(a) if used as a noun, means an opening or excavation in, or working of, the ground for the purpose of obtaining, proving or opening up a mineral, rock, stone or clay and includes:

(i) a quarry, excavation or opening in the ground that is made for the purpose of searching for or removing a mineral, rock, stone or clay; and

(ii) all workings and plant underground or above ground that are used in connection with crushing, reducing, melting, refining or treating any mineral, rock, stone or clay; and

(b) if used as a verb, means any method of working by which a mineral, rock, stone or clay may be disturbed, removed, carted, carried, washed, dissolved, sifted, roasted, smelted, refined, crushed or otherwise dealt with for the purpose of obtaining any mineral from it, whether the mineral, rock, stone or clay was previously disturbed or not;

“OHS regulations” means *The Occupational Health and Safety Regulations, 1996*;

“open pit mine” means a mine that is worked from the exposed surface and includes a strip mine, quarry, gravel pit, sand pit and clay pit;

“ore pass” means a vertical or inclined passage underground for the downward transfer of ore or materials;

“panel” means a subdivision of an ore body;

“professional engineer” means a professional engineer as defined in *The Engineering and Geoscience Professions Act*;

“professional geoscientist” means a professional geoscientist as defined in *The Engineering and Geoscience Professions Act*;

“qualified hygienist” means a hygienist possessing a recognised professional standing who is certified by a recognized national or international occupational or industrial hygienist credentialing body;

“raise” means an opening underground that extends upward to an angle greater than 30° from the horizontal to:

(a) connect with a level above; or

(b) explore the ground for a limited distance above a level;

“rated load” means:

- (a) with respect to a conveyance, the maximum load that may be carried in, on or under a conveyance, determined in accordance with clause 10-34(a);
- (b) with respect to each deck of a multi-deck conveyance, the maximum load that may be carried on the deck, determined in accordance with clause 10-34(b); and
- (c) with respect to a raise climber, the maximum load that may be carried on the raise climber, determined by a professional engineer;

“rockburst” means a violent failure of rock that causes a significant expulsion of material;

“room” means, if referring to an excavation underground, a production area in a panel;

“rubbing rope” means a rope that is:

- (a) suspended between 2 conveyances in a shaft; and
- (b) used to keep the conveyances from contacting each other when they do not track properly within the guide ropes;

“shaft” means a vertical or nearly vertical opening into an underground mine that is normally used to transport persons or hoist ore or materials;

“shaft rope” means a hoisting rope, guide rope, rubbing rope or balance rope;

“sinking bucket” means a specialized conveyance used for the purposes of a shaft-sinking operation that:

- (a) is in the general form of a bucket or pail; and
- (b) is sufficiently large to accommodate several persons;

“skip” means a specialized conveyance that:

- (a) is used in a shaft for hoisting ore or materials; and
- (b) can be adapted for transporting persons;

“stope” means an underground excavation made for the purpose of extracting ore from the surrounding rock;

“working face” means the exposed surface of the ore or material where mining is being done;

“workings” means the parts of a mine where excavations have taken place or are taking place.

- (2) Unless otherwise provided, terms used in these regulations that are defined in the OHS regulations have the meanings given to them in those regulations.

(3) A reference in these regulations to a table is a reference to the table as set out in Part I of the Appendix.

(4) A reference in these regulations to a form is a reference to the form as set out in Part II of the Appendix.

Application of these regulations

1-3 These regulations apply to mines.

Application of OHS regulations to mines

1-4(1) Subject to subsection (2) and unless these regulations provide otherwise, the OHS regulations apply to mines in addition to these regulations.

(2) If there is a conflict between the OHS regulations and these regulations, these regulations prevail.

(3) An approval provided by the director of occupational health and safety pursuant to the OHS regulations that is applicable to mines constitutes an approval pursuant to these regulations.

PART 2

General Notice Requirements

Commencement of work, intended installation

2-1(1) Subsection 7(1) of the OHS regulations does not apply to mines.

(2) An employer, contractor or owner shall give the chief mines inspector written notice of the following as soon as is reasonably possible:

(a) the commencement of work or the resumption of work after an interruption of work of 2 months or more;

(b) the commencement of work at a major new part of a mine.

(3) If a hoist is to be installed in a shaft, an employer, contractor or owner shall provide the chief mines inspector with:

(a) written notice at least 90 days before commencement of the installation; and

(b) the specifications and layout of the facility at least 30 days before commencement of the installation.

(4) A notice required by this section must contain the information mentioned in subsection 7(3) of the OHS regulations.

Dangerous occurrences

2-2(1) In this section, “**dangerous occurrence**” means any occurrence that does not result in, but could have resulted in, a circumstance set out in subsection 8(1) of the OHS regulations and includes:

(a) the structural failure or collapse of a structure, scaffold, temporary falsework, concrete formwork, dam or bulkhead;

(b) the unanticipated failure or collapse of all or any part of an excavated shaft, tunnel, caisson, coffer dam, trench or excavation;

- (c) any equipment failure involving a hoist, sheave, hoisting rope, conveyance, shaft timbering or shaft lining;
 - (d) any inrush of water underground;
 - (e) any outbreak of fire underground;
 - (f) any outbreak of fire on the surface that causes structural damage to a building at the mine;
 - (g) any call-out of a mine rescue team;
 - (h) any unusual gaseous condition in a workings;
 - (i) any rockburst or unexpected or uncontrolled subsidence or caving-in of a workings;
 - (j) any failure during use of the braking or steering system of a vehicle used for the hauling or loading of ore or waste;
 - (k) any loss of control of any vehicle conveying workers;
 - (l) the failure of a crane or hoist or the overturning of a crane or unit of powered mobile equipment;
 - (m) any accidental contact with an energized electrical conductor;
 - (n) the bursting of a grinding wheel;
 - (o) an uncontrolled spill or escape of a toxic, corrosive or explosive substance;
 - (p) a premature detonation or accidental detonation of explosives;
 - (q) the failure of an elevated or suspended platform; and
 - (r) the failure of an atmosphere-supplying respirator.
- (2) An employer, contractor or owner shall give notice to the division as soon as is reasonably possible of any dangerous occurrence that takes place, whether or not a worker sustains injury.
- (3) A notice required by subsection (2) must include:
- (a) the name of each employer, contractor and owner involved in the dangerous occurrence at the mine;
 - (b) the date, time and location of the dangerous occurrence;
 - (c) the circumstances related to the dangerous occurrence;
 - (d) the name, telephone number and email address of the employer, contractor or owner or a person designated by the employer, contractor or owner to be contacted for additional information.
- (4) An employer, contractor or owner shall provide each co-chairperson or the representative with a copy of the notice required by subsection (2).
- (5) An employer, contractor or owner shall ensure that every dangerous occurrence is investigated and a written report prepared in accordance with section 31 of the OHS regulations.

PART 3
Plans and Records

Preparation of plans

3-1(1) In this section, “**winze**” means a vertical or inclined opening that is sunk from a level to:

- (a) connect with a level below; or
- (b) explore the ground for a limited distance below a level.

(2) An employer, contractor or owner shall ensure that the following plans are prepared by a qualified person:

- (a) a surface plan showing the boundaries of the property and all lakes, streams, roads, railways, electric transmission lines, main pipelines, buildings, shafts, adits, surface workings, diamond drill holes, boreholes, dumps and tailings disposal areas;
- (b) a plan of each underground level, showing all workings, shafts, drifts, crosscuts, diamond drill holes, dams and bulkheads;
- (c) a plan respecting vertical mine sections at suitable intervals showing all shafts, drifts, crosscuts, stopes, raises, winzes and workings in relation to the surface, including the location of the top of bedrock, the surface of overburden, the position of any unconsolidated deposit and the position of any known watercourse or body of water, with each section shown on a separate drawing;
- (d) a ventilation plan showing the direction and quantity of the main air currents, locations of permanent fans, ventilation doors, stoppings and connections with adjacent mines.

(3) An employer, contractor or owner shall ensure that a plan mentioned in subsection (2):

- (a) is reviewed and updated at least every 90 operating days; and
- (b) is updated within 30 operating days after any significant change to a mine is made.

Marking current progress

3-2 If requested by an occupational health officer to do so, an employer or contractor shall mark the current progress of a mine on the plans required pursuant to section 3-1.

Annual submission of certified copies

3-3(1) On or before March 31 of each year, an employer, contractor or owner shall forward to the chief mines inspector copies of the plans required pursuant to section 3-1 as at December 31 of the previous year.

(2) The copies mentioned in subsection (1) must be certified as correct by the employer, contractor or owner.

Monthly statistics

3-4 Not later than 14 days after the end of each calendar month, an employer or contractor shall provide the division and the co-chairpersons of the committee with employment and accident statistics for the previous calendar month in a form satisfactory to the chief mines inspector.

Electronic log or records

3-5 A log book or record required by these regulations may be in either an electronic or paper format, unless otherwise specified.

Entries in log books, records

3-6(1) If a worker or other person is required pursuant to these regulations to record an entry in a log book, log or record, the entry must include the following:

- (a) the date of the entry;
 - (b) any information required by a provision of these regulations;
 - (c) the name or initials of the worker or person making the entry.
- (2) If a provision of these regulations requires the employer or contractor to countersign an entry in a log book, log or record, the employer or contractor shall:
- (a) read the entry; and
 - (b) acknowledge that he or she has read the entry by recording:
 - (i) the date of his or her review; and
 - (ii) his or her name or initials.

Record retention

3-7(1) Unless otherwise specified in these regulations, an employer, contractor or owner shall retain all records required by these regulations at the mine for a period of at least 3 years after the day on which the record was created or the last entry in the record was made.

(2) If a mine is abandoned, the employer, contractor or owner, in consultation with the chief mines inspector, shall ensure that all records that are relevant to the health of workers and self-employed persons are kept indefinitely and made available to workers.

PART 4 Supervision of Workers

Definitions for Part

4-1 In this part, “**direct supervisor’s certificate**” means a direct supervisor’s certificate issued pursuant to section 4-6.

Qualifications of direct supervisor

4-2(1) An employer or contractor shall ensure that all work performed underground or in an open pit mine is supervised by a direct supervisor.

(2) No employer or contractor shall require or permit a person to act as a direct supervisor, unless:

- (a) the person is competent to act as a direct supervisor;
- (b) the person:
 - (i) holds a valid direct supervisor’s certificate; or
 - (ii) holds a temporary authorization to supervise issued pursuant to section 4-4;

- (c) the person has adequate knowledge of the language normally used at the mine;
- (d) the person has:
 - (i) a minimum of 3 years' experience in the practical working of a mine; or
 - (ii) a degree or other qualification in mining or a related discipline from a university or technical institute and a minimum of 1 year's experience in the practical working of a mine;
- (e) the person holds a valid class A qualification in first aid pursuant to Part V of the OHS regulations;
- (f) if the proposed duties of the person include the supervision of blasting operations, the person holds a valid blaster's certificate pursuant to section 11-36;
- (g) the person is trained in the duties of a direct supervisor in a mine emergency in the particular mine; and
- (h) the person is authorized by the employer or contractor to act as a direct supervisor.

Suspension of authorization

4-3 If an employer or contractor suspends or revokes an authorization to act as a direct supervisor, the employer or contractor shall immediately inform the chief mines inspector of the suspension or revocation and the reasons for it.

Temporary authorization to supervise

4-4(1) An employer or contractor may issue a temporary authorization to act as a direct supervisor to a person who meets the requirements of section 4-2.

(2) An employer or contractor shall provide, in writing, the name of a worker granted temporary authorization to act as a supervisor to the chief mines inspector in writing within 14 days after the date of issuance.

(3) A temporary authorization to act as a direct supervisor:

- (a) is valid for a period not exceeding 90 days from the date of issuance unless it is revoked or suspended pursuant to section 4-3; and
- (b) is not to be renewed or extended.

Direct supervisor's examination

4-5(1) A person is eligible to take the direct supervisor's examination if:

- (a) the person has been recommended by his or her employer or contractor to the chief mines inspector; and
- (b) the employer or contractor of that person provides a written notice to the chief mines inspector stating that the person meets the qualifications set out in section 4-2.

(2) The chief mines inspector may set an examination to test the knowledge, with respect to the following subjects, of a person who wishes to obtain a direct supervisor's certificate:

- (a) legal requirements and standards applicable to:
 - (i) the rights and responsibilities of workers, supervisors, employers and contractors; and
 - (ii) the type of mine for which the direct supervisor's certificate will be issued;
- (b) practices and procedures of the employer or contractor;
- (c) emergency procedures;
- (d) airborne contaminants;
- (e) radiation protection, if applicable.

(3) The chief mines inspector may permit a person who fails the direct supervisor's examination to make another attempt after a period of not less than 30 days after the date of the previous attempt.

Direct supervisor's certificate

4-6(1) The chief mines inspector may issue a direct supervisor's certificate to a person if that person has passed the direct supervisor's examination within 6 months before the date of issue of the direct supervisor's certificate.

(2) The chief mines inspector may impose any terms and conditions on the direct supervisor's certificate that the chief mines inspector considers appropriate.

(3) No direct supervisor shall fail to comply with any term or condition imposed on the direct supervisor's certificate pursuant to subsection (2).

(4) Subject to section 4-7, a direct supervisor's certificate expires 5 years after the date of issue.

Revocation or suspension of direct supervisor's certificate

4-7(1) The chief mines inspector may, at any time, revoke or suspend a direct supervisor's certificate if the direct supervisor fails to comply with any term or condition of the direct supervisor's certificate or, in the opinion of the chief mines inspector, it is appropriate to do so in the circumstances.

(2) The chief mines inspector shall inform the direct supervisor and the employer or contractor immediately in writing of the revocation or suspension of the direct supervisor's certificate and the reasons for the revocation or suspension.

(3) If a direct supervisor's certificate is revoked pursuant to this section, any person in possession of the revoked direct supervisor's certificate, or a copy of the revoked direct supervisor's certificate, shall immediately return it to the chief mines inspector.

PART 5
General Safety Requirements

Training program for workers

5-1(1) An employer shall:

- (a) develop a written program for the training of workers to ensure that they are adequately trained to carry out their duties safely; and
 - (b) appoint a competent person to direct the training program.
- (2) A training program must specify for each type of work procedure:
- (a) the content of the training required; and
 - (b) the time required for the training.
- (3) The person appointed to direct the training program shall:
- (a) keep a record of all training provided to each worker through the program; and
 - (b) make a copy of the record readily available to workers.
- (4) The employer shall ensure that any person who provides training as part of the training program:
- (a) is competent to provide the training; and
 - (b) is provided with adequate time and facilities to provide the training.
- (5) If a worker has previous experience in the mining industry and is able to establish to the satisfaction of the person directing the training program that the worker has received training equivalent to training required by the program, the person directing the training program may accept the worker's previous training as meeting all or any part of the requirements of the program.

Substance impairment prohibited

5-2 An employer or contractor shall take all reasonable steps to ensure that no person whose ability to work safely is impaired by alcohol, any drug or any other substance is allowed to work at a mine.

General standards for equipment

- 5-3(1)** An employer, contractor or owner shall ensure that all equipment used at a mine is designed, constructed, installed, maintained and operated to safely perform any task for which the equipment is used.
- (2) A supplier shall ensure that all equipment supplied for use at a mine is designed and constructed to safely perform any task for which the equipment is intended to be used.

Interference with safety equipment or processes prohibited

5-4 No worker shall:

- (a) remove, displace, damage, destroy or render inoperative any safeguard or emergency equipment other than for the purpose of maintenance;
- (b) remove or render unreadable any warning sign or notice unless authorized to do so by the employer or contractor; or

- (c) interfere with:
 - (i) the equipment mentioned in clause (a), including the proper use of that equipment; or
 - (ii) any method or process adopted for the protection of that worker or any other worker at the mine.

Personnel accountability system

5-5(1) An employer or contractor shall develop, implement and maintain an effective system:

- (a) to record the workers who go underground on each shift;
 - (b) to record the workers who return to the surface on each shift; and
 - (c) to clearly identify any worker who is not accounted for on each shift.
- (2) An employer or contractor shall ensure that a competent person:
- (a) examines the records mentioned in subsection (1) at the end of each shift; and
 - (b) immediately after examining the records, reports to the employer or contractor the identity of any worker who is not accounted for on a shift.

Shift record

5-6(1) An employer or contractor shall:

- (a) provide a shift record for the mine; and
 - (b) ensure that the shift record is kept readily available.
- (2) An employer or contractor shall ensure that:
- (a) at the end of every shift, the direct supervisor records all significant information relevant to the health and safety of workers that was discovered during that shift; and
 - (b) at the beginning of every shift, the direct supervisor:
 - (i) reads any entry made pursuant to clause (a); and
 - (ii) acknowledges that he or she has read the entry by recording:
 - (A) the date of his or her review; and
 - (B) his or her name or initials.

Unusually hazardous work

5-7(1) In this section, “**unusually hazardous work**” means work that involves different or additional hazards or risks than are normally involved with that type of work or similar work.

- (2) An employer or contractor shall ensure that:
- (a) unusually hazardous work is supervised closely and frequently; and
 - (b) only workers who have been thoroughly instructed with respect to the unusual hazard and proper work procedures are assigned to do the unusually hazardous work.

Working alone

5-8(1) An employer or contractor shall ensure that no worker is required or permitted to work alone at any worksite if the absence of personal communication with another person may place the worker's health or safety at risk.

(2) If a worker is working alone at a worksite, an employer or contractor shall ensure that contact is made with the worker personally, or by radio, telephone or other suitable means, at least once every 2 hours.

Regular inspection of underground mine

5-9(1) An employer or contractor shall prepare a written plan for regular inspections of an underground mine that:

- (a) identifies the parts of the mine to be inspected; and
- (b) subject to subsection (2), specifies the frequency of inspection for each part of the mine to be inspected, taking into account:
 - (i) the work to be done in the mine;
 - (ii) the conditions arising in the mine; and
 - (iii) the requirements of these regulations.

(2) Inspections must be made at least once during each shift in any underground part of the mine where:

- (a) mining is taking place;
- (b) drilling or blasting is taking place; or
- (c) a worker is working alone.

(3) An employer or contractor shall:

- (a) appoint a competent person to implement the plan for inspection of a mine;
- (b) ensure that the person appointed pursuant to clause (a) records each inspection carried out; and
- (c) ensure that any condition relevant to the health or safety of workers on succeeding shifts is recorded in the shift record.

Asset management plan

5-10(1) In this section, "**fixed assets**" includes buildings, concrete, machinery, structural elements, mobile bins, and exterior cladding.

(2) An employer or contractor shall ensure that any plant under the control of the employer or contractor is capable of safely performing the function for which it is used.

(3) An employer or contractor shall establish an asset management plan that establishes an inspection and maintenance plan for all fixed assets that are not currently covered by other inspection and maintenance requirements in these regulations or the Act.

(4) The asset management plan shall be developed in consultation with and be approved by a professional engineer.

Asset management plan elements

5-11(1) The asset management plan inspections must include the identification of:

- (a) corrosion;
- (b) fatigue cracking;
- (c) wear; and
- (d) loose objects.

(2) All inspections of fixed assets will be conducted based on the approved asset management plan and conducted by a qualified person.

(3) The employer or contractor shall annually prepare a report that includes:

- (a) the details of the inspections conducted;
- (b) the date of inspections;
- (c) the element inspected;
- (d) the findings of each inspection;
- (e) the defects, if any, identified;
- (f) the records of any tests conducted; and
- (g) the corrective action taken.

(4) A copy of the report must be provided to the chief mines inspector:

- (a) in the case of the first report, on or before March 31, 2021; and
- (b) on or before March 31 of each subsequent year.

Inspection of equipment and worksite

5-12 An employer shall ensure that each worker inspects his or her worksite and equipment for defects and unsafe conditions at the beginning of each shift, and as necessary after that, to ensure that the worksite and equipment are safe.

Remedying defects, unsafe conditions

5-13(1) If a defect or unsafe condition that may create a hazard to a worker is identified, an employer or contractor shall:

- (a) until appropriate steps are taken pursuant to clause (b), take immediate steps to protect the health and safety of any worker who may be at risk; and
- (b) as soon as is reasonably practicable, take suitable action to correct the defect or unsafe condition.

(2) A worker who knows or has reason to believe that a worksite or any equipment under the worker's control is not in a safe condition shall:

- (a) repair the defect or correct the unsafe condition if the worker is authorized by the employer to do so and is competent to do so; or
- (b) as soon as is reasonably practicable, report the condition of the worksite or equipment to the employer.

Entry restrictions

5-14(1) An employer or contractor shall ensure that no worker is required or permitted to enter or work in any part of a mine that is barricaded or fenced off unless the employer or contractor has:

- (a) determined the conditions under which entry into or work in that part of the mine is safe; and
 - (b) clearly explained the conditions mentioned in clause (a) to the worker.
- (2) No worker shall enter or work in any part of a mine that is barricaded or fenced off unless the employer or contractor has:
- (a) determined the conditions under which entry into or work in that part of the mine is safe; and
 - (b) clearly explained to the worker the precautions to take for safe entry into or work in that part of the mine.

Report by professional engineer

5-15 The chief mines inspector may:

- (a) require an employer, contractor or owner to supply a report by a professional engineer or professional geoscientist on any matter governed by these regulations if the chief mines inspector has reason to believe that there is a potential danger to any worker employed at that mine; and
- (b) specify the time within which the report mentioned in clause (a) must be submitted.

Information re hazards

5-16 If any of the things mentioned in clauses (a) to (d) may present a hazard to a self-employed person or worker, the employer or contractor shall provide that person or worker with documentation containing the most current and relevant information and an evaluation or assessment with respect to the location of those things:

- (a) any disused workings;
- (b) any rock or stratum that contains or is likely to contain any liquid, including water, or gas;
- (c) any material that is likely to flow;
- (d) any diamond drill holes.

Controlling movement of strata

5-17 An employer or contractor shall take effective steps to control the movement of strata in all underground excavations to protect the health and safety of workers, including:

- (a) if reasonably practicable, supporting the ground by bolting, timbering, shotcreting or screening; and
- (b) sounding and scaling as necessary.

Determination of surface subsidence

5-18 If bedded deposits are mined, the employer, contractor or owner shall:

- (a) perform a suitable survey to determine the surface subsidence, if any, induced by the mining:
 - (i) at least every 2 years in active areas of the mine; and
 - (ii) at those intervals of time that are directed by the chief mines inspector in inactive areas of the mine; and
- (b) retain the information obtained from a survey carried out pursuant to clause (a) indefinitely.

Prevention of inrush

5-19 An employer, contractor or owner shall take all practicable steps to prevent any inrush of any gas, liquid or other material into the workings from any disused workings or strata.

PART 6
Design of mines

DIVISION 1
General

Change and shower facilities

6-1(1) An employer, contractor or owner shall provide and maintain at a mine:

- (a) facilities for workers to change and dry their clothing; and
 - (b) shower facilities.
- (2) Facilities required pursuant to subsection (1) must be appropriately located, suitable, adequate and clean.
- (3) An employer, contractor or owner shall provide separate facilities for male and female workers for the purposes mentioned in this section.

Fixed ladders underground

6-2(1) Section 255 of the OHS regulations does not apply to fixed ladders underground.

- (2) If a fixed ladder is provided in an underground manway or a shaft, the employer or contractor shall ensure that the ladder meets the requirements of this section.
- (3) A fixed ladder must be securely held in place at the top and bottom and at any intermediate points that are necessary to prevent sway in the ladder.
- (4) The rungs of a fixed ladder must be uniformly spaced with centres that are not less than 250 millimetres and not more than 300 millimetres apart.
- (5) A clearance of at least 150 millimetres must be maintained between the rungs on a fixed ladder and the structure to which the ladder is affixed.

- (6) The side rails of a fixed ladder must extend at least 1 metre above any platform, roof or other landing on the structure to which the ladder is fixed, unless suitable handrails are provided.
- (7) A fixed ladder must be equipped with suitably sized and sturdily constructed platforms at height intervals of not more than 7 metres if the ladder:
- (a) is more than 7 metres high; and
 - (b) is inclined more than 50° from the horizontal.
- (8) A suitably sized and sturdily constructed platform must be installed at every point at which a fixed ladder is offset.
- (9) The size of a ladder opening in a platform, roof or other landing must be sufficient to allow the passage of a worker wearing self-contained breathing apparatus or a stretcher bearing an injured worker.
- (10) If a ladder is inclined from the horizontal at 70° or more, the ladder must be offset to cover the openings in platforms.
- (11) If a ladder is inclined from the horizontal at more than 50° but less than 70°, the ladder may be continuous through the platforms.
- (12) An employer, contractor or owner shall ensure that a fixed ladder in an untimbered raise is equipped with guardrails.

Wire rope or chain ladders

- 6-3(1)** In this section, “**birdcaged wire**” means wire rope that contains a bulge due to the wire rope strands opening or unravelling.
- (2) Except during shaft-sinking operations, an employer or contractor shall ensure that no ladder made of wire rope or chain is used for climbing purposes.
- (3) If a wire rope ladder is used during shaft-sinking operations, the employer, contractor or owner shall ensure that no wire rope used in the ladder contains any broken, frayed or birdcaged wires.

Stairways

- 6-4** An employer, contractor or owner shall ensure that a stairway in a shaft is equipped with suitably placed hand rails if the stairway is inclined to less than 50° from the horizontal.

DIVISION 2 Underground Mines

Application of Division

- 6-5** This Division applies to the design of underground mines.

Design of mine

- 6-6** An employer, contractor or owner shall prepare and implement a mine design that:
- (a) is based on sound geotechnical engineering practices;
 - (b) considers, so far as is reasonably practicable, the health and safety of workers;

- (c) is prepared under the direction of a qualified person;
- (d) consists of drawings, plans, specifications and procedures to be used in the construction and operation of the mine;
- (e) takes into account the geology of the mine;
- (f) assesses the ground stability of the active and proposed workings of the mine;
- (g) takes into account previous occurrences of ground instability;
- (h) outlines the geometry of existing and proposed excavations;
- (i) specifies the ground support system to be used; and
- (j) describes the mining methods to be used, including stope sequencing and blasting methods.

Tailings containing cyanide prohibited

6-7 Unless otherwise permitted by the chief mines inspector, the employer or contractor shall ensure that tailings that contain cyanide are not used for filling worked-out areas underground.

Exits to surface

6-8(1) Subject to subsection (2), an employer, contractor or owner shall provide and maintain 2 independent exits to the surface from the underground mine that meet the requirements of this section.

(2) During the exploration and development phases of an underground mine, an employer, contractor or owner may provide and maintain only 1 exit to the surface that meets the requirements of this section if the employer, contractor or owner submits to the chief mines inspector, for approval, a written plan that:

- (a) outlines the precautions that will be taken to protect the health and safety of workers; and
 - (b) sets out the phase in which the second exit to the surface will be developed.
- (3) The 2 exits required by subsection (1):
- (a) must be at least 30 metres from each other at any point; and
 - (b) must be of sufficient size to provide a safe passageway for workers wearing self-contained breathing apparatuses and carrying a stretcher.
- (4) A structure that covers an exit required by subsection (1):
- (a) must be constructed to minimize the danger from fire; and
 - (b) without limiting the generality of clause (a), must be constructed of non-flammable material or metal that is bonded to ground.

- (5) An employer or contractor shall ensure that:
 - (a) each exit from an underground mine that is regularly used is inspected monthly by a competent person; and
 - (b) the person who conducts the inspection mentioned in clause (a) records the particulars of the inspection in the appropriate log or record.

Exits underground

6-9(1) Subject to subsection (2), an employer, contractor or owner shall provide and maintain 2 exits that meet the requirements of this section from each underground part of a mine in which workers regularly work or travel.

- (2) A single exit is permitted from:
 - (a) a drift or raise while it is being advanced;
 - (b) a room within a panel while the room is being advanced; and
 - (c) any other place approved in writing by the chief mines inspector.
- (3) Each exit required by subsection (1):
 - (a) must lead to a different exit to the surface; and
 - (b) must be designed, constructed and maintained so that any seepage of air from the exhaust side to the fresh air side is kept as low as is reasonably achievable.
- (4) An exit required by subsection (1) or (2) must be traversable:
 - (a) by a worker using self-contained breathing apparatus and at the same time permit the passage of a stretcher;
 - (b) if reasonably practicable, by a vehicle.
- (5) An employer, contractor or owner shall ensure that:
 - (a) each exit required by this section is inspected monthly by a competent person; and
 - (b) the person who conducts the inspection mentioned in clause (a) records the particulars of the inspection in the appropriate log or record.
- (6) Nothing in this section is intended to prohibit the temporary closure of 1 exit for rehabilitation or other short-term mining activity.

Marking exits, etc.

6-10(1) An employer or contractor shall mark with a clear, legible sign or by other visual means:

- (a) each means of exit to the surface from an underground part of a mine; and
 - (b) each worksite and travelway.
- (2) Signs or other visual means of marking an exit must be placed in prominent and conspicuous places.

- (3) An employer or contractor shall:
 - (a) post in conspicuous places underground, and in all refuge stations, a current plan of the mine that shows the workings, the ventilation system and the means of exit; and
 - (b) update the plan mentioned in clause (a) at least quarterly.

Emergency means of exit during power failure

6-11(1) If exit to the surface from an underground mine is solely by means of shafts that are not equipped with ladders, the employer, contractor or owner shall ensure that workers can be safely transported by a conveyance to the surface in the event of a failure of the power transmission system, control system or utility power supply:

- (a) by developing emergency work procedures that are approved by the chief mines inspector;
 - (b) by providing adequate and effective equipment; and
 - (c) by providing emergency power to the conveyance specified by the chief mines inspector.
- (2) An employer or contractor shall ensure that:
 - (a) the conveyance is tested using emergency power at least once annually by a competent person; and
 - (b) the emergency power source is tested at least quarterly by a qualified person.
- (3) An employer or contractor shall:
 - (a) ensure that the details of the testing mentioned in subsection (2) are recorded in the hoisting machinery log book by the person who conducted the test; and
 - (b) countersign the entries made pursuant to clause (a).
- (4) If all means of exit to the surface from an underground mine are solely by means of shafts, the employer, contractor or owner shall ensure that the electrical hoisting systems are designed to prevent a fire, in any one location, from disabling all hoists simultaneously.

Procedure where exit from underground restricted

6-12(1) If an underground mine is to be operated with a single exit to the surface for an extended period because the second exit is unavailable, the employer or contractor shall:

- (a) develop a written plan in consultation with the committee outlining the precautions that will be taken to protect the health and safety of workers working underground;
 - (b) submit the plan to the chief mines inspector for approval;
 - (c) implement the approved plan, as appropriate; and

- (d) test the hoist under the power of a standby or back-up generator before transporting workers.
- (2) If exit to the surface from an underground mine is solely by means of shafts that are not equipped with ladders and if only 1 exit is available and the second exit cannot be brought back into operation within 2 hours in an emergency, the employer or contractor shall ensure that workers are informed immediately of the restricted access.
- (3) If exit to the surface from an underground mine is solely by means of shafts that are not equipped with ladders and all shafts are unavailable, the employer or contractor shall:
 - (a) ensure that all work ceases immediately, with the exception of emergency work, including work required to repair an exit; and
 - (b) if an exit cannot be brought back into operation within 12 hours, ensure that the emergency procedure identified in the fire control and emergency response plan required by section 19-4 is implemented.

Underground electrical system

6-13 An employer, contractor or owner shall ensure that:

- (a) every feeder cable from the surface is protected with a suitable lightning-arrestor near the point of entry of the cable to the mine; and
- (b) no lightning-arrestor ground is connected to any rail, track, pipeline or other conductor that enters the mine.

Boundary pillars

6-14(1) In this section, “**boundary pillar**” means a pillar positioned between 2 adjoining properties.

- (2) If workings on adjoining properties controlled by more than 1 owner approach each other, the employers, contractors or owners shall jointly determine the following to protect the health and safety of workers:
 - (a) the size of any boundary pillar required; and
 - (b) if applicable, the method of mining adjacent to that boundary pillar.
- (3) The boundary pillar mentioned in subsection (2) must be:
 - (a) designed by a professional engineer; and
 - (b) of a size that is sufficient to protect the health and safety of workers.
- (4) If the employers, contractors and owners cannot agree on the size of the boundary pillar mentioned in subsection (2), the total width of the boundary pillar must be at least 30 metres.

DIVISION 3
Open Pit Mines

Application of Division

6-15 This Division applies to the design of open pit mines.

Design of mine

6-16(1) An employer, contractor or owner shall prepare and implement a mine design that:

- (a) is based on sound geotechnical engineering practices;
 - (b) considers, so far as is reasonably practicable, the health and safety of workers;
 - (c) is prepared under the direction of a qualified person;
 - (d) consists of drawings, plans, specifications and procedures to be used in the construction and operation of the mine;
 - (e) takes into account the geology of the mine;
 - (f) assesses the ground stability of the active and proposed workings of the mine;
 - (g) takes into account previous occurrences of ground instability;
 - (h) outlines the geometry of existing and proposed excavations;
 - (i) includes a blasting design;
 - (j) outlines the methods to be used to control water from the strata or from any surrounding bodies of water; and
 - (k) includes a slope stability monitoring program that is:
 - (i) specific to the design of the mine; and
 - (ii) approved by a professional engineer.
- (2) An employer, contractor or owner shall ensure that a mine design is assessed and updated under the direction of a qualified person:
- (a) annually; and
 - (b) before any alteration is made to the mine that might significantly affect the ground stability.

Design of haulage roads

6-17(1) An employer, contractor or owner shall ensure that all haulage roads at an open pit mine are designed, constructed and maintained to provide:

- (a) a travel width:
 - (i) that is at least the approved width; or

- (ii) if there is no approved width pursuant to subclause (i), that is, not including the width of a berm mentioned in subsection (2):
 - (A) at least 2.5 times the width of the widest haulage vehicle used on the road where dual lane traffic exists; and
 - (B) at least twice the width of the widest haulage vehicle used on the road where single lane traffic exists; and
 - (b) a surface and slope that reduce, as far as is reasonably practicable, the danger of vehicles slipping or skidding.
- (2) If there is a drop-off greater than 3 metres from a haulage road at an open pit mine, an employer, contractor or owner shall ensure that:
- (a) on haulage roads constructed on or after July 16, 2003, a berm at least 75% of the height of the largest tire on any vehicle used on the road is constructed and maintained along the edge of the road; and
 - (b) to allow for drainage or snow clearance, no opening in a berm is greater in width than the width of the blade of any equipment used to construct or maintain the opening.
- (3) If a haulage road is constructed at an open pit mine on or after July 16, 2003, and any of the circumstances mentioned in subsection (4) exists, an employer, contractor or owner shall do all of the following:
- (a) if reasonably practicable, provide emergency runaway lanes or retardation barriers that are:
 - (i) placed at suitable locations; and
 - (ii) capable of bringing a runaway vehicle to a controlled stop;
 - (b) maintain and clearly mark the emergency runaway lanes or retardation barriers.
- (4) Subsection (3) applies if:
- (a) both of the following circumstances exist:
 - (i) the grade of the haulage road:
 - (A) for articulated bottom-dump trucks exceeds 6%; or
 - (B) for non-articulated end-dump trucks exceeds 8%; and
 - (ii) a sharp bend in the haulage road exists that creates a risk to the operator of a vehicle; or
 - (b) the chief mines inspector directs that the employer, contractor or owner comply with subsection (3).

Boundary approach limit

6-18(1) In this section, “**boundary approach limit**” means the minimum distance that an excavation in an open pit mine may approach a boundary between 2 adjoining properties.

(2) If workings on adjoining properties controlled by more than 1 owner approach each other, the employers, contractors or owners shall jointly determine the following to protect the health and safety of workers:

- (a) the boundary approach limit; and
- (b) the method of mining to be used in the area adjacent to the boundary approach limit.

(3) If the employers, contractors or owners cannot agree on the size of the boundary approach limit mentioned in subsection (1), the employers, contractors or owners shall ensure that:

- (a) in the case of unconsolidated materials:
 - (i) the boundary approach limit on each side of the boundary between 2 adjoining properties is not less than one-half the depth of the open pit mine; and
 - (ii) all material that sloughs off within the area mentioned in subclause (i) is left to form a natural slope and is not removed for any reason; and
- (b) in the case of consolidated materials, the boundary approach limit on each side of the boundary between 2 adjoining properties is at least 5 metres.

Benches

6-19 If falling material may endanger a worker as a result of the height of a working face or the nature of the material, the employer or contractor shall ensure that the mine is provided with benches at suitable levels.

Maximum working face height

6-20 An employer or contractor shall ensure that the height of a working face does not exceed the maximum height of the loading equipment used plus 2 metres, unless permitted by the chief mines inspector.

PART 7

Work Practices and Procedures

Definitions for Part

7-1 In this Part, “**raise climber**” means a mechanically operated platform that is:

- (a) suspended from a track;
- (b) powered by air motors or electric motors; and
- (c) used in a raise:
 - (i) to transport workers and materials; or
 - (ii) as a temporary staging from which workers may perform mining procedures.

Guarding ore passes, manways, raises, etc.

7-2(1) If reasonably practicable, an employer or contractor shall ensure that:

- (a) the top of every ore pass, manway or other opening into which a worker could step or fall is:
 - (i) covered with a securely installed covering; or
 - (ii) guarded by an adequate barrier; and

- (b) the top of every raise or other opening to a level into which powered mobile equipment could fall is protected by a barrier that has been designed by a professional engineer and built to the design specifications.
- (2) If a manway is being repaired or is unsafe for travel, an employer or contractor shall ensure that:
 - (a) access to the manway is restricted; and
 - (b) the top and bottom of the manway is posted with warning signs or permanent markings clearly indicating whether the manway is open or closed to workers.

Protection of workers pulling chutes

7-3(1) If a worker is required to pull a chute, the employer or contractor shall ensure that:

- (a) the volume of any liquid entering a mine opening used for the passage of ore, waste or other material by gravity is minimized to the extent that is reasonably practicable;
 - (b) a mechanical locking device is installed on power operated chute gates so that the gates may be locked in either the open or closed position; and
 - (c) the chute is designed so that a power failure will not cause the chute gates to open.
- (2) An employer or contractor shall ensure that no worker pulling a chute is positioned so that the worker's safe exit is impeded by an uncontrolled discharge of liquid or solid material from the chute.
- (3) If a worker is required or permitted to work in a chute or at a worksite that may be affected by the flow of material from the chute, the employer or contractor shall ensure that:
- (a) the power supply to a conveyor or gate that controls the flow of material into the chute is disconnected, locked out and tagged; and
 - (b) subject to subsection (4), gates are locked in the closed position to prevent the flow of material.
- (4) If it is necessary for a worker to work with a chute open, the employer or contractor shall ensure that a suitable bulkhead is installed above the worker to divert or arrest the flow of material.

If material is hung up

7-4(1) Subject to subsection (2), if material is hung up in a mine opening that is used for the passage of ore, waste or other material by gravity, the employer or contractor shall ensure that no worker is required or permitted to enter the opening until a competent person authorized by the employer or contractor:

- (a) examines the stability of the hang-up;
- (b) determines the method of safely removing the hang-up; and
- (c) supervises the removal of the hang-up.

- (2) An employer or contractor may permit a worker who is supervised by the authorized person mentioned in subsection (1) to enter a mine opening mentioned in subsection (1) for the purpose of removing the hang-up.

Loading at drawpoint

7-5 Except if remote-controlled powered mobile equipment is used, an employer shall ensure that the operator of powered mobile equipment that is being used to remove material from a drawpoint does not move the equipment beyond a point subtending a 45° angle back from the brow of the drawpoint to the back of the bucket once the brow is open.

Diamond drill holes

7-6(1) In this section, “**point of intersection**” means the point at which a diamond drill hole intersects with a drift.

- (2) An employer or contractor shall ensure that the location of every diamond drill hole is marked on the appropriate working plan.
- (3) If blasting is to be conducted within 8 metres of a diamond drill hole, an employer or contractor shall securely fence off or guard the collar of the drill hole and any other possible point of intersection to prevent worker access to any point of intersection.
- (4) The employer or contractor shall mark the collar of a diamond drill hole and each point of intersection with a single capital letter “H” measuring 300 millimetres by 300 millimetres in clearly visible paint, placed within 1 metre of the collar or point of intersection.

Open pit precautions

7-7(1) At an open pit mine, the employer or contractor shall ensure that:

- (a) all loose material is scaled or trimmed from the side of the open pit mine where a worker is required or permitted to be present;
 - (b) except for berms, all equipment, unconsolidated material, rocks and construction materials are kept at least 2 metres from the edge of the open pit mine; and
 - (c) the slope of any pile of unconsolidated material adjacent to the open pit mine is at an angle not steeper than the lesser of:
 - (i) 1 horizontal to 1 vertical; and
 - (ii) the natural angle of repose.
- (2) An employer or contractor shall ensure that no vehicle is operated, and no vehicle or heavy load is located, near the edge of an open pit mine so as to affect the stability of the walls of the open pit mine.
- (3) If unconsolidated material is being worked at an open pit mine, the employer or contractor shall ensure that there is no undermining of the working face.
- (4) If an open pit mine is being worked in benches, the employer or contractor shall ensure that any accumulation of loose rock on a bench that may endanger a worker is removed.

Stagings

7-8(1) If wooden stagings are used, the employer or contractor shall ensure that:

- (a) the stagings are designed to support at least 3 times the load to which it may be subject;
- (b) the planks are sound and free of defects; and
- (c) the planks are not painted or treated to obscure the grain.

(2) If constructing a staging, the worker shall ensure that the planks are nailed or otherwise secured to prevent the planks from slipping off their supports.

Steeply inclined raises

7-9(1) Subject to subsection (3), an employer or contractor shall ensure that a raise that is inclined at more than 50° from the horizontal and is to be driven more than 20 metres along the slope is divided into at least 2 compartments, one of which is maintained as a ladderway and equipped with fixed ladders.

(2) An employer or contractor shall ensure that the timbering in a raise described in subsection (1) is installed:

- (a) as near to the working face as is reasonably practicable; and
- (b) so that the distance between the working face and top of the timbering does not exceed 8 metres.

(3) If a raise climber or similar equipment is used, a raise that is inclined at more than 50° from the horizontal may be driven more than 20 metres along the slope without being divided into compartments.

Raise climbers

7-10(1) An employer, contractor or owner shall ensure that:

- (a) a raise climber is designed, constructed, installed, operated and maintained to safely perform any task for which it is used; and
- (b) a raise climber platform is designed by a professional engineer to withstand the expected load.

(2) An employer or contractor shall ensure that a raise climber:

- (a) is provided with a durable and clearly legible indication of the load rating that is readily accessible to the operator at the control station;
- (b) has at least 2 independent means of braking, each of which is:
 - (i) capable of stopping the raise climber and holding it in place; and
 - (ii) designed to be tested independently of the other; and
- (c) has an adequate and suitable means of communication between the worker operating the controls and the worker on the raise climber platform, if they are different persons.

(3) Except if the track on which a raise climber operates is being extended, the employer or contractor shall ensure that a raise climber has a stop block installed to prevent the raise climber from being taken beyond the end of the track.

- (4) An employer or contractor shall ensure that:
- (a) the raise climber service area is designed and operated to prevent workers from exiting the raise climber while it is below the open raise; and
 - (b) an emergency procedure is developed, and the means to carry out the procedure are available, to remove workers safely from a raise climber that is stalled at a position other than at the raise climber service area.

Electrically powered raise climbers

7-11(1) An employer or contractor shall ensure that an electrically powered raise climber:

- (a) is operated at a voltage less than 750 volts;
 - (b) is protected by a ground fault interrupt system;
 - (c) has a conspicuous and accessible control at the raise climber service area to isolate the power from the raise climber;
 - (d) has a control switch on the raise climber to isolate the power from the motor; and
 - (e) has a means of disconnecting and locking out the main power supply.
- (2) If electric detonators are being used, an employer or contractor shall ensure that the power supply to an electrically powered raise climber is disconnected while a round in the raise is being charged with explosive.

Inspection of raise climbers

7-12(1) At the commencement of each shift, an employer or contractor shall ensure that the brakes of a raise climber are inspected and tested by a competent worker to ensure that the brakes are in a safe working condition.

(2) Before a raise climber is started, an employer or contractor shall ensure that a competent worker makes a complete visual inspection of the raise climber and the surrounding area to ensure that no worker is endangered by the start-up of the raise climber.

(3) An employer or contractor shall ensure that a raise climber is inspected weekly by a competent person to identify any defects or unsafe conditions.

Inspection of critical parts

7-13(1) In this section, “**critical part**” means each part of a raise climber that, if it failed, would cause the uncontrolled descent of the raise climber.

(2) An employer or contractor shall ensure that the critical parts of a raise climber are subjected to a thorough inspection, including non-destructive testing, under the supervision of a professional engineer:

- (a) before the raise climber is first put into service;
- (b) during every major overhaul; and
- (c) at least once in every 4,000 hours of use or every 12 months, whichever occurs first.

Raise climber log book

7-14 An employer or contractor shall:

- (a) maintain a raise climber log book for each raise climber and ensure that the raise climber log book is kept readily available;
- (b) ensure that the details of each inspection required pursuant to section 7-12, including any defects discovered as a result of the inspection, are recorded in the raise climber log book by the person who conducted the inspection; and
- (c) countersign the entries made pursuant to clause (b) on a regular basis.

Operation of raise climbers

7-15(1) An employer or contractor shall:

- (a) designate a worker to operate a raise climber;
 - (b) ensure that the designated operator is trained in the safe operation of the raise climber; and
 - (c) ensure that no worker other than a designated operator operates a raise climber.
- (2) An operator of a raise climber shall not operate the raise climber unless:
- (a) the operator has determined the weight of the load; and
 - (b) the load is less than the rated load for the operating conditions.

Raise climber as only means of exit

7-16 If a raise climber provides the only means of exit from a worksite, the employer or contractor shall ensure that no worker is required or permitted to remain in that worksite if the raise climber is removed from the worksite for any reason.

Dredges

7-17(1) An employer or contractor shall ensure that a dredge used at a mine is equipped with:

- (a) adequate and suitable fire-fighting equipment;
 - (b) adequate guard rails to prevent any worker from falling into the water;
 - (c) a suitable gangplank for exit to a permanent walkway;
 - (d) a ladder on each side of the dredge that extends from the deck to the water level for rescue purposes;
 - (e) an adequate means of exit from the engine room and control cabin; and
 - (f) an effective means of communicating with workers on the dredge.
- (2) If a worker is required or permitted to be on a dredge that is not connected to the shore by a walkway, the employer or contractor shall ensure that at least 2 suitable boats, one based at the dredge and the other based at the shore, are available for immediate use.
- (3) An employer or contractor shall ensure that no flammable materials, other than lubricant and fuel necessary for 24 hours of operation, are stored on a dredge.

(4) The employer or contractor shall ensure that every dredge put into service on or after July 16, 2003 is equipped with lightning protection system that conforms to the requirements of Canadian Standards Association standard CAN/CSA-B72-M87 (R2013), *Installation Code for Lightning Protection Systems* or another approved standard.

(5) The employer or contractor shall ensure that a dredge put into service before July 16, 2003 and not equipped in accordance with subsection (4) is not used during an electrical storm.

Blast furnaces and smelters

7-18(1) If there is a blast furnace or smelter at a mine, the employer or contractor, in consultation with the committee, shall:

- (a) develop and implement a work plan for the operation of the blast furnace or smelter to ensure the health and safety of workers who work at or near the blast furnace or smelter;
 - (b) make a copy of the work plan readily available to workers who work at or near the blast furnace or smelter; and
 - (c) ensure that all workers and self-employed persons comply with the work plan.
- (2) A work plan for the operation of a blast furnace or smelter must be in writing and include provisions for:
- (a) supervision of the operation;
 - (b) training of workers;
 - (c) adequate safety equipment;
 - (d) any necessary limits on the use of equipment at or near the blast furnace or smelter;
 - (e) prevention of any dangerous spilling or splashing of molten metal or material;
 - (f) warnings to be given and precautions to be taken if molten metal or material is to be moved;
 - (g) control of any contact of molten metal or material with cold, damp surfaces; and
 - (h) an effective maintenance program for equipment and vehicles used at or in connection with the blast furnace or smelter.

PART 8

Shaft-Sinking Operations

General duty

8-1 An employer, contractor or owner shall ensure that all shafts in a mine are designed, constructed and maintained to safely bear the loads that may reasonably be anticipated to be placed on them.

Notice of shaft-sinking operation

8-2 As soon as possible but not later than 90 days before a shaft-sinking operation commences, an employer, contractor or owner shall give notice of the shaft-sinking operation by submitting to the chief mines inspector:

- (a) the drawings and specifications for:
 - (i) the sinking procedure to be used;
 - (ii) the shaft lining program;
 - (iii) the equipment to be used in the sinking process, including dump doors; and
 - (iv) the shaft collar; and
- (b) the primary and secondary signal systems to be used during a shaft-sinking operation.

Sinking shaft in sedimentary strata

8-3(1) If a shaft is to be sunk in an area underlain by water-bearing or brine-bearing sedimentary strata, the employer, contractor or owner shall give written notice to the chief mines inspector of any intention to drill any hole for the purpose of consolidating a shaft site by a grouting or freezing method.

- (2) A notice required by subsection (1) must:
 - (a) be given as soon as is reasonably possible but not later than 90 days before drilling begins;
 - (b) include the location of the proposed shaft and the number and depth of the holes to be drilled; and
 - (c) if subsection (3) applies, include the radius and specifications of the pillar to be left around the shaft.
- (3) If a shaft is to be sunk in an area underlain by water-bearing or brine-bearing sedimentary strata, the employer, contractor or owner shall ensure that:
 - (a) a substantial pillar is left around the shaft at each working horizon that is adequate to protect the shaft from any damage resulting from movement of the strata; and
 - (b) a professional engineer determines the appropriate radius and other specifications of the pillar to meet the requirements of clause (a).

Shaft collar

8-4 An employer, contractor or owner shall ensure that every shaft or raise opening at the surface is provided with a collar that is:

- (a) designed and constructed in accordance with sound engineering practices to prevent any person or equipment from falling into the shaft or raise;
- (b) made of concrete or equivalent material; and
- (c) if reasonably practicable, secured to the bedrock.

Design of shaft-sinking equipment

8-5(1) An employer, contractor or owner shall ensure that the conveyance used in the shaft sinking, its components, the hoisting system and mountings, and the crosshead are designed, constructed, installed, operated and maintained so that the conveyance is capable of transporting workers safely.

(2) Without limiting the generality of subsection (1), if a shaft is being sunk, an employer, contractor or owner shall ensure that:

- (a) the conveyance measures at least 1 070 millimetres from the floor of the conveyance to the top of the side of the conveyance; and
- (b) the suspension members of the conveyance are securely attached to the hoist rope.

(3) If the distance between the shaft collar and the shaft bottom is greater than 60 metres, the employer or contractor shall ensure that:

- (a) a suitable crosshead is used at the point of attachment of the suspension members to the hoist rope; and
- (b) the crosshead:
 - (i) lands on at least 2 chairs at the bottom crosshead stop to prevent distortion of the crosshead;
 - (ii) is equipped with a safety device for attaching the conveyance to the crosshead so that the crosshead cannot jam in the shaft compartment without stopping the conveyance; and
 - (iii) is of a type that encloses the conveyance unless the shaft compartment is tightly lined and the conveyance is barrel-shaped.

(4) An employer or contractor shall not require or permit persons to be transported in a conveyance during a shaft-sinking operation unless the requirements of subsections (1) to (3) are met.

Shaft lining

8-6(1) If a shaft is to be lined with timber, an employer or contractor shall ensure that:

- (a) the timber is suitable and of adequate strength; and
- (b) the lining is installed and maintained to a distance of not less than 15 metres from the bottom of the shaft.

(2) If a shaft is to be lined with concrete or steel and concrete, an employer, contractor or owner shall:

- (a) ensure that the lining is of suitable construction and is strong enough to withstand the maximum load that may reasonably be anticipated;
- (b) specify a reasonable maximum distance to be permitted between the lower extremity of the lining and the shaft bottom and notify the chief mines inspector of that distance; and
- (c) ensure that the lining, whether temporary or permanent, is installed and maintained to a distance from the bottom of the shaft that is not less than the distance specified pursuant to clause (b).

Doors

8-7(1) During a shaft-sinking operation, an employer or contractor shall ensure that dump doors meeting the requirements of subsection (2) are installed at the conveyance dumping position.

(2) The dump doors required by subsection (1) must:

- (a) prevent the conveyance from being dumped while the dump doors are open;
- (b) prevent any material from falling down the shaft while the conveyance is being dumped; and
- (c) be equipped with devices that mechanically latch the dump doors out of the shaft compartment automatically if the dump doors are fully open.

(3) During shaft-sinking operations, an employer or contractor shall ensure that service doors are:

- (a) installed at the collar; and
- (b) equipped with devices that mechanically latch the service doors out of the shaft compartment automatically if the service doors are fully open.

(4) An employer or contractor shall ensure that the doors required by subsections (1) and (3) are closed while a conveyance is:

- (a) being loaded with tools or materials; or
- (b) being unloaded.

(5) Except if a closed crosshead that provides equivalent protection for persons is in use, an employer or contractor shall ensure that the doors required by subsections (1) and (3) are closed while persons are entering or leaving a conveyance.

Signal lights

8-8 An employer or contractor shall ensure that dual lights are installed at the hoist operator's position that activate automatically to indicate to the hoist operator that:

- (a) the crosshead and conveyance are descending together from the dumping position; and
- (b) the dump doors and service doors are closed or open.

Multi-deck stage

8-9 If a multi-deck stage is used during a shaft-sinking operation, an employer, contractor or owner shall ensure that:

- (a) the multi-deck stage is:
 - (i) designed by a professional engineer; and
 - (ii) constructed, installed, operated and maintained in accordance with the design mentioned in subclause (i);
- (b) any ropes used with the multi-deck stage meet the load factor requirements set out in section 10-57; and

- (c) either:
 - (i) flashing lights are on each level of the multi-deck stage that are activated if the conveyance is near the stage, to warn workers on the stage that the conveyance is near; or
 - (ii) the shaft through which the conveyance travels is enclosed.

Open hooks prohibited

8-10 During a shaft-sinking operation, an employer or contractor shall ensure that no open hooks are used to suspend any staging, working platform, conveyance or other equipment in the shaft.

Means of escape

8-11(1) Subject to subsection (2), during a shaft-sinking operation, an employer or contractor shall ensure that a suitable manway is constructed and maintained in the shaft from the collar to the sinking stage.

(2) An employer or contractor may install an independently-powered escape conveyance in a shaft in place of a manway, but the conveyance must be fully operational before the shaft exceeds a depth of 30 metres.

- (3) The employer or contractor shall provide an auxiliary ladder that:
 - (a) extends from the permanent ladder or the sinking stage to the bottom of the shaft; and
 - (b) is located and attached so that it can be promptly lowered to any point at which workers are working.

Procedure before hoisting a sinking bucket

8-12 During shaft-sinking operations, an employer or contractor shall ensure that:

- (a) a sinking bucket is not moved from the top or bottom of a shaft until the worker in charge of the sinking bucket has steadied the sinking bucket;
- (b) a sinking bucket is not moved from the bottom of a shaft until the worker in charge of the sinking bucket has examined the sinking bucket and has removed any mud or other material that may be sticking to it; and
- (c) before a sinking bucket containing loose rock or material is moved, no loose rock or material projects above the rim of the sinking bucket.

Riding in sinking bucket

8-13(1) During shaft-sinking operations, no employer or contractor shall require or permit any person:

- (a) to ride on the rim or outside of a sinking bucket; or
 - (b) subject to subsection (2), to ride in a sinking bucket that contains ore, waste or any other materials.
- (2) Small items, including tools, may be carried in a sinking bucket if:
- (a) it is necessary to do so; and
 - (b) adequate precautions are taken to ensure the safety of workers being transported in the sinking bucket.

- (3) An employer or contractor shall ensure that, during shaft-sinking operations:
 - (a) the sinking bucket used to transport workers is in the charge of a competent worker authorized by the employer or contractor; and
 - (b) no person other than an authorized competent worker gives the signals for the movement of a sinking bucket used to transport workers.
- (4) A worker being transported in a sinking bucket shall obey the instructions of the authorized competent worker in charge of the sinking bucket.
- (5) A worker involved in shaft sinking activities shall wear a personal fall arrest system pursuant to the OHS regulations.

Lowering sinking bucket to bottom of shaft

8-14 Subject to section 8-15, if a sinking bucket is being lowered to the bottom of a shaft during shaft-sinking operations, the employer or contractor shall ensure that:

- (a) the sinking bucket is stopped at a distance of not less than 5 metres and not more than 10 metres from the bottom of the shaft and, beyond that point, lowered slowly and only on a separate signal from the worker in charge of the sinking bucket; and
- (b) while the crosshead is being chaired and released, the hoist is operated at creep speed only.

Lowering workers after blast

8-15 During shaft-sinking operations, on the first trip in which workers are transported down a shaft after a blasting operation, the employer or contractor shall ensure that:

- (a) the sinking bucket does not transport more workers than are necessary to make a proper examination of the parts of the shaft that might have been affected by the blast;
- (b) subject to clause (c), the sinking bucket is not lowered beyond a point in the shaft beyond which the health or safety of workers may be endangered and, in any case, is not lowered beyond a point that is less than 15 metre above the top of the blasting set or the multi-deck stage; and
- (c) beyond the point mentioned in clause (b), the sinking bucket is lowered slowly and only on a separate signal from the worker in charge of the sinking bucket.

Overhead protection

8-16 During shaft-sinking operations, if work in the shaft is to be carried out at more than one elevation at the same time, the employer or contractor shall ensure that workers in the lower elevations are protected from the danger of falling objects or materials by installing a secure covering that:

- (a) extends over a sufficient portion of the shaft to afford adequate protection to the workers below; and
- (b) is capable of withstanding the maximum load that may reasonably be anticipated.

Working below shaft mucking machine

8-17 An employer or contractor shall not require or permit a worker to work on or below a shaft mucking machine unless:

- (a) the shaft mucking machine is secured in position by an elevating system that is capable of supporting the full load of the machine; and
- (b) any ropes used with the shaft mucking machine meet the load factor requirements set out in section 10-57.

PART 9**Shaft Safety and Shaft Inspections****Notice of shaft design changes**

9-1 Before making any significant change in the design, construction or layout of a shaft or any change in the design or construction of equipment used in a shaft, an employer, contractor or owner shall:

- (a) as soon as possible, give notice of the proposed change by submitting to the chief mines inspector:
 - (i) all details of the proposed change; and
 - (ii) any drawings and specifications that the chief mines inspector considers necessary; and
- (b) ensure that the proposed change mentioned in clause (a) is designed by a professional engineer.

Lining of compartments

9-2(1) Except during shaft-sinking operations, the employer or contractor shall ensure that every shaft is lined at all levels and at the collar to protect workers from falling material and to keep workers from coming into contact with a conveyance or counterweight.

(2) A lining required by subsection (1):

- (a) must be constructed of material that is strong enough to contain any falling material or supplies within the shaft;
- (b) must, if material or supplies are transported in the cage compartment:
 - (i) extend above the collar and each level by a distance equal to the height of the conveyance plus 2 metres; and
 - (ii) extend below the collar and each level by a distance of at least 2 metres; and
- (c) may contain an opening in the side through which materials or workers are loaded on or off the conveyance.

(3) An employer or contractor shall ensure that there is a substantial enclosure above the shaft within the headframe to prevent inadvertent worker access to the shaft and to protect workers in the headframe from falling material.

(4) If a shaft constructed after 1978 contains a skip compartment and a cage compartment, the employer or contractor shall ensure:

- (a) that the skip compartment is separated from the cage compartment by a substantial partition that extends the length of the shaft; or
- (b) that workers and materials are not transported in the shaft at the same time.

(5) If a counterweight is used in a shaft, the employer or contractor shall ensure that the counterweight operates in a separate compartment or is guarded so that the counterweight does not endanger workers at pass points or at any level or other point of access to the shaft.

Manways

9-3 If a shaft containing a conveyance is equipped with a manway, an employer, contractor or owner shall ensure that:

- (a) the manway is separated from the hoisting or counterweight compartments of the shaft by:
 - (i) a substantial heavy mesh screen with a maximum opening of 5 centimetres; or
 - (ii) another suitable partition that will prevent:
 - (A) a falling object from entering the manway; and
 - (B) an object in the manway from intruding into the hoisting or counterweight compartment; or
- (b) access to the manway is controlled so that the manway cannot be used while material is being hoisted in the shaft.

Rescue from hoist – shaft without manway

9-4(1) If a worker may be transported by a hoist in a shaft that is not equipped with a manway, the employer, contractor or owner shall:

- (a) develop procedures for the rescue of a worker trapped in a conveyance in the shaft;
 - (b) provide equipment that is adequate and suitable for the procedures mentioned in clause (a); and
 - (c) subject to subsection (2), annually test the procedures and equipment required by clauses (a) and (b).
- (2) If the use of an off-site portable emergency hoist is an element of the procedures developed pursuant to subsection (1), the employer, contractor or owner shall ensure that the portable hoist is tested on site:
- (a) at each shaft every 5 years; and
 - (b) after any alteration in the headframe that may affect the operation of the portable hoist.

(3) An employer, contractor or owner shall ensure that each rope of any portable emergency hoist that is an element of the procedures developed pursuant to subsection (1) is tested at least once a year and is:

- (a) cleaned and checked for a decrease in diameter every 30 metres; and
- (b) examined by an approved electromagnetic testing service with an electromagnetic testing device or another method approved by the chief mines inspector.

Access to shafts

9-5 At each level or other point of access to the workings from the shaft, an employer or contractor shall ensure that the following are provided:

- (a) a safe travelway to the workings from the hoisting compartment;
- (b) a safe travelway from each shaft manway to the workings;
- (c) adequate standing room adjacent to the shaft.

Guarding of shaft openings

9-6(1) Subject to subsections (2) to (4), an employer, contractor or owner shall ensure that every shaft opening is securely fenced, covered or otherwise guarded to prevent workers, material or equipment from falling into the shaft.

(2) Except where the hoisting compartment at a shaft station is securely closed off, an employer or contractor shall ensure that a substantial gate is installed at each shaft opening at the surface, at each level and at each loading pocket.

(3) An employer or contractor shall ensure that a gate required by subsection (2):

- (a) is designed and constructed to withstand the impact of a vehicle, other than powered mobile equipment;
- (b) has a clearance beneath its lower edge that is not greater than 40 millimetres; and
- (c) is kept closed except:
 - (i) if the conveyance is being loaded or unloaded at the shaft station; or
 - (ii) during shaft station maintenance.

(4) If it is necessary to temporarily remove from a shaft opening a fence or cover required by subsection (1) or a gate required by subsection (2), the employer or contractor shall ensure that:

- (a) the shaft opening is otherwise guarded or access to it is restricted; and
- (b) the fence, cover or gate is replaced as soon as is reasonably practicable.

Shaft obstructions

9-7(1) In this section, “**shaft obstruction**” means:

- (a) any equipment that, if installed in a shaft, may interfere with the free passage of the conveyance;
- (b) any door installed in a shaft that, if fully or partially closed, may interfere with the free passage of the conveyance.

- (2) If there is a shaft obstruction, the employer or contractor shall ensure that:
 - (a) any part or door is restrained from projecting into the shaft by a positive locking device; and
 - (b) at the hoist operator's position:
 - (i) there are dual position-indicating lights installed that meet the requirements of subsection (3); or
 - (ii) there is another device installed that is:
 - (A) capable of determining if parts or doors are locked in a safe position and that no moveable part or door is projecting into the shaft compartment; and
 - (B) is designed by a professional engineer experienced in hoist and shaft systems.
- (3) For the purposes of clause (2)(b):
 - (a) the dual position-indicating lights must:
 - (i) include:
 - (A) a red light that turns on if any moveable part or door is not locked in a safe position; and
 - (B) a green light that turns on if there is no moveable part or door projecting into the shaft compartment; and
 - (ii) be designed and installed so that the green light does not turn on until a protruding moveable part or door is fully retracted; and
 - (b) the switches that turn on the red and green lights must be activated directly by the moveable part or door that constitutes the shaft obstruction.
- (4) Before a shaft obstruction is installed, the employer or contractor shall:
 - (a) prepare a procedure for safely working with shaft obstructions;
 - (b) record the procedure in the hoist operator's log book; and
 - (c) post copies of the procedure in appropriate locations near the shaft.

Devices for landing conveyance

- 9-8(1)** An employer or contractor shall ensure that all chairs:
- (a) are designed by a professional engineer; and
 - (b) are installed and maintained to safely land the conveyance.
- (2) If chairs are used for the purpose of landing a conveyance at any point in a shaft other than at the lowest point of travel, the employer or contractor shall ensure that the chairs:
- (a) are installed:
 - (i) to fall clear and remain clear of the shaft compartment if the conveyance is raised off the chairs; and
 - (ii) so that the chairs do not distort the conveyance; and
 - (b) are operable only from outside the conveyance.

Barrier to water in shaft bottom

9-9 Except during shaft-sinking operations or sump cleaning operations, an employer or contractor shall ensure that a barrier or other suitable device is installed in the shaft to prevent a conveyance from being lowered into water in the bottom of the shaft.

Isolating the shaft station

9-10 The employer, contractor or owner shall ensure that each shaft station in a multi-level mine can be secured from the workings by doors that are designed, constructed, installed and maintained so that any seepage of air from the workings is kept as low as is reasonably achievable.

Weekly shaft inspection

9-11 An employer or contractor shall ensure that each shaft, including the walls, lining, guides and compartments, and all equipment within each shaft, is inspected by a competent person at least weekly to determine whether the shaft and its components and equipment are in safe working condition.

Annual headframe inspection

9-12 An employer or contractor shall ensure that the headframe of a shaft, including the foundation, backlegs, sheave deck, drum deck, suspension deck, dump, bin and bin supports, is inspected by a competent person at least annually.

Shaft inspection log book

9-13 An employer or contractor shall:

- (a) maintain a shaft inspection log book for each shaft and ensure that the book is kept readily available to the hoist operator and to workers conducting shaft inspections or shaft maintenance;
- (b) ensure that the details of each inspection made, investigation conducted, defect repaired or unsafe condition corrected are recorded in the shaft inspection log book by the person who made the inspection, conducted the investigation, repaired the defect or corrected the unsafe condition; and
- (c) countersign the entries made pursuant to clause (b) on a regular basis.

Working in shaft

9-14(1) An employer or contractor shall ensure that:

- (a) no worker works or conducts an inspection in a shaft or in a part of a headframe not isolated from the shaft while hoisting operations are in progress, unless the hoisting operations are necessary for doing that work or conducting that inspection;
- (b) no worker works or conducts an inspection in a shaft or in any shaft station, loading pocket, pump station or other opening into the shaft or headframe unless the worker is protected against:
 - (i) accidental contact with a moving conveyance; and
 - (ii) being struck by a falling object;
- (c) no worker enters or crosses a compartment of a shaft in which hoisting operations are being carried on, except for the purpose of entering or leaving the conveyance in that compartment; and
- (d) no worker works below a loading pocket unless the loading pocket has been adequately secured to prevent any inflow of material.

(2) Before any work or inspection mentioned in subsection (1) is performed and before a worker enters or crosses a compartment mentioned in clause (1)(c), an employer or contractor shall ensure that:

- (a) operational procedures are developed to protect worker health and safety;
- (b) a competent person notifies the hoist operator that the work or inspection is about to begin or that a worker is about to enter or cross the compartment, as the case may be; and
- (c) the hoist operator implements the procedures established pursuant to clause (a).

(3) The employer or contractor shall:

- (a) ensure that the notification mentioned in clause (2)(b) is recorded in the hoist operator's log book by the hoist operator; and
- (b) countersign the entries made pursuant to clause (a) on a regular basis.

(4) If a worker is required or permitted to be below a staging or suspended work platform in a shaft or raise, or to be on a staging or suspended work platform that is being moved, the employer or contractor shall ensure that the staging or suspended work platform is equipped with a secondary suspension system that will prevent the staging or platform from falling if the primary suspension system fails.

(5) While a staging or suspended work platform is being moved, the employer or contractor shall ensure that only the workers who are required to move the staging or platform are required or permitted to be on it.

PART 10 Hoists and Hoisting in Shafts

DIVISION 1 General Requirements

General duty re hoists

10-1 An employer, contractor or owner shall ensure that all hoists and related equipment:

- (a) are designed, installed, operated and maintained to safely bear the loads they are expected to bear; and
- (b) meet the requirements set out in Divisions 1 and 2 of this Part.

General duty re ropes

10-2 An employer, contractor or owner shall ensure that all shaft ropes:

- (a) are safe for the loads they are expected to bear; and
- (b) meet the requirements set out in Division 3 of this Part.

General duty re log books, record books

10-3 An employer or contractor shall ensure that the log books and records required by this Part with respect to a hoist or rope:

- (a) are kept at the place of employment where the hoist or rope is located; and
- (b) are readily available to those persons required by these regulations to make entries in those log books and records.

Hoisting machinery log book

10-4 An employer or contractor shall:

- (a) maintain a hoisting machinery log book for each hoist in a mine;
- (b) ensure that a report is recorded in the hoisting machinery log book for:
 - (i) every inspection or examination that is conducted on the mechanical components of the hoist, whether specifically required by these regulations or not;
 - (ii) every failure or accident involving mechanical components of the hoist, the hoisting rope, conveyance or any other part of the hoisting, dumping or loading equipment;
 - (iii) any action taken as a result of a matter mentioned in subclause (i) or (ii); and
 - (iv) any maintenance, correction or repair work carried out on mechanical components of the hoist, the hoisting rope, the conveyance or any other part of the hoisting, dumping or loading equipment; and
- (c) countersign the entries made pursuant to clause (b) at least weekly.

Electrical hoisting equipment log book

10-5 An employer or contractor shall:

- (a) maintain an electrical hoisting equipment log book for each electrical hoist in a mine;
- (b) ensure that a report is recorded in the electrical hoisting equipment log book for:
 - (i) every inspection or examination that is conducted on the electrical components of the hoist and all related equipment, whether specifically required by these regulations or not;
 - (ii) every failure or accident involving the electrical components of the hoist and all related equipment;
 - (iii) any action taken as a result of a matter mentioned in subclause (i) or (ii); and
 - (iv) any maintenance, correction or repair work carried out on the electrical components of the hoist and all related equipment; and
- (c) countersign the entries made pursuant to clause (b) at least weekly.

Rope record book

10-6(1) An employer or contractor shall maintain a rope record book for each hoisting compartment.

(2) An employer or contractor shall ensure that all entries made in the rope record book pursuant to these regulations are countersigned within 1 week after the entry is made.

Hoist operator's log book

10-7(1) An employer or contractor shall maintain a hoist operator's log book for each hoist.

(2) An employer or contractor shall ensure that the following information is recorded in the hoist operator's log book:

- (a) any inspection, examination, test or maintenance of brakes and clutches conducted pursuant to section 10-93;
- (b) for each working shift, a report of the condition of the signaling apparatus;
- (c) any special instructions received from a person who conducts an inspection involving the safety of persons, signed by the person issuing the instructions;
- (d) a report of the test of overwind and underwind devices conducted pursuant to section 10-94, reviewed and signed by the hoisting operator assuming duty for the next shift;
- (e) the results of the trial trip tests conducted pursuant to clause 10-58(2)(b) and section 10-95;
- (f) a notation to the hoist operator assuming duty for the next shift of any special circumstance or matter affecting the operation of the hoist or the safety of persons;
- (g) a report of any action taken pursuant to a report recorded in the hoist operator's log book;
- (h) the times when the hoist operator started and finished a shift.

(3) An employer or contractor shall:

- (a) ensure that the details of each inspection, examination, test, or maintenance, correction or repair action required pursuant to this section are recorded in the hoist operator's log book and signed; and
- (b) countersign the entries made pursuant to clause (a) at least weekly.

Mine hoist certificate

10-8(1) Before a hoist is put into service at a mine for the first time, the employer, contractor or owner shall ensure that a mine hoist certificate with respect to the hoist has been obtained from a professional engineer who is competent in the design of mine hoists.

(2) The mine hoist certificate mentioned in subsection (1) must set out:

- (a) the maximum permissible total rope pull for the conditions under which the hoist is to be operated;

- (b) the maximum permissible suspended load;
 - (c) in the case of a friction hoist, the maximum permissible unbalanced load; and
 - (d) the maximum number of persons that may be transported on the conveyance, calculated in accordance with subsection (3).
- (3) The maximum number of persons that may be transported on a conveyance is calculated in accordance with the following formula:

$$N = \frac{85\% \times R}{90}$$

where:

N is the maximum number of people that may transported on a conveyance; and

R is the rated load of the conveyance expressed in kilograms.

- (4) An employer, contractor or owner shall ensure that:
- (a) a copy of the mine hoist certificate is posted at the hoist operator's position on the hoist; and
 - (b) the information required pursuant to clauses (2)(a) to (d), as set out in the mine hoist certificate, is posted at each level in the shaft station.

Certificate re modifications

10-9 An employer or contractor shall ensure that no modifications to increase the hoisting capacity of a hoist are made unless a certificate has been obtained from a professional engineer who is competent in the design of mine hoists, certifying that, if the modifications were made to the hoist, the hoist and related equipment:

- (a) would be safe for the purpose of transporting workers, material and equipment; and
- (b) would meet the requirements of these regulations.

Putting hoist into service

10-10(1) Before a hoist is put into service in a mine for the first time, or before a hoist is put back into service after significant modifications have been made to it, the employer or contractor shall:

- (a) give notice of intention to put the hoist into service by submitting the following to the chief mines inspector:
 - (i) the specifications for the hoist and related equipment;
 - (ii) drawings showing the general arrangement of the hoist and headframe;
 - (iii) a copy of the mine hoist certificate for the hoist;
 - (iv) details of any modification made to the hoist and a copy of the certificate required by section 10-9;

- (b) ensure that:
 - (i) commissioning tests are conducted to determine whether the hoist is in safe working condition and meets the requirements of these regulations; and
 - (ii) a professional engineer certifies the test results;
 - (c) ensure that a competent person:
 - (i) examines, with an approved non-destructive test method, all of the following for flaws:
 - (A) all new or significantly modified hoist drums, shafts and brake components;
 - (B) all new or significantly modified sheaves and sheave wheel shafts;
 - (C) all new or significantly modified conveyance and counterweight attachments, pins and drawbars; and
 - (ii) conducts tests to determine whether or not all safety devices and controls in the hoisting system are working properly; and
 - (d) notwithstanding section 3-7, ensure that records of the results of all tests required by this subsection are kept indefinitely.
- (2) At least 3 days before commissioning tests required by clause (1)(b) are conducted, an employer or contractor shall notify the chief mines inspector of the time at which the tests are to be conducted.
- (3) Before a hoist is put back into service after it has been out of service for a period of 15 months or more, the employer or contractor shall notify the chief mines inspector of the measures that have been taken to ensure that the hoist is in safe working condition.

Putting automatic controls into service

10-11 Before automatic controls are installed in a hoist and put into service for the first time or before automatic controls on a hoist are put back into service after significant modifications have been made to them, the employer or contractor shall give notice of intention to operate the hoist on automatic controls by submitting to the chief mines inspector:

- (a) the details of the automatic control installation;
- (b) a certificate from the professional engineer who oversaw the installation and testing of the automatic controls certifying that the automatic controls are safe for use; and
- (c) the operating procedures to be followed if the hoist is operated on automatic control.

Preventive maintenance program

10-12(1) An employer or contractor shall develop a preventive maintenance program for each hoist that requires and sets out the time period and procedure for the inspection of all hoist components.

(2) The preventive maintenance program mentioned in subsection (1) must be developed in consultation with, and be approved by, a professional engineer competent in hoist maintenance.

(3) An employer or contractor shall provide the chief mines inspector with a copy of the preventive maintenance program before implementing the program.

(4) All inspections will be conducted by a qualified person.

(5) An employer or contractor shall keep a detailed record of:

- (a) the inspections conducted;
- (b) the date of inspections;
- (c) the element inspected;
- (d) the defects identified;
- (e) the records of any tests conducted; and
- (f) the corrective action taken.

(6) Records pursuant to subsection (5) must be made available for inspection by the chief mines inspector.

Friction clutches prohibited

10-13 On and after July 16, 2003, an employer, contractor or owner shall ensure that no hoist fitted with a friction clutch is installed in a shaft.

DIVISION 2

Standards for Hoisting Machinery

Definitions for Division

10-14 In this Division, “**limit of travel**” means the upper and lower boundaries of the shaft within which a conveyance is allowed to operate.

Hoist drums

10-15(1) Subject to subsection (5), an employer or contractor shall ensure that a cylindrical drum on a hoist is equipped with:

- (a) grooves that properly fit the rope in use; and
- (b) flanges:
 - (i) of sufficient height to contain all of the rope on the drum; and
 - (ii) of sufficient strength to withstand any loads imposed by the rope.

(2) An employer or contractor shall ensure that any conical portion of a hoist drum is equipped with grooves to prevent the rope from slipping on the drum or from coiling unevenly.

- (3) An employer or contractor shall ensure that a hoist drum and a sheave are arranged so that the rope properly coils across the face of the drum and winds smoothly from one layer to another without cutting into the rope layer beneath.
- (4) An employer or contractor shall ensure that:
 - (a) except in the case of an emergency hoist not stored under load, a hoist drum has sufficient rope-carrying capacity to permit hoisting from the lower and the upper limit of travel in the shaft with not more than 3 layers of rope on the drum at any time; and
 - (b) there is a minimum of 3 turns of rope on the drum if the conveyance is at the lowest point of travel in the shaft.
- (5) An employer or contractor may use a hoist with a smooth drum during shaft-sinking operations, preliminary development operations or other operations of a temporary nature if, at least 30 days before the hoist is put into service for one of those operations, the employer or contractor gives to the chief mines inspector:
 - (a) notice of the intention to use a hoist with a smooth drum; and
 - (b) details of the method to be used for tensioning the hoisting rope.

Diameter of drum, friction pulley

10-16(1) Subject to subsection (2), an employer or contractor shall ensure that the diameter of the hoist drum is equal to or greater than:

- (a) 80 times the diameter of the hoisting rope in use, if the diameter of the rope is 26 millimetres or more; or
 - (b) 60 times the diameter of the hoisting rope in use, if the diameter of the rope is less than 26 millimetres.
- (2) In the case of shaft-sinking operations or preliminary development operations an employer or contractor shall ensure that the diameter of the hoist drum is equal to or greater than:
- (a) 60 times the diameter of the hoisting rope in use, if the diameter of the rope is 26 millimetres or more; or
 - (b) 48 times the diameter of the hoisting rope in use, if the diameter of the rope is less than 26 millimetres.
- (3) In the case of a friction hoist, an employer or contractor shall ensure that the diameter of the friction pulley is equal to or greater than:
- (a) 100 times the diameter of the rope, if the hoist is equipped with locked coil ropes; or
 - (b) 80 times the diameter of the rope, in any other case.

Head sheaves and deflecting sheaves

10-17 An employer or contractor shall ensure that:

- (a) the diameter of a head sheave and a deflecting sheave is not less than the minimum diameter of a hoist drum, determined in accordance with section 10-15 for the same rope and function;

- (b) the grooving of a head sheave and a deflecting sheave is the correct size for the diameter of the rope; and
- (c) the head sheave and the deflecting sheave are properly aligned.

Hoist brake systems

10-18(1) An employer or contractor shall ensure that no hoist is used unless the hoist is equipped with 2 sets of mechanical brakes that operate independently from each other to stop and hold the hoist drum or friction pulley.

(2) An employer or contractor shall ensure that each set of hoist brakes are designed, installed and maintained:

- (a) to safely stop and hold the hoist drum or friction pulley if the conveyance is carrying its maximum permitted load and operating at its maximum permitted speed;
- (b) to be tested separately from the hoist operator position, whether the hoist is moving or is stationary;
- (c) so that all linkages and brake pistons operate within design limits if applying normal braking effort;
- (d) so that full braking torque may be exerted at any time;
- (e) to prevent any movement of the hoist if a predetermined limit is exceeded; and
- (f) to permit ready identification of brake wear or slack linkage.

(3) An employer or contractor shall ensure that at least 1 set of brakes required by this section is designed, installed and maintained:

- (a) to apply directly to the drum to immediately stop and hold the hoist drum or friction pulley; and
- (b) to apply automatically if:
 - (i) the safety circuit of the hoist is interrupted; or
 - (ii) the pressure in the hydraulic or pneumatic brake actuating system drops below normal.

(4) An employer or contractor shall ensure that no hoist used to transport workers is equipped with a foot-operated brake unless the foot-operated brake is an auxiliary electrical device.

(5) An employer or contractor shall ensure that the brakes of a hoist installed on or after July 16, 2003 are designed, installed and maintained to decelerate the drum at between 1.5 and 3.7 metres per second per second in circumstances in which:

- (a) braking is initiated by an interrupted safety circuit; and
- (b) the hoist:
 - (i) is normally used to transport persons; and
 - (ii) is operating at full speed in the shaft.

Hoist with clutched drum

10-19 An employer or contractor shall ensure that, on a drum hoist equipped with a clutched drum:

- (a) the clutch is interlocked with the brake so that the clutch:
 - (i) can be disengaged only if the brake on the drum is fully applied; and
 - (ii) is fully engaged before the brake can be released; and
- (b) the controls for engaging and disengaging the clutch are equipped with:
 - (i) guards to prevent the inadvertent operation of the clutch; and
 - (ii) a device that indicates to the hoist operator whether or not the clutch is fully engaged.

Clutch and brake use during maintenance

10-20(1) The employer or contractor shall ensure that:

- (a) if a worker is in a shaft conveyance, the corresponding drum is clutched in or secured by other engineered means;
- (b) a worker is not permitted to enter a shaft conveyance or work on or under a shaft conveyance if the corresponding drum of the hoist is unclutched, unless the conveyance is secured in position; and
- (c) if the drum of a hoist is unclutched, the brake of the drum is not to be used to lower the conveyance.

(2) Clause (1)(b) does not apply to shaft-sinking operations.

Hoist with automatic controls

10-21(1) If a hoist is capable of being operated under automatic control, the employer or contractor shall ensure that the hoist is equipped with all of the following:

- (a) a device that permits changing from manual to automatic controls;
- (b) suitable back-out devices that operate only if the hoist is under manual control;
- (c) an alarm that sounds if an emergency stop occurs.

(2) If a hoist is designed to be operated automatically either by controls located at shaft stations or by controls located inside the conveyance, the employer or contractor shall ensure that the switch used to change over control between the shaft station and the conveyance is operable only at the shaft station at which the conveyance is stopped.

(3) Except if a call system is in operation, the employer or contractor shall ensure that a control installed at a shaft station for selecting the conveyance destination and initiating hoist movement is operable only if the conveyance is stopped at that station.

(4) An employer or contractor shall ensure that any control used to initiate a jogging of a conveyance is not operable from inside the conveyance.

(5) An employer or contractor shall ensure that a control that is installed at a shaft station or landing station and that is used to initiate hoist movement other than a jogging movement:

- (a) is operable only if the shaft gate at that level is closed;
- (b) is located so that the control can be operated from inside the conveyance if the conveyance is stopped at the shaft station or other landing station; and
- (c) incorporates a 5-second delay between the operation of the device and the actual movement of the conveyance.

(6) An employer or contractor shall ensure that a control that is installed in a conveyance and that is used to control hoist movement other than a jogging movement is:

- (a) operable only if the conveyance doors are closed; and
- (b) capable of initiating an emergency stop of the conveyance.

Depth indicator

10-22(1) An employer or contractor shall ensure that a hoist is equipped with a depth indicator that continuously, accurately and clearly shows to the hoist operator at all times:

- (a) the position of the conveyance;
- (b) any locations in the shaft where a reduction in speed is directed by the employer or contractor for any reason;
- (c) the positions of the overwind and underwind safety devices required pursuant to section 10-23 for the conveyance and the counterweight;
- (d) the limits of travel beyond which the conveyance must not be moved; and
- (e) the position of each service door, dump door and crosshead landing chair.

(2) An employer or contractor shall ensure that each hoisting system is equipped with a suitable device to indicate to the hoist operator any failure of the drive to the depth indicator.

Overwind, underwind and overspeed protection

10-23(1) An employer or contractor shall ensure that each hoist is equipped with safety devices to protect the conveyance or counterweight against:

- (a) overwinding;
- (b) underwinding, except during shaft-sinking operations or as otherwise approved;
- (c) approaching a limit of travel at excessive speed; and
- (d) travelling at a speed that is more than 15% greater than the normal operating speed.

(2) An employer or contractor shall ensure that a safety device required by subsection (1):

- (a) interrupts the hoist safety circuit if the safety device is activated;
- (b) is driven directly by the hoist drum or friction pulley if the safety device is mechanically activated;
- (c) continues to operate if the hoist drum stops;
- (d) prevents the paying out of excess rope during shaft-sinking operations; and
- (e) is set to gradually decelerate the hoist and bring the conveyance to a safe stop before the conveyance, the counterweight or a rope attachment can reach any permanent obstruction in the shaft or headframe.

(3) An employer or contractor shall ensure that a hoist is equipped with a device to audibly warn the hoist operator if the conveyance is at a location in the shaft where manual braking must be commenced to permit the conveyance to be stopped normally.

Headframe height

10-24 An employer or contractor shall ensure that each headframe is of sufficient height to provide an overwind distance that exceeds the greater of:

- (a) twice the stopping distance of the conveyance or the counterweight travelling at the maximum speed permitted by the hoist controls; and
- (b) 3 metres.

Overwind safety devices – conveyance without safety catches

10-25(1) If a conveyance is not equipped with safety catches, the employer or contractor shall:

- (a) subject to section 10-26, provide arrestors and a means of preventing the conveyance from falling back down the shaft that are designed and installed so that, if the conveyance or counterweight breaks away from the rope during an overwind, it will fall back the shortest practicable distance before it is arrested; and
- (b) install a track limit switch in each shaft hoisting compartment that meets the requirements of subsection (2).

(2) A track limit switch must be:

- (a) located above the normal upper limit of travel of the conveyance; and
- (b) positioned so that, in the event of an overwind, the switch will be triggered directly by the conveyance or the counterweight to interrupt the hoist safety circuit and bring the hoist to a safe stop before the conveyance, counterweight or rope attachments can reach any permanent obstruction in the shaft or headframe.

Detaching hooks – overwound conveyance

10-26 Except during shaft-sinking operations, if a conveyance is suspended from 2 or more ropes on a drum hoist, the employer or contractor shall ensure that the conveyance is equipped with detaching hooks that will:

- (a) detach the conveyance from the winding rope if the conveyance is overwound in the headframe; and
- (b) support the conveyance to prevent it from falling.

Skip used to transport workers

10-27 If a hoist is used to transport a worker in a skip, the employer or contractor shall ensure that:

- (a) if a worker may be at risk, the hoist is equipped with a safety device that will prevent the skip from being hoisted to the dumping position while the worker is being carried;
- (b) except during shaft-sinking operations, the hoist is equipped with a device that will automatically give an audible or visible warning to the worker in charge of the skip if the safety device mentioned in clause (a) is activated;
- (c) the safety device mentioned in clause (a) is designed to fail to safety; and
- (d) the hoist operator's position is equipped with a device that automatically gives an audible or visible warning that the safety device mentioned in clause (a) has been activated.

Underslung Decks

10-28 If underslung work decks are used in a shaft, the employer shall develop a procedure for the safe use of the deck, that includes:

- (a) methods for workers on the platform to signal an emergency stop of the hoist; and
- (b) methods of positively locking out the loading pocket.

Hoist back-out device

10-29(1) An employer or contractor shall ensure that a hoist is equipped with a manually operated back-out device that meets the requirements of subsection (2) to enable a conveyance to be removed from an overwound or underwound position.

(2) The back-out device required by subsection (1) must be equipped so that:

- (a) the hoist moves only in the proper direction; and
- (b) the brakes holding the conveyance in an overwound or underwound position cannot be released until the driving torque has developed sufficiently to ensure movement in the proper direction.

Safety devices for friction hoists

10-30(1) An employer or contractor shall ensure that a friction hoist is equipped with the following safety devices:

- (a) a device that will stop the conveyance as quickly as is safely practicable if the slippage occurring between the drum of the hoist and the hoisting ropes exceeds the amount predetermined by a professional engineer;
- (b) a device that will compensate for any alteration in the effective position of a safety device that is caused by rope creep or slippage, but that only makes an adjustment if the hoist is at rest and the brakes are applied;

- (c) a device that will initiate an emergency stop if any abnormal movement of a tail rope loop occurs;
 - (d) a device that will stop the hoist if a broken wire protrudes from a hoisting rope.
- (2) An employer or contractor is deemed to be in compliance with clause (1)(b) if the hoist is equipped with sync on the fly computer controlled devices that are capable of compensating for rope creep or slippage while the hoist is in motion.
- (3) An employer or contractor shall ensure that a friction hoist is equipped with tapered guides or other approved devices that are:
- (a) located above and below the limits of travel of the conveyance; and
 - (b) arranged to brake, stop and hold an overwound conveyance if the safety devices fail.

Safety devices for hoists

10-31(1) In this section, “**safety circuit**” means a combination of suitable protective devices and protective circuits that, if activated, will:

- (a) set the brakes of the hoist;
 - (b) remove power from the hoist motor;
 - (c) stop the hoist and conveyance safely under all permissible conditions of load, speed and direction of travel; and
 - (d) require a manual reset before the conveyance can be moved.
- (2) An employer or contractor shall ensure that a hoist is equipped with a safety circuit that:
- (a) is designed to fail to safety;
 - (b) is installed and maintained to provide protection at all times; and
 - (c) operates at a minimum practicable voltage.
- (3) An employer or contractor shall ensure that the safety circuit of a hoist activates automatically if:
- (a) there is a failure of the power supply or a drop in voltage sufficient to affect the safe operation of the hoist;
 - (b) there is an abnormal overload on the hoist motor;
 - (c) there is a short circuit in the hoist electrical system, the hoist safety circuit or the hoist control system; or
 - (d) a safety device required by these regulations has been activated.
- (4) An employer or contractor shall ensure that a hoist is provided with a manually operated emergency stop switch that is:
- (a) within easy reach of the hoist operator if he or she is at the hoist controls; and

- (b) installed:
 - (i) at each location from which the hoist can be remotely controlled;
 - (ii) at the skip dump; and
 - (iii) at the loading pocket.
- (5) An employer or contractor shall ensure that the manually operated emergency stop switch at each location is tested weekly to ensure that all components of the emergency safety circuit operate properly.
- (6) An employer or contractor shall ensure that a hoist is provided with an ammeter that:
 - (a) is located so as to be clearly visible to the hoist operator; and
 - (b) at all times indicates the load on the hoist drive motor.
- (7) An employer or contractor shall ensure that every computer-controlled hoist controller installed or modified is equipped with:
 - (a) a memory-type fault annunciator that:
 - (i) detects and displays the operation of any protective device required by this section; and
 - (ii) indicates which device mentioned in subclause (i) activated first; and
 - (b) an uninterrupted power supply.

Adjustment or alteration of a hoist safety circuit

10-32 An employer or contractor shall authorize only a qualified person to adjust or alter a safety device on a hoisting installation.

Load safety factors – conveyance

10-33(1) An employer, contractor or owner shall ensure that the static safety factor used in the design of a conveyance and for the determination of the rated load of a conveyance is not less than 10.

(2) An employer, contractor or owner shall ensure that any part of a conveyance or counterweight that is installed on or after July 16, 2003 is capable of withstanding at least 4 times the maximum allowable design stresses mentioned in subsection 10-35(3) without permanent distortion while the conveyance or counterweight is in service and carrying the rated load.

Maximum load

10-34 An employer or contractor shall obtain, with respect to a conveyance, a certificate of a professional engineer that sets out:

- (a) the maximum load that may be carried on, in or under the conveyance;
- (b) in the case of a multi-deck conveyance, the maximum load of each deck; and
- (c) any restrictions that must be observed related to the operating conditions.

Conveyances used to transport workers

10-35(1) An employer or contractor shall ensure that a conveyance used to transport workers that is installed on or after July 16, 2003 meets the requirements of this section.

(2) An employer or contractor shall ensure that a conveyance used to transport workers is designed by a professional engineer.

(3) The maximum allowable design stresses for a conveyance used to transport workers must be those that are established by sound engineering practices and that include consideration for the effects of:

- (a) any impact load that might be imposed on the conveyance;
- (b) any dynamic load that might be imposed on the conveyance;
- (c) stress concentration factors;
- (d) corrosion;
- (e) metal fatigue; and
- (f) the use of dissimilar materials.

(4) A conveyance used to transport workers must:

- (a) be made of sheet steel at least 3 millimetres thick or other material of equivalent strength;
- (b) have a roof made of steel plate at least 5 millimetres thick or other material of equivalent strength;
- (c) have an internal height that is greater than 2.1 metres and a clearance at the door that is greater than 1.8 metres;
- (d) if reasonably practicable, have an exit in the roof through which workers can pass and that can be opened either from the inside or the outside of the conveyance; and
- (e) be adequately ventilated.

(5) The doors of a conveyance used to transport workers must be:

- (a) of solid construction except for a viewing window;
- (b) of adequate strength to withstand normal shock loads; and
- (c) designed and installed so that:
 - (i) there is only enough clearance at the floor to allow the doors to be opened and closed;
 - (ii) the doors are high enough so that the opening above the doors will not endanger workers by permitting falling objects or materials to enter the conveyance;
 - (iii) the doors can be closed if workers or materials, other than rolling stock or similarly large items, are being transported; and
 - (iv) the doors cannot be opened outward from the conveyance.

(6) An employer or contractor shall ensure that a conveyance used to transport workers that is installed before July 16, 2003 is designed by a professional engineer and meets the following requirements:

- (a) the deck on which workers ride is completely covered by a roof that:
 - (i) extends over the full area of the deck; and
 - (ii) is adequately constructed to protect workers from overhead hazards;
- (b) the sides of the deck on which workers ride:
 - (i) extend from the floor to the roof of the conveyance; and
 - (ii) are suitably constructed to prevent a worker from coming into contact with the sides of the shaft timbering or other installations in the shaft;
- (c) the deck on which workers ride is equipped with doors that:
 - (i) extend from the floor to the roof of the deck; and
 - (ii) are designed and installed so that the doors cannot be opened outward from the conveyance.

Requirements where sinking buckets used

10-36 If a sinking bucket is used for a purpose other than shaft sinking, the employer or contractor shall ensure that:

- (a) dump doors and service doors meeting the requirements of section 8-7 are installed and maintained at the collar; and
- (b) a suitable landing or platform is provided at each working level to enable the safe loading and unloading of the sinking bucket.

Safety catches for single rope hoists

10-37(1) On a hoist installed on or after January 1, 1979, an employer or contractor shall ensure that a conveyance used to transport workers that is attached to a single hoisting rope is equipped with effective safety catches that will engage with the guides and bring the conveyance safely to rest if the hoisting rope breaks or becomes detached.

- (2) Subsection (1) does not apply:
 - (a) during shaft-sinking operations and preliminary operations using a sinking bucket;
 - (b) during shaft maintenance; or
 - (c) with respect to a conveyance being used in an emergency to remove workers from the mine.
- (3) Before a conveyance equipped with safety catches is first used to transport workers, the employer or contractor shall ensure that a competent person conducts a free-fall test to ensure that the safety catches function properly.
- (4) A free-fall test required by subsection (3) must involve the sudden releasing of a conveyance that is at rest and contains its maximum load.

- (5) An employer or contractor shall ensure that:
- (a) each day, a competent person inspects the safety catches for cleanliness, proper adjustment and proper operating conditions; and
 - (b) every 3 months and after any repairs are made to the safety catches, a competent person tests the safety catches by blocking the conveyance and releasing the rope tension on the conveyance to determine whether the catches grip the guides adequately and correctly.
- (6) An employer or contractor shall ensure that the results of the inspection or test mentioned in subsection (3) or (5) are recorded in the hoisting machinery log book by the person who carried out the inspection or test.

Shaft guides and safety catches

10-38 If safety catches are installed on the conveyance, the employer or contractor shall ensure that:

- (a) the guides, guide attachments and shaft timbering or other lining are of sufficient strength to withstand the forces that may reasonably be anticipated to be applied if the safety catches are engaged;
- (b) the components are suitably designed, installed and maintained to enable the safety catches to arrest the conveyance at any point in the shaft; and
- (c) the guide dimensions and alignment are maintained to limit the lateral acceleration of the conveyance to a safe level.

Multiple rope drum hoists

10-39 If a conveyance is suspended by 2 or more ropes on a drum hoist, the employer or contractor shall ensure that:

- (a) the ropes are of approximately equal size and strength; and
- (b) the rope tension is equalized.

Conveyance suspension system

10-40(1) An employer or contractor shall ensure that the following have a static safety factor of 10 if new:

- (a) each component of the suspension system between a conveyance or counterweight and a hoisting rope or balance rope;
- (b) each connection between components of a conveyance.

(2) An employer or contractor shall ensure that none of the components of the suspension system used between a hoisting rope or balance rope and a conveyance is of welded construction.

Methods of attaching ropes

10-41(1) An employer or contractor shall ensure that:

- (a) each hoisting rope and each balance rope of a hoist is securely attached to the conveyance or the counterweight by a closed device that will not inadvertently disconnect; and
- (b) on a drum hoist, the hoisting rope from the conveyance or counterweight is securely attached to the drum of the hoist.

(2) An employer or contractor shall ensure that the following are approved by a professional engineer:

- (a) the method of attaching a rope mentioned in subsection (1) on any new installation;
- (b) a proposed modification to an existing rope attachment.

Examination and testing of rope attachments

10-42 If the rope attachments of a hoisting rope or balance rope are first installed or are re-installed after they have been disassembled, the employer or contractor shall ensure that, before the hoist is put into operation, a competent worker:

- (a) examines the rope attachments connecting the hoisting rope or balance rope to the conveyance or counterweight and the hoisting rope to the drum to determine whether or not they are defective;
- (b) makes any necessary adjustments to the attachments mentioned in clause (a); and
- (c) records the results of the examination and any adjustments made in the hoisting machinery log book.

Rope clearance, alignment

10-43(1) An employer or contractor shall ensure that:

- (a) if 2 or more balance ropes are used to balance a conveyance, engineered devices are installed to separate the loops of the ropes if the hoist is in operation; and
 - (b) no balance rope rubs on any steelwork in the shaft.
- (2) If guide ropes or rubbing ropes are used, the employer or contractor shall ensure that adequate provision is made for the correct alignment and unrestricted vertical movement of the lower ends of those ropes.
- (3) If there is water, spillage or other material in a shaft sump, the employer or contractor shall ensure that:
- (a) there is sufficient clearance between any balance rope and the material in the shaft sump to permit the rope to run freely; and
 - (b) any guide rope or rubbing rope and any associated rope attachment or tensioning device is clear of the material at the bottom of the shaft.

Mechanical hoist system inspections

10-44(1) An employer or contractor shall ensure that:

- (a) all mechanical components of a hoist system, including safety devices, are inspected weekly by a competent worker for defects and unsafe conditions to ensure that the hoist is capable of safe operation; and
 - (b) a thorough annual visual examination of each conveyance and its joints and welds is carried out by a competent worker.
- (2) With respect to a friction hoist, an employer or contractor shall ensure that:
- (a) every rope tread is examined by a competent worker as often as is necessary to ensure that the rope tread is maintained in good condition; and

- (b) at least once every 6 months:
 - (i) every rope tread is measured by a competent worker; and
 - (ii) safety devices are re-calibrated to account for any reduction in tread diameter.
- (3) If a defect or unsafe condition that may create a hazard to a worker is identified in an inspection or examination conducted pursuant to subsection (1) or (2), the employer or contractor shall ensure that, in addition to meeting the requirements of section 5-14, the defect is repaired or the unsafe condition is corrected:
 - (a) by a competent worker, in the case of the hoist system and its components; and
 - (b) by a qualified worker, in the case of safety devices.
- (4) An employer or contractor shall ensure that every repair, adjustment or alteration to a hoist system is made only by a competent person authorized by the employer or contractor.
- (5) An employer or contractor shall ensure that a written record of any inspection, examination, repair or other activity carried out pursuant to this section is recorded in the hoisting machinery log book by the person who carried out the activity.

Hoist system inspection

- 10-45(1)** An employer or contractor shall ensure that the hoist system, all electrical components, electrical safety devices and electrical signalling devices are inspected weekly by a qualified worker.
- (2) If a defect or unsafe condition that may create a hazard to a worker is identified in an inspection conducted pursuant to subsection (1), the employer or contractor shall ensure that, in addition to meeting the requirements of section 5-14, the defect is repaired or the unsafe condition is corrected by a qualified worker.
 - (3) An employer or contractor shall ensure that every repair, adjustment or alteration to a component mentioned in subsection (1) is made only by a qualified person authorized by the employer or contractor.
 - (4) An employer or contractor shall ensure that a written record of any inspection, repair or other activity carried out pursuant to this section is recorded in the electrical hoisting equipment log book by the person who carried out the activity.

DIVISION 3**Ropes****Manufacturer's certificate**

10-46 An employer or contractor shall ensure that no shaft rope is installed or used in a shaft unless the employer or contractor has a certificate from the manufacturer for that shaft rope that sets out the following:

- (a) the manufacturer's name and address;
- (b) the manufacturer's rope number;
- (c) the date of manufacture of the rope;
- (d) the diameter of the rope;

- (e) the weight of the rope;
- (f) the length of the rope;
- (g) the class of core used in the rope;
- (h) the percentage by mass of lubricant in the core of the rope;
- (i) the trade name of the interior lubricant mentioned in clause (h);
- (j) the number of strands in the rope;
- (k) the number of wires in each strand;
- (l) the diameter of the wires;
- (m) the breaking stress of the material of which the wires are made;
- (n) the results of the standard torsion test of the wires;
- (o) the breaking load of the rope as determined by loading to destruction in a tensile testing machine.

Rope test certificate

10-47 An employer or contractor shall ensure that no shaft rope is put into service unless:

- (a) a representative sample that is not less than 2.5 metres in length has been tested in a destructive test by an approved rope testing laboratory; and
- (b) the approved rope testing laboratory mentioned in clause (a) has issued a rope testing certificate setting out:
 - (i) the breaking load of the rope;
 - (ii) the breaking load extension of the rope;
 - (iii) the results of the torsion test of the wires; and
 - (iv) the condition of the wires and the rope lubricant.

Information to be recorded in rope record book

10-48 An employer or contractor shall ensure that the following information is recorded in the rope record book required by section 10-6:

- (a) with respect to each rope used in a hoisting compartment:
 - (i) the information set out in the manufacturer's certificate required by section 10-46;
 - (ii) the name of the supplier from whom the rope was purchased;
 - (iii) the date of purchase;
 - (iv) the mine identification number for the rope; and
 - (v) a history of the rope, setting out:
 - (A) with respect to each installation of the rope in a location other than in the present location, the date on which the rope was installed in the other location and the date on which the rope was removed from that location;

- (B) the date on which the rope was installed in its present location;
 - (C) with respect to each occasion on which the rope was shortened, the date on which the rope was shortened and the length of rope removed;
 - (D) the date and the results of each breaking test, electromagnetic test or other approved test; and
 - (E) with respect to each occasion on which the rope was taken out of service, the date on which the rope was taken out of service and the reasons for taking the rope out of service;
- (b) the weight of the conveyance and rope attachments;
 - (c) the maximum load that may be carried in the conveyance;
 - (d) the weight or tension applied to each guide rope or rubbing rope used in the hoisting compartment;
 - (e) with respect to each hoisting rope used in the hoisting compartment:
 - (i) the maximum length of the rope below the sheave; and
 - (ii) the maximum weight of the rope below the sheave;
 - (f) with respect to each balance rope, guide rope or rubbing rope used in the hoisting compartment:
 - (i) the length of the rope;
 - (ii) the weight of the rope; and
 - (iii) the weight attached or tension applied to the rope;
 - (g) the static load factor of each rope, determined in accordance with section 10-56:
 - (i) in the case of a hoisting rope, at the conveyance suspension and at the head sheave with the rope fully let out;
 - (ii) in the case of a balance rope, at the conveyance suspension point with the conveyance at its upper limit of travel; and
 - (iii) in the case of a guide rope or rubbing rope, at the suspension point.

Sending information to chief mines inspector

10-49(1) If a rope is installed in a hoisting compartment, the employer or contractor shall forward to the chief mines inspector the information mentioned in clauses 10-48(a) to (g), except the information mentioned in paragraph 10-48(a)(v)(E), with respect to that rope as soon as possible after the rope is installed.

(2) If an electromagnetic test or any other approved test of a rope is required by this Division, the employer or contractor shall forward a report of the test, including graphs and interpretations, to the chief mines inspector within 30 days after the test.

(3) An employer or contractor shall provide notification of the replacement of a hoist rope or a balance rope to the chief mines inspector at least 7 days before its replacement.

(4) If a rope mentioned in subsection (3) requires immediate replacement due to failure or unexpected circumstances, an employer or contractor shall provide notification to the chief mines inspector within 24 hours after replacement.

(5) A notification provided to the chief mines inspector pursuant to subsection (4) must also include the circumstances for the unexpected replacement.

Used ropes

10-50(1) An employer or contractor shall ensure that no shaft rope that has been used previously is put into service unless:

- (a) the rope has been properly examined by a competent person immediately before it is put back into service and has been found to be in safe working condition;
 - (b) if possible, 2 standard test pieces, one from each end of the rope, have been tested to destruction by an approved rope testing laboratory and have been found to be in safe working condition;
 - (c) the rope has been tested electromagnetically for loss of metal and broken wires and has been found to be in safe working condition;
 - (d) the rope has been properly maintained during its previous use and storage;
 - (e) a record of the previous use, maintenance and testing of the rope is available; and
 - (f) the chief mines inspector has given written permission for the rope to be used.
- (2) If a used hoisting rope is put back into service on a friction hoist, the employer or contractor shall ensure that, in addition to meeting the requirements of section 10-61, each week for 4 weeks following being put back into service a competent worker measures and records on a graph:
- (a) the stretch of each hoisting rope; and
 - (b) the number of hoisting cycles completed with each hoisting rope.

Splicing prohibited

10-51 An employer or contractor shall ensure that no rope is used as a shaft rope if the rope has been spliced.

Rope reversal prohibited

10-52 An employer or contractor shall ensure that no shaft rope is reversed.

Lubrication of ropes

10-53 An employer or contractor shall ensure that a competent worker:

- (a) lubricates every hoisting rope, other than a jacketed or plastic-impregnated rope, as often as is necessary to maintain the rope in safe working condition; and
- (b) if lubrication is applied manually, records the application of the lubricant mentioned in clause (a) in the hoisting machinery log book.

Storage of ropes

10-54 An employer or contractor shall ensure that rope stored on reels:

- (a) is stored in a manner to minimize migration of the rope lubricant; and
- (b) is not exposed to conditions that will permit corrosion of the rope.

Automatic fire suppression system

10-55 If an automatic hoist lubrication system is installed on the hoisting ropes, the employer, contractor or owner shall ensure that:

- (a) the head ropes are protected by an automatic fire suppression system; and
- (b) a fire suppression system activation alarm is installed at the hoist operator position.

Calculation of load factor

10-56(1) The load factor for a hoisting rope on a drum hoist is calculated in accordance with the following formula:

$$L = \frac{B \times N}{C + M + R}$$

where:

L is the load factor for hoisting rope on a drum hoist;

B is the breaking load of the weakest hoisting rope as set out in the manufacturer's certificate;

N is the number of hoisting ropes used on the drum hoist;

C is the combined weight of the conveyance and the rope attachments;

M is the maximum weight of the load permitted to be carried in the conveyance; and

R is the combined weight of the hoisting ropes that are suspended below the head sheave and the balance ropes, if any, that are suspended below the conveyance.

(2) The load factor for a hoisting rope on a friction hoist is calculated in accordance with the following formula:

$$L = \frac{B \times N}{C + M + R}$$

where:

L is the load factor for a hoisting rope on a friction hoist;

B is the breaking load of the weakest hoisting rope as set out in the manufacturer's certificate;

N is the number of hoisting ropes used on the friction hoist;

C is the combined weight of the conveyance and the rope attachments;

M is the maximum weight of the load permitted to be carried in the conveyance;
and

R is the combined weight of the hoisting ropes that are suspended from the conveyance side of the friction drum and the balance ropes, if any, that are suspended below the conveyance.

- (3) The load factor of a balance rope, a guide rope or a rubbing rope is calculated in accordance with the following formula:

$$L = \frac{B}{W}$$

where:

L is the load factor of a balance rope, a guide rope or a rubbing rope;

B is the breaking load of the rope as set out in the manufacturer's certificate;
and

W is:

- (a) in the case of a guide rope or rubbing rope, the total weight of the rope plus the weight hung on the bottom of the rope; and
- (b) in the case of a balance rope, the maximum weight of the balance rope hanging below the conveyance.

Minimum permitted load factor

10-57(1) The load factor for a hoisting rope if newly installed on a drum hoist as calculated pursuant to subsection 10-56(1) must not be less than:

- (a) 8.5 if the conveyance is at the sheave wheel; and
- (b) if the conveyance is at the lowest point of travel:
 - (i) 6.5 if the conveyance is being used to transport workers and is not equipped with safety catches that meet the requirements of section 10-37; and
 - (ii) 5.25 in any other case.

(2) The load factor for a hoisting rope if newly installed on a friction hoist as calculated pursuant to subsection 10-56(2) must not be less than the greater of:

- (a) 6.5; and
- (b) the value L determined in accordance with the following formula:

$$L = 8.1 - [0.00152 \times Q]$$

where Q is the maximum length of rope in metres suspended below the friction drum or head sheave.

(3) The load factor for a balance rope as calculated pursuant to subsection 10-56(3) must not be less than 7.0 if the rope is newly installed.

(4) The load factor for a guide rope or a rubbing rope as calculated pursuant to subsection 10-56(3) must not be less than 5.0 if the rope is newly installed.

Cleaning and examination of rope connections, attachments

10-58(1) An employer or contractor shall ensure that a competent worker:

- (a) at least daily, visually examines the connections and rope attachments used to make connections between:
 - (i) each hoisting rope or balance rope and a conveyance; and
 - (ii) each hoisting rope and a hoist drum; and
 - (b) cleans and thoroughly examines:
 - (i) at least monthly, each swivel attachment; and
 - (ii) at least every 6 months, each connection and rope attachment mentioned in clause (a), other than a swivel attachment.
- (2) After any connection or rope attachment mentioned in clause (1)(a) is altered, adjusted or dismantled and reassembled, the employer or contractor shall ensure that:
- (a) the connection or rope attachment is thoroughly examined by a competent worker to ensure that it is safe; and
 - (b) the conveyance is not used for transporting workers until the hoist is tested:
 - (i) by making 2 complete trips with the conveyance bearing the maximum permissible suspended load set out in the mine hoist certificate required by section 10-8; or
 - (ii) by another method approved by the chief mines inspector.
- (3) An employer or contractor shall ensure that the hoist operator records the results of the test required by clause (2)(b) in the hoist operator's log book.
- (4) An employer or contractor shall ensure that each connection and rope attachment mentioned in clause (1)(a) is subjected to a non-destructive test:
- (a) before it is put into service initially; and
 - (b) at intervals not exceeding 5 years.
- (5) With respect to each rope attachment and mechanical tensioning device installed in conjunction with a guide rope or rubbing rope, an employer or contractor shall ensure that a competent worker:
- (a) at least weekly, visually examines the attachment or device; and
 - (b) at least every 6 months, thoroughly cleans and examines the attachment or device.
- (6) An employer or contractor shall ensure that the competent worker who carries out any of the examinations required by this section records the results of the examination in the hoisting machinery log book.

Daily inspection of hoisting and balance ropes

10-59 An employer or contractor shall ensure that, at least daily, a competent worker:

- (a) inspects the exterior of each hoisting rope and balance rope while the ropes are operating at a maximum speed of 90 metres per minute to note:
 - (i) any visible damage or distortion in the rope; and
 - (ii) the condition of the rope dressing; and
- (b) records the details of the inspection mentioned in clause (a) in the hoisting machinery log book.

Monthly inspection of hoisting ropes – drum hoists

10-60(1) With respect to a drum hoist, an employer or contractor shall ensure that, at least monthly, a competent worker:

- (a) inspects the portion of the hoisting rope that is not on the drum if the conveyance is at its lowest stopping point;
 - (b) inspects the portion of the hoisting rope that normally remains on the drum if the conveyance is at its lowest stopping point; and
 - (c) records the details of the inspections mentioned in clauses (a) and (b) in the hoisting machinery log book.
- (2) An inspection pursuant to clause (1)(a) must include:
- (a) the cleaning of a portion of the rope, with a different portion cleaned for each monthly inspection; and
 - (b) an examination of the condition of the cleaned portion of the rope, including:
 - (i) measuring any reduction in diameter; and
 - (ii) an examination for any corrosion, distortion, broken wires or wear on the rope.
- (3) An inspection pursuant to clause (1)(b) must include an examination of the rope:
- (a) for any significant crushing;
 - (b) for any deterioration of the rope; and
 - (c) to determine whether the rope is properly wound on the drum.
- (4) If, as a result of an inspection pursuant to subsection (1), there is a finding of corrosion, broken wires, an appreciable reduction in diameter or an appreciable amount of wear, the competent worker shall monitor the condition of the rope to ensure that the rope is capable of safe operation by re-examining the portion of the rope in which the problem is found at intervals of time that are sufficient to protect the health and safety of workers.

Monthly inspection of ropes – friction hoists

10-61 With respect to a friction hoist, an employer or contractor shall ensure that, at least monthly, a competent worker:

- (a) measures and records on a graph the stretch of each hoisting rope and the number of hoisting cycles completed with each hoisting rope;

- (b) measures and records the diameter of each hoisting rope at suitable locations on the rope, including locations where the hoist stops often on the head sheave;
- (c) examines the condition of each hoisting rope, including examining for any corrosion, distortion, broken wires or wear on the ropes;
- (d) examines the balance rope at suitable locations on the rope, including the areas adjacent to the attachments and in the loop if the conveyance is at a shaft station, and observes the condition of the rope, including examining any corrosion, distortion, broken wires or wear on the ropes; and
- (e) records the details of the examinations mentioned in clauses (a) to (d) in the hoisting machinery log book required by section 10-4.

Testing of hoisting ropes – drum hoists

10-62(1) Subject to section 10-64, with respect to a drum hoist, an employer or contractor shall ensure that, at least every 6 months, each hoisting rope is examined by an approved electromagnetic testing service or another approved method to determine whether or not the rope is in safe operating condition.

(2) With respect to a drum hoist, an employer or contractor shall, every 6 months, remove from the lower end of each hoisting rope above the attachment a portion of the rope that is not less than 3 metres in length.

(3) An employer or contractor shall ensure that:

- (a) the third and each subsequent portion of rope removed pursuant to subsection (2) is tested by an approved rope testing laboratory;
- (b) a summary of each test conducted in accordance with clause (a) is recorded in the rope record book required by section 10-6; and
- (c) a test certificate is obtained from an approved rope testing laboratory, retained, and a copy forwarded to the chief mines inspector.

Testing of hoisting ropes – friction hoists

10-63(1) With respect to a friction hoist, an employer or contractor shall ensure that a competent worker:

- (a) at suitable intervals of time, examines and adjusts each hoisting rope:
 - (i) to maintain the desired torque balance of the rope; and
 - (ii) in multi-rope installations, to maintain equal tension among the ropes;
- (b) subject to section 10-64, at least every 6 months, electromagnetically tests each hoisting rope using an approved electromagnetic testing service or another approved method; and
- (c) at least every 12 months:
 - (i) changes the position of each hoisting rope within the clamps or attachments if it is practicable to do so; or

- (ii) if the position change mentioned in subclause (i) is not practicable, thoroughly examines the hoisting rope within the clamps or attachments:
 - (A) after dismantling and thoroughly cleaning the attachment between the rope and the conveyance or counterweight; or
 - (B) if the procedure described in paragraph (A) is not reasonably practicable, by another approved method.
- (2) An employer or contractor shall ensure that the suitable intervals of time mentioned in clause (1)(a) are determined by a qualified person.
- (3) If the attachment between a hoisting rope and the conveyance or counterweight is disassembled, the employer or contractor shall ensure that the attachment is not reassembled unless the rope is in satisfactory condition.
- (4) An employer or contractor shall ensure that the competent worker who conducts any inspection, test or other action pursuant to this section records the details in the hoisting machinery log book required by section 10-4.

More frequent testing – hoisting ropes with diminished breaking load

- 10-64(1)** If a test of a hoisting rope determines that the rope has lost more than 7% of its original breaking load, the employer or contractor shall ensure that, at 3-month intervals, the rope is electromagnetically tested using an approved electromagnetic testing service or another approved method.
- (2) If extrapolation of the results of a test of a hoisting rope indicates that the rope will lose more than 10% of its original breaking load before the next required test, the employer or contractor shall ensure that the rope is examined by an approved electromagnetic testing service or another approved method at intervals of time that are frequent enough to ensure that the rope has not lost more than 10% of its original breaking load.

Annual inspection – hoisting ropes and balance ropes

- 10-65(1)** An employer or contractor shall ensure that a competent worker:
- (a) inspects each hoisting rope and balance rope in accordance with this section as often as is necessary to ensure that the rope is capable of safe operation, but at least every 12 months; and
 - (b) records the details of the inspection mentioned in clause (a) in the hoisting machinery log book.
- (2) An inspection pursuant to subsection (1) must include:
- (a) the cleaning of portions of the hoisting and balance ropes at 30-metre intervals throughout the length of the ropes; and
 - (b) an examination of the condition of the cleaned portions of the ropes, including:
 - (i) measuring any reduction in diameter of the hoisting ropes;
 - (ii) an examination for any corrosion, distortion, broken wires or wear on the hoisting and balance ropes; and
 - (iii) if necessary, opening corroded portions of the balance rope to examine the interior of the rope.

Annual inspection – guide ropes and rubbing ropes

10-66(1) An employer or contractor shall ensure that a competent worker:

- (a) inspects each guide rope and rubbing rope in accordance with this section as often as is necessary to ensure that the rope is capable of safe operation, but at least every 12 months; and
 - (b) records the details of the inspection mentioned in clause (a) in the hoisting machinery log book.
- (2) An inspection pursuant to subsection (1) must include:
- (a) the cleaning of portions of the rope at 30-metre intervals throughout the length of the rope, including every conveyance meeting point, shaft station, discharge point and loading point; and
 - (b) an examination of the condition of the cleaned portions of the rope, including:
 - (i) measuring any reduction in diameter; and
 - (ii) an examination for any corrosion, distortion, broken wires or wear on the rope.

Testing and adjustment of balance ropes, guide ropes and rubbing ropes

10-67(1) Subject to subsections (2) to (6), an employer or contractor shall ensure that, at least every 12 months, an approved electromagnetic testing service examines each balance rope, guide rope and rubbing rope with an electromagnetic testing device or another approved method to determine whether the rope is in safe operating condition.

(2) Subsection (1) does not apply to guide ropes and rubbing ropes located in potash mines.

(3) If a test of a balance rope in accordance with subsection (1) determines that the rope has lost more than 7% of its original breaking load, the employer or contractor shall ensure that an approved electromagnetic testing service examines the rope with an electromagnetic testing device or another approved method:

- (a) at least every 6 months; or
- (b) at any other interval of time directed by the chief mines inspector.

(4) If extrapolation of the results of a test of a balance rope indicates that the rope will lose more than 10% of its original breaking load before the next test required pursuant to these regulations, the employer or contractor shall ensure that an approved electromagnetic testing service examines the rope with an electromagnetic testing device or another approved method:

- (a) at least every 3 months; or
- (b) at any other interval of time directed by the chief mines inspector.

(5) Subject to subsection (6), an employer or contractor shall ensure that each guide rope and rubbing rope used in a potash mine is in safe operating condition:

(a) by ensuring that:

(i) at least every 36 months each rope is examined by an approved electromagnetic testing service with an electromagnetic testing device or another approved method; and

(ii) at least every 12 months each rope is cleaned and checked for decrease in diameter every 30 metres; or

(b) by ensuring that at least every 12 months each rope is examined by an approved electromagnetic testing service with an electromagnetic testing device or another approved method.

(6) If extrapolation of the results of a test of a guide rope or rubbing rope located in a potash mine indicates that the rope will lose more than 20% of its original breaking load before the next test required pursuant to these regulations, the employer or contractor shall ensure that an approved electromagnetic testing service examines the rope with an electromagnetic testing device or another approved method:

(a) at least every 12 months; or

(b) at any other interval of time directed by the chief mines inspector.

(7) If reasonably practicable, an employer or contractor shall ensure that, at least every 5 years, each guide rope and rubbing rope is lifted through a distance that is at least 1.5 times the headframe capping length.

(8) If there is uneven wear in a guide rope, the employer or contractor shall ensure that the rope is turned through a suitable angle at suitable intervals of time to equalize the wear around the diameter of the rope.

(9) An employer or contractor shall record the details of an inspection or action required pursuant to this section in the hoisting machinery log book.

Unusual rope condition

10-68 If an unusual condition is identified in a shaft rope that does not constitute a sufficient reason to discard the rope pursuant to section 10-69, 10-70 or 10-71, the employer or contractor shall:

(a) immediately notify the chief mines inspector of the unusual condition; and

(b) ensure that examinations of the rope are conducted at appropriate intervals of time along the length of the rope to ensure the safety of workers.

Hoisting rope discard criteria

10-69(1) An employer or contractor shall ensure that any hoisting rope used in a shaft is discarded after the rope has been in service for 2 years unless:

(a) the chief mines inspector approves the use of the rope for a further period; or

(b) the rope is discarded sooner pursuant to subsection (2).

(2) An employer or contractor shall ensure that a hoisting rope used in a shaft is discarded if, in any part of the rope:

- (a) it is determined by any of the following methods that the breaking load has decreased to less than 90% of the original breaking load:
 - (i) an electromagnetic test;
 - (ii) a calculation based on the observed reduction of diameter of the rope;
 - (iii) a test to destruction;
 - (iv) extrapolation to the current date from measurements of loss of breaking load plotted against time;
- (b) the extension of a test piece has decreased to less than 60% of its original extension if the test piece is tested to destruction;
- (c) the number of broken wires, excluding filler wires, in a section of rope equalling the length of 1 lay, is greater than 5% of the total number of wires;
- (d) an examination reveals a marked increase in the number of broken wires per unit length since the previous examination;
- (e) a visual examination, an approved electromagnetic test or another approved method indicates the presence of a defect that may endanger the safety of a worker;
- (f) significant corrosion or distortion is evident; or
- (g) the rate of stretch begins to show a significant increase over the normal rate of stretch noted during the rope's service.

Balance rope discard criteria

10-70(1) An employer or contractor shall ensure that any balance rope used in a shaft is discarded after the rope has been in service for 3 years unless:

- (a) the chief mines inspector approves the use of the rope for a further period; or
- (b) the rope is discarded sooner pursuant to subsection (2).

(2) An employer or contractor shall ensure that a balance rope used in a shaft is discarded if, in any part of the rope:

- (a) it is determined by any of the following methods that the breaking load has decreased to less than 85% of the original breaking load:
 - (i) an approved electromagnetic test or another approved method;
 - (ii) a calculation based on the observed reduction of diameter of the rope;
 - (iii) a test to destruction;
 - (iv) extrapolation to the current date from measurements of loss of breaking load plotted against time;
- (b) the extension of a test piece has decreased to less than 60% of its original extension if the test piece is tested to destruction;

- (c) the number of broken wires, excluding filler wires, in a section of rope equalling the length of 1 lay, is greater than 5% of the total number of wires;
- (d) a visual examination, an approved electromagnetic test or another approved method indicates the presence of a defect that may endanger the safety of a worker; or
- (e) significant corrosion or distortion is evident.

Guide rope, rubbing rope discard criteria

10-71 An employer or contractor shall ensure that a guide rope or rubbing rope used in a shaft is discarded if, in any part of the rope:

- (a) it is determined by any of the following methods that the breaking load has decreased to less than 75% of the original breaking load:
 - (i) an approved electromagnetic test or another approved method;
 - (ii) a calculation based on the observed reduction of diameter of the rope;
- (b) the extension of a test piece has decreased to less than 60% of its original extension if the test piece is tested to destruction;
- (c) the number of broken wires, excluding filler wires, in a section of rope equalling the length of 1 lay, is greater than 5% of the total number of wires;
- (d) an outer wire or rod has lost 40% or more of its radial depth;
- (e) a visual examination, an approved electromagnetic test or another approved method indicates the presence of a defect that may endanger the safety of a worker; or
- (f) significant corrosion or distortion is evident.

Notice of hoisting rope discard

10-72(1) If a hoisting rope is taken out of service, the employer or contractor shall, within 180 days, give written notice of that fact to the chief mines inspector.

(2) A written notice required by subsection (1) must include:

- (a) the date on which the rope is taken out of service;
- (b) the reasons for taking the rope out of service; and
- (c) the disposition of the rope.

Special testing of discarded hoisting ropes

10-73 If, in the opinion of the chief mines inspector, special testing of a discarded hoisting rope is in the interest of better mine hoisting practice, the chief mines inspector may require the employer or contractor:

- (a) to have specimens cut from the rope at locations specified by the chief mines inspector; and
- (b) to send the specimens to an approved rope testing laboratory.

Removal of ropes after hoisting ceases

10-74 If a shaft or shaft compartment is abandoned for hoisting purposes, the employer or contractor shall ensure that the hoisting ropes are removed from the hoist immediately.

DIVISION 4

Qualifications of Hoist Operators and Workers in Charge of Conveyances**Interpretation of Division**

10-75 In this Division, “**hoist operator’s certificate**” means a hoist operator’s certificate issued pursuant to section 10-80.

Qualifications of hoist operator

10-76 No person shall act as a hoist operator, and no employer or contractor shall require or permit a person to act as a hoist operator, unless:

- (a) the person is competent to act as a hoist operator;
- (b) the person:
 - (i) holds a valid hoist operator’s certificate issued pursuant to section 10-80; or
 - (ii) holds a valid temporary authorization to operate a hoist issued pursuant to section 10-78;
- (c) the person holds a valid annual medical certificate issued pursuant to section 10-82;
- (d) the person has adequate knowledge of the language normally used at the mine;
- (e) the person has:
 - (i) a minimum of 3 years’ mining experience; or
 - (ii) a combination of training and experience that, in the opinion of the chief mines inspector, is equivalent to 3 years’ mining experience;
- (f) the person’s employer or contractor certifies in writing that the person:
 - (i) has at least 150 hours of combined:
 - (A) training; and
 - (B) hoisting experience under the direct supervision of a certified hoist operator;
 - (ii) a combination of training and experience that, in the opinion of the chief mines inspector, is equivalent to the requirements set out in subclause (i); and
 - (iii) has been trained in the procedures that the person will be expected to perform as a hoist operator at the mine; and
- (g) the person is authorized by the person’s employer or contractor to act as a hoist operator.

Suspension of authorization to operate hoist

10-77 If an employer or contractor suspends or revokes an authorization to act as a hoist operator, the employer or contractor shall immediately inform the chief mines inspector of the suspension or revocation and the reasons for it.

Temporary authorization to operate hoist

10-78(1) An employer or contractor may issue a written temporary authorization to a worker to operate a hoist if the worker:

- (a) has mining experience that, in the opinion of the employer or contractor, is adequate for undertaking the duties of a hoist operator;
 - (b) has demonstrated practical knowledge that, in the opinion of the employer or contractor, is adequate with respect to the following:
 - (i) the hoisting system, including safety devices;
 - (ii) signalling procedures and the hoist signalling system for the hoist that the worker is to operate;
 - (iii) emergency procedures;
 - (iv) the provisions of these regulations pertaining to hoists;
 - (c) has been trained in the procedures that the worker will be expected to perform; and
 - (d) holds a valid annual medical certificate issued pursuant to section 10-82.
- (2) An employer or contractor shall notify the chief mines inspector in writing within 14 days, if a temporary authorization is issued.
- (3) The notification mentioned in subsection (2) must include:
- (a) the name of the worker in receipt of the temporary authorization; and
 - (b) the issuance and expiry dates.
- (4) A temporary authorization to act as a hoist operator is valid for a period not exceeding 90 days from the date issued, unless it is revoked or suspended pursuant to section 10-77.
- (5) Notwithstanding subsection (4), a temporary authorization to act as a hoist operator expires on the day the worker is issued a hoist operator's certificate in accordance with section 10-80.
- (6) An employer or contractor shall not renew or extend a temporary authorization to operate a hoist.

Hoist operator's examination

10-79(1) A person is eligible to take the hoist operator's examination if:

- (a) the person has been recommended by his or her employer or contractor to the chief mines inspector; and
- (b) the employer or contractor of that person provides a written notice to the chief mines inspector stating that the person meets the qualifications set out in section 10-76.

(2) The chief mines inspector may set an examination to test the knowledge, with respect to the following subjects, of a person who wishes to obtain a hoist operator's certificate:

- (a) legal requirements and standards applicable to hoists;
- (b) construction and specifications of the type of hoist to be operated;
- (c) safety devices used on hoists and safety practices and procedures to be followed in operating a hoist;
- (d) safety inspections and hoist tests;
- (e) the hoist signalling system for the hoist that the person is to operate;
- (f) signalling procedures;
- (g) the responsibilities of a hoist operator;
- (h) recording test results and observations of abnormal circumstances in the hoist operator's log book;
- (i) emergency procedures;
- (j) practices and procedures to be followed in using a hoist to transport workers.

(3) The chief mines inspector may permit a person who fails the hoist operator's examination to make another attempt after a period of not less than 30 days after the date of the previous attempt.

Hoist operator's certificate

10-80(1) The chief mines inspector may issue a hoist operator's certificate to a person if:

- (a) that person has passed the hoist operator's examination within 6 months before the date of issuance of the hoist operator's certificate; and
- (b) the chief mines inspector has received a written letter from that person's employer clearly identifying any specialized procedures for which the person has or has not received training.

(2) The chief mines inspector may impose any terms and conditions on the hoist operator's certificate that the chief mines inspector considers appropriate.

(3) No hoist operator shall fail to comply with any term or condition imposed on the hoist operator's certificate pursuant to subsection (2).

(4) Subject to section 10-81, a hoist operator's certificate expires 5 years after the date of issue.

Revocation or suspension of hoist operator's certificate

10-81(1) The chief mines inspector may, at any time, revoke or suspend a hoist operator's certificate if the hoist operator fails to comply with any term or condition of the hoist operator's certificate or, in the opinion of the chief mines inspector, it is appropriate to do so in the circumstances.

(2) The chief mines inspector shall inform the hoist operator and the employer or contractor immediately in writing of the revocation or suspension of the hoist operator's certificate and the reasons for the revocation or suspension.

(3) If a hoist operator's certificate is revoked pursuant to this section, any person in possession of the revoked hoist operator's certificate, or a copy of the revoked hoist operator's certificate, shall immediately return it to the chief mines inspector.

Annual medical certificate

10-82(1) If an employer or contractor wishes to authorize a worker as a hoist operator, the employer or contractor shall:

(a) arrange for the worker to undergo an annual medical examination by a duly qualified medical practitioner during the worker's normal working hours and reimburse the worker for any part of the cost of the medical examination that the worker cannot otherwise recover; and

(b) ensure that a medical certificate is prepared by the duly qualified medical practitioner who conducted the medical examination pursuant to clause (a) that states that the person is fit to discharge the duties of a hoist operator.

(2) Subject to subsection (3), a medical certificate obtained pursuant to subsection (1) is valid for a period of 1 year after the date of issue.

(3) A duly qualified medical practitioner may at any time recall a hoist operator for re-examination and may cancel or renew the medical certificate based on the duly qualified medical practitioner's assessment of the hoist operator's fitness to discharge the duties of a hoist operator.

(4) If a worker cannot attend a medical examination mentioned in subsection (1) during the worker's normal working hours, an employer shall credit the worker's attendance at the examination outside normal working hours as time at work and ensure that the worker does not lose any pay or other benefits.

(5) A medical examination arranged pursuant to subsection (1) must include any medical procedures that are necessary for the duly qualified medical practitioner to determine if the worker is fit to discharge the duties of a hoist operator.

Hoist operator's hours of work

10-83(1) Subject to subsections (3) to (5), an employer or contractor shall ensure that no hoist operator works more than 12 hours in any period of 24 consecutive hours.

(2) For the purposes of subsection (1), any non-hoisting time worked by the hoist operator before commencing hoisting work must be counted as time worked.

- (3) If a hoist operator reaches the end of a 12-hour shift and no authorized hoist operator replacement is available to take over the hoisting duties, an employer or contractor may permit the hoist operator to work 1 additional hour in a period of 24 consecutive hours.
- (4) During an emergency or during repair work to the shaft, an employer or contractor may permit a hoist operator who has worked 12 hours to work 1 additional hour in a period of 24 consecutive hours.
- (5) If a mine does not operate more than 12 hours in a 24-hour period, an employer or contractor may permit a hoist operator to work for an additional period that is sufficient to make possible the transporting of workers at the beginning and end of a shift.
- (6) Nothing in this section exempts an employer or contractor from complying with the hours of work provisions of Part II of *The Saskatchewan Employment Act* and the regulations made pursuant to that Act.

DIVISION 5

Operation of Hoists

General duty re maximum load

10-84 An employer or contractor shall ensure that no hoist is loaded in excess of the maximum permissible suspended load set out in the mine hoist certificate for the hoist.

General duty re rated load of conveyance

10-85 If a hoist is being operated, an employer or contractor shall ensure that:

- (a) the rated load of the conveyance is not exceeded; and
- (b) no operating restrictions set out in the mine hoist certificate are contravened.

General duty re maximum number of persons

10-86 An employer or contractor shall ensure that no hoist is used to transport a greater number of persons than the maximum number of persons set out in the mine hoist certificate.

Transporting workers – conveyance requirements

10-87(1) Except during a shaft-sinking operation or during an emergency that may endanger the health or safety of a worker, an employer or contractor shall ensure that no worker is transported in a conveyance that does not meet the requirements of section 10-35.

(2) Subject to subsection (3), if a worker is being transported in a conveyance, the employer or contractor shall ensure that:

- (a) the hoist is not operated unless the doors of the conveyance are securely closed; and
- (b) the conveyance doors are not opened until a full stop has been made at the intended destination.

- (3) The requirements set out in subsection (2) do not apply if:
 - (a) during a shaft inspection, other precautions are implemented that are effective to protect the health and safety of the worker being transported in the conveyance; or
 - (b) the conveyance remains unintentionally stopped at a point other than at a shaft station and the employer or contractor shall implement an emergency procedure to safely remove the worker from the conveyance.

Transporting workers with materials or equipment

10-88(1) Subject to subsections (2) to (4), an employer or contractor shall ensure that no worker is transported in a conveyance that is being used at the same time for hoisting materials or equipment.

- (2) An employer or contractor may permit a worker to be transported in a conveyance while personal hand tools or other personal equipment is being transported if:

- (a) suitable precautions are taken to prevent injury to any person in the conveyance; and
 - (b) the combined load does not exceed 85% of the maximum permissible suspended load as set out in the mine hoist certificate.

- (3) An employer or contractor may permit a worker to be transported in a conveyance while materials or equipment other than personal hand tools or other personal equipment is being transported if:

- (a) in the case of a multi-deck conveyance:
 - (i) the worker is carried on a deck that does not contain any material or equipment;
 - (ii) the material or equipment is adequately secured;
 - (iii) the material or equipment being transported will not interfere with the removal of a worker from the conveyance in the event of an emergency; and
 - (iv) the combined load does not exceed 85% of the maximum permissible suspended load set out in the mine hoist certificate; or
 - (b) in the case of a single-deck conveyance:
 - (i) the worker is required to control the material or equipment; and
 - (ii) precautions are implemented that are necessary to protect the health and safety of the worker.

- (4) If a skip is used to transport a worker, the employer or contractor shall ensure that the hoist travels at a speed that does not exceed the lesser of:

- (a) 5 metres per second; and
 - (b) one-half of the hoist's normal speed.

Workers in charge of conveyance

10-89(1) An employer or contractor shall:

- (a) designate a worker to be in charge of a conveyance if the conveyance is operating under manual control;
 - (b) ensure that the names of the workers designated pursuant to clause (a) are readily available for the information of workers; and
 - (c) ensure that no worker, other than a worker designated pursuant to clause (a), is in charge of a conveyance that is under manual control.
- (2) An employer or contractor shall not designate a worker pursuant to clause (1)(a) unless the worker has been trained in hoisting signals and the matters set out in subsection (3).
- (3) An employer or contractor shall ensure that a worker designated pursuant to clause (1)(a) who is in charge of a conveyance operating under manual control:
- (a) maintains discipline in the conveyance while persons are being transported;
 - (b) enforces the maximum load for the conveyance, as set out in the certificate required pursuant to section 10-34;
 - (c) notifies the hoist operator if a heavy or irregularly shaped load is to be transported; and
 - (d) gives any necessary hoist signals to the hoist operator.
- (4) If workers are underground in an area served by a hoist operated by manual control, the employer or contractor shall ensure that if the worker in charge of the conveyance is not riding in or on the conveyance:
- (a) the worker is readily available at all times within the sound of the shaft signals; or
 - (b) the fire control and emergency response plan developed pursuant to section 19-4 contains suitable provisions to ensure the conveyance is made available in the event of an emergency.

Transporting workers – worker conduct

10-90(1) An employer or contractor shall ensure that workers being transported in a conveyance:

- (a) do not engage in any behaviour that may adversely affect the health or safety of a worker; and
 - (b) obey the instructions of the worker in charge of the conveyance.
- (2) At all times while being transported in a conveyance, a worker:
- (a) shall not engage in any behaviour that may adversely affect the health or safety of a worker; and
 - (b) shall obey the instructions of the worker in charge of the conveyance.

Operation by manual control

10-91 An employer or contractor shall ensure that no hoist operating under manual control is operated unless a hoist operator is at the controls of the hoist at all times while the hoist is in motion.

Operation by automatic control

10-92(1) At all times while workers are underground in an area served by a hoist that is being operated by automatic control, the employer or contractor shall ensure that the hoist operator is not engaged in duties that prevent the operator from returning to the hoist controls within 5 minutes.

(2) If a hoist is being operated by automatic control, the employer or contractor shall ensure that only the hoist operator operates the device that permits changing the hoist from manual to automatic control.

(3) At the time when a hoist is put into operation by automatic control and after that at least once every 24 hours while the hoist is being operated by automatic control, the employer or contractor shall ensure that the hoist operator:

- (a) tests the hoist brakes; and
- (b) remains at the controls long enough to observe that the hoist is functioning properly under the automatic control.

(4) If a hoist operated by automatic control makes an emergency stop, the employer or contractor shall ensure that the hoist operator:

- (a) takes action appropriate to the emergency; and
- (b) switches the hoist to manual control until:
 - (i) the reason for the emergency stop has been determined;
 - (ii) the fault has been corrected; and
 - (iii) sufficient hoisting cycles have been completed to ensure that the system is operating normally.

Inspection of hoist brakes

10-93 An employer or contractor shall ensure that, on each shift before a conveyance operating under manual control is moved, the hoist operator:

- (a) determines whether or not the hoist brakes are in proper working condition:
 - (i) in the case of a mechanical hoist, by testing the brakes of the drums against the normal starting power of the engine; and
 - (ii) in the case of an electric hoist, by testing the brakes against the normal starting current;
- (b) in the case of a drum hoist fitted with a clutch, does not unclutch any drum of the hoist until the test mentioned in clause (a) is complete and the hoist operator determines that the brakes are in proper working condition;

- (c) in the case of a drum hoist fitted with a friction clutch, tests the holding power of the clutch while the brake of the corresponding drum is kept on and the brake of the other drum is kept off:
 - (i) in the case of a mechanical hoist, against the normal starting power of the engine; or
 - (ii) in the case of an electric hoist, against the normal starting current;
- (d) immediately reports any defects or unsafe conditions with respect to the hoist brakes to the employer or contractor; and
- (e) records the results of each test required by this section in the hoist operator's log book required by section 10-7.

Overwind and underwind testing

10-94 An employer or contractor shall ensure that a hoist operator:

- (a) tests the overwind and underwind safety devices required by sections 10-23 and 10-25 at least daily if the hoist is in operation; and
- (b) records the results of the tests mentioned in clause (a) in the hoist operator's log book.

Testing after hoist stoppage

10-95(1) After every stoppage of a hoist for repairs or for any other purpose in which the stoppage lasts for more than 2 hours, the employer or contractor shall ensure that, before any worker is raised or lowered in the conveyance, the hoist operator:

- (a) tests the safety of the hoist by moving the conveyance 1 complete trip up and down the working portion of the shaft; and
- (b) records the results of the test in the hoist operator's log book.

(2) Subsection (1) does not apply if a hoist is sitting idle on automatic.

Clutch and brake use

10-96(1) An employer or contractor shall ensure that the hoist operator does not unclutch a hoist drum until the brake test required by section 10-93 is completed and no defect or unsafe condition is found.

(2) Before either drum of a double drum hoist is unclutched, an employer or contractor shall ensure that the brakes are applied on both drums.

(3) Subject to subsection (4), an employer or contractor shall ensure that, while a hoist drum is unclutched, no worker is required or permitted to:

- (a) enter a conveyance; or
- (b) work on or under a conveyance.

(4) Subsection (3) does not apply:

- (a) during shaft-sinking operations; or
- (b) if the conveyance is first secured in position by chairing, blocking or having a positive locking device inserted into the drum.

- (5) An employer or contractor shall ensure that no conveyance is lowered from an unclutched drum.
- (6) An employer or contractor shall ensure that the hoist operator does not leave the controls of a hoist under manual control unless:
 - (a) the brakes are set;
 - (b) the clutches are engaged or the conveyance on an unclutched drum is chaired or blocked; and
 - (c) the power supply to the hoist controls is disconnected.

Transporting material or equipment in shaft

10-97(1) If material or equipment is being transported in a conveyance, the employer or contractor shall ensure that:

- (a) the material or equipment is loaded and secured so as to prevent it from shifting during transport; and
 - (b) if any material or equipment projects above or below the conveyance, that material or equipment is securely fastened so that it cannot:
 - (i) come into contact with the sides of the shaft, the timber supports or other conveyance or shaft equipment; or
 - (ii) cause damage to any ropes.
- (2) An employer or contractor shall ensure that:
- (a) adequate precautions are taken to secure any material or equipment slung from a rope or conveyance; and
 - (b) no open hooks are used to suspend material or equipment in a shaft.
- (3) An employer or contractor shall ensure that a competent worker:
- (a) inspects, before use, any sling, chain or other rigging to be used for lowering any material or equipment in a shaft;
 - (b) removes from service any rigging that is kinked, damaged or otherwise faulty; and
 - (c) supervises the slinging of any material or equipment in a shaft.

Use of chairs

10-98(1) An employer or contractor shall ensure that chairs are not used for landing a conveyance while workers are being transported in the conveyance.

(2) An employer or contractor shall ensure that chairs are not put into operation unless the proper chairing signal has been given to the hoist operator.

DIVISION 6 Hoist Signalling Systems

Submission of hoist signalling system plans

10-99 An employer or contractor shall ensure that, before any signalling system is installed, the hoist signalling system plans are submitted to the chief mines inspector.

Hoist signalling system – general requirements

10-100(1) An employer or contractor shall ensure that a hoist signalling system that complies with this Division is installed at every shaft with a hoist.

(2) The hoist signalling system must:

- (a) permit the worker in charge of the conveyance and the hoist operator to exchange control signals;
- (b) enable clear, audible signals to be given that are separate and distinct for each shaft compartment; and
- (c) be arranged so that the hoist operator can return a signal to the worker giving the signal.

(3) An employer or contractor shall ensure that the hoist signalling system is installed at:

- (a) the collar;
- (b) every working level; and
- (c) every other landing station in regular use in the shaft.

Location of movement signal

10-101 An employer or contractor shall ensure that the signal for movement of a conveyance is located within easy reach of a worker in the conveyance.

Operation of return signal

10-102 The hoist operator shall return the signal to a worker in a conveyance who gave the signal if the worker is to be lowered or raised in the conveyance.

Communication with hoist operator

10-103(1) In this section, “**signal line**” means a cord that, if pulled, rings a bell at the hoist operator’s position and any other place in the shaft where a bell is located.

(2) Except during a shaft-sinking operation, an employer or contractor shall ensure that there are 2 separate and effective means of communication between the hoist operator and any part of the shaft.

(3) At least one of the means of communication required pursuant to subsection (2) must be a voice communication system.

(4) If a signal line is used as a means of communication, an employer or contractor shall ensure that the signal line is installed in each working compartment of each shaft in a manner that permits signals to be communicated to the hoist operator from any portion of the shaft.

Cage call system

10-104 If a cage call system is installed, an employer or contractor shall ensure that:

- (a) the signals for the system do not sound at the hoist operator’s position; and
- (b) the control for the signal of the cage call system:
 - (i) is separate from the hoist signal system; and
 - (ii) is clearly marked “cage call system”.

Signalling procedures

10-105 An employer or contractor shall:

- (a) develop and implement a signalling procedure between the hoist operator and the worker in charge of the conveyance;
- (b) ensure that the signalling procedure mentioned in clause (a) is properly used;
- (c) ensure that the signals used in the signalling procedure required pursuant to clause (a) are those set out in Table 1; and
- (d) ensure that a copy of the signalling procedure is posted:
 - (i) in the hoist room;
 - (ii) at the shaft collar; and
 - (iii) at every landing station in use in the shaft.

Signal method and order

10-106 If sound signals are used to control the movement of a conveyance, an employer or contractor shall ensure that the hoist operator and the worker in charge of a conveyance:

- (a) give the sound signals at distinct intervals of time; and
- (b) give and return the signals in the following order:
 - (i) cautionary signal;
 - (ii) directory signal; and
 - (iii) executive signal.

Signalling and operating procedures re hoisting workers

10-107(1) If sound signals are used to control the movement of a conveyance, on receipt of the cautionary signal that a worker is to be raised or lowered, the hoist operator shall:

- (a) return the cautionary signal;
 - (b) not move the conveyance until the executive signal is received; and
 - (c) not leave the hoist controls until the worker has been safely raised or lowered.
- (2) If the worker who is signalling movement is being raised or lowered, the worker shall give the signal from within the conveyance.
- (3) The hoist operator shall:
- (a) not move the conveyance within a period of 5 seconds after receiving an executive signal that a person is to be raised or lowered; and
 - (b) complete the required raising or lowering without interruption unless a stop signal or emergency signal is received.
- (4) If a hoist operator is unable to act within 1 minute after receiving the executive signal, the hoist operator shall not move the conveyance until he or she again receives a complete set of signals as set out in clause 10-106(b).

Special signals

10-108(1) In addition to the signals required by this Part, an employer or contractor shall develop:

- (a) signals to designate all regular shaft conveyance landing stations; and
 - (b) signals to designate all hoisting movements not set out in Table 1.
- (2) An employer or contractor shall ensure that each signal mentioned in subsection (1) is readily distinguishable from other signals.
- (3) An employer or contractor shall ensure that all signals mentioned in subsection (1) and an adequate description of their application to movements are posted:
- (a) in the hoist room;
 - (b) at the shaft collar; and
 - (c) at each conveyance landing station in use in the shaft.

Prohibition on talking to hoist operator

10-109 An employer or contractor shall ensure that:

- (a) except in an emergency or for the purpose of training, no person speaks to the hoist operator while the hoist is being operated manually; and
- (b) a sign stating the prohibition mentioned in clause (a) is posted in a position plainly visible to anyone approaching the hoist operator.

Precautions after inadvertent stop

10-110(1) Subject to subsection (2), an employer or contractor shall ensure that the hoist operator does not move the conveyance until a proper signal is received.

(2) If a conveyance has inadvertently stopped at a place in the shaft from which a signal cannot be given, the hoist operator may move the conveyance:

- (a) if persons are in the conveyance, when the hoist operator is authorized to do so by the employer or contractor; or
- (b) if persons are not in the conveyance, when:
 - (i) the reason for the inadvertent stop has been determined to the satisfaction of the hoist operator;
 - (ii) any fault has been corrected; and
 - (iii) the hoist operator is satisfied that it is safe to move the conveyance.

Who may give signals to hoist operator

10-111 Unless the hoist system is operating under automatic control, an employer or contractor shall ensure that:

- (a) except in an emergency, only workers who are designated pursuant to clause 10-89(1)(a) give signals to the hoist operator;
- (b) a worker authorized to give a signal to the hoist operator is at the same level as the conveyance if giving the signal; and
- (c) no unauthorized worker interferes with the hoist signalling system.

PART 11
Storage, Transportation and Use of Explosives

DIVISION 1
Interpretation and General Requirements

Definitions for Part

11-1 In this Part:

“ammonium nitrate (AN)” means a solid form of ammonium nitrate (AN) in a concentration of at least 28% nitrogen;

“ANFO” means a mixture of ammonium nitrate (AN) and fuel oil that is used as an explosive;

“black powder” means a type P.1 industrial explosive classified in accordance with section 36 of the federal regulations;

“cartridge” means an individual closed shell, bag or tube containing an explosive;

“chief inspector of explosives” means an inspector as defined in the *Explosives Act* (Canada);

“detonating cord” means a flexible linear explosive charge consisting of a core of powdered explosive enclosed in textile and plastic coverings;

“federal Act” means the *Explosives Act* (Canada);

“federal regulations” means the *Explosives Regulations, 2013*;

“hazard category” means the following classification of explosives based on the potential effects of the quantity of explosive and how it is packaged:

- (a) PE 1 – mass explosion hazard;
- (b) PE 2 – serious projection hazard but not a mass explosion hazard;
- (c) PE 3 – fire hazard and either a minor blast or minor projection hazard, or both, but not a mass explosion hazard; or
- (d) PE 4 – fire hazard or slight explosion hazard, or both, with only local effect;

“industrial explosive” means the following types of high explosive:

- (a) E.1 – blasting explosives;
- (b) E.2 – perforating explosives;
- (c) E.3 – special-application explosives;
- (d) I – initiation systems; and
- (e) P.1 – black powder and hazard category PE 1 black powder substitutes, if they are used in mining, quarrying, construction or avalanche control;

“initiate” means the process of causing an explosive to detonate;

“mishole” means a blast hole in which a charge or part of a charge failed to detonate on initiation;

“primer” means a unit, package or cartridge of explosive used to initiate other explosives, and which contains a detonator or detonator cord;

“quantity distance standard” means the National Standard of Canada CAN/BNQ 2910-510/2015 *Explosives – Quantity Distances*, as amended from time to time;

“safety fuse” means a core of black powder enclosed within various layers of textiles, plastic, asphalt and wax that is designed to burn at a rate of approximately 132 seconds per metre;

“safety fuse assembly” means an initiating device consisting of:

- (a) a pre-cut length of safety fuse with an anti-static staple;
- (b) a high strength detonator affixed to one end of the device; and
- (c) an igniter cord connector affixed to the other end of the device;

“storage standard” means the National Standard of Canada CAN/BNQ 2910-500/2015 *Explosives – Magazines for Industrial Explosives*, as amended from time to time;

“suitable closed container” means a container that is composed of material that is designed to prevent sparking caused by friction;

“UN number” means the number assigned to an explosive that has been classified, approved and authorized by the chief inspector of explosives as set out in column 1 of Schedule 1 of the *Transportation of Dangerous Goods Regulations* (Canada);

“vulnerable place” refers to:

- (a) any building in which people live, work or assemble;
- (b) public roads, railways and other transportation infrastructure;
- (c) pipelines and energy transmission lines; and
- (d) any place where a substance that increases the likelihood of a fire or explosion is likely to be stored.

General duty

11-2 An employer or contractor shall ensure that all explosives are handled, used, stored, transported and disposed of in a safe manner.

Smoking prohibited

11-3 No employer or contractor shall:

- (a) permit any person to smoke while handling, using, storing, transporting or disposing of explosives, or smoke within 15 metres of any place where explosives are stored or handled; or
- (b) allow any open flame or smoldering material to be taken or used within 15 metres of any explosive, detonator or detonator cord.

Identification of explosives

11-4 An employer or contractor shall ensure that no explosives are used unless:

- (a) the requirements of subsections 74(1), (2) and (4) of the federal regulations are met;
- (b) the explosive and its inner and outer packaging displays:
 - (i) the hazard category for the type of explosive;
 - (ii) the UN number assigned to the explosive; and
 - (iii) the trade name and classification of the explosive.

Classes of explosives

11-5 An employer or contractor shall ensure that no explosive is used underground or above ground unless it has been authorized by the Explosives Regulatory Division of the Department of Natural Resources of the Government of Canada as suitable for use in that environment.

Manufacture of explosives

11-6 An employer or contractor shall ensure that no explosives are manufactured at a mine unless the mine is a licensed factory as defined in the federal Act.

DIVISION 2 Storage of Explosives

Definitions for Division

11-7 In this Division, “**permit**” means a permit issued pursuant to section 11-12.

Storage of detonators and primers

11-8(1) An employer or contractor shall ensure that:

- (a) detonators, blasting caps and capped fuses are stored in day boxes or in magazines; and
 - (b) explosives or detonating cords are not stored in the same magazine or day box in which detonators are stored.
- (2) If detonators, blasting caps and capped fuses are stored in a magazine or day box located aboveground, they are to be separated from explosives or detonating cord in accordance with the storage standard and the quantity distance standard.
- (3) If detonators, blasting caps and capped fuses are stored underground in separate closed containers or magazines they are not to be located within 8 metres of:
- (a) a day box containing explosives; or
 - (b) a magazine containing explosives.
- (4) An employer or contractor shall ensure that electric or electronic detonators stored in a magazine are:
- (a) stored with their leg wires shunted; and
 - (b) stored in their original containers as shipped by the manufacturer.

- (5) An employer or contractor shall ensure that electric or electronic detonators that have been removed from a magazine, day box or long-hole storage area for use remain with the leg wires shunted as shipped by the manufacturer until the moment of use.
- (6) If explosives, detonators or detonating cords are removed from storage for use, the employer or contractor shall ensure that any unused explosives, detonators or detonating cords are returned to a magazine or a day box by the end of the shift.
- (7) An employer or contractor shall ensure that primers are prepared:
 - (a) as near as is practicable to the place where they are to be used;
 - (b) in a quantity that is sufficient only for the immediate work at hand; and
 - (c) using only tools of non-sparking material.

Above ground storage

- 11-9(1)** An employer or contractor shall ensure that a magazine located above ground is constructed in accordance with subsection 11-13(1).
- (2) An employer or contractor shall ensure that all explosives, detonators and detonating cords that are not required for immediate use are stored in a magazine that is constructed in accordance with subsection 11-13(1).
- (3) An employer or contractor shall ensure that the quantity of explosives, detonators and detonating cords stored in an above ground magazine:
 - (a) does not exceed the maximum quantity specified in the permit for the magazine; and
 - (b) in no case shall the quantity exceed the amount necessary to operate the mine for 1 year.
- (4) An employer or contractor shall ensure that a copy of all regulations and workplace procedures relating to the safe storage and handling of explosives, detonators and detonating cords in an above ground magazine are posted in each magazine mentioned in subsection (1).

Underground storage

- 11-10(1)** An employer or contractor shall ensure that a magazine located underground is constructed in accordance with subsection 11-13(2).
- (2) An employer or contractor shall ensure that the quantity of explosives, detonators and detonating cords stored in an underground magazine:
 - (a) does not exceed the maximum quantity specified in the permit for the magazine; and
 - (b) the amount does not exceed what is required to operate the mine at peak production for 8 days.

(3) An employer or contractor may temporarily store explosives, detonators or detonating cords underground in a day box if:

- (a) the day box is constructed in accordance with section 11-15;
- (b) the day box is kept locked while not in use and a key control and a security plan have been implemented; and
- (c) the quantity of explosives, detonators or detonating cords in 1 day box does not exceed a maximum of 150 kilograms.

(4) An employer or contractor shall ensure that a copy of all regulations and workplace procedures relating to the safe storage and handling of explosives, detonators and detonating cords in an underground magazine are posted in each magazine mentioned in subsection (1).

Longhole storage area

11-11(1) Subject to subsections (2) and (3), if longhole blasting operations are being conducted, an employer or contractor may store explosives, detonators and detonating cords in a storage area that is not a day box or magazine:

- (a) without a permit from the chief mines inspector if the amount of explosives, detonators and detonating cord to be stored is limited to the amount that will be loaded within 24 hours of storage; or
- (b) with a permit from the chief mines inspector if the amount of explosives, detonators and detonating cord to be stored exceeds that which will be loaded within 24 hours of storage.

(2) An employer or contractor shall ensure that the storage area for longhole blasting operations established pursuant to subsection (1):

- (a) is located in a safe and secure area that is out of the way of any traffic and meets the requirements of subsection 11-16(2); and
- (b) restricts access only to persons:
 - (i) who:
 - (A) have duties related to the use, storage, transportation of explosives;
 - (B) supervise blasting activities; or
 - (C) are appointed to keep records and logs related to blasting and use of explosives; and
 - (ii) who hold a valid security screening document required pursuant to subsection 11-31(1) or (2).

(3) An employer or contractor that establishes a storage area for longhole blasting operations mentioned in clause (1)(a) shall ensure that:

- (a) all explosives and detonating cord are separated from detonators by a minimum distance of 8 metres; and
- (b) all electric or electronic detonators are stored in suitable closed containers and must remain shunted as shipped by the manufacturer until the moment of use.

- (4) An employer or contractor shall ensure that the storage area for longhole blasting operations established pursuant to clause (1)(a) is guarded at all times by an authorized person who meets the requirements of subclause (2)(b)(ii).

Permit required

11-12(1) No person shall:

- (a) construct or operate a magazine or magazine site; or
 - (b) subject to clause (2)(b), construct or operate a storage area for longhole blasting operations; or
 - (c) store explosives:
 - (i) in a magazine;
 - (ii) in a magazine site; or
 - (iii) in a storage area for longhole blasting operations if the amount to be stored in the area exceeds that which will be loaded within 24 hours;unless the person holds a valid permit for that magazine, magazine site or storage area for longhole blasting operations.
- (2) An employer or contractor shall apply to the chief mines inspector for a permit to construct and operate:
- (a) a magazine or a magazine site; or
 - (b) a storage area for longhole blasting operations if the amount to be stored in the area exceeds that which will be loaded within 24 hours.
- (3) An application pursuant to subsection (2) must include:
- (a) the plans for the magazine site, the magazine or storage area for longhole blasting operations;
 - (b) the fire safety plan;
 - (c) within 6 months after the coming into force of these regulations, the security plan and key control plan;
 - (d) detailed plans and specifications for heating or cooling or insulating a magazine; and
 - (e) any other information required by the chief mines inspector.
- (4) If the chief mines inspector is satisfied that the plans for a magazine site, a magazine or a storage area for longhole blasting operations meet the requirements of these regulations, the chief mines inspector:
- (a) may issue a permit to authorize the construction and operation of a magazine site, a magazine or a storage area for longhole blasting operations;
 - (b) shall specify in the permit the maximum quantity of explosives, detonators and detonating cords that may be stored at the magazine site, in the magazine or in the storage area for longhole blasting operations; and
 - (c) may impose any terms and conditions on a permit that the chief mines inspector considers appropriate in the circumstances.

(5) If the chief mines inspector is satisfied that it is appropriate to do so, the chief mines inspector may cancel a permit issued pursuant to this section.

(6) An employer or contractor shall ensure that the total quantity of explosives, detonators and detonating cord stored underground does not exceed the maximum quantity established in the underground magazine permit.

(7) Subsection (6) does not apply to a storage area for longhole blasting operations established pursuant to clause 11-11(1)(a).

Design of magazines

11-13(1) An employer or contractor shall ensure that a magazine site located on the surface and any permanent or portable magazine located above ground is designed and constructed in accordance with:

- (a) these regulations;
 - (b) the quantity distance standard;
 - (c) the storage standard; and
 - (d) any terms and conditions imposed on the permit by the chief mines inspector.
- (2) An employer or contractor shall ensure that a magazine located underground is designed and constructed:
- (a) in accordance with the requirements of section 11-16;
 - (b) with a level floor;
 - (c) with walls made of non-sparking materials; and
 - (d) with no electrical fixtures.

Magazines located on surface

11-14(1) If a magazine is located on the surface, the employer or contractor shall ensure that:

- (a) the magazine is protected by a fire break that extends a minimum of 15 metres in all directions from the magazine;
 - (b) no flammable material is stored within 15 metres of the magazine; and
 - (c) the magazine is conspicuously marked with signs that are posted:
 - (i) 8 metres from the start of each road that approaches the magazine; and
 - (ii) at least 2 metres above the ground for ease of visibility.
- (2) An employer or contractor shall ensure that a magazine on the surface is located so that its distance from any public place is not less than the minimum distance required by the quantity distance standard and the storage standard for the quantity and type of explosive in the magazine.
- (3) Subsection (2) comes into force 12 months after this section comes into force.

Design of day boxes

11-15 An employer or contractor shall ensure that any day box is:

- (a) constructed in a manner, and of materials, that will prevent any sparking caused by friction;
- (b) painted red and conspicuously marked "DANGER-EXPLOSIVES" in capital letters that are not less than 10 centimetres in size;
- (c) separated from any other day box by at least 8 metres; and
- (d) equipped with a lock.

Location of underground storage

11-16(1) An employer or contractor shall ensure that any magazine or day box used underground in a mine is located in a safe, secure area out of the way of traffic.

(2) An employer or contractor shall ensure that no explosive or detonator is stored underground in a mine within 60 metres of any:

- (a) shaft station;
- (b) hoist room;
- (c) refuge station;
- (d) electrical substation;
- (e) fuel storage area;
- (f) workshop;
- (g) lunchroom; or
- (h) vulnerable place.

Safety precautions

11-17(1) An employer or contractor shall ensure that:

- (a) a magazine or day box is kept clean, dry and free from grit at all times;
- (b) any broken cartridges and spilled explosives are cleaned up immediately; and
- (c) after the clean-up of any spilled explosives in a magazine, any contaminated area is treated with a suitable neutralizing agent to remove any traces of the explosive.

(2) An employer or contractor shall ensure that no ferrous metal is kept or used in any magazine or day box unless the metal is sheathed with a suitable non-sparking material.

(3) An employer or contractor shall ensure that no open flame is taken or used within 15 metres of any explosive, detonator or detonator cord.

Control of magazines

11-18(1) An employer or contractor shall ensure that each magazine:

- (a) is kept securely locked at all times except during deliveries, withdrawals and inspections conducted pursuant to section 11-19; and
- (b) is operated in accordance with the requirements of section 153 of the federal regulations.

(2) An employer or contractor shall ensure that, at each magazine, the oldest stock of each type and size of explosive is used first.

(3) An employer or contractor shall ensure that the following information is recorded for each magazine:

- (a) the quantity of explosives, detonators and detonating cord kept in the magazine;
- (b) the date of delivery of any explosives, detonators or detonating cord to the magazine and the quantity and type delivered;
- (c) the date of issuance of any explosives, detonators or detonating cord from the magazine and the quantity and type issued; and
- (d) the date of return of any explosives, detonators or detonating cord to the magazine and the type and quantity returned.

(4) An employer or contractor shall maintain a daily record of blasting activity that includes:

- (a) the number of holes charged;
- (b) the number and type of detonators used;
- (c) the number of holes blasted;
- (d) the kind and quantity of explosives, including detonating cord, used;
- (e) the kind and quantity of explosives taken from the magazines or day boxes;
- (f) the number and location of misfires, if any;
- (g) the kind and quantity of explosives returned to the magazines or day boxes;
- (h) the number and location of any charges left unfired, if any;
- (i) the location of the blast holes;
- (j) the location of the tie-ins;
- (k) the delays used;
- (l) the hole depth; and
- (m) a diagram of the post-blasting pattern identifying misfires, if any.

(5) The blaster shall sign off the daily record mentioned in subsection (4).

(6) The daily record established in subsection (4) must be kept at the mine and be available for inspection by the chief mine inspector.

Inspection and maintenance

11-19(1) An employer or contractor shall appoint a person:

- (a) qualified in the use of explosives; and

- (b) who holds a valid security screening document required pursuant to section 11-31 to:
 - (i) conduct a thorough weekly inspection of all magazines, day boxes, daily records and shift logs pertaining to blasting activity;
 - (ii) reconcile entries in the magazine log, daily record and the shift log to determine if all explosives, detonators and detonating cord are accounted for; and
 - (iii) countersign the entries referenced in this section.
- (2) The person appointed pursuant to subsection (1) shall submit a signed written report to the employer or contractor summarizing the results of each inspection, including:
 - (a) the information required by subsections 11-18(3) and (4);
 - (b) any discrepancies resulting from reconciliation between the magazine log, daily record and shift log; and
 - (c) any unsafe condition.
- (3) An employer or contractor shall ensure that:
 - (a) any discrepancy or unsafe condition identified in the written report pursuant to subsection (2) or otherwise is corrected as soon as is reasonably practicable;
 - (b) all deteriorated and damaged explosives are destroyed in a safe manner in accordance with the manufacturer's recommendations; and
 - (c) all of the requirements pursuant to section 11-71 have been met.

DIVISION 3 Transportation of Explosives

Vehicles

- 11-20(1)** An employer or contractor shall ensure that:
 - (a) any vehicle used for transporting explosives, detonators or detonating cord is maintained in good mechanical condition; and
 - (b) any metal parts on a vehicle used for transporting explosives that may come in contact with a container of explosive are covered with a suitable non-sparking material.
- (2) For the purposes of clause (1)(b), the inner and outer packaging of the explosive, including the container of the explosive or a tarpaulin that is not anti-static, shall not be considered a suitable non-sparking material.
- (3) An employer or contractor shall ensure that any vehicle used for transporting explosives is equipped with:
 - (a) two 4.5 kilogram multi-purpose dry chemical fire extinguishers that are readily available to the driver of the vehicle;

- (b) a battery disconnect; and
 - (c) if there is a possibility that the vehicle will be used in conditions of reduced visibility, a flashing red light attached to the vehicle in a visible location.
- (4) An employer or contractor shall ensure that any vehicle being used for transporting explosives is equipped with placards that:
- (a) are clearly visible and legible; and
 - (b) are placed:
 - (i) on each side and each end of the vehicle so that the placards are visible from any direction; and
 - (ii) on a contrasting background apart from any other marking with which the placards might be confused.

Control of vehicles

11-21(1) An employer or contractor shall ensure that a vehicle being used to transport explosives, detonators or detonating cord:

- (a) is under the charge of a worker who holds a valid blaster's certificate issued pursuant to section 11-36 or a valid temporary authorization to blast issued pursuant to section 11-34;
 - (b) is not left unattended unless:
 - (i) the vehicle is designated by the employer or contractor as a vehicle that may only be used for transporting and holding explosives;
 - (ii) the vehicle is parked in an area that is designated by the employer or contractor as an area in which a vehicle transporting explosives may be parked; and
 - (iii) the supervisor records the details of the vehicle's load and location in the shift record;
 - (c) carries no other materials in or on the vehicle; and
 - (d) is not loaded to more than 80% of its rated carrying capacity.
- (2) Any explosives, detonators and detonating cord, blasting caps and capped fuses not required for immediate use shall not be held or stored in a vehicle.

Operation of vehicles

11-22(1) If a vehicle is used to transport explosives, detonators and detonating cord, an employer or contractor shall ensure that:

- (a) the engine of the vehicle is not left running during loading or unloading of the explosives, detonating cord or detonators, unless a device powered by the vehicle's engine is used for the loading or unloading; and
- (b) the vehicle is not left unattended while loaded with explosives, detonating cord or detonators.

(2) An employer or contractor shall ensure that detonators, blasting caps and capped fuses are kept separate from other explosives and are:

- (a) not transported in the same vehicle or at the same time as explosives unless they are kept in suitable closed containers that are specifically designed to maintain an air gap separation distance of 50 millimetres between the explosives and the detonators, blasting caps and capped fuses;
- (b) in the case of detonators, not transported in the same vehicle in quantities greater than 1,000; and
- (c) not stored, held or transported in:
 - (i) the same compartment as the driver or passengers; or
 - (ii) a glove box, storage console or other storage area or compartment located within the same area as a driver or passenger.

Loading and unloading of vehicles

11-23 An employer or contractor shall ensure that all explosives, detonating cord and detonators are appropriately packaged for transit and safely loaded, stowed and secured before transit.

Loaded vehicles in transit

11-24(1) Subject to subsection (2), an employer or contractor may designate an area in which a vehicle transporting explosives, detonating cord and detonators may be parked.

(2) Subject to subsection (3), a vehicle being used to transport explosives, detonators or detonating cord shall not be parked within 60 metres of the places mentioned in subsection 11-16(2).

(3) A vehicle loaded with explosives, detonators and detonator cords may be parked temporarily within 60 meters of a shaft station or hoist room during unloading or loading.

Drivers and passengers

11-25(1) An employer or contractor shall ensure that no workers travel in or on a vehicle that is being used to transport explosives, other than those workers who are necessary for the handling of the explosives.

(2) An employer or contractor shall ensure that a vehicle being used to transport explosives is under the charge of a worker who holds a valid blaster's certificate issued pursuant to section 11-36 or a temporary authorization to blast issued pursuant to section 11-34.

(3) An employer or contractor shall ensure that the driver of a vehicle used to transport explosives:

- (a) drives in a careful manner;
- (b) drives at a speed that is reasonable for the prevailing conditions; and
- (c) stops the vehicle before crossing a railway track.

- (4) The driver of a vehicle used to transport explosives shall:
- (a) drive in a careful manner;
 - (b) drive at a speed that is reasonable for the prevailing conditions; and
 - (c) stop the vehicle before crossing a railway track.

Refuelling

11-26(1) An employer or contractor shall ensure that, except in an emergency, no vehicle is refuelled while it is being used to transport explosives.

(2) If a vehicle is refuelled while being used to transport explosives, the employer or contractor shall report the details of the occurrence to the committee within 24 hours after the occurrence.

Manner of transportation – general

11-27(1) If explosives, detonating cord or detonators are transported from one storage area to any other storage area or point of use, the employer or contractor shall ensure that the transportation is:

- (a) completed as soon as possible; and
 - (b) is carried out or supervised by a competent person authorized for that purpose by the employer or contractor.
- (2) The employer or contractor shall ensure that explosives delivered to a shaft station or near the shaft collar or other entrance to a mine for storage or use underground, are:
- (a) held temporarily in a safe and secure area;
 - (b) not left unattended; and
 - (c) transported to the point of use or to an underground magazine or day box as soon as is reasonably practicable.
- (3) If explosives are being heated while being transported in a vehicle, the employer or contractor shall ensure that:
- (a) the energy source used to provide energy to the heating device:
 - (i) does not directly involve the combustion of fuel; and
 - (ii) is contained in a compartment or enclosure that:
 - (A) is separate from the explosives; and
 - (B) is constructed of non-combustible materials;
 - (b) a barrier is maintained between the explosives and the heating device to prevent the explosives or their containers from coming into contact with the heating device;
 - (c) all exposed surfaces of the heating device are maintained at a temperature of 100° C or less; and
 - (d) the temperature in the area surrounding the explosives that is closest to the heating device is monitored at all times while the explosives are being heated.

Transportation in conveyance

11-28 If a conveyance is being used to transport explosives, the employer or contractor shall ensure that:

- (a) the operation is conducted or supervised by a person authorized for that purpose by the employer or contractor;
- (b) the authorized person informs the person in charge of the conveyance and the hoist operator that explosives are being transported;
- (c) no other material is transported in the conveyance at the same time as explosives are transported; and
- (d) no person travels in the conveyance with the explosives, except for the worker in charge of the conveyance and the persons transporting the explosives.

Transportation by locomotive

11-29(1) If track haulage is used to transport explosives underground, the employer or contractor shall ensure that:

- (a) if it is reasonably practicable to do so, the locomotive is located at the front of the train transporting the explosives;
 - (b) if it is not reasonably practicable to locate the locomotive at the front of the train:
 - (i) the locomotive is located at the rear of the train; and
 - (ii) a worker is positioned to warn the driver of the locomotive and other workers of any hazard;
 - (c) the car carrying the explosives is separated from the locomotive battery or trolley by an empty car or a draw-bar of equivalent length; and
 - (d) no explosives are carried on the locomotive.
- (2) If a trolley locomotive is used to transport explosives, the employer or contractor shall ensure that the car carrying the explosives is protected against contact with any trolley wire.

DIVISION 4 Use of Explosives

Definitions for Division

11-30 In this Division:

“blaster” means a person who conducts a blasting operation, with or without the assistance of another person;

“blaster’s certificate” means a blaster’s certificate issued pursuant to section 11-36;

“blasting machine” means a device that provides electrical energy or shock energy for the purpose of energizing a detonator;

“blasting meter” means a test instrument, such as a blasting galvanometer, blasting ohmmeter, blasting voltmeter or blasting multimeter that is designed to check detonators and electric circuits for continuity, resistance, stray currents and other pertinent measurements;

“bootleg” means a remnant of a blast hole that did not properly break when the blast was initiated;

“equivalent document” means any of the following:

- (a) a valid approval letter issued by the Minister of Natural Resources (Canada) pursuant to section 183 of the federal regulations;
- (b) a valid Free and Secure Trade Card issued by the Canada Border Services Agency;
- (c) a valid NEXUS card issued by the Canada Border Services Agency;
- (d) a satisfactory criminal record check;

“firing cable” means a heavy-gauge reusable wire that connects an electrical power source with an electrical blasting circuit;

“lead wire” means a light-gauge disposable wire that connects an electrical power source with a circuit containing electric detonators;

“security screening document” means a valid Possession and Acquisition Licence for firearms issued pursuant to the *Firearms Act* (Canada) or an equivalent document.

Security screening

11-31(1) An employer, contractor or owner must comply with the requirements of this section not later than 6 months after the coming into force of these regulations.

(2) No person may conduct blasting activities or hold a blaster’s certificate or a temporary authorization to blast without being in possession of a valid security screening document.

(3) If a worker who is not a blaster has access to a high hazard explosive or it is possible for the worker to come into contact with a high hazard explosive as a result of his or her duties, the worker shall hold a valid security screening document.

(4) If a worker has access to a high hazard explosive or it is possible for the worker to come into contact with a high hazard explosive as a result of his or her duties and the worker does not have a valid security screening document, the worker shall be directly supervised by a person who holds:

- (a) a valid security screening document required pursuant to this section;
- (b) a blaster’s certificate issued in accordance with section 11-36; or
- (c) a temporary authorization to blast issued pursuant to section 11-34.

(5) For each worker who is required to possess a valid security screening document, the employer or contractor shall:

- (a) keep a copy of the valid security screening documents on file; and
- (b) make available for inspection the copies of the valid security screening document.

(6) Any worker required to hold a valid security screening document shall:

- (a) ensure that his or her security screening document is kept valid at all times;
- (b) provide the employer or contractor with the security screening document if it is renewed; and
- (c) advise his or her employer or contractor immediately:
 - (i) if, for any reason, the security screening document has become or will become suspended or revoked or has expired; or
 - (ii) if charged with an offence, that could result in his or her security screening document being revoked or suspended.

(7) If informed by a worker with a blaster's certificate or a temporary authorization to blast of an instance pursuant to clause (6)(c), the employer or contractor shall as soon as possible advise the chief mines inspector in writing.

Qualifications of blaster

11-32 No person shall conduct a blasting operation, and no employer or contractor shall require or permit a person to conduct a blasting operation, unless:

- (a) the person is trained and is competent to act as a blaster;
- (b) the person:
 - (i) holds a valid blaster's certificate issued pursuant to section 11-36; or
 - (ii) holds a temporary authorization to blast issued pursuant to section 11-34;
- (c) the person is in possession of a valid security screening document required pursuant to section 11-31;
- (d) the person has adequate knowledge of the language normally used at the mine;
- (e) the person has mining experience that is adequate for undertaking the duties of conducting a blasting operation; and
- (f) the person is authorized by the person's employer or contractor to act as a blaster.

Suspension of temporary authorization to blast

11-33 If an employer or contractor suspends or revokes a temporary authorization to act as a blaster, the employer or contractor shall immediately inform the chief mines inspector of the suspension or revocation and the reasons for it.

Temporary authorization to blast

11-34(1) An employer or contractor may issue a written temporary authorization to blast to a worker who:

- (a) has provided the employer or contractor with a valid security screening document required pursuant to section 11-31; and
 - (b) in the opinion of the employer or contractor, has:
 - (i) adequate knowledge of the language normally used at the mine;
 - (ii) mining experience and training that is adequate for undertaking the duties of conducting a blasting operation; and
 - (iii) demonstrated adequate practical knowledge of explosives and safe blasting procedures.
- (2) An employer or contractor who has issued a temporary authorization to blast to a person in accordance with subsection (1) shall, within 14 days after issuance, provide to the chief mines inspector a copy of:
- (a) the temporary authorization to blast; and
 - (b) the worker's valid security screening document.
- (3) A temporary authorization to blast expires on the earlier of the following dates, unless it is revoked or suspended pursuant to section 11-33 or 11-37:
- (a) 180 days after the date of issue;
 - (b) the day on which the worker is issued a blaster's certificate.
- (4) An employer or contractor shall not renew or extend a temporary authorization to blast.

Blaster's examination and qualifications

11-35(1) A person is eligible to take the blaster's examination if:

- (a) the person has been recommended by his or her employer or contractor to the chief mines inspector; and
 - (b) the employer or contractor of that person provides a written notice to the chief mines inspector stating the person meets the qualifications set out in section 11-32.
- (2) The chief mines inspector may set an examination to test the knowledge, with respect to the following subjects, of a person who wishes to obtain a blaster's certificate:
- (a) legal requirements and standards applicable to blasting and the use of explosives;
 - (b) the nature and types of explosives and the selection of the appropriate types of explosives;
 - (c) storage and transportation of explosives;

- (d) initiation systems and the selection of the appropriate types of initiation systems;
 - (e) blasting techniques and practices;
 - (f) primers;
 - (g) safety precautions to be used before, during and after blasting;
 - (h) the methods of loading holes and safety precautions to be used in loading holes;
 - (i) the firing of shots, the connection of detonator lead wires and firing cables, and the testing of firing circuits;
 - (j) misfires and faulty firing circuits.
- (3) A person who fails the blaster's examination is eligible to take the examination 30 days after the previous attempt.

Blaster's certificate

11-36(1) The chief mines inspector may issue a blaster's certificate to a person if that person:

- (a) has passed the blaster's examination within 6 months before the date of issuance of the blaster's certificate; and
 - (b) meets the security screening requirements in section 11-31.
- (2) The chief mines inspector may impose any terms and conditions on the blaster's certificate that the chief mines inspector considers appropriate.
- (3) No blaster shall fail to comply with any term or condition imposed on the blaster's certificate pursuant to subsection (2).
- (4) Subject to subsections 11-31(5) and (6) and sections 11-33 and 11-37, a blaster's certificate expires 5 years from the date of issuance.

Revocation or suspension of blaster's certificate

11-37(1) The chief mines inspector may, at any time, revoke or suspend a blaster's certificate if the blaster fails to comply with any term or condition of the blaster's certificate or, in the opinion of the chief mines inspector, it is appropriate to do so in the circumstances.

- (2) The chief mines inspector shall inform the blaster and the employer or contractor immediately in writing of the revocation or suspension and the reasons for the revocation or suspension.
- (3) If a blaster's certificate is revoked pursuant to this section, any person in possession of the revoked blaster's certificate, or a copy of the revoked blaster's certificate, shall immediately return it to the chief mines inspector.

Posting of names

11-38(1) An employer or contractor shall ensure that the names of workers authorized to blast pursuant to sections 11-34 and 11-36 are readily available for the information of workers.

- (2) An employer or contractor shall ensure that the names of workers who hold valid security screening documents are readily available for the information of workers.

Procedure before drilling

11-39(1) Subject to subsection (2), before drilling commences at a working face where blasting has taken place, the employer or contractor shall ensure that the working face is washed with water and thoroughly examined for any misholes, bootlegs or residual explosive.

(2) If water cannot be used to wash the working face, the employer or contractor shall:

- (a) develop a procedure for the safe and effective examination of the working face for misholes, bootlegs or residual explosive; and
- (b) ensure that the procedure developed pursuant to clause (a) is carried out before drilling is commenced.

Size of drill holes

11-40 An employer or contractor shall ensure that each drill hole is of a suitable size to permit the free and unobstructed insertion of a cartridge to the bottom of the hole.

No drilling near charged holes

11-41 An employer or contractor shall ensure that no drilling operation is conducted within 8 metres of any working face in which 1 or more holes have been charged with explosive until those charges have been fired.

Drilling in open pit mine

11-42 If drilling is to be carried out in an open pit mine where blasting has taken place, the employer or contractor shall ensure that:

- (a) no hole is drilled:
 - (i) within 300 millimetres of any bootleg; or
 - (ii) if any part of the hole would be within 8 metres of a hole charged with explosive, unless the hole is drilled under the direct supervision of a direct supervisor:
 - (A) to clear a blocked hole that is not a mishole; or
 - (B) to make another hole necessary for blasting a mishole in accordance with section 11-47; and
- (b) if mining is by benches, the drilling pattern in alternate benches is staggered at a distance equal to half the interval between adjacent holes in the pattern.

Drilling in fractured rock

11-43(1) If fractured rock has been produced by blasting, the employer or contractor shall ensure that no worker drills within 8 metres of any area suspected of containing explosive unless the rock has been thoroughly examined to ensure that it does not have any misholes.

(2) If it is not reasonably practicable to examine the rock in accordance with subsection (1), the employer or contractor shall ensure that a remotely controlled drilling procedure is used.

Drilling underground near explosives

11-44(1) In this section, “**cut bottom**” means the bottom of an arrangement of holes used to provide a space in which the surrounding rock can be blasted.

- (2) An employer or contractor shall ensure that no drilling takes place underground:
- (a) within 150 millimetres of any bootleg;
 - (b) within 300 millimetres of any cut bottom that has been charged and blasted; or
 - (c) on any face that contains undetonated explosives, except in accordance with section 11-47.

Charging holes

11-45(1) An employer or contractor shall ensure that only tools made of non-sparking material are used to charge a hole with explosive.

- (2) A worker shall use only tools made of non-sparking material to charge a hole with explosive.

Pneumatic charging

11-46(1) An employer or contractor shall ensure that no hole is charged with explosive by a pneumatic charging method unless:

- (a) the explosive to be used is a type that is compatible with the use of a pneumatic charger;
 - (b) only semi-conductive hose manufactured for the purpose is used;
 - (c) the loading equipment and mobile equipment used for loading the explosive are bonded to ground;
 - (d) the loading equipment used for loading the explosive is not in electrical contact with the mine grounding system;
 - (e) if an electrical detonator is to be used in the hole:
 - (i) plastic or non-conducting liners are not used; and
 - (ii) the detonator is not placed in the hole until the pneumatic loading of the hole is complete; and
 - (f) the loading of the explosives is carried out by a procedure that will prevent:
 - (i) any dangerous build-up of static electricity; and
 - (ii) any hazard from stray electrical currents.
- (2) If pneumatic charging methods are used with electric blasting caps, the employer or contractor shall ensure that only collar priming is used.
- (3) While charging holes by a pneumatic charging method, a blaster:
- (a) shall keep electric detonators at least 8 metres away from the loading operation until all the holes have been charged and the charging device has been disassembled; and
 - (b) shall not handle an electric detonator until any static electricity remaining on the blaster has been effectively discharged.

- (4) An employer or contractor shall ensure that no ANFO is pneumatically loaded into a plastic liner.

Misholes

- 11-47(1)** If there is a mishole, the blaster shall:

- (a) mark the mishole by:
 - (i) inserting a conspicuous, non-metallic marker at the hole's out end;
 - (ii) roping off the area around the mishole to prevent unauthorized entry; or
 - (iii) using any other method authorized by the employer or contractor;
 - (b) blast the mishole as soon as it is safe to do so in accordance with blasting procedure; or
 - (c) wash out the explosive by an approved method if the explosive used is water soluble.
- (2) If drilling is required, the blaster shall notify the direct supervisor before commencing drilling.
- (3) The direct supervisor shall:
- (a) determine the location, direction and depth of any hole necessary for blasting the misfired shot; and
 - (b) supervise the drilling of holes mentioned in clause (a).
- (4) If any mishole remains at the end of a shift, the direct supervisor shall record the location of each mishole in the shift record.
- (5) If work on a working face is to be discontinued, the employer or contractor shall ensure that, as soon as is reasonably practicable:
- (a) the material broken at the firing of the last round is cleared from the working face;
 - (b) the working face is thoroughly examined for explosive in any cut-off hole or mishole;
 - (c) all bootlegs are painted for identification; and
 - (d) if the ground support is installed normally, the ground support is installed to the end of the workings.

Safety of workers during blasting

- 11-48(1)** An employer or contractor shall:

- (a) develop a written procedure to ensure the safety of workers during blasting operations; and
 - (b) ensure that the procedure developed pursuant to clause (a) is followed if blasting operations are carried out.
- (2) A blaster who carries out a blasting operation shall follow the procedure developed pursuant to subsection (1).

(3) Without limiting the generality of subsection (1), a procedure required by that subsection must include provisions dealing with the following matters:

- (a) removing persons from the blast area who may be endangered by the blast;
- (b) in the case an open pit mine, controlling traffic on roads at the mine site;
- (c) effective guarding of entrances to the blasting site to prevent entry of unauthorized persons;
- (d) specifying the type of effective warning devices to be used, procedures for operating them and the timing of their use before and during a blast;
- (e) providing for an orderly return to work if the worksite is safe after a blast.

(4) The effective guarding mentioned in clause (3)(c) must include posting a person at each entrance to the blast area and requiring each of those persons to remain until relieved by the blaster.

Controlling traffic on public road during surface blasting

11-49(1) In this section, “**public road**” means any road that is accessible to and intended for use by the public.

(2) If persons on a public road may be at risk during an open pit mine blasting operation, the employer or contractor shall develop and implement a written traffic warning plan that deals with the following matters:

- (a) obtaining from the appropriate authority any necessary permission to warn traffic;
- (b) the type of warning devices to be used;
- (c) the number of workers needed to provide adequate warning;
- (d) the procedures to be used by workers to control and warn traffic approaching the danger area.

Connecting underground workings

11-50 Before a connection is made between 2 underground workings, the employer or contractor shall ensure that:

- (a) a thorough examination is made of the workings towards which the active working is advancing to determine whether the other workings are safe and without hazard; and
- (b) all approaches to both workings are effectively guarded in accordance with subsection 11-48(4) during blasting to prevent the unauthorized entry of any person if the distance between the 2 workings is less than the greater of:
 - (i) twice the length of the longest drill steel being used; and
 - (ii) 5 metres from the bottom of the longest hole.

Safety fuse assemblies

11-51(1) An employer or contractor shall ensure that safety fuse assemblies are:

- (a) purchased only as pre-assembled units;
- (b) used only to initiate blasts;
- (c) of a uniform length; and

- (d) equipped with:
 - (i) an uncapped end that is painted a distinctive colour; and
 - (ii) an anti-static staple.
- (2) An employer or contractor shall ensure that safety fuse assemblies are not:
 - (a) cut to shorten their designed delay time; or
 - (b) used in confined areas such as chutes, ore passes or drawpoints.

More than one shot fired

11-52 If more than one shot is to be fired:

- (a) the blaster shall use igniter cord to ignite the safety fuse; and
- (b) the employer or contractor shall ensure that a second worker accompanies the blaster if a means other than a remote ignition method is being used to fire the shots.

Firing of charged holes

11-53(1) An employer or contractor shall ensure that:

- (a) each hole charged with explosive is fired in its planned sequence; and
 - (b) if the firing of one hole charged with explosive could affect another hole charged with explosive, all of the charged holes are fired in one operation.
- (2) If there are holes charged with explosive at the end of a shift, the employer or contractor shall ensure that:
- (a) the area in which the holes are located is effectively marked and barricaded to prevent unauthorized entry; and
 - (b) the direct supervisor records the status of the holes remaining to be fired in the shift record.

Precautions re blasting in stages

11-54 If blasting is to take place in stages in a drift or a raise, a blaster shall allow sufficient time for the following to occur before blasting another part of the round:

- (a) the drift or raise must be clear of fumes; and
- (b) the rock must cool to a point where there is no danger of premature detonation by heated ground.

Returning to scene of blast

11-55(1) If a blast is initiated with a safety fuse assembly, the blaster shall ensure that no person returns to the scene of the blast until 30 minutes have elapsed after detonation.

- (2) If there is reason to believe that there has been a mishole in a blasting operation, or the blaster is unable to count the shots, the blaster shall ensure that no person returns to the scene of the blast until 60 minutes have elapsed after the lighting of the fuse or the closing of the blasting circuit.
- (3) If reblasting occurs, the blaster shall ensure that no person returns to the scene of the blast until 30 minutes have elapsed after the reblast.

- (4) If a blast is initiated with electric delay action detonators and 2 or more shots were fired, the blaster shall ensure that no person returns to the scene of the blast until 10 minutes have elapsed after the blast.

Repair of faulty circuit

11-56 In the case of a blast initiated by electrical detonators, if no shot is heard and a faulty circuit is indicated, the employer or contractor shall ensure that the circuit is only repaired after the blaster has ensured that:

- (a) the blasting machine is disconnected from the power source;
- (b) the blasting switch is locked in the open position; and
- (c) the lead wires are short-circuited.

Ventilation after blasting underground

11-57(1) An employer or contractor shall ensure that:

- (a) blasting operations underground are scheduled so that the exposure of workers to dust, fumes and smoke is kept as low as possible; and
 - (b) subject to subsection (2), adequate ventilation is provided to remove any harmful gas or fumes before a worker returns to a worksite underground after a blasting operation.
- (2) Unless the conditions after a blasting operation can be predicted with reasonable accuracy, an employer or contractor shall examine the worksite with an approved testing device to ensure that the worksite is safe for workers to re-enter.

Initiation by electrical means required

11-58 An employer or contractor shall ensure that blasting is initiated only by electrical means in the following cases:

- (a) if a shaft is being sunk;
- (b) if a raise is being driven;
- (c) if the area to be blasted is unusually wet;
- (d) in chutes, ore passes or drawpoints and other confined spaces where escape by a worker is not readily available.

Blasting machines

11-59(1) In the case of a blast initiated by electrical means, the employer or contractor shall ensure that only an approved blasting machine is used.

- (2) An employer or contractor shall ensure that a blasting machine is:
- (a) stored in a location that is suitable to protect the machine from damage; and
 - (b) maintained regularly to ensure the proper functioning of the machine.

Initiating blasting from power distribution system

11-60(1) If the source of energy for initiating a blast is an electrical power distribution system, the employer or contractor shall ensure that:

- (a) the blasting circuit has an isolating transformer; and
- (b) the firing device opens the circuit by gravity.

(2) The employer or contractor shall ensure that an electrical power distribution system blasting switch:

- (a) has the live side located in a fixed, locked box;
- (b) is accessible only to the blaster and a worker authorized to conduct maintenance on the blasting device; and
- (c) has a lightning gap that:
 - (i) is at least 1.5 metres between the blasting switch and the service switch; and
 - (ii) is only closed by a twist plug and cable assembly immediately before firing.

Blasting multiple areas with single electrical source

11-61 If blasting is to be initiated simultaneously in more than one area of a mine by a single source of electricity, the employer or contractor shall ensure that:

- (a) all workers are checked out of the affected areas before blasting;
- (b) the initiation of the blast is under the direct supervision of a direct supervisor; and
- (c) each branch circuit is isolated by a locking switch that automatically short circuits the branch circuit.

Blaster's duties – underground blasting with electricity

11-62 If blasting underground is initiated by electrical means, the blaster shall ensure that:

- (a) the lead wires of the electrical detonators are short-circuited at all times, except when the charges are to be fired;
- (b) each firing cable and the lead wires of an electrical detonator are suspended individually and not allowed to make contact with any metallic object or power cable;
- (c) the bare wire connector of the firing cable or of the lead wires of an electrical detonator does not touch any part of the worksite;
- (d) the connected lead wire of an electrical detonator or a firing cable does not make contact with any electrical source or any material that conducts electricity;
- (e) firing cables are clearly distinguishable from other wires;
- (f) firing cables are used for blasting purposes only;
- (g) the connecting ends of all lead wires, firing cables and electric detonators:
 - (i) are short-circuited until the final connection is made between the firing location and the blasting site;
 - (ii) remain short-circuited until all workers, other than the blaster, are removed to a place of safety;

- (iii) are connected and the short circuits removed sequentially starting from the blasting face to the firing location; and
- (iv) following a blast, are short-circuited sequentially starting from the firing location to the blasting face;
- (h) firing cables used to initiate a blast at one worksite are not used to initiate a blast at another worksite until all proper precautions are taken to ensure that no firing cable has any connection with the lead wires from the first worksite;
- (i) the electrical circuit is tested with an approved circuit-testing device and found to be satisfactory before the shot is fired;
- (j) no worker is required or permitted to enter a place where a charge has been fired until:
 - (i) the firing cables are disconnected from the blasting machine and are short-circuited; or
 - (ii) in the case of a blasting operation using a power distribution system, the branch circuit is locked in the open position and the firing cables are short-circuited; and
- (k) no electrical detonator is stored or placed within 8 metres of an energized electrical conductor, except a firing cable being used in a blasting operation, unless precautions are taken to prevent premature initiation.

Blaster's duties – surface blasting with electricity

11-63 If blasting at the surface is initiated by electrical means, the blaster shall ensure that:

- (a) the lead wires of electrical detonators are short-circuited at all times, except when the charges are to be fired;
- (b) firing cables are used for blasting purposes only;
- (c) the electrical circuit is tested with an approved circuit-testing device and found to be satisfactory before a shot is fired; and
- (d) the short circuit in the firing cable is replaced immediately after the firing cables are disconnected from the blasting machine.

Vehicles near charged holes

11-64(1) An employer or contractor shall ensure that no vehicle or part of a vehicle, except a vehicle that is used to transport explosives, and no machine or equipment or part of a machine or equipment is operated within 8 metres of the collar of a hole that is charged with explosive or that is being charged with explosive.

(2) An employer or contractor shall ensure that an area where a hole is charged with explosive or is being charged with explosive is clearly marked to warn persons that entry is prohibited to unauthorized vehicles.

Protection against lightning

11-65(1) An employer or contractor shall ensure that adequate precautions are taken to prevent any premature discharge of explosive due to lightning.

(2) If explosives are being fired at an open pit mine or during a shaft-sinking operation at an underground mine, the employer or contractor shall warn the blaster as soon as possible of the approach of an electrical storm.

(3) If explosives are being fired at an open pit mine or during a shaft-sinking operation at an underground mine and an electrical storm is approaching, the employer or contractor shall ensure that:

- (a) all lead wires are short-circuited;
- (b) all charging operations are stopped; and
- (c) all workers:
 - (i) are withdrawn from any area where:
 - (A) charges have been loaded or connected; or
 - (B) there are supplies of explosives; and
 - (ii) remain at a safe distance until the danger from the electrical storm has passed.

(4) If an electrical storm is approaching, the employer or contractor shall ensure that:

- (a) any magazine located on the surface is closed; and
- (b) all workers:
 - (i) are withdrawn from the area around the magazine; and
 - (ii) remain at a safe distance until the danger from the electrical storm has passed.

Protection against radio-frequency hazards

11-66(1) If a radio-frequency transmitter is located within the general vicinity of a mine, the employer or contractor shall ensure that no worker is required or permitted to use electrical detonators within the appropriate minimum distance set out in Tables 1 to 8 of the Institute of Makers of Explosives, Safety Library Publication No. 20, *Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Commercial Electrical Detonators (Blasting Caps)*, December 2011, Washington, D.C.

(2) An employer or contractor shall ensure that warning signs are posted as necessary requiring all mobile radio-frequency transmitters to be turned off while the transmitters are within 30 metres of an electrical blasting area that is located on the surface.

Blasting at adjacent mines

11-67 If blasting is to be carried out at 2 or more adjacent open pit mines or 2 or more underground mines that have connected workings, the employer or contractor shall establish a mutually acceptable blasting time and procedure that will protect the health and safety of the workers at all of the mines.

Use of explosives re thermal conditions

11-68 An employer or contractor shall ensure that:

- (a) explosives are used according to the thermal conditions recommended by the manufacturer; and
- (b) no explosive is used to blast rock or other material if there is a risk of premature detonation of the explosive by reason of the temperature of the rock or other material.

Cartridges

11-69(1) An employer or contractor shall ensure that no explosive is removed from the original wrapping of a cartridge.

- (2) No worker shall remove any explosive from the original wrapping of a cartridge.

Defective explosives, detonators

11-70(1) An employer or contractor shall give notice to the chief mines inspector as soon as is reasonably possible if a defective explosive or detonator is discovered.

- (2) The notice required by subsection (1) must include the name and address of the manufacturer of the explosive or detonator and the details of the discovery.

(3) An employer or contractor shall ensure that any explosive or detonator that has become defective as a result of the passage of time or the method of storage:

- (a) is not used; and
- (b) is removed and disposed of in a safe manner in accordance with:
 - (i) the manufacturer's recommendations; and
 - (ii) the provisions of the federal regulations dealing with disposal and destruction.

(4) An employer or contractor shall ensure any records required pursuant to subclause (3)(b)(ii) are retained at the mine for review by the chief mines inspector.

(5) If an employer or contractor wishes to dispose of a significant amount of explosives, other than by detonation or returning the explosives to the supplier, the employer or contractor shall first obtain the written approval of the chief mines inspector of the disposal procedure to be used.

Security and reporting to authorities

11-71(1) An employer or contractor shall ensure that:

- (a) no person tampers with or makes an unauthorized removal of any explosives, detonators or detonating cord, or ammonium nitrate (AN) or ANFO, including emulsion blends from a mine;
- (b) a security plan, key control plan and an emergency response plan are established and implemented for each magazine, day box and storage area for longhole blasting operations on the mine site; and

- (c) the security plan mentioned in clause (b) contains:
 - (i) an assessment of security risks resulting from the presence of explosives, blasting caps, detonators and detonating cord or ammonium nitrate (AN) or ANFO, including emulsion blends on the mine site; and
 - (ii) the reasonably practicable measures that will be taken to minimize security risks including:
 - (A) the procedures to follow to respond to security risks; and
 - (B) the procedures to follow to report security incidents or any theft of, attempted theft of, tampering with or loss of any explosives, detonators or detonating cord or ammonium nitrate (AN) or ANFO, including emulsion blends that is not attributable to normal operations, to local police or the Royal Canadian Mounted Police.
- (2) The emergency response plan mentioned in clause (1)(b) must include a spill contingency plan for incidents involving a spill of explosives.
- (3) The spill contingency plan mentioned in subsection (2) must contain:
 - (a) the procedures to follow to respond to a spill of explosives that has occurred above ground or underground and that requires a clean-up;
 - (b) the reasonably practicable measures that will be taken to:
 - (i) protect health and safety;
 - (ii) contain the spill and carry out the clean-up; and
 - (iii) document and record the details of the spill in a log; and
 - (c) the log required pursuant to subclause (b)(iii) must include the following information and be made available for inspection and review by the chief mines inspector:
 - (i) the amount and type of explosives spilled;
 - (ii) the manufacturer of the explosives spilled;
 - (iii) the persons involved in the spill;
 - (iv) the name, telephone number and email address of a person to be contacted for additional information;
 - (v) the actions taken to clean up the spill; and
 - (vi) the safety and emergency measures used.
- (4) An employer or contractor shall develop a training plan for all workers and supervisors on the key control plan, fire plan, emergency response plan or security plan.

PART 12
Lung-function Tests

Lung-function tests required for workers in a dust exposure occupation

12-1(1) In this section, “**dust exposure occupation**” means regular employment:

- (a) underground; or
 - (b) in any part of a mine where ore or waste material is crushed, ground or screened by a process other than by a wet process.
- (2) If a worker is regularly employed in a dust exposure occupation, an employer shall:
- (a) arrange for the worker to have lung-function tests during the worker’s normal working hours:
 - (i) every 24 months, if the worker works in a potash mine; and
 - (ii) every 12 months, if the worker works in any other type of mine; and
 - (b) reimburse the worker for any part of the cost of the lung-function tests that the worker cannot otherwise recover.
- (3) Lung-function tests arranged pursuant to subsection (2) must include the following tests:
- (a) forced vital capacity;
 - (b) forced expiratory volume at 1 second.
- (4) If a worker cannot attend the lung-function tests during the worker’s normal working hours, an employer shall credit the worker’s attendance at the tests outside normal working hours as time at work and ensure that the worker does not lose any pay or other benefits.
- (5) A worker who attends lung-function tests pursuant to this section is not precluded from requesting a medical examination pursuant to section 345 or 358 of the OHS regulations.

PART 13
Lighting in Mines

Lighting re underground at a mine

13-1 At an underground mine, an employer, contractor or owner shall provide suitable and adequate stationary lights that are located:

- (a) in every underground shaft station that is in regular use;
- (b) in every underground permanent workshop and garage that is in regular use;
- (c) in every underground hoist room;

- (d) in every underground permanent electrical substation;
- (e) in every underground permanent fixed refuge station;
- (f) in every underground fuel station that is in regular use; and
- (g) at any other place underground where lighting is necessary because of the nature of the work being done or the equipment being used.

Emergency lighting underground at a mine

13-2 If a failure of the regular lighting system would be likely to create conditions dangerous to the health or safety of workers underground, an employer or contractor shall provide suitable and adequate emergency lighting for the worksite.

Open flame prohibited

13-3 An employer or contractor shall ensure that no open flame is used for illumination underground.

Cap lamps

13-4(1) If a worker goes underground, the employer or contractor shall:

- (a) provide the worker with a suitable and adequate cap lamp; and
- (b) ensure that the worker keeps the cap lamp in his or her close personal possession at all times while working underground.

(2) An employer or contractor shall ensure that a cap lamp used by a worker underground is capable of providing adequate illumination for the duration of that worker's shift.

Auxiliary lighting

13-5 If a worker must assess ground conditions underground at a distance greater than the effective range of the worker's cap lamp, the employer or contractor shall provide auxiliary lighting suitable and adequate for the worker to safely carry out the assessment.

Lighting re open pit mine

13-6 If operations are conducted at an open pit mine during darkness, an employer or contractor shall provide suitable and adequate lights that are located:

- (a) at every place at the mine where vehicles regularly dump material over the edge of an embankment that is more than 3 metres high; and
- (b) at any other place at the mine where lighting is necessary because of the nature of the work being done or the equipment being used.

PART 14

Air Quality and Ventilation Underground at a Mine

Air quality underground

14-1(1) An employer or contractor shall develop and implement a written program to monitor the quality and quantity of the air in all parts of an underground mine except in those areas barricaded or fenced off.

- (2) The air quality program mentioned in subsection (1) must:
 - (a) be developed in consultation with the committee; and
 - (b) contain a description of:
 - (i) the locations to be monitored;
 - (ii) the frequency at which the locations are to be monitored; and
 - (iii) the type of equipment to be used and how the equipment is to be calibrated.
- (3) An employer or contractor shall ensure that:
 - (a) a competent person is responsible for measuring the air quality at the mine;
 - (b) the person mentioned in clause (a) records the result of each measurement; and
 - (c) the records of the air quality program are readily available to workers.

Airborne contaminants

14-2(1) In this section, “**uncombined silica**” means silica that is not combined chemically with any other element or compound.

- (2) An employer or contractor shall take all reasonably practicable steps to minimize the dissemination of dust into any active mining area underground at a mine.
- (3) Except as otherwise provided in these regulations, to the extent that is reasonably practicable, an employer or contractor shall ensure that in any underground part of a mine where workers work or pass:
 - (a) the concentration of airborne carbon monoxide does not exceed 25 parts per million at any time;
 - (b) the concentration of airborne carbon dioxide does not exceed 5 000 parts per million at any time;
 - (c) the concentration of airborne nitrogen dioxide does not exceed 2 parts per million at any time;
 - (d) the oxygen content is not less than 19.5% and not more than 23%, by volume at any time;
 - (e) the concentration of airborne contaminants meets the requirements of section 307 of the OHS regulations;
 - (f) a worker’s personal exposure to Diesel Particulate Matter in an underground mine does not exceed an 8-hour time-weighted average shift airborne concentration of 160 micrograms of total carbon (TC) per cubic metre of air ($\mu\text{g}/\text{m}^3$) or equivalent value to 160 $\mu\text{g}/\text{m}^3$ determined by and based on an approved methodology for judging exposure.

(4) If hard rock mining is carried out underground in strata containing uncombined silica in a crystalline form, an employer or contractor shall:

- (a) so far as is reasonably practicable, minimize the dissemination of dust into the general mine air during the construction, use and maintenance of every ore pass;
- (b) provide an effective means to spray water within a suitable distance of the working face of every drift or raise to suppress any dust;
- (c) ensure that the spray mentioned in clause (b) is used for a minimum of 15 minutes after any blasting operation is complete; and
- (d) provide every drill with a water jet, spray or other suitable attachment to prevent dust from escaping and ensure that the attachment is used at all times during a drilling operation.

(5) If mining is carried out in mines not included in subsection (4) and strata containing uncombined silica in a crystalline form are encountered, an employer or contractor shall:

- (a) meet the applicable requirements of the OHS regulations; and
- (b) notify the chief mines inspector.

Flammable gas underground

14-3(1) A worker who detects or suspects flammable gas underground shall:

- (a) cease any work or activity that may ignite the gas; and
- (b) immediately notify the employer or contractor.

(2) If flammable gas is detected in a dangerous concentration underground, an employer or contractor shall:

- (a) take immediate steps to protect the health and safety of any worker who may be at risk;
- (b) designate the area as a fire hazard in accordance with section 17-3;
- (c) identify the source of the gas; and
- (d) control the hazard.

General requirement for underground ventilation

14-4(1) Sections 65 to 67 of the OHS regulations do not apply underground.

(2) Subject to subsection (3), an employer, contractor or owner shall, in every underground mine:

- (a) ensure adequate ventilation;
- (b) provide a mechanical ventilation system that is suitable and adequate to protect workers against inhalation of a contaminant of a kind and quantity that is likely to be hazardous to workers;

- (c) ensure that the mechanical ventilation system required by clause (b) is maintained and properly used; and
 - (d) if reasonably practicable, ensure that the mechanical ventilation system required by clause (b) is equipped with a device that will provide an audible or visual warning if the system is not working effectively.
- (3) Any area in an underground mine that is barricaded or fenced off is not required to be ventilated.

Failure of mechanical ventilation

14-5(1) In this section, “**stop**”, with respect to a mechanical ventilation system, does not include a stop that is caused by a brief interruption of the power supply.

(2) Subject to subsection (3), if the mechanical ventilation system underground at a mine fails or stops, the employer or contractor shall ensure:

- (a) that all persons are withdrawn from the affected area; and
 - (b) that no worker enters the affected area until:
 - (i) the mechanical ventilation system has been restored;
 - (ii) the affected area has been inspected by a competent person authorized by the employer or contractor; and
 - (iii) the employer or contractor determines that the affected area is safe and that work may proceed.
- (3) If a mechanical ventilation system underground fails or stops or if its effect is reduced to the extent that worker health or safety may be affected, and if the employer or contractor determines that no immediate danger exists, work may continue if the employer or contractor ensures that:
- (a) any activity that produces harmful contaminants underground is curtailed; and
 - (b) the quality of the air is monitored to ensure worker health and safety.

Maintenance on mechanical ventilation system

14-6 An employer or contractor shall ensure that adequate provision is made to provide suitable and adequate protection to workers conducting maintenance on a mechanical ventilation system underground while the mechanical ventilation system is stopped for maintenance.

Ventilation near workings

14-7 An employer or contractor shall ensure that:

- (a) each underground working face is adequately ventilated;
- (b) if ventilation to an underground working face is provided by an auxiliary fan and ducts, the end of the duct is within 38 metres of the working face;
- (c) suitable air is directed over workers and equipment towards the working face and then removed directly to a local return air way.

Non-ventilated areas

14-8(1) An employer or contractor shall ensure that every entrance to a non-ventilated area is barricaded and a sign posted that:

- (a) is placed in a conspicuous location;
- (b) is legible;
- (c) prohibits unauthorized entry; and
- (d) if possible, identifies any specific hazard.

(2) An employer or contractor shall not permit a worker to enter or work in a non-ventilated area unless the employer or contractor has ensured that the non-ventilated area has been inspected and tested by a competent person who determines that:

- (a) the air quality meets the standards described in subsection 14-2(3); and
- (b) there is no other hazard.

PART 15
Haulage

DIVISION 1
Equipment

Definitions for Part

15-1 In this Part, “**gross vehicle weight**” means:

- (a) the combined weight of a vehicle and the load carried on that vehicle; or
- (b) the combined weight of 2 or more vehicles coupled or joined together and the combined weight of the loads carried on each of those vehicles.

Vehicles used on a grade or ramp

15-2 If a vehicle is operated on a grade or ramp underground, an employer or contractor shall ensure that the vehicle is designed, constructed and maintained for that use.

Lights

15-3(1) Subject to subsections (2) and (3), an employer, contractor or supplier shall ensure that every vehicle, other than a locomotive, is equipped with the following:

- (a) lights that:
 - (i) provide illumination in the direction of travel; and
 - (ii) if reasonably practicable, show the width of the vehicle or unit of powered mobile equipment;
- (b) subject to subsection (2), red rear lights.

(2) Rear lights are not required to be red if the vehicle is designed for bi-directional use.

(3) An employer, contractor or supplier shall ensure that every train that operates underground is equipped with a suitable and adequate headlight and red tail light.

Windshields

15-4 If a vehicle is used on the surface and is equipped with a cab that has a windshield or windows, an employer or contractor shall ensure that the windshield or windows are:

- (a) constructed of transparent, shatter-proof safety glass or equivalent material;
- (b) free from scratches or cracks that would impair the operator's vision; and
- (c) equipped with:
 - (i) a suitable defrosting device; and
 - (ii) suitable windshield washers and wipers.

Air conditioning

15-5 An employer or contractor shall ensure that the cab of a vehicle is equipped with an air conditioning system if:

- (a) the vehicle is used in an open pit mine and has a gross vehicle weight in excess of 50 000 kilograms; or
- (b) the chief mines inspector determines that the operator of the vehicle is regularly exposed to heat stress or dust that may affect the worker's health or safety.

Communication system

15-6 An employer or contractor shall ensure that all vehicles that are used in an open pit mine are equipped with a two-way communication system.

Non-application of section 160 of OHS regulations

15-7 Section 160 of the OHS regulations does not apply to vehicles that are designed for bi-directional use.

Auxiliary steering on vehicles over 4 000 kilograms

15-8(1) Subject to subsection (2), an employer, contractor or supplier shall ensure that every vehicle is equipped with an auxiliary device that will enable an operator to steer the vehicle long enough to bring it to a safe stop if:

- (a) the vehicle has a gross vehicle weight in excess of 4 000 kilograms;
- (b) the steering mechanism in the vehicle depends on power; and
- (c) the loss of power to the steering mechanism might prevent the vehicle from being steered manually.

(2) Subsection (1) does not apply to vehicles that have a maximum operating speed of 20 kilometres per hour or less.

(3) If a rubber-tired vehicle uses an auxiliary hydraulic pump to provide emergency steering and is put into service on or after July 16, 2003, an employer, contractor or supplier shall ensure that the hydraulic fluid supplied to the pump is taken from a separate reservoir or from an isolated section of the main reservoir.

(4) An employer or contractor shall ensure that, on new vehicles purchased on or after July 16, 2003, the auxiliary device required by subsection (1):

- (a) activates automatically if an automatic engine shutdown occurs; and
- (b) activates an audible and visual warning device that warns the operator of impending engine shutdown.

(5) An employer or contractor shall ensure that every new rubber-tired vehicle purchased on or after July 16, 2003 is equipped with an engine shutdown override system that allows the operator to temporarily prevent engine shutdown while stopping the vehicle.

Wheel chocks

15-9(1) In this section, “**wheel chock**” means an external device, usually of triangular configuration, that prevents a rubber-tired wheel from rolling if the device is positioned in contact with the wheel when the wheel is at a standstill.

(2) An employer or contractor shall ensure that wheel chocks provided on a rubber-tired vehicle in accordance with this section are capable of holding the vehicle if they are placed beneath the wheels bearing the heaviest portion of the load.

(3) If a rubber-tired vehicle will be regularly operated on a slope greater than 5%, an employer or contractor shall ensure that:

- (a) if the vehicle has a gross vehicle weight under 4 000 kilograms, the vehicle is equipped with at least 1 wheel chock; and
- (b) if the vehicle has a gross vehicle weight equal to or in excess of 4 000 kilograms, the vehicle is equipped with at least 2 wheel chocks.

(4) If a rubber-tired vehicle is left unattended on a slope that is greater than 5%, an employer or contractor shall ensure that the operator:

- (a) parks the vehicle against the wall or berm with the wheels turned to the wall or berm and applies the parking brake;
- (b) if the vehicle is equipped with 1 wheel chock, places the wheel chock snugly and squarely against the centre of the tread of one of the tires bearing the heaviest portion of the load; and
- (c) if the vehicle is equipped with 2 or more wheel chocks, places the wheel chocks snugly and squarely against the centre of the tread of the tires bearing the heaviest portion of the load.

Roll-over protection structures

15-10(1) If a unit of powered mobile equipment is used underground and the chief mines inspector determines that there is a risk that the unit of powered mobile equipment may roll over, an employer, contractor or supplier shall ensure that the unit of powered mobile equipment is equipped with a roll-over protective structure that meets the requirements of subsections 161(2), (3) and (5) of the OHS regulations.

(2) If a unit of powered mobile equipment is equipped with a roll-over protective structure, an employer, contractor or supplier shall ensure that the unit of powered mobile equipment is also equipped with:

- (a) seat-belts for the operator and for any other worker who is required or permitted to be in or on the unit of powered mobile equipment while the unit of powered mobile equipment is in motion; or
- (b) if the work process renders the wearing of seat-belts impracticable, shoulder belts, bars, gates, screens or other restraining devices designed to prevent the operator and any other worker from being thrown outside the roll-over protective structure.

Protection from falling objects

15-11(1) If an operator of a vehicle, or any other worker who is required or permitted to be in or on a vehicle, is at danger of being struck by a falling object or projectile, an employer or contractor shall ensure that, if reasonably practicable, the vehicle is equipped with a suitable and adequate cab, canopy, screen or guard.

(2) The cab, canopy, screen or guard mentioned in subsection (1) must be:

- (a) designed by a professional engineer to withstand the force to which it may be exposed; and
- (b) installed according to the instructions of a professional engineer.

Brakes and controls – locomotive

15-12(1) An employer, contractor or supplier shall ensure that every locomotive is equipped with:

- (a) suitable and adequate service brakes;
- (b) a suitable and adequate parking brake; and
- (c) a control lever that is installed to prevent the inadvertent detachment of the control lever from the locomotive.

(2) An employer, contractor or supplier shall ensure that every storage battery and trolley locomotive is equipped with:

- (a) a control lever that is installed to prevent the inadvertent detachment of the control lever from the locomotive if the power is on; and
- (b) a control switch that is designed to return to a neutral position if the switch is released.

Brakes – vehicles

15-13(1) In this section:

“secondary braking system” means a braking system that:

- (a) is capable of stopping a rubber-tired vehicle in the event of any single failure in the service braking system; and
- (b) may have 1 or more components in common with the service braking system;

“service braking system” means a primary braking system, of any type, that is used for stopping and holding a vehicle.

(2) An employer, contractor or supplier shall ensure that every vehicle is equipped with:

- (a) a service braking system that is capable of safely stopping and holding a fully loaded vehicle on all expected operating grades;
- (b) an effective independently activated parking brake that is capable of holding a fully loaded vehicle on all expected operating grades; and
- (c) if the vehicle is purchased on or after July 16, 2003 and has a rated speed in excess of 32 kilometres per hour, a secondary braking system that is capable of safely stopping and holding the fully loaded vehicle on all expected operating grades.

(3) If a new rubber-tired vehicle is purchased for use underground on or after July 16, 2003, the employer, contractor or supplier shall ensure that the vehicle is equipped with a braking system that:

- (a) meets the requirements of Canadian Standards Association standard CAN/CSA-M424.3-M90, *Braking Performance – Rubber-Tired, Self-Propelled Underground Mining Machines* or another approved standard; or
- (b) is approved.

(4) If the gross vehicle weight of a rubber-tired vehicle used to transport ore or waste at an open pit mine exceeds 25 000 kilograms and is equipped with air or air-over hydraulic brakes, an employer, contractor or supplier shall ensure that the vehicle is also equipped with:

- (a) in addition to the normal operating air supply, an adequate source of emergency energy capable of applying the service brakes to safely stop and hold a fully loaded vehicle on all expected operating grades; and
- (b) an alarm that will warn the operator if the available air pressure drops to the lowest safe operating pressure.

(5) If the gross vehicle weight of a rubber-tired vehicle used to transport ore or waste at an open pit mine exceeds 25 000 kilograms and the vehicle is equipped with hydraulically operated brakes, an employer, contractor or supplier shall ensure that the vehicle is also equipped with:

- (a) a brake hydraulic system that is divided into 2 or more separate and independently operated circuits, each of which is capable of safely stopping and holding the fully loaded vehicle on all expected operating grades; and
- (b) an alarm that will warn the operator of a failure in the brake hydraulic circuit.

Brakes – mobile conveyor underground

15-14(1) An employer or contractor shall develop and implement a written procedure for the safe traversing of mobile conveyors over inclines and declines underground.

(2) Within 1 year after the coming into force of this section, an employer or contractor shall ensure that a mobile conveyor is equipped with a braking system that is capable of:

- (a) securely stopping and holding the belt of the conveyor in place; and
- (b) securely stopping and holding the conveyor in place.

Brakes – testing

15-15(1) An employer or contractor shall develop and implement a written program to test the brakes on all vehicles that are equipped with a braking system.

(2) Subject to subsection (3), the brake testing program mentioned in subsection (1) must describe the tests to be used:

- (a) before putting a vehicle into service at a mine;
- (b) when testing the braking systems of each vehicle at the beginning of each shift; and
- (c) following a major repair to the braking systems of any vehicle.

(3) If a rubber-tired vehicle used to transport material on the surface has a gross vehicle weight in excess of 25 000 kilograms and a rated speed in excess of 32 kilometres per hour, an employer or contractor shall ensure that the service brakes are tested annually in accordance with Table 2.

(4) An employer or contractor shall ensure that:

- (a) the results of the tests required pursuant to clauses (2)(a) and (c) and subsection (3) are recorded in the vehicle maintenance records mentioned in section 15-18; and
- (b) the results of the tests required pursuant to clause (2)(b) are recorded in the vehicle equipment record mentioned in section 15-18.

DIVISION 2 Vehicle Operation

Operation of vehicles

15-16(1) An employer or contractor shall ensure that only competent workers are required or permitted to operate a vehicle.

(2) An employer or contractor shall ensure that the operator of a vehicle:

- (a) does not exceed a speed that is reasonable and safe; and
- (b) operates the vehicle in a safe manner.

(3) A worker shall ensure that he or she:

- (a) does not exceed a speed that is reasonable and safe; and
- (b) operates the vehicle in a safe manner.

Operation of locomotive underground

15-17(1) An employer or contractor shall ensure that the operator of a locomotive underground:

- (a) does not operate the locomotive unless the operator is properly stationed at the controls; and
 - (b) does not leave the controls unattended unless:
 - (i) the control lever has been placed in the park position;
 - (ii) the parking brakes have been set; and
 - (iii) in the case of a storage battery locomotive, the main switch has been placed in a non-operating position.
- (2) An employer or contractor shall ensure that:
- (a) every locomotive underground is equipped with an audible warning alarm; and
 - (b) the operator of the locomotive activates the alarm:
 - (i) before the locomotive moves; and
 - (ii) when approaching:
 - (A) a manway;
 - (B) a place where workers are working; and
 - (C) any other place designated by the employer or contractor.

Vehicle records

15-18 An employer or contractor shall maintain for each vehicle:

- (a) a vehicle equipment record; and
- (b) a vehicle maintenance record.

Pre-operation inspections

15-19 An employer or contractor shall ensure that:

- (a) the details of each pre-operation inspection conducted in accordance with these regulations are recorded in the vehicle equipment and maintenance records by the person who performed the inspection; and
- (b) each record mentioned in section 15-18 is kept readily available to the operator of the vehicle or, if reasonably practicable, with the vehicle.

Vehicle maintenance

15-20 An employer or contractor shall ensure that:

- (a) all vehicles are maintained and repaired by a competent person; and
- (b) the competent person records the details of the maintenance and repairs conducted in the vehicle maintenance record pursuant to section 15-18.

Pneumatic tires mounted on split-rim assembly

15-21 In addition to the requirements of section 128 of the OHS regulations, an employer or contractor shall ensure that:

- (a) only a competent worker is required or permitted to work on a pneumatic tire mounted on a split-rim assembly; and
- (b) before removing a vehicle wheel on which a pneumatic tire is mounted on a split-rim assembly:
 - (i) the tire is completely deflated; or
 - (ii) a written work procedure is implemented that provides protection to the worker equivalent to that provided by the procedure mentioned in subclause (i).

Maintenance of rail tracks

15-22 An employer or contractor shall ensure that every rail track used is maintained in safe working condition.

Maintenance of travelway

15-23 An employer or contractor shall ensure that every travelway is:

- (a) maintained in a safe condition; and
- (b) free from any obstruction that may interfere with safe travel.

Restricted visibility vehicle

15-24(1) In this section, “**restricted visibility vehicle**” means a vehicle that restricts the view of the operator because of its design or size.

(2) If a restricted visibility vehicle is used in an open pit mine, an employer or contractor shall ensure that no other vehicle approaches the restricted visibility vehicle unless that other vehicle is equipped with an effective means to indicate its presence to the operator of the restricted visibility vehicle.

Remote-controlled vehicles

15-25(1) In this section:

“**control unit**” means a unit that transmits the operator’s instructions to the remote-controlled vehicle;

“**operator**” means a person who operates a remote-controlled vehicle;

“**remote-control system**” means a system that allows an operator to control a remote-controlled vehicle from a distance using electrical impulses or radio signals;

“**remote-controlled vehicle**” means a vehicle that is operated by a remote-control system.

(2) If a remote-controlled vehicle is used, an employer or contractor shall develop and implement a written plan for the operation of remote-controlled vehicles.

- (3) The plan mentioned in subsection (2) must:
- (a) be developed in consultation with the committee; and
 - (b) address the safe installation, operation and maintenance of remote-controlled vehicles, including the following:
 - (i) the location of the operator;
 - (ii) the training of workers to be operators;
 - (iii) the location and arrangement of controls and safeguards;
 - (iv) the design and arrangement of transmitters and receivers to prevent inadvertent activation;
 - (v) the procedure to change an identification code and radio frequency for transmitters and receivers;
 - (vi) the testing, inspection and maintenance procedures, including the frequency of the testing, inspection and maintenance;
 - (vii) the extrication of a remote-controlled vehicle from a hazardous location.
- (4) An employer or contractor shall ensure that:
- (a) the operator of a remote-controlled vehicle is in a safe location at all times while the control unit of the vehicle is energized;
 - (b) the control unit for a remote-controlled vehicle is de-energized if the control unit is not in use;
 - (c) a control unit operates only 1 vehicle;
 - (d) the remote-controlled vehicle is designed so that it will not be activated by any radio signal other than the signal from that vehicle's control unit;
 - (e) no remote-controlled vehicle accidentally starts by remote control;
 - (f) a remote-controlled vehicle only moves by remote control if direct pressure is applied to the controls on the control unit for that remote-controlled vehicle;
 - (g) the remote-controlled vehicle is equipped with a selector switch that enables the operator to operate the vehicle either manually or by remote control;
 - (h) the control unit is equipped with a device that warns the operator if the control unit is energized; and
 - (i) the control unit for each remote-controlled vehicle:
 - (i) is equipped with:
 - (A) controls that are the same as, or similar to, the manual controls on the remote-controlled vehicle; and

(B) both:

(I) a machine stop that is capable of immobilizing equipment in the event an operator loses control of the control unit; and

(II) a tilt switch or other safety device or technology that deactivates the controls on the remote-controlled vehicle and applies the brakes if a worker loses control of the control unit; and

(ii) is designed to ensure that:

(A) the control unit will not activate detonators; and

(B) only an authorized person can change the identification code or radio frequency of the control unit or the receiver on the vehicle.

Traffic control plan

15-26(1) If a worker is in danger from vehicular traffic, an employer or contractor shall develop and implement a written traffic control plan to protect the worker from traffic hazards.

(2) The traffic control plan mentioned in subsection (1) must:

(a) be developed in consultation with the committee; and

(b) set out, if appropriate:

(i) the maximum allowable speed of any vehicle in use;

(ii) the maximum operating grades;

(iii) the location and type of control signs;

(iv) the route to be taken by vehicles and units of powered mobile equipment;

(v) the priority to be established for classes of vehicles;

(vi) the location and type of barriers, restricted areas or safety stations;

(vii) the procedure to be used in case of an emergency; and

(viii) the duties of workers and the employer or contractor.

(3) An employer or contractor shall ensure that:

(a) workers are trained in the traffic control plan developed pursuant to subsection (1); and

(b) the traffic control plan developed pursuant to subsection (2) is made readily available for reference by workers.

Clearance for underground travel and haulage

15-27(1) If a train is used underground, an employer or contractor shall ensure that:

(a) a clearance of at least 450 millimetres is maintained between:

(i) the sides of the travelway or any obstruction; and

(ii) the locomotive or any car in the train; and

- (b) either:
 - (i) a clearance of at least 600 millimetres is maintained between:
 - (A) one side of the travelway or any obstruction; and
 - (B) the locomotive or any car in the train; or
 - (ii) safety stations are cut every 30 metres in the travelway.
- (2) If workers and vehicles, other than a locomotive, regularly use the travelway located underground, an employer or contractor shall ensure that either:
 - (a) a total clearance of at least 2 metres is maintained between the sides of the travelway and the vehicle; or
 - (b) safety stations are cut every 30 metres in the travelway.
- (3) If a vehicle, other than a locomotive, is used underground, an employer or contractor shall ensure that a total clearance of at least 1.5 metres is maintained between:
 - (a) the sides of the haulage-way or any obstruction; and
 - (b) the vehicle.
- (4) If a worker rides in the cab of a vehicle, an employer or contractor shall ensure that:
 - (a) any travelway constructed before the coming into force of this section, a clearance of at least 300 millimetres is maintained between the roof of the travelway and the top of the cab; and
 - (b) any travelway constructed on or after the coming into force of this section, a clearance of at least 300 millimetres is maintained above the top of the cab.
- (5) If a worker rides in a vehicle not fitted with a cab, an employer or contractor shall ensure that:
 - (a) any travelway constructed before the coming into force of this section, a clearance of at least 1.2 metres is maintained between the roof of the travelway and the seat provided for that worker; and
 - (b) any travelway constructed on or after the coming into force of this section, a clearance of at least 1.2 metres is maintained above the seat provided for that worker.

Safety stations

15-28(1) If a safety station is required pursuant to a provision of these regulations, an employer or contractor shall ensure that the safety station is:

- (a) clearly and conspicuously marked;
- (b) clean and free of obstructions; and
- (c) cut perpendicular to the travelway or as close to perpendicular as is practicable.

(2) An employer or contractor shall ensure that a safety station excavated on or after July 16, 2003:

- (a) is at least 1.2 metres deep;
- (b) is at least 1.5 metres wide; and
- (c) has a height that is at least the greater of:
 - (i) 2 metres; and
 - (ii) the height of the travelway.

(3) If on or after July 16, 2003 a ramp that has a grade that is greater than 5% is constructed underground, an employer, contractor or owner shall ensure that safety stations are cut every 30 metres on the ramp, except where an intersecting excavation provides protection equal to a safety station.

Seat-belts

15-29(1) In this section, “**brakeperson**” means a worker who assists the locomotive operator.

(2) Subject to subsections (3) and (4), an employer or contractor shall ensure that no worker is transported on a vehicle underground unless the worker:

- (a) is provided with a suitable seat;
- (b) is seated; and
- (c) if reasonably practicable, is secured by a seat-belt or other restraining device that is designed to prevent the worker from being thrown from the vehicle while it is in motion.

(3) If it is not reasonably practicable for a worker to be secured in a vehicle underground by a seat-belt or other restraining device, an employer or contractor shall ensure that other suitable precautions are taken to minimize the risk to the worker of being thrown from the vehicle.

(4) A brakeperson who is riding on the back of a train is not required to be seated or to be secured by some other restraining device.

(5) If an open vehicle is used to transport a worker, an employer or contractor shall ensure that no part of the worker’s body protrudes beyond the side of the vehicle.

(6) Subject to subsections (3) and (4), an employer or contractor shall ensure that the operator of a vehicle does not put it into motion unless all workers on the vehicle are seated.

(7) Subject to subsections (3) and (4), a worker shall be seated and shall use any seat-belt or other restraining device required in a vehicle pursuant to these regulations or pursuant to any other regulations made pursuant to the Act.

Transportation of workers

15-30(1) An employer or contractor shall ensure that a worker is transported on a train only if a locomotive is at the leading end of the train.

(2) If the working face of a ramp is more than 90 metres below the top of the ramp entrance, an employer or contractor shall provide suitable transportation for any worker who must travel the ramp.

DIVISION 3
Dump and Stockpiles

Definitions for Division

15-31 In this Division:

“dump” means a pile or heap of ore, coal or waste at a mine that:

- (a) exceeds 3 metres in height; and
- (b) is not intended for reclamation;

“dump block” means a safeguard positioned to prevent a vehicle from backing over the edge of a dump when dumping a load;

“stockpile” means a pile or heap of ore, coal or waste at a mine that:

- (a) exceeds 3 metres in height; and
- (b) is intended for reclamation.

Mine dump

15-32(1) An employer or contractor shall develop a written dump plan at least 14 days before commencing construction of the dump, roads and ramps that are part of the dumping operation.

(2) The dump plan mentioned in subsection (1) must:

- (a) be developed in consultation with the committee;
- (b) be submitted to the chief mines inspector; and
- (c) describe:
 - (i) the proposed location of the dump, roads and ramps;
 - (ii) the grades of each road and ramp;
 - (iii) the location of dump berms and dump blocks;
 - (iv) the location of restricted areas; and
 - (v) the safety procedures to be implemented, including signaling procedures.

(3) An employer or contractor shall ensure that a dump plan developed pursuant to subsection (1) is made readily available to workers at the mine.

(4) An employer or contractor shall ensure that a dump is designed by a professional engineer if at least one of the following circumstances exists:

- (a) the dump plan contemplates a total dump volume in excess of 1 million cubic metres;
- (b) the dump plan contemplates a dump height in excess of 50 metres;
- (c) the dump plan contemplates a dump area in excess of 5 hectares;
- (d) the dump is to be located on a natural or trimmed slope that is steeper than 20° from the horizontal plane;

- (e) the dump plan contemplates that waste material will be dumped or placed in a watercourse having a potential peak flow that is greater than 1 cubic metre per second, once in every 200 years;
- (f) the proposed dump location may pose a hazard to a building, road, power transmission line, pipeline or major watercourse.

Dumping procedures

15-33(1) An employer or contractor shall ensure that any dump located at a mine is:

- (a) constructed in accordance with a dump plan developed pursuant to section 15-32;
- (b) maintained in a stable and safe condition; and
- (c) capable of supporting any vehicle intended for use on the dump.

(2) If a bank is more than 3 metres high, an employer or contractor shall ensure that no material is dumped over the edge of the bank or within 3 metres of the crest of the dump berm unless:

- (a) in the case of a truck, there is:
 - (i) a dump block sufficient to prevent the truck from going over the dump edge;
 - (ii) a dump berm and a competent dump signaller to direct the truck operator; or
 - (iii) a dump berm that is continually maintained; and
- (b) in the case of a rubber-tired front-end loader, there is:
 - (i) a dump berm; or
 - (ii) a dump block.

(3) If a dump berm or dump block is installed at a dump, an employer or contractor shall ensure that:

- (a) the height of the berm or block is the lesser of:
 - (i) 75% of the height of the largest tire found on any vehicle used for dumping; or
 - (ii) the maximum height over which a truck is capable of dumping; or
- (b) the block is:
 - (i) designed by a professional engineer; and
 - (ii) securely anchored.

Stockpiles

15-34(1) If material is to be stored in a stockpile, an employer or contractor, in consultation with the committee, shall:

- (a) develop a work plan for the operation of the stockpile to ensure the health and safety of workers who work on or near the stockpile;

- (b) make a copy of the work plan readily available to workers at the stockpile; and
 - (c) ensure that all workers and self-employed persons comply with the work plan.
- (2) A work plan for the operation of a stockpile must be in writing and must include provisions for:
- (a) supervision of the operation;
 - (b) training of workers;
 - (c) any necessary limits on the use of equipment on or near the stockpile;
 - (d) control of:
 - (i) the formation of dangerous slopes; and
 - (ii) the undermining of the stockpile; and
 - (e) control of drawpoints and dumping operations.

DIVISION 4 **Conveyors**

General requirements for conveyors

- 15-35(1)** An employer or contractor shall ensure that no worker:
- (a) rides on a conveyor belt; or
 - (b) except as provided in subsection (2), crosses a belt conveyor that has not been locked out.
- (2) A worker may cross a belt conveyor on a walkway that:
- (a) has guardrails; and
 - (b) is:
 - (i) at least 600 millimetres wide if the walkway was installed before July 1, 1997; or
 - (ii) at least 900 millimetres wide if the walkway was installed on or after July 1, 1997.
- (3) If a worker may be at risk from being caught in a pinch point at the head, tail, drive or tension pulleys of a belt conveyor, an employer or contractor shall ensure that:
- (a) the pinch point is protected by an effective safeguard; and
 - (b) the safeguard extends at least 1 metre beyond the pinch point.

(4) An employer or contractor shall ensure that a belt conveyor is equipped with a belt-slip detection device designed to stop the drive motor in the case of belt blockage or belt slippage if the belt conveyor is:

- (a) used underground; or
- (b) installed in a building and is more than 15 metres long.

(5) If an elevated conveyor crosses over a place where a worker may pass or work, an employer or contractor shall ensure that suitable precautions are taken to prevent materials on the conveyor from falling on the worker.

Start-up warning device required

15-36(1) An employer or contractor shall ensure that a belt conveyor is equipped with an effective start-up warning device:

- (a) if a conveyor is started by remote control; or
 - (b) if any portion of the conveyor is not visible to the worker starting the conveyor.
- (2) The start-up warning device mentioned in subsection (1) must:
- (a) subject to clause 15-38(2)(b), be located at suitable intervals along a conveyor; and
 - (b) have a mechanism that provides a 10-second delay between the sounding of the warning and the start-up of the conveyor.

Pull cords

15-37 Subject to section 15-38, an employer or contractor shall ensure that:

- (a) the belt conveyor is equipped with controls that must be reset manually after an emergency stop and before the conveyor can be restarted;
- (b) every accessible section of the belt conveyor is equipped with a pull cord or other device approved by the chief mines inspector that is capable of stopping the conveyor in the case of an emergency; and
- (c) the pull cord mentioned in clause (b):
 - (i) reaches from the head pulley to the tail pulley; and
 - (ii) is located to maximize its effective use.

Temporary extensible belt conveyor

15-38(1) If a temporary extensible belt conveyor is used underground, an employer or contractor shall ensure that:

- (a) the conveyor is equipped with pull cords or emergency stop controls that are located at the drive unit, the delivery end and, if reasonably practicable, the return end;
- (b) the pull cord or emergency stop controls mentioned in clause (a) are located to maximize their effective use;

- (c) subject to subsection (2), no worker works on a section of the conveyor that is not protected by pull cords or emergency stop controls unless that worker has stopped and locked out the conveyor;
 - (d) at each entrance to a room where the conveyor is located, notices are posted that:
 - (i) are conspicuous and legible; and
 - (ii) inform workers of the requirements of clause (c); and
 - (e) a start-up warning device that meets the requirements of clause 15-36(2)(b) is located at the drive unit, the delivery end and, if reasonably practicable, at the return end.
- (2) If aligning the belt of a temporary extensible belt conveyor requires the belt to be in motion, an employer or contractor shall:
- (a) develop a procedure in consultation with the committee designed to keep workers out of direct contact with any moving part of the belt conveyor while the workers are aligning the belt, and ensure that workers are trained in the procedure; or
 - (b) ensure that the belt conveyor is equipped with an alternative approved device that is capable of stopping the belt conveyor in the case of an emergency.

Conveyor belts used underground at a mine

15-39(1) An employer or contractor shall ensure that a conveyor belt that is installed underground:

- (a) meets the Canadian Standards Association standard CAN/CSA-M422-M87, *Fire-Performance and Antistatic Requirements for Conveyor Belting*, types A1 or C;
 - (b) is fire-resistant belting that is accepted by the US Mines Safety and Health Association pursuant to the *Code of Federal Regulations*, Title 30, Part 18; or
 - (c) meets another approved standard.
- (2) An employer or contractor shall ensure that a suitable and adequate automatic fire suppression system that meets the requirements of section 17-8 is installed at the conveyor drive pulley if either of the following types of belting is used on a conveyor underground:
- (a) type C belting as described in the standard mentioned in clause (1)(a);
 - (b) belting that meets the requirements of clause (1)(b).

PART 16
Use of Diesel Engines Underground

DIVISION 1
General

Diesel engine

16-1(1) An employer or contractor shall ensure that no internal combustion engine, other than a diesel engine, is used underground.

(2) An employer or contractor shall ensure that non-rail-bound diesel-powered vehicles purchased on or after July 16, 2003 and intended for use underground:

- (a) meet Canadian Standards Association standard CAN/CSA-M424.2-M90, *Non-Rail-Bound Diesel-Powered Machines for Use in Non-Gassy Underground Mines*, excluding the requirements in sections 4.5, 5.3 and 5.4 of that standard; or
- (b) are approved.

Form A to be completed

16-2(1) An employer or contractor shall ensure that Form A is completed for each diesel engine to be used underground.

(2) The form mentioned in subsection (1) must be:

- (a) completed before the diesel engine is put to use underground; and
- (b) retained until the diesel engine is no longer in use underground.

Fuel

16-3(1) An employer or contractor shall ensure that any diesel fuel used underground has:

- (a) a flash point that is greater than 52°C; and
- (b) a sulphur content that comprises less than 0.05% of the weight of the diesel fuel.

(2) An employer or contractor shall ensure that no volatile fuel, including gasoline, is used in the starting mechanism of a diesel engine.

Fuel transfer

16-4 An approved portable container may be used to fuel a diesel engine underground only if the employer or contractor ensures that:

- (a) the amount of fuel transferred from the fuel station to the engine is less than 50 litres; and
- (b) the container is returned to the fuel station as soon as is reasonably practicable, but in any event, not later than the end of the shift during which the container was used.

Engine to be shut off

16-5(1) An employer or contractor shall ensure that all diesel engines underground are shut off in each of the following circumstances:

- (a) when the diesel engine is being fuelled; and
- (b) when a diesel-powered vehicle or piece of equipment has not been used for more than 10 minutes.

(2) An employer or contractor shall ensure that no diesel-powered vehicle or piece of equipment is left unattended with the engine running.

Diesel engine inspection and maintenance

16-6 An employer or contractor shall:

- (a) develop and implement a written maintenance program for diesel engines used underground that is designed to minimize exhaust emissions by keeping the diesel engines operating at peak performance;
- (b) ensure that all diesel engines are inspected and maintained by a qualified person for defects and unsafe conditions as often as is necessary to ensure that:
 - (i) the diesel engines are in good operating condition; and
 - (ii) the diesel engine emissions do not exceed the emission limits set out in the maintenance program developed pursuant to clause (a); and
- (c) ensure that a record of any inspection or maintenance activity carried out pursuant to clause (a) or (b) is recorded:
 - (i) in the case of a vehicle, in the vehicle maintenance record mentioned in section 15-18; and
 - (ii) in all other cases, in a maintenance record.

DIVISION 2**Diesel Engine Emissions****General duty – emissions**

16-7 An employer, contractor or owner shall ensure that diesel engine emissions underground are kept as low as is reasonably achievable.

Adequate airflow required

16-8(1) In this section:

“adequate airflow” means:

- (a) in the case of 1 diesel engine operating underground in a single ventilation circuit:
 - (i) the airflow recommended by CANMET for a particular diesel engine model; or
 - (ii) a minimum of 3.8 cubic metres per minute for each rated kilowatt of that diesel engine; and
- (b) in the case of more than 1 diesel engine operating underground in a single ventilation circuit, the sum of the airflows set out in clause (a) for each engine;

“CANMET” means the Canada Centre for Mineral and Energy Technology Branch of the Department of Natural Resources of the Government of Canada.

(2) An employer or contractor shall ensure that no diesel engine is used underground that does not have adequate airflow.

(3) If the adequate airflow in any ventilation circuit underground is interrupted for any reason, an employer or contractor shall ensure that the operator of each diesel engine stops operating the engine as soon as is reasonably possible in that part of the mine.

Contamination limits re diesel engine emissions

16-9 An employer or contractor shall ensure that no diesel engine is used underground if the carbon monoxide in the undiluted exhaust emissions of a diesel engine exceeds 1 500 parts per million of air, measured before the exhaust passes through the exhaust gas scrubber required by section 16-10.

Exhaust gas scrubber

16-10(1) Subject to subsection (3), an employer or contractor shall ensure that every diesel engine used underground is equipped with an exhaust gas scrubber.

(2) If reasonably practicable, the exhaust gas scrubber mentioned in subsection (1) must reduce carbon monoxide emissions by at least 90%.

(3) An exhaust gas scrubber is not required on a diesel engine that the employer or contractor has reasonably determined is designed to produce the same reduction in emissions without a scrubber as a diesel engine that is equipped with a scrubber.

(4) At a minimum, the undiluted exhaust emissions of each diesel engine operating without an exhaust gas scrubber pursuant to subsection (3) must meet the emissions limits established for diesel engines operating with an exhaust gas scrubber pursuant to subsection (2).

Testing exhaust emissions

16-11(1) If diesel-powered equipment operates underground, an employer or contractor shall develop and implement a written testing program that tests the following:

- (a) at suitable locations representative to the exposure of workers:
 - (i) the airflow around the diesel-powered equipment where a worker is usually present to ensure that the airflow is adequate pursuant to section 16-8;
 - (ii) the airborne exhaust emissions to ensure that the contamination limits for nitrogen dioxide, carbon dioxide, and carbon monoxide do not exceed the limits set out in clauses 14-2(3)(a) to (c) in any place where a worker is usually present; and
 - (iii) the oxygen content to ensure that it meets the requirements set out in clause 14-2(3)(d);
 - (b) the undiluted exhaust emissions of each diesel engine before the exhaust gases pass through an exhaust gas scrubber to ensure that the contamination limit set out in section 16-9 is not exceeded.
- (2) The testing program mentioned in the subsection (1) must be developed in consultation with and approved by a qualified hygienist and must:
- (a) identify the method to be used to conduct the tests;
 - (b) identify the procedures to be used to determine when exhaust emissions are most likely to be the highest for the test mentioned in clauses (1)(a) and (b) and ensure that tests are done weekly;

- (c) ensure that the test mentioned in clause (1)(b) is performed in accordance with section 16-6; and
 - (d) address the type of testing equipment to be used and how that equipment should be calibrated to ensure accuracy.
- (3) An employer or contractor shall:
- (a) ensure that testing equipment is appropriately and properly calibrated;
 - (b) ensure that a competent person is responsible for conducting the tests required by subsection (1); and
 - (c) ensure that the person mentioned in clause (b):
 - (i) records the results of any test done pursuant to subclauses (1)(a)(i) to (iii); and
 - (ii) records the results of any test done pursuant to clause (1)(b) in a maintenance record; and
 - (d) ensure that the committee is provided with a copy of the results recorded pursuant to clause (c).

Testing – Mine Workers

16-12(1) For the purposes of clause 14-2(3)(f), if a diesel engine operates underground and there is a risk to workers from exposure to airborne diesel particulate matter, an employer or contractor shall develop and implement a written testing program to test the exposure levels of workers to the airborne diesel particulate matter underground.

- (2) The testing program mentioned in subsection (1) must:
- (a) be developed in consultation with and approved by a qualified hygienist;
 - (b) identify the method that will be used to conduct the tests;
 - (c) ensure that the testing is representative of worker exposure to airborne diesel particulate matter; and
 - (d) address the type of testing equipment to be used and how that equipment should be calibrated to ensure accuracy.
- (3) An employer or contractor shall:
- (a) ensure that the testing equipment is appropriate and properly calibrated;
 - (b) ensure that a competent person is responsible for conducting the tests required by this section;
 - (c) ensure that the person mentioned in clause (b) records the results of any tests done;
 - (d) provide the committee with a copy of the results recorded pursuant to clause (c); and
 - (e) submit a copy of the results recorded pursuant to clause (c) to the chief mines inspector.

PART 17
Fire Prevention and Control

DIVISION 1
General

Definitions for Part

17-1 In this Part:

“combustion products” means products produced as a result of a fire and includes smoke, ash and gases;

“hot work” means work that produces arcs, sparks, flames, heat or other sources of ignition.

Fire prevention and control

17-2 An employer or contractor shall:

- (a) take all reasonably practicable steps to prevent the outbreak of fire on the surface and underground;
- (b) provide effective means to:
 - (i) control a fire; and
 - (ii) protect workers from any fire that may occur; and
- (c) develop a written fire control and emergency response plan in accordance with section 19-4.

Fire hazard area

17-3(1) If a risk of fire exists in any area of a mine as a result of smoking or the use of any open flame equipment, match or other means of producing heat or fire, an employer or contractor shall designate the area as a fire hazard area.

(2) If an area has been designated as a fire hazard area pursuant to subsection (1), an employer or contractor shall ensure that legible fire hazard warning signs are posted and maintained in conspicuous locations around the perimeter of the area.

Fire prohibited underground

17-4(1) Subject to subsection (3), an employer or contractor shall ensure that:

- (a) no person smokes or uses any open flame equipment, match or other means of producing heat or fire in any area designated as a fire hazard area pursuant to section 17-3; and
- (b) no fire is set underground.

(2) Subject to subsection (3), no worker shall:

- (a) smoke or use any open flame equipment, match or other means of producing heat or fire in any area designated as a fire hazard area pursuant to section 17-3; or
- (b) set any fire underground.

(3) This section does not apply to controlled open flame equipment that is used in accordance with section 17-21.

Precautions in or near building

17-5(1) In this section, “**non-combustible construction**” means the type of construction by which a degree of fire safety is attained through the use of non-combustible materials for structural members and other building assemblies.

(2) On and after July 16, 2003, an employer, contractor or owner shall ensure that no building is constructed within 15 metres of a shaft house, portal house or any closed-in portion of a headframe, unless the building:

- (a) is of non-combustible construction;
- (b) has a fire wall with a 2-hour fire resistance rating that separates the building from the shaft house, portal house and headframe; and
- (c) is not used for the storage of flammable or combustible material.

(3) If a hoist is located above a mine shaft, an employer, contractor or owner shall ensure that the supporting and enclosing structure of the hoist is of non-combustible construction.

(4) If an adit is covered by a building or near a fire hazard, an employer or contractor shall ensure that a suitable fire door is installed in the adit in accordance with section 17-9 to prevent the flow of any combustion products into the adit.

Firefighting equipment

17-6(1) An employer or contractor shall ensure that there are suitable and adequate portable fire extinguishers and other suitable and adequate firefighting equipment:

- (a) in the case of an open pit mine:
 - (i) on each vehicle;
 - (ii) on every dredge;
 - (iii) at every belt conveyor drive unit; and
 - (iv) at any location where a fire may create a hazard to a worker; and
- (b) in the case of an underground mine:
 - (i) at each headframe or other entrance to an underground mine;
 - (ii) in each hoist room;
 - (iii) at any surface location where a fire may create a hazard to a worker;
 - (iv) on each vehicle and at each stationary diesel engine;
 - (v) at every underground crusher station, electrical installation, pump station, shaft station, belt conveyor drive unit, service garage, fuel station, explosive storage area, flammable liquid storage area and hot work area; and
 - (vi) at any other area that is designated as a fire hazard area pursuant to section 17-3.

(2) An employer or contractor shall ensure that the firefighting equipment required pursuant to subsection (1) is:

- (a) conspicuously marked; and
- (b) located so that, in the event of a fire, it will be accessible.

Maintenance and inspection of firefighting equipment

17-7(1) In this section, “**equipment**” means the firefighting equipment required pursuant to section 17-6.

(2) An employer or contractor shall ensure:

- (a) that a competent person:
 - (i) maintains the equipment;
 - (ii) conducts monthly inspections of the equipment; and
 - (iii) prepares a written report containing the details of each monthly inspection conducted pursuant to subclause (ii); and
- (b) that the inspection report mentioned in subclause (a)(iii) is:
 - (i) recorded by the competent person mentioned in clause (a) and countersigned or verified electronically by the employer or contractor; and
 - (ii) located at the place of employment and made readily available to workers.

Fire suppression system

17-8(1) A fire suppression system required pursuant to this section must:

- (a) include a sprinkler system, a dry chemical system, or any other system capable of suppressing the expected type and size of fire;
- (b) be equipped with:
 - (i) a hose or pipe that is secured and protected against damage, abrasion and corrosion to distribute water, dry chemical or any other fire suppressing substance;
 - (ii) discharge nozzle blow-off caps or any other device capable of preventing moisture, dirt or other material from entering the hose or pipe; and
 - (iii) a manual activation device that is capable of being activated from each side of the equipment and from the operator’s position; and
- (c) in the case of the fixed equipment mentioned in clause (3)(a) that operates unattended and vehicles mentioned in clause (3)(b) that operate by remote control, be equipped with:
 - (i) an automatic activation device; and
 - (ii) an automatic engine shut-down system.

(2) An employer, contractor or supplier shall ensure that, if reasonably practicable, any vehicle purchased on or after July 16, 2003 that is used underground and that contains more than 250 litres of diesel fuel, grease or oil is equipped with:

- (a) a fire suppression system that meets the requirements of subsection (1); and
- (b) if reasonably practicable:
 - (i) an automatic engine shut-down system; and
 - (ii) an automatic hydraulic pressure relief system.

(3) On and after July 1, 2004, an employer or contractor shall provide a fire suppression system that meets the requirements of subsection (1):

- (a) if reasonably practicable, on each piece of fixed equipment underground that contains more than 175 litres of diesel fuel, grease or oil other than:
 - (i) a belt conveyor using a belt to which subsection 15-39(1) applies; and
 - (ii) a feeder;
- (b) on each vehicle underground that is operated by remote control; and
- (c) in every high fire-risk area in a building or structure, excluding fan houses and the area over a hoist motor, that is located:
 - (i) on the surface of an underground mine; and
 - (ii) above or adjacent to an opening to an underground mine.

(4) An employer or contractor of an open pit mine shall ensure that each haul truck, hydraulic power shovel or loader that has an engine producing 190 kilowatts or more and that is purchased on or after July 16, 2003 is equipped with:

- (a) a fire suppression system that meets the requirements of subsection (1); and
- (b) if reasonably practicable:
 - (i) an automatic engine shut-down system; and
 - (ii) an automatic hydraulic pressure relief system.

Fire door

17-9(1) In this section, “**fire door**” includes the frame surrounding the door.

(2) If reasonably practicable, an employer or contractor shall ensure that:

- (a) a sufficient number of fire doors are installed underground to close off fuel stations; and
- (b) a fire risk mitigation strategy approved by a professional engineer and the committee is designed and implemented:
 - (i) for service garages constructed on or after July 16, 2003;
 - (ii) to isolate intake and exhaust shafts from each other; and
 - (iii) in the case of multi-level mines, to isolate the workings from the shaft.

(3) An employer or contractor shall ensure that a fire door required pursuant to subsection (2) is:

- (a) constructed of steel or of a material that has a 2-hour fire resistance rating;
- (b) constructed and maintained to reduce leakage of air to a minimum;
- (c) equipped with:
 - (i) if reasonably practicable, a seal that has at least a 2-hour fire resistance rating; and
 - (ii) an emergency exit for workers if the fire door cannot be easily opened by a worker;
- (d) capable of being opened from both sides;
- (e) installed so that the door will not open inadvertently if the airflow in the mine is reversed; and
- (f) kept clear of all obstructions.

Fire-proof structures required underground

17-10 Except in the case of portable mine refuge units, an employer or contractor shall ensure that every underground building or enclosure constructed on or after July 16, 2003 is:

- (a) constructed of material with at least a 1-hour fire resistance rating; and
- (b) located and maintained to reduce any fire hazard to a minimum.

DIVISION 2

Location, Storage and Transportation of Ignitable Substances

Fuel station

17-11(1) An employer or contractor shall designate every fuel station underground as a fire hazard area.

(2) If a fuel station is required pursuant to subsection 17-17(2), an employer or contractor shall ensure that the fuel station is:

- (a) located:
 - (i) in an area that has adequate ground support for a permanent installation;
 - (ii) with regard to the ventilation system so that a minimum number of workers would be affected by smoke and gases from a fire in the fuel station; and
 - (iii) separate from a service garage;
- (b) designed and located to prevent the inadvertent entry of an uncontrolled vehicle;

- (c) if vehicles are to be fuelled inside the fuel station, equipped with a self-closing door to close off the fuel station that meets the requirements of subsection 17-9(3);
 - (d) equipped with firefighting equipment and a fire suppression system that:
 - (i) can be activated from:
 - (A) several locations inside the fuel station; or
 - (B) each entrance to the fuel station;
 - (ii) is equipped with an alarm that sounds at a surface location that is staffed at all times during working hours; and
 - (iii) if discharge of the fire suppression system will put a worker who is in the fuel station at risk, is equipped with an alarm that sounds inside the fuel station at least 10 seconds before the discharge from the fire suppression system;
 - (e) equipped with a ventilation system that is:
 - (i) capable of keeping airborne contaminants at or below the levels set out in section 14-2; and
 - (ii) interlocked with the fire suppression system to stop ventilation in the event of fire;
 - (f) equipped with a bright light above every emergency exit; and
 - (g) equipped with a fuel container that is equipped with an approved hose and an approved nozzle with a fill valve that automatically shuts off if:
 - (i) released by the operator; and
 - (ii) the tank is full.
- (3) An employer or contractor shall ensure that no fuel station is used as a travelway or for the storage of any materials other than diesel fuel, grease or oil.
- (4) A fuel station constructed on or after July 16, 2003 must be:
- (a) totally enclosed;
 - (b) designed to prohibit the fuelling of any vehicle not fully contained in the fuel station; and
 - (c) equipped with a lined containment area that is capable of holding a spill of 110% of the capacity of the largest storage tank in the fuel station.

Inspection and maintenance of fuel station

17-12 An employer or contractor shall:

- (a) ensure that every fuel station is maintained in a condition of efficient and safe functioning by a system of regular examination, testing, servicing and repair;

- (b) ensure that a competent person is responsible for inspecting each underground fuel station weekly; and
- (c) ensure that the results of each inspection conducted pursuant to clause (b) are recorded.

Location of steam boilers and diesel engines

17-13(1) An employer, contractor or owner shall ensure that a steam boiler or diesel engine installed on or after July 16, 2003 is installed more than 30 metres from the centre line of the collar of any shaft or any other entrance to a mine.

(2) An employer, contractor or owner shall ensure that a steam boiler or diesel engine installed before July 16, 2003 is located at least 22 metres from the centre line of the collar of any shaft or any other entrance to the mine.

Internal combustion engine

17-14(1) An employer or contractor shall ensure that no internal combustion engine that uses gasoline or any other highly volatile liquid or flammable gas is installed, serviced or stored:

- (a) underground;
 - (b) within 15 metres of the building housing the hoist; or
 - (c) within 30 metres of the centre line of the collar of any shaft or any other entrance to a mine.
- (2) If an internal combustion engine that uses gasoline or any other highly volatile liquid or flammable gas is installed in a building at any mine, an employer, contractor or owner shall ensure that:
- (a) the engine exhaust gases are exhausted clear of the building; and
 - (b) if reasonably practicable, exhaust gases are prevented from re-entering the building or entering the intake of any air compressor or contaminating the atmosphere of any adjacent buildings or the workings.

Storage of liquid fuel

17-15(1) With the exception of fuel in the tanks of operating equipment, an employer or contractor shall ensure that no liquid or gaseous fuel is stored within 30 metres of the centre line of the collar of any shaft or any other entrance to a mine.

(2) An employer, contractor or owner shall ensure that the natural drainage from a fuel storage area is away from the collar of any shaft or any other entrance to a mine.

Storage of ignitable substances – general

17-16(1) In this section and in section 17-17, “**ignitable substance**” means combustible liquids, flammable liquids, diesel fuel, grease, oil and hydraulic fluids.

(2) An employer or contractor shall ensure that the quantity of ignitable substances stored in a headframe, shaft house or portal house is minimized in accordance with the storage program mentioned in subsection (3).

(3) An employer or contractor shall develop and implement a written storage program to address the storage of ignitable substances in the headframe.

- (4) The storage program mentioned in subsection (3) must:
- (a) describe the type and amount of ignitable substances permitted to be stored in a headframe, shaft house or portal house; and
 - (b) describe the conditions under which the ignitable substances will be stored.

Storage of ignitable substances – underground

17-17(1) If an ignitable substance is stored underground, an employer or contractor shall ensure that:

- (a) the ignitable substance is stored in an approved container; and
 - (b) the approved container is:
 - (i) conspicuously and clearly labelled; and
 - (ii) located, guarded and handled to protect it from damage.
- (2) Subject to subsection (6), if the quantity of ignitable substances to be stored underground exceeds 1 000 litres, an employer or contractor shall ensure that the ignitable substances are stored at a fuel station that meets the requirements set out in section 17-11.
- (3) Subject to subsection (6), an employer or contractor shall obtain a permit from the chief mines inspector if the quantity of ignitable substances to be stored underground exceeds the amount required for 24 hours of operation.
- (4) For the purposes of subsection (3), an employer or contractor shall ensure that:
- (a) any permit obtained is conspicuously posted in the storage area; and
 - (b) the maximum quantity of ignitable substances stored underground does not exceed the amount authorized by the permit.
- (5) An employer or contractor shall take adequate precautions to ensure that:
- (a) any spillage underground of ignitable substances is reduced to a minimum;
 - (b) any spillage underground of ignitable substances is contained in a safe manner; and
 - (c) any spillage underground of ignitable substances that may be hazardous is absorbed by non-flammable material that is then removed from the mine in a fire-proof receptacle within 24 hours after the spill.
- (6) Nothing in this section prohibits an employer or contractor from storing supplies of oil and grease underground in a shop for the maintenance of vehicles and equipment.

Transfer of liquid fuel – surface

17-18(1) If an internal combustion engine fuel tank that uses gasoline or any other highly volatile liquid or flammable gas is installed in a building located on the surface, and if liquid fuel is transferred into that fuel tank, an employer or contractor shall ensure that:

- (a) the transfer of fuel occurs from outside of the building;

- (b) the fuel is transferred in a tightly jointed pipe;
 - (c) any air displaced from the fuel tank during the fuelling process is exhausted clear of the building; and
 - (d) the fuel tank is equipped with a reliable means of preventing the tank from being overfilled.
- (2) An employer or contractor shall ensure that liquid fuel is not transferred from one container to another by the direct application of air under pressure.

Transportation and transfer of liquid fuel – underground

17-19(1) If diesel fuel is transported underground in a mobile container, an employer or contractor shall ensure that:

- (a) the container is conspicuously and clearly labelled “Diesel Fuel”; and
 - (b) the container, if purchased on or after July 16, 2003:
 - (i) is an approved container or is constructed in accordance with a design prepared by a professional engineer; and
 - (ii) is equipped with vents that are designed to be spill-proof or that are kept closed at all times while the container is being transported.
- (2) An employer or contractor shall ensure that diesel fuel is not transferred from one container to another by the direct application of air under pressure.
- (3) An employer or contractor shall ensure that diesel fuel is not transferred from the surface to underground through a piping system unless the piping system is approved.

Fuelling of vehicles underground

17-20(1) Subject to subsection (2), an employer or contractor shall ensure that vehicles underground are fuelled at a fuel station that meets the requirements set out in section 17-11.

- (2) If it is not reasonably practicable to fuel a vehicle at a fuel station that meets the requirements set out in section 17-11, an employer or contractor may permit a vehicle to be fuelled underground by a fuel truck in accordance with subsection (3).
- (3) An employer or contractor shall ensure that a fuel truck that is used to fuel other vehicles underground in accordance with subsection (2) is:

- (a) equipped with:
 - (i) a fuel container that is:
 - (A) approved or constructed in accordance with a design prepared by a professional engineer; and
 - (B) equipped with an approved hose and an approved nozzle with a fill valve that automatically shuts off if:
 - (I) released by the operator; or
 - (II) the tank is full;

- (ii) a relay that is installed to isolate the battery from the circuit if the ignition is turned off; and
- (iii) an automatic fire suppression system that is:
 - (A) designed, installed and maintained to provide suitable and adequate fire protection; and
 - (B) equipped with a manual activation device that is capable of being activated from each side of the fuel truck and the fuel truck operator's position;
- (b) not used to transport more than 1 200 litres of fuel, unless otherwise approved;
- (c) if reasonably practicable, not left running while being used to fuel other vehicles;
- (d) if reasonably practicable, only used to fuel other vehicles if the fuel truck is located in an exhaust airway; and
- (e) if not in use, kept in an area designated by the employer or contractor.

DIVISION 3 Hot Work

Hot work and use of compressed gas

17-21(1) In this section, “**hot work equipment**” means equipment that produces arcs, sparks, flames, heat or other sources of ignition, and includes welding equipment, cutting equipment and brazing equipment.

- (2) An employer or contractor shall ensure that:
 - (a) all acetylene and liquified gas containers are used and stored in an upright position; and
 - (b) all compressed gas cylinders are stored in a safe place and are suitably and adequately secured.
- (3) If cylinders of compressed gas are being transported underground, an employer or contractor shall ensure that:
 - (a) the cylinder valves are protected from damage; and
 - (b) all fittings, including regulators and manifolds, are disconnected from the cylinders, unless:
 - (i) the cylinders are secured in an upright position; and
 - (ii) the fittings are protected by a suitable and adequate cage or safeguard.
- (4) An employer or contractor shall ensure that no device or equipment that produces gas, other than a cylinder of compressed gas, is used to fuel hot work equipment underground.

(5) Subject to subsection 363(1) of the OHS regulations, if hot work is performed an employer or contractor shall ensure that:

- (a) outside a designated shop or garage:
 - (i) if reasonably practicable, all combustible material within a 3-metre radius of the hot work or on which sparks or hot material may fall is thoroughly wetted with water before the hot work begins and after it is finished; and
 - (ii) the area is regularly checked for 2 hours after the completion of the hot work;
- (b) adequate firefighting equipment is readily available at all times while the hot work is being done and during the fire watch mentioned in clause (a);
- (c) hot work is not conducted within 15-metres of any place where explosives are being stored or transported; and
- (d) any area in which hot work takes place is suitably and adequately ventilated.

(6) If a cylinder of compressed gas is operated from a location underground or in a conveyance that is not readily accessible to the worker who is operating the hot work equipment, an employer or contractor shall ensure that:

- (a) another competent worker is present at all times and ready to operate the cylinder control devices; and
- (b) there is a suitable and adequate means of communication between the worker operating the hot work equipment and the worker operating the cylinder control device.

(7) If a cylinder of compressed gas is used to supply hot work equipment, an employer or contractor shall ensure that the cylinder is located, guarded and handled during use so that the cylinder and its fittings are protected from damage.

DIVISION 4

Disposal

Refuse disposal

17-22(1) An employer or contractor shall ensure that combustible refuse:

- (a) does not accumulate:
 - (i) in a headframe, hoist room, portal house or any other building on the surface; or
 - (ii) in a hoist room or shaft station underground;
- (b) is not disposed of or permitted to decay underground; and
- (c) if it accumulates underground, is removed to the surface at least once a week.

- (2) An employer or contractor shall ensure that:
- (a) suitable covered metal containers are:
 - (i) provided for the temporary disposal of combustible refuse;
 - (ii) placed at suitable locations, including:
 - (A) at shaft stations, shops, and lunch rooms;
 - (B) at enclosures housing machinery, equipment or stores; and
 - (iii) emptied regularly; and
 - (b) the contents of the metal containers mentioned in clause (a) are disposed of in a safe and suitable manner.

Timber disposal re underground mine

17-23 An employer or contractor shall ensure that:

- (a) all timber, lumber and pallets underground:
 - (i) are stored:
 - (A) in a safe manner; and
 - (B) in an area designated by the employer or contractor; and
 - (ii) if they are not in use and are not intended for use in current operations, are promptly removed to the surface;
- (b) all scrap wood and wood refuse is removed to the surface within 1 week of its accumulation; and
- (c) if there is a risk of fire in the storage area designated pursuant to paragraph (a)(i)(B), the storage area is designated as a fire hazard area pursuant to section 17-3.

PART 18

Control of Underground Water

Definitions for Part

18-1 In this Part:

“bulkhead” means a structure that is:

- (a) built for the purpose of impounding water, compressed air, hydraulic backfill or any other material in an underground opening if the potential pressure against the structure will be in excess of 100 kilopascals; and
- (b) constructed to completely close off the underground opening mentioned in clause (a);

“dam” means a structure that is:

- (a) built for the purpose of impounding 25 cubic metres or more of water or slimes in an underground opening; and
- (b) constructed to permit an unobstructed overflow of water or slimes;

“slimes” means a mixture of fine sediment and water.

Dam construction underground

18-2(1) Subject to section 18-5, at least 14 days before commencing construction on a dam, an employer or contractor shall submit the following to the chief mines inspector for approval:

- (a) a plan of the dam designed by a professional engineer;
 - (b) the structural designs and specifications for the dam;
 - (c) the design calculations for the dam;
 - (d) detailed drawings of the dam.
- (2) An employer or contractor shall ensure that every dam is maintained to safely withstand any load expected to be placed on it.
- (3) An employer or contractor shall ensure that any dam that is constructed on or after July 16, 2003 is:
- (a) designed by a professional engineer;
 - (b) designed and constructed to safely withstand any load expected to be placed on it; and
 - (c) constructed:
 - (i) in accordance with the approved plan mentioned in subsection (1);
 - (ii) under the direction of a professional engineer; and
 - (iii) to permit an unobstructed overflow of slimes or water.

Bulkhead construction underground

18-3(1) Subject to section 18-5, at least 14 days before commencing construction on a bulkhead, an employer or contractor shall submit the following to the chief mines inspector for approval:

- (a) a plan of the bulkhead designed by a professional engineer;
 - (b) the structural designs and specifications for the bulkhead;
 - (c) the design calculations for the bulkhead;
 - (d) detailed drawings of the bulkhead.
- (2) An employer or contractor shall ensure that every bulkhead is maintained to safely withstand any load expected to be placed on it.
- (3) An employer or contractor shall ensure that any bulkhead that is constructed on or after July 16, 2003 is:
- (a) designed by a professional engineer;
 - (b) designed and constructed to safely withstand any load expected to be placed on it; and
 - (c) constructed:
 - (i) in accordance with the approved plan mentioned in subsection (1);
 - (ii) under the direction of a professional engineer; and
 - (iii) to completely close off a mine opening.

Dams and bulkheads to be shown on plan

18-4 An employer or contractor shall ensure that every dam and bulkhead is clearly and accurately shown on the plan required pursuant to section 3-1.

Emergency dam or bulkhead construction underground

18-5(1) Notwithstanding sections 18-2 and 18-3, an employer or contractor may construct a dam or bulkhead without obtaining the approval of the chief mines inspector if an emergency situation arises that may jeopardize the health or safety of a worker or the safety of the mine if the dam or bulkhead is not constructed.

(2) If an emergency dam or bulkhead is constructed pursuant to subsection (1), the employer or contractor shall:

- (a) notify the chief mines inspector of the construction as soon as is practicable after construction commences; and
- (b) submit to the chief mines inspector for approval:
 - (i) a plan for the dam or bulkhead designed by a professional engineer;
 - (ii) the structural designs and specifications for the dam or bulkhead;
 - (iii) the design calculations for the dam or bulkhead; and
 - (iv) detailed drawings of the dam or bulkhead.

Underground water drainage

18-6(1) An employer or contractor shall ensure that an underground mine is kept free from water, the accumulation of which might endanger the lives of any worker in the mine or in any adjoining mine, by ensuring that a drainage system is developed and installed to conduct excess water to a pumping system.

(2) The pumping system mentioned in subsection (1) must be capable of pumping the water to the surface for disposal.

Placement of backfill, water or slimes

18-7 An employer or contractor shall ensure that any backfill, water or slimes placed in an underground structure are placed in a manner that will not endanger:

- (a) any workers; or
- (b) the structural integrity of the mine.

PART 19**Emergency Response and Mine Rescue re Underground at a Mine****Definitions for Part**

19-1 In this Part:

“mine rescue certificate” means a mine rescue certificate issued pursuant to section 19-13;

“mine rescue instructor” means a person who is the holder of a mine rescue instructor certificate;

“mine rescue instructor certificate” means a mine rescue instructor certificate issued pursuant to section 19-13;

“mine rescue worker” means a person who is the holder of a mine rescue certificate;

“self-rescue apparatus” means a small respiratory protective device that provides the worker with a limited amount of time to escape a hazardous atmosphere.

Application of Part – underground mines

19-2 This Part only applies to underground mines.

General duty re competency of mine rescue workers

19-3 An employer or contractor shall ensure that all mine rescue workers are competent to carry out their duties pursuant to these regulations.

Fire control and emergency response plan

19-4(1) In this section, **“equipment”** includes personal protective equipment.

(2) An employer, contractor or owner shall:

(a) take all reasonably practicable steps to prevent the outbreak of fire underground and to provide effective means to protect workers from any fire that may occur; and

(b) develop and implement a written fire control and emergency response plan that:

(i) provides for the safety of all workers in the event of a fire or other emergency underground; and

(ii) establishes procedures for workers to follow in the event of a fire or other emergency underground.

(3) A plan developed pursuant to subsection (2) must address the following:

(a) the types of emergencies that may reasonably occur;

(b) the minimum number of mine rescue workers that must respond to each incident identified in clause (a), including:

(i) the qualifications and responsibilities of those mine rescue workers; and

(ii) the type of equipment that must be provided to those mine rescue workers;

(c) the procedure to be used to summon the mine rescue team for duty;

(d) the emergency procedures to be used in case of fire or other emergency, including:

(i) a personal accountability system;

(ii) if applicable, the use of an emergency hoist;

(iii) a procedure to be used if the second exit is unavailable;

(iv) evacuating endangered workers to the surface or to a refuge station;

- (v) the safe conclusion of the emergency and removal of workers from refuge; and
- (vi) pursuant to clause 10-89(4)(b), suitable provisions to ensure the conveyance is made available in the event of an emergency;
- (e) the use of self-rescue apparatus;
- (f) an emergency warning system;
- (g) the design and location of all refuge stations;
- (h) the training of supervisors and workers:
 - (i) in the procedures developed pursuant to the plan; and
 - (ii) in the use of equipment necessary to implement the procedures developed pursuant to the plan.

Emergency warning system

19-5(1) An employer or contractor shall ensure that an underground mine is equipped with an effective emergency warning system that:

- (a) warns workers of an emergency underground; and
 - (b) meets the requirements of this section.
- (2) An emergency warning system used for the purposes mentioned in subsection (1) must:
- (a) be fully operational at all times;
 - (b) be maintained by a competent person; and
 - (c) be equipped with a primary and back-up means of activation.
- (3) Before installing or significantly modifying any emergency warning system required pursuant to subsection (1), an employer or contractor shall submit the details of the emergency warning system, or any modification to it, to the chief mines inspector.
- (4) An employer or contractor shall ensure that, if reasonably practicable, high risk areas underground are monitored with a heat sensing device that is linked to:
- (a) an alarm; and
 - (b) if reasonably practicable, a fire suppression system.

Testing of emergency warning system and plan

19-6(1) An employer or contractor shall ensure that:

- (a) at least once during each calendar year, the fire control and emergency response plan is tested by a drill that is initiated by the emergency warning system; and
- (b) at least once during every 2 calendar years, every shift of workers participates in a test of the fire control and emergency response plan by a drill that is initiated by:
 - (i) the emergency warning system required by section 19-5; or
 - (ii) any other effective means.

(2) The person who conducts the tests pursuant to clause (1)(a) shall submit a report to the chief mines inspector that:

- (a) describes the simulated conditions used in the test;
- (b) evaluates the effectiveness of the fire control and emergency response plan or emergency warning system, as the case may be; and
- (c) details the functioning of the emergency warning system.

(3) An employer or contractor shall ensure that any report prepared pursuant to subsection (2) is posted in a conspicuous location on the surface.

Requirements for emergency voice communication system

19-7(1) Except during shaft-sinking operations, an employer or contractor shall ensure that an effective emergency voice communication system is installed and maintained.

(2) The voice communication system must permit voice communication between:

- (a) a location on the surface that will be attended by a worker if any worker is underground;
- (b) the collar;
- (c) the landing stations in use in the shaft;
- (d) each hoist room; and
- (e) each underground refuge station.

Mine rescue station

19-8(1) An employer or contractor shall install, equip, operate and maintain a mine rescue station in accordance with this section at every underground mine.

(2) An employer or contractor shall ensure that a certified mine rescue instructor supervises the maintenance of every mine rescue station and the equipment in the station.

(3) An employer or contractor shall ensure that every mine rescue station is:

- (a) located on the surface within a reasonable distance from a mine opening through which an emergency response operation could be staged; and
- (b) installed in a location where it will not be contaminated by the air exhausted from the workings.

(4) An employer or contractor shall ensure that every mine rescue station is equipped with the following:

- (a) effective means of communication to the underground portions of the mine mentioned in section 19-7;
- (b) effective portable lights;
- (c) adequate first aid equipment and supplies;
- (d) gas detection equipment;

- (e) basic rescue equipment, including an axe, sledge-hammer, claw hammer, pick, shovel, saw and scaling bars;
- (f) an adequate number of approved respiratory protective devices that have a minimum capacity of 4 hours;
- (g) if required for the respiratory protective devices, suitable and adequate testing equipment;
- (h) adequate repair parts for the respiratory protective devices;
- (i) for the respiratory protective devices:
 - (i) an adequate number of replacement cylinders of oxygen; and
 - (ii) an adequate amount of carbon dioxide absorbent;
- (j) emergency lighting;
- (k) a smoke or fire detector that sounds an alarm at a central surface location.

Mine rescue training

- 19-9(1)** An employer or contractor shall appoint a certified mine rescue instructor.
- (2) The certified mine rescue instructor appointed pursuant to subsection (1) shall supervise the training of mine rescue workers.

Qualifications of mine rescue worker

- 19-10(1)** No person shall act as a mine rescue worker, and no employer or contractor shall require or permit a person to act as a mine rescue worker, unless:
- (a) the person is competent to act as a mine rescue worker;
 - (b) the person holds:
 - (i) a valid mine rescue worker certificate issued pursuant to section 19-13; and
 - (ii) a valid class A qualification in first aid that meets the requirements of Part V of the OHS regulations;
 - (c) the person has, within the previous 12-month period, passed a comprehensive medical examination and has been certified by a duly qualified medical practitioner to be free of any medical condition that would prohibit the worker from using a respiratory protective device under arduous work conditions;
 - (d) the person has received approved training; and
 - (e) the person is designated by the person's employer or contractor to act as a mine rescue worker.

- (2) An employer or contractor shall ensure that accurate training records are kept for each mine rescue worker.

Qualifications of mine rescue instructor

- 19-11(1)** No person shall act as a mine rescue instructor, and no employer or contractor shall require or permit a person to act as a mine rescue instructor, unless:
- (a) the person is competent to act as a mine rescue instructor;

- (b) the person holds:
 - (i) a valid mine rescue instructor certificate issued pursuant to section 19-13; and
 - (ii) a valid class A qualification in first aid that meets the requirements of Part V of the OHS regulations;
 - (c) the person has approved training and experience; and
 - (d) the person is designated by the person's employer or contractor to act as a mine rescue instructor.
- (2) An employer or contractor shall ensure that accurate training records are kept for each mine rescue instructor.

Mine rescue examination

- 19-12(1)** A person is eligible to take the mine rescue worker examination if the employer or contractor of that person provides a written notice to the chief mines inspector stating that the person meets the qualifications set out in subclause 19-10(1)(b)(ii) and clauses 19-10(1)(c) and (d).
- (2) A person is eligible to take the mine rescue instructor examination if the employer or contractor of that person provides a written notice to the chief mines inspector stating that the person meets the qualifications set out in subclause 19-11(1)(b)(ii) and clause 19-11(1)(c).
- (3) The chief mines inspector may:
- (a) set a mine rescue worker examination and a mine rescue instructor examination to test the knowledge, with respect to the following subjects, of persons who wish to obtain a mine rescue worker certificate or mine rescue instructor certificate, as the case may be:
 - (i) purpose and objective of a mine rescue;
 - (ii) airborne contamination and mine ventilation;
 - (iii) methods and instruments used to detect dangerous levels of airborne contamination;
 - (iv) safety precautions and equipment;
 - (v) the responsibilities of a mine rescue worker;
 - (vi) emergency procedures;
 - (vii) the use of respiratory protective devices;
 - (viii) fighting fire underground; and
 - (b) in consultation with the mining industry, identify any other area for which testing by the chief mines inspector is deemed necessary.
- (4) A person who fails the mine rescue worker examination or the mine rescue instructor examination is eligible to take the examination 30 days following the previous attempt.

Mine rescue certificates

19-13 The chief mines inspector may issue:

- (a) a mine rescue worker certificate to a person who passes the mine rescue worker examination; and
- (b) a mine rescue instructor certificate to a person who:
 - (i) passes the mine rescue instructor examination; and
 - (ii) in the opinion of the chief mines inspector, demonstrates competence in mine rescue and mine rescue training.

Maintenance of qualification

19-14(1) An employer or contractor shall ensure that no person continues to be designated as a mine rescue worker pursuant to clause 19-10(1)(e) unless that person:

- (a) meets the requirements set out in clauses 19-10(1)(a) to (d); and
- (b) participates in a minimum of 40 hours of mine rescue training in each calendar year.

(2) An employer or contractor shall ensure that no person continues to be designated as a mine rescue instructor pursuant to clause 19-11(1)(d) unless that person:

- (a) meets the requirements set out in clauses 19-11(1)(a) to (c); and
- (b) participates in the delivery of a minimum of 40 hours of mine rescue training in each calendar year.

Mine rescue coordinator

19-15(1) An employer or contractor shall appoint a person as a mine rescue coordinator who is competent with respect to:

- (a) mine rescue principles; and
- (b) the fire control and emergency response plan for that mine.

(2) A mine rescue coordinator appointed pursuant to subsection (1) shall supervise mine rescue workers in all emergency response operations at that mine.

Minimum number of mine rescue workers required

19-16 An employer or contractor shall ensure that, if reasonably practicable:

- (a) at least 15 workers at every underground mine are mine rescue workers;
- (b) at least 1 mine rescue worker works underground on each shift; and
- (c) at least 10 mine rescue workers do not work underground on the same shift.

Mine rescue teams

19-17(1) Subject to subsection (2), if an emergency response operation requires the use of self-contained breathing apparatus, an employer or contractor shall ensure that a mine rescue team of at least 5 mine rescue workers responds to the emergency incident.

(2) The chief mines inspector may permit a mine rescue team consisting of fewer than 5 mine rescue workers to respond to an emergency response operation requiring the use of self-contained breathing apparatus.

(3) For each mine rescue team mentioned in subsections (1) and (2), an employer or contractor shall appoint 1 member of the mine rescue team as a team captain.

(4) During an emergency response operation, a team captain mentioned in subsection (3):

- (a) has direct control of the activities of the mine rescue team;
- (b) is responsible for the safety of the mine rescue team; and
- (c) shall not take part in any activity at the mine that is not directly related to the safety of the mine rescue team.

(5) During shaft-sinking operations, if there is insufficient room in a shaft sinking cage to accommodate a 5-member mine rescue team, the 5-member rescue team may be transported to the site of the emergency in multiple lifts of the shaft-sinking personnel cage.

Medical monitoring of certified mine rescue workers

19-18 If an emergency response operation is 12 hours or longer, an employer or contractor shall ensure that the health of every mine rescue worker is monitored by one of the following persons:

- (a) a duly qualified medical practitioner;
- (b) a nurse working under the direction of a duly qualified medical practitioner;
- (c) an emergency medical technician working under the direction of a duly qualified medical practitioner.

Primary refuge station

19-19(1) An employer or contractor shall install, equip and maintain a primary refuge station underground.

(2) An employer or contractor shall ensure that each primary refuge station is:

- (a) excavated in solid host material or constructed of steel;
- (b) separated from adjoining workings by fire doors or stoppings that are:
 - (i) designed to prevent noxious fumes from entering the refuge station; and
 - (ii) if reasonably practicable, constructed of materials that have at least a 1-hour fire resistance rating;
- (c) located:
 - (i) if reasonably practicable, in a fresh air circuit; and
 - (ii) at least 100 metres away from any fuel station, explosive storage area or other fire hazard;
- (d) identified and its location shown, as accurately as possible, on a map of the surface of the mine;
- (e) designed to accommodate the number of workers who may reasonably be expected to use the refuge station;

- (f) clearly marked;
 - (g) readily accessible; and
 - (h) properly maintained and the area around the entrance is kept free of combustible material.
- (3) An employer, contractor or owner shall ensure that every primary underground refuge station is equipped with the following:
- (a) at least 36 hours of breathable air for the number of workers who may reasonably be expected to use the refuge station in accordance with the fire control and emergency response plan;
 - (b) potable water for the number of workers who may reasonably be expected to use the refuge station in accordance with the fire control and emergency response plan;
 - (c) food;
 - (d) lights;
 - (e) first aid supplies;
 - (f) sanitation facilities;
 - (g) suitable firefighting equipment;
 - (h) an effective means of communication with the surface;
 - (i) sufficient seating.

Auxiliary refuge stations

- 19-20(1)** An employer or contractor shall install, equip and maintain auxiliary refuge stations within a reasonable distance of all locations where workers are expected to take refuge in the event of an emergency incident.
- (2) An employer or contractor shall ensure that each auxiliary refuge station is constructed appropriately and adequately.
- (3) An employer or contractor shall ensure that every auxiliary refuge station is equipped with the following:
- (a) at least 36 hours of breathable air for the number of workers who may reasonably be expected to use the refuge station in accordance with the fire control and emergency response plan;
 - (b) potable water for the number of workers who may reasonably be expected to use the refuge station in accordance with the fire control and emergency response plan;
 - (c) an effective means of communication with the surface;
 - (d) suitable and appropriate material to maintain the seal around the door of the refuge station.

Additional refuge station

19-21 An employer or contractor shall locate, install, equip and maintain refuge stations, in addition to the refuge stations mentioned in sections 19-19 and 19-20, as directed by the chief mines inspector.

Inspection of refuge stations

19-22 An employer or contractor shall:

- (a) ensure that every refuge station, and the equipment in the refuge station, is thoroughly inspected by a competent person at least once a month; and
- (b) ensure that the results of each inspection conducted pursuant to clause (a) are recorded by the competent person mentioned in clause (a) and countersigned by the employer or contractor.

Use of compressed air in refuge station

19-23 If a refuge station mentioned in section 19-19, 19-20 or 19-21 uses compressed air cylinders, the employer or contractor shall ensure that the compressed air cylinders are equipped with regulators that provide for the optimum flow of air in the refuge station, taking into account the size of the refuge station and the number of workers who may use it.

Respiratory protective device for hoist operators

19-24 If the fire control and emergency response plan prepared pursuant to section 19-4 requires a hoist operator to remain in the hoist room during an emergency and the air supply of a hoist room may become contaminated, an employer or contractor shall ensure that:

- (a) suitable respiratory protective devices are provided for each hoist operator; and
- (b) the respiratory protective devices mentioned in clause (a):
 - (i) provide at least 4 hours of breathable air; and
 - (ii) are properly maintained.

Self-rescue apparatus

19-25(1) If the chief mines inspector requires self-rescue apparatuses to be provided underground, or if the self-rescue apparatuses are otherwise provided by an employer or contractor, the employer or contractor shall ensure that:

- (a) all workers carry a self-rescue apparatus at all times while working underground; or
- (b) a sufficient number of self-rescue apparatuses are stored at suitable locations underground.

(2) If self-rescue apparatuses are provided in accordance with subsection (1), an employer or contractor shall ensure that a worker who may be required to use a self-rescue apparatus is adequately trained by a competent person in the proper use of the self-rescue apparatus and in its limitations.

PART 20
Abandoning Workings

Notice of intended closing or abandonment

20-1(1) An employer, contractor or owner shall give written notice to the chief mines inspector of an intended closing or abandonment of a mine or a major part of a mine.

(2) The notice mentioned in subsection (1) must:

- (a) be given as soon as is reasonably practicable, but not later than 60 days before beginning the process of closing or abandoning a mine or a major part of a mine;
- (b) include a description of the methods by which:
 - (i) all explosives, fuses and detonators will be disposed of;
 - (ii) the shaft compartments will be abandoned and hoisting ropes disposed of;
 - (iii) the shafts and entrances from the surface will be secured;
 - (iv) the pits and other openings on the surface will be fenced or otherwise secured; and
 - (v) the safety of the mine site will be secured; and
- (c) be accompanied by the plans mentioned in section 20-2.

Submission of plans

20-2 Before a mine or any part of a mine is closed, abandoned or otherwise rendered inaccessible, the employer, contractor or owner shall ensure that:

- (a) all plans required pursuant to subsection 3-1(2) are updated; and
- (b) copies of the plans mentioned in clause (a) are:
 - (i) certified as correct by the employer, contractor or owner; and
 - (ii) forwarded to the chief mines inspector.

Openings to underground mines

20-3(1) If a shaft, raise, adit or other opening to the surface is abandoned or if the workings are discontinued, the employer, contractor or owner shall ensure that the shaft, raise, adit or other opening is secured against unauthorized entry in accordance with this section.

(2) A shaft, raise, adit or other opening must be secured by:

- (a) covering the top of it with a bulkhead designed by a professional engineer of reinforced concrete at bedrock or at the top of the concrete collar of the shaft, raise, adit or opening; or
- (b) a suitable closure method designed and approved by a professional engineer and approved by the chief mines inspector consisting of a long-lasting and suitable material anchored at bedrock or at the top of the concrete collar of the shaft, raise, adit or other opening.

- (3) An employer, contractor or owner shall ensure that the cover required pursuant to subsection (2) is clearly marked with a substantial 1-metre high marker or sign that identifies the party responsible for the opening and the cover.

Open pit mines

20-4 If an open pit mine is closed permanently or for an indefinite period, the employer, contractor or owner shall:

- (a) secure the open pit mine to prevent unauthorized entry and post warning signs; or
- (b) perform remedial work so that the workings present no greater hazard than the natural topographic features of the district.

Securing hazardous plants

20-5 If a mine or any part of a mine is to be closed or abandoned and the plant associated with the mine presents a hazard, the employer, contractor or owner shall secure the plant to protect against unauthorized or inadvertent entry.

Disposing of explosives

20-6 If a mine is to be closed or abandoned, the employer, contractor or owner shall:

- (a) ensure that all explosives, detonators and detonating cord are disposed of in a safe manner in accordance with the manufacturer's instructions; and
- (b) at least 14 days before disposal, notify the chief mines inspector in writing of the disposal procedure to be used for the purposes of clause (a).

Safety equivalency

20-7(1) In this section:

“applicant” means an employer, contractor or owner or a group of employers, contractors or owners who apply for a variation pursuant to this section;

“approved” means approved by the director;

“director” means the director of occupational health and safety as defined in *The Saskatchewan Employment Act*.

- (2) A variation in the composition, design, size and arrangement of any material, object, device, thing, procedure, process or methodology may be implemented only if it is approved pursuant to this section.

(3) An applicant may apply in writing to the director in the manner and form specified by the director to vary the composition, design, size and arrangement of any material, object, device, thing, procedure, process or methodology from the composition, design, size or arrangement prescribed in these regulations.

(4) A written application must include information satisfactory to the director to confirm that the proposed variation has been reviewed and approved by the committees who are affected by the variation.

(5) In deciding whether to approve an application made pursuant to subsection (3) the director may:

- (a) consult any persons that the director considers advisable;
- (b) require the applicant to provide a demonstration of any procedure or methodology respecting the variation;

- (c) request the applicant to provide any information the director considers relevant; and
 - (d) obtain any information the director considers relevant from any other source.
- (6) After considering any information provided or obtained pursuant to subsections (4) and (5), the director may approve the variation if the director is satisfied that:
 - (a) the factors of strength, health and safety in the composition, design, size and arrangement of the material, object, device, thing, procedure, process or methodology are equal to or greater than the factors of strength, health and safety prescribed in these regulations; and
 - (b) the variation affords protection for the health or safety of a worker equal to or greater than that prescribed by these regulations.
- (7) In approving a variation pursuant to subsection (6), the director may impose any terms and conditions that the director considers appropriate including:
 - (a) requiring information and data to be collected respecting the variation after the approval of the variation; and
 - (b) requesting information respecting the training of any employees that must be conducted before the variation is implemented.
- (8) Every applicant to whom an approval has been granted shall comply with any terms and conditions imposed pursuant to subsection (7).
- (9) If the director does not approve a variation, or the director revokes or suspends an approval pursuant to subsection (10), the director shall provide the applicant with notice of the director's decision with written reasons.
- (10) The director may revoke or suspend an approval if:
 - (a) the applicant has failed to comply with any term or condition of the approval; or
 - (b) the director considers it appropriate or necessary to do so.
- (11) Before implementing any variation approved by the director the applicant shall ensure that:
 - (a) notice of the variation is provided to all employees and committees who are affected by the variation; and
 - (b) all required training is conducted.
- (12) The applicant shall:
 - (a) keep on file all approvals, records and reports for the period in which the variation is implemented; and

- (b) make any approval, record or report available on request to:
 - (i) the director in any manner he or she may require; or
 - (ii) the committees affected by the variation in any manner they may require.

PART 21

Transition, Repeal and Coming into Force

Transitional

21-1(1) In this section:

- (a) **“existing approval”** means an approval issued pursuant to the former regulations that is in existence on the day before the coming into force of these regulations;
 - (b) **“existing certificate”** means a certificate issued pursuant to the former regulations that is in existence on the day before the coming into force of these regulations;
 - (c) **“existing permit”** means a permit issued pursuant to the former regulations that is in existence on the day before the coming into force of these regulations.
- (2) Every existing certificate, existing approval and existing permit is continued pursuant to these regulations and may be dealt with pursuant to these regulations as if it were issued pursuant to these regulations.
- (3) Unless sooner revoked or cancelled pursuant to these regulations, every existing certificate issued to a direct supervisor, hoist operator, blaster, mine rescue worker or mine rescue instructor expires 5 years from the day the existing certificate was issued, notwithstanding any term, condition or provision to the contrary in:
- (a) the former regulations; or
 - (b) these regulations.
- (4) The chief mines inspector may at any time revoke or suspend an existing certificate, existing approval or existing permit continued pursuant to subsection (2) if:
- (a) the holder fails to comply with any term or condition of the certificate, approval or permit; or
 - (b) in the opinion of the chief mines inspector, it is appropriate to do so in the circumstances.

RRS c O-1.1 Reg 2 repealed

21-2 *The Mines Regulations, 2003* are repealed.

Coming into force

21-3 These regulations come into force 1 year after the day on which they are published in The Saskatchewan Gazette.

Appendix

PART I

Table 1

[Sections 10-105 and 10-108]

Hoisting Signals

Signal	Purpose	Status	Conditions
One bell	Stop immediately if in motion	Executive signal	To be given by the worker in charge of the conveyance to stop the conveyance
One bell	Raise	Executive signal	To be given by the worker in charge of the conveyance after the directory signal is given. This is used only when the conveyance is to move upward.
Two bells	Lower	Executive signal	To be given by the worker in charge of the conveyance after the directory signal is given. This is used only when the conveyance is to move downward.
Three bells	Persons about to ascend or descend	Cautionary signal	The worker in charge of the conveyance will give this signal and the hoist operator will respond with the same signal to the worker in charge before any person is allowed to leave or enter the conveyance. If the conveyance stops at a level and a person remains on the conveyance, the signals are to be repeated.
Four bells	Blasting signal	Cautionary signal	To be given by the worker in charge of the conveyance. The hoist operator will raise the conveyance a short distance and let it back slowly. Only a one-bell signal is required to signal for raising a worker away from the blast.
Five bells	Conveyance release signal	Executive signal	To be given by the worker in charge of the conveyance for release of the conveyance to the hoist operator. The hoist operator will give the same signal to the worker in charge prior to any movement of the conveyance. The person in charge of the conveyance will guard the conveyance until it is moved from the landing place.
Nine bells	Emergency signal	Emergency signal	When a conveyance call system is in operation, the signal must be used to indicate an emergency and it must be given only on the conveyance call system. The emergency signal must be followed by the signal for the level on which the emergency exists.
One bell – two bells	Chairing signal	Executive signal	To be given by the worker in charge of the conveyance. The hoist operator will respond and raise the cage 0.5 metres (1.5 feet) and then slowly move the conveyance to the level as the chairs are set in place. When complete, the hoist operator will give the three-bells signal.

Table 2
[Section 15-15]

**Approved Service Brake Testing for Surface Haulage Vehicles and
Rubber-tired Units of Powered Mobile Equipment
Whose Gross Weight Exceeds 25 000 Kilograms**

A Stopping distance:

The service brakes must be capable of stopping the fully-loaded vehicle or rubber-tired unit of powered mobile equipment operating on level ground from an initial speed of 32 kilometres per hour within a distance of:

Gross Weight in Kilograms	Stopping Distance
under 50 000 kg	20 metres
50 000 to 100 000 kg	30 metres
100 000 to 200 000 kg	40 metres
over 200 000 kg	55 metres

B Test conditions:

Auxiliary retarding devices must not be used during the brake tests but must be available for application in an emergency.

The test roadway must have a uniform grade and must be of adequate width for safety. An emergency lane or run-off must be available in case of brake failure.

Note: A 5% variation in initial speed will result in a 10% difference in stopping distance.

PART II

Form A

[Section 16-2]

Diesel-Powered Equipment Notice**Company Identification**

Company Name: _____ Date: _____

Mine: _____ Area of operation: _____

Type: _____ Purpose: _____

Manufacturer's recommended grade (for mobile units): _____

Maximum operating grade for unit: _____ Maximum authorized load: _____

Unit Identification Data

Make: _____ Company unit number: _____

Does the unit conform to the CSA standards: ☐ Yes ☐ No**Engine Data**

Make: _____ Model: _____ Serial Number: _____

Maximum rated load (kW): _____ Maximum speed (RMP): _____

Maximum fuel injection (kg/hr): _____

After Treatment Device Data

Type: _____ Manufacturer: _____ Model: _____

Fuel: _____ Capacity of tanks: _____

Hydraulic FluidTrade name: _____ Quantity: _____ Fire retardant: ☐ Yes ☐ No**Fire Suppression System**

Type: _____ Number of nozzles: _____ Size of unit: _____

Fire Extinguishers

Type and size: _____

Ventilation

Amount of air required for this diesel engine: _____

Braking System:**Service:****Emergency:** _____**Parking Brake:** __________
Company Representative
(Name and signature)_____
Title

**SASKATCHEWAN
REGULATIONS 21/2018**

The Child Care Act, 2014

**RÈGLEMENT DE LA
SASKATCHEWAN 21/2018**

*Loi de 2014 sur les
garderies d'enfants*

SASKATCHEWAN REGULATIONS 21/2018*The Child Care Act, 2014*

Section 30

Order in Council 169/2018, dated March 29, 2018

(Filed March 29, 2018)

Title**1** These regulations may be cited as *The Child Care Amendment Regulations, 2018*.**RRS c C-7.31 Reg 1 amended****2** *The Child Care Regulations, 2015* are amended in the manner set forth in these regulations.**Section 42 amended****3** **Clause 42(2)(a) is amended by striking out** “the Saskatchewan Institute of Applied Science and Technology” **and substituting** “Saskatchewan Polytechnic”.**New section 77****4** **Section 77 is repealed and the following substituted:****“Start-up grants — centres****77(1)** The minister may make a one-time grant to a licensee of a non-profit centre for the following purposes:

- (a) to develop child care spaces;
- (b) to support the design and implementation of an enriched learning environment.

(2) The maximum grant that may be made pursuant to subsection (1) is \$861 per child care space”.**Section 79 repealed****5** **Section 79 is repealed.****Section 80 amended****6(1)** **Subsection 80(1) is repealed and the following substituted:****“(1)** The minister may make a one-time grant to a licensee of a home described in this section for the following purposes:

- (a) to commence the home’s operations;
- (b) to support the design and implementation of an enriched learning environment”.

(2) **Subsection 80(2) is amended:**

- (a)** in clause (a) by striking out “\$2,250” and substituting “\$3,275”; and
- (b)** in clause (b) by striking out “\$1,800” and substituting “\$2,825”.

RÈGLEMENT DE LA SASKATCHEWAN 21/2018*Loi de 2014 sur les garderies d'enfants*

Article 30

Décret 169/2018, en date du 29 mars 2018

(Déposé le 29 mars 2018)

Titre**1** *Règlement modificatif de 2018 sur les garderies d'enfants.***Modification de RRS c C-7.31 Règl 1****2** Le *Règlement de 2015 sur les garderies d'enfants* est modifié de la manière énoncée dans le présent règlement.**Modification de l'article 42****3** L'alinéa 42(2)a) est modifié par suppression de « du Saskatchewan Institute of Applied Science and Technology » et son remplacement par « de la Saskatchewan Polytechnic ».**Nouvel article 77****4** L'article 77 est abrogé et remplacé par ce qui suit :**« Subventions de démarrage – garderies non résidentielles****77(1)** Le ministre peut accorder une subvention ponctuelle au licencié d'une garderie non résidentielle sans but lucratif, aux fins suivantes :

- a) l'aménagement de places;
- b) le soutien à la conception et à la réalisation d'un milieu d'apprentissage enrichi.

(2) La subvention maximale qui peut être accordée en vertu du paragraphe (1) est de 861 \$ par place ».**Abrogation de l'article 79****5** L'article 79 est abrogé.**Modification de l'article 80****6(1)** Le paragraphe 80(1) est abrogé et remplacé par ce qui suit :**« (1)** Le ministre peut accorder une subvention ponctuelle au licencié d'une garderie résidentielle visée au présent article, aux fins suivantes :

- a) la mise sur pied de la garderie;
- b) le soutien à la conception et à la réalisation d'un milieu d'apprentissage enrichi ».

(2) Le paragraphe 80(2) est modifié :**a)** à l'alinéa a) par suppression de « 2 250 \$ » et son remplacement par « 3 275 \$ »;**b)** à l'alinéa b) par suppression de « 1 800 \$ » et son remplacement par « 2 825 \$ ».

(3) Subsection 80(3) is amended:

- (a) in clause (a) by striking out “\$2,500” and substituting “\$3,525”; and**
- (b) in clause (b) by striking out “\$2,000” and substituting “\$3,025”.**

Section 82 amended

7 Subsection 82(2) is amended:

- (a) in clause (a) by striking out “\$50” and substituting “\$75”; and**
- (b) in clause (b) by striking out “\$40” and substituting “\$60”.**

New section 83.1

8 The following section is added after section 83:

“Early childhood services grants — northern centres

83.1(1) The minister may make a grant to an eligible licensee of a non-profit centre described in this section with respect to the ongoing operating and staffing costs to provide child care services.

(2) The maximum grant that may be made pursuant to subsection (1) to the licensee of a full-time centre or a teen student support centre that is located within the Northern Saskatchewan Administration District is:

- (a) \$686.67 per month per infant child care space;
- (b) \$412 per month per toddler child care space;
- (c) \$206 per month per preschool child care space; and
- (d) \$137.33 per month per school-age child care space.

(3) The maximum grant that may be made pursuant to subsection (1) to the licensee of an extended hours centre that is located within the Northern Saskatchewan Administration District and that operates less than 120 hours per week is:

- (a) \$858.33 per month per infant child care space;
- (b) \$515 per month per toddler child care space;
- (c) \$257.50 per month per preschool child care space; and
- (d) \$171.67 per month per school-age child care space.

(3) Le paragraphe 80(3) est modifié :

- a) à l'alinéa a) par suppression de « 2 500 \$ » et son remplacement par « 3 525 \$ »;**
- b) à l'alinéa b) par suppression de « 2 000 \$ » et son remplacement par « 3 025 \$ ».**

Modification de l'article 82

7 Le paragraphe 82(2) est modifié :

- a) à l'alinéa a) par suppression de « 50 \$ » et son remplacement par « 75 \$ »;**
- b) à l'alinéa b) par suppression de « 40 \$ » et son remplacement par « 60 \$ ».**

Nouvel article 83.1

8 L'article suivant est inséré après l'article 83 :

« Subventions pour services à la petite enfance – garderies non résidentielles du Nord

83.1(1) Le ministre peut accorder une subvention au licencié admissible d'une garderie non résidentielle sans but lucratif visée au présent article relativement aux frais courants de fonctionnement et de dotation en personnel entraînés par la prestation de services de garderie.

(2) La subvention maximale qui peut être accordée en vertu du paragraphe (1) au licencié d'une garderie non résidentielle, soit à plein temps, soit pour le soutien aux élèves adolescents, située dans le district administratif du Nord de la Saskatchewan est :

- a) de 686,67 \$ par mois par place pour enfant en bas âge;
- b) de 412 \$ par mois par place pour tout-petit;
- c) de 206 \$ par mois par place pour enfant d'âge préscolaire;
- d) de 137,33 \$ par mois par place pour enfant d'âge scolaire.

(3) La subvention maximale qui peut être accordée en vertu du paragraphe (1) au licencié d'une garderie non résidentielle à ouverture étendue qui est située dans le district administratif du Nord de la Saskatchewan et qui est ouverte moins de 120 heures par semaine est :

- a) de 858,33 \$ par mois par place pour enfant en bas âge;
- b) de 515 \$ par mois par place pour tout-petit;
- c) de 257,50 \$ par mois par place pour enfant d'âge préscolaire;
- d) de 171,67 \$ par mois par place pour enfant d'âge scolaire.

(4) The maximum grant that may be made pursuant to subsection (1) to the licensee of an extended hours centre that is located within the Northern Saskatchewan Administration District and that operates 120 hours per week or more is:

- (a) \$1,030 per month per infant child care space;
- (b) \$618 per month per toddler child care space;
- (c) \$309 per month per preschool child care space; and
- (d) \$206 per month per school-age child care space.

(5) A licensee who receives a grant pursuant to this section is not entitled to receive a grant pursuant to section 83 for the same period”.

Sections 88 and 89 repealed

9 Sections 88 and 89 are repealed.

Section 90 amended

10 Subsection 90(2) is amended by striking out “\$100” and substituting “\$150”.

Section 91 repealed

11 Section 91 is repealed.

Section 102 amended

12 Subsection 102(3) is amended:

- (a) by repealing clause (c) and substituting the following:**
“(c) the Canada Child Benefit”;
- (b) by repealing clause (d); and**
- (c) in clause (e) by striking out “Indigenous and Northern Affairs Canada” and substituting “Indigenous Services Canada”.**

Coming into force

13(1) Subject to subsections (2) and (3), these regulations come into force on the day on which they are filed with the Registrar of Regulations.

(2) Sections 7 and 10 come into force on the day on which they are filed with the Registrar of Regulations, but are retroactive and are deemed to have been in force on and from April 1, 2017.

(3) Section 8 comes into force on April 1, 2018.

(4) La subvention maximale qui peut être accordée en vertu du paragraphe (1) au licencié d'une garderie non résidentielle à ouverture étendue qui est située dans le district administratif du Nord de la Saskatchewan et qui est ouverte au moins 120 heures par semaine est :

- a) de 1 030 \$ par mois par place pour enfant en bas âge;
- b) de 618 \$ par mois par place pour tout-petit;
- c) de 309 \$ par mois par place pour enfant d'âge préscolaire;
- d) de 206 \$ par mois par place pour enfant d'âge scolaire.

(5) Le licencié qui reçoit une subvention en vertu du présent article n'est pas admissible à une subvention en vertu de l'article 83 pour la même période ».

Abrogation des articles 88 et 89

9 Les articles 88 et 89 sont abrogés.

Modification de l'article 90

10 Le paragraphe 90(2) est modifié par suppression de « 100 \$ » et son remplacement par « 150 \$ ».

Abrogation de l'article 91

11 L'article 91 est abrogé.

Modification de l'article 102

12 Le paragraphe 102(3) est modifié :

- a) **par abrogation de l'alinéa c) et son remplacement par ce qui suit :**
 - « c) l'Allocation canadienne pour enfants »;
- b) **par abrogation de l'alinéa d);**
- c) **à l'alinéa e) par abrogation de « des Affaires autochtones et du Nord Canada » et son remplacement par « de Services aux Autochtones Canada ».**

Entrée en vigueur

13(1) Sous réserve des paragraphes (2) et (3), le présent règlement entre en vigueur à la date de son dépôt auprès du registraire des règlements.

(2) Les articles 7 et 10 entrent en vigueur à la date de leur dépôt auprès du registraire des règlements, mais s'appliquent rétroactivement et sont réputés avoir été en vigueur depuis le 1^{er} avril 2017.

(3) L'article 8 entre en vigueur le 1^{er} avril 2018.

SASKATCHEWAN REGULATIONS 22/2018*The Fisheries Act (Saskatchewan), 1994*

Section 37

Order in Council 171/2018, dated March 29, 2018

(Filed March 29, 2018)

Title**1** These regulations may be cited as *The Fisheries Amendment Regulations, 2018*.**RRS c F-16.1 Reg 1 amended****2** *The Fisheries Regulations* are amended in the manner set forth in these regulations.**Section 3 amended****3 Subsection 3(1) is repealed and the following substituted:**

“(1) In this section, ‘**aquarium fish**’ means any fish that is not indigenous to Saskatchewan and whose owner satisfies the minister that the fish is imported or kept for display purposes only, but does not include any species of fish:

- (a) listed in Table 10 of the Appendix; or
- (b) designated by the minister as a prohibited species in Saskatchewan pursuant to subsection 88.1(3)”.

Section 19 amended

4 Subsection 19(2) is amended in the portion preceding clause (a) by striking out “The following persons may possess for use as bait or use as bait live crayfish, leeches or other aquatic invertebrates” and substituting “No person shall possess for use as bait, or use as bait, live crayfish, leeches or other aquatic invertebrates unless that person is”.

Subsection 19.1 amended**5 Subsection 19.1(1) is repealed and the following substituted:**

“(1) In this section, ‘**regulated jurisdiction**’ means a jurisdiction listed in Table 12 of the Appendix or a jurisdiction designated pursuant to subsection (1.1).

“(1.1) The minister may designate any jurisdiction as a regulated jurisdiction for the purposes of this section if the minister is satisfied on reasonable, scientific grounds that a threat or potential threat to fish health or fish populations exists.

“(1.2) If the minister designates a jurisdiction pursuant to subsection (1.1), the minister shall cause the designation to be:

- (a) published in the Gazette; and
- (b) made known to the public in any manner the minister considers appropriate, including by publishing it on the ministry website”.

New section 84.1**6 The following section is added before section 85:****“Definition for Part**

84.1 In this Part, “**watercraft**” includes a boat, canoe, kayak, jetski or dinghy”.

Section 85.1 amended

7 Section 85.1 is amended by striking out “, boat or other watercraft” and substituting “or watercraft”.

New sections 88.1 and 88.2

8 Sections 88.1 and 88.2 are repealed and the following substituted:

“Prohibition re certain species of fish

88.1(1) In this section and in section 88.2, **‘prohibited species in Saskatchewan’** means any species listed in Table 10 of the Appendix or any species designated by the minister pursuant to subsection (3).

(2) No person shall:

- (a) import into Saskatchewan, or attempt to import into Saskatchewan, fish of any prohibited species in Saskatchewan, except pursuant to a permit issued by the minister;
- (b) buy or sell, or attempt to buy or sell, or possess fish of any prohibited species in Saskatchewan, except pursuant to a permit issued by the minister;
- (c) transport fish of any prohibited species in Saskatchewan, except pursuant to a permit issued by the minister; or
- (d) introduce or dispose of fish of any prohibited species in Saskatchewan into Saskatchewan waters.

(3) The minister may designate any species of fish as a prohibited species in Saskatchewan for the purposes of this section if the minister is satisfied on reasonable, scientific grounds that a threat or potential threat to fish health or fish populations exists.

(4) If the minister designates a species of fish pursuant to subsection (3), the minister shall cause the designation to be:

- (a) published in the Gazette; and
- (b) made known to the public in any manner the minister considers appropriate, including by publishing it on the ministry website”.

“Order re prohibited species

88.2(1) In this section, **‘invasive species jurisdiction’** means a jurisdiction listed in Table 13 of the Appendix or a jurisdiction designated pursuant to subsection (3).

(2) An officer who has reasonable grounds to believe that fish of any prohibited species in Saskatchewan is contained in or found on a vehicle, trailer, watercraft, place or other thing, or that the vehicle, trailer, watercraft, place or thing has been registered or operated in an invasive species jurisdiction, may issue a written order for any or all of the following:

- (a) the inspection and cleaning of the vehicle, trailer, watercraft, place or thing associated with the fish of the prohibited species in Saskatchewan;
- (b) the quarantine of fish of the prohibited species in Saskatchewan and the vehicle, trailer, watercraft, place or thing in or on which the fish of the prohibited species in Saskatchewan is contained or found;

- (c) the decontamination of the vehicle, trailer, watercraft, place or thing in or on which the fish of the prohibited species in Saskatchewan is contained or found;
 - (d) the destruction and disposal of the fish of the prohibited species in Saskatchewan.
- (3) The minister may designate any jurisdiction as an invasive species jurisdiction for the purposes of this section if the minister is satisfied on reasonable, scientific grounds that a threat or potential threat to fish health or fish populations exists.
- (4) If the minister designates a jurisdiction pursuant to subsection (3), the minister shall cause the designation to be:
- (a) published in the Gazette; and
 - (b) made known to the public in any manner the minister considers appropriate, including by publishing it on the ministry website”.

Section 88.3 amended

9 Clause 88.3(c) is repealed and the following substituted:

“(c) ensure that the vehicle, trailer, watercraft, place or thing in or on which the species listed in Table 10 of the Appendix is contained or found does not come in contact with Saskatchewan waters until the vehicle, trailer, watercraft, place or thing is decontaminated to the satisfaction of the minister”.

Section 88.4 amended

10 Section 88.4 is amended by striking out “boats” and substituting “watercraft”.

Section 88.5 amended

11 Section 88.5 is amended by striking out “boat” and substituting “watercraft”.

New section 88.6

12 The following section is added after section 88.5:

“Transportation of watercraft

88.6 No person shall transport a watercraft on a highway by means of a conveyance if the watercraft has a drainage hole in the lower hull or bilge and that drainage hole is blocked with a plug”.

Appendix amended

13 Table 6 of the Appendix is repealed.

Coming into force

- 14(1)** Subject to subsection (2), these regulations come into force on April 1, 2018.
- (2) If these regulations are filed with the Registrar of Regulations after April 1, 2018, these regulations come into force on the day on which they are filed with the Registrar of Regulations.

SASKATCHEWAN REGULATIONS 23/2018*The Wildfire Act*

Section 81

Order in Council 172/2018, dated March 29, 2018

(Filed March 29, 2018)

Title**1** These regulations may be cited as *The Wildfire Amendment Regulations, 2018*.**RRS c W-13.01 Reg 1, section 6 amended****2 Subsections 6(6) and (7) of *The Wildfire Regulations* are repealed and the following substituted:**

“(6) A burn notification number expires at the end of the day that follows the day for which the burn notification number was issued, at which time the fire must be extinguished.

“(7) Notwithstanding subsection (6), a burn notification number for brush piles expires at the end of the day that is four days after the day for which the burn notification number was issued, at which time the fire must be extinguished”.

Coming into force**3(1)** Subject to subsection (2), these regulations come into force on March 31, 2018.

(2) If these regulations are filed with the Registrar of Regulations after March 31, 2018, these regulations come into force on the day on which they are filed with the Registrar of Regulations.

SASKATCHEWAN REGULATIONS 24/2018*The Wildlife Habitat Protection Act*

Section 3

Order in Council 173/2018, dated March 29, 2018

(Filed March 29, 2018)

Title

1 These regulations may be cited as *The Wildlife Habitat and Ecological Lands Designation Amendment Regulations, 2018 (No. 2)*.

RRS c W-13.2 Reg 4, Appendix amended

2 **The Appendix to *The Wildlife Habitat and Ecological Lands Designation Regulations* is amended:**

(a) by repealing item 35 and substituting the following:

“35 The south-west quarter of Section 11, in Township 23, in Range 31, west of the First Meridian”;

(b) by repealing item 59 and substituting the following:

“59 All those lands in Township 34, in Range 32, west of the First Meridian, described as follows:

- (a) Section 3;
- (b) the north half of Section 4;
- (c) Section 5;
- (d) the south-west quarter of Section 7;
- (e) the west half of Section 8;
- (f) the west half and south-east quarter of Section 11;
- (g) the south-east quarter of Section 22;
- (h) the west half of Section 29”;

(c) by repealing item 79 and substituting the following:

“79 That portion of the north half of Section 11 lying to the north of the Canadian National Railway right-of-way, in Township 20, in Range 33, west of the First Meridian”;

(d) by repealing item 108 and substituting the following:

“108 All those lands in Township 35, in Range 1, west of the Second Meridian, described as follows:

- (a) Section 29;
- (b) the south-east quarter of Section 30;
- (c) the west half of Section 31”;

(e) by repealing item 137 and substituting the following:

“137 The south-west quarter of Section 16, in Township 9, in Range 3, west of the Second Meridian”;

(f) by repealing item 169 and substituting the following:

“169 All those lands in Township 44, in Range 4, west of the Second Meridian, described as follows:

- (a) that portion of Section 10 lying outside the Provincial Forest boundary;
- (b) that portion of the east half and the south-west quarter of Section 15;
- (c) the south-east quarter of Section 16;
- (d) the north-west quarter of Section 17;
- (e) that portion of the south-west quarter of Section 23 lying outside the Provincial Forest boundary”;

(g) by repealing item 181 and substituting the following:

“181 All those lands in Township 29, in Range 5, west of the Second Meridian, described as follows:

- (a) that portion of Section 1 that is Crown owned;
- (b) that portion of Section 2 that is Crown owned;
- (c) that portion of Section 3 that is Crown owned;
- (d) the north-east quarter of Section 6;
- (e) the north-east quarter of Section 7;
- (f) the north-west quarter of Section 11”;

(h) by repealing item 220 and substituting the following:

“220 All those lands in Township 30, in Range 7, west of the Second Meridian, described as follows:

- (a) the north-west quarter of Section 11;
- (b) the south-west quarter of Section 22;
- (c) Section 29”;

(i) by repealing item 247 and substituting the following:

“247 All those lands in Township 49, in Range 8, west of the Second Meridian, described as follows:

- (a) the east half and south-west quarter of Section 20;
- (b) the west half of Section 21;
- (c) the south-west quarter of Section 22;
- (d) the east half of Section 24;
- (e) the south-west quarter of Section 28;

- (f) the north-west quarter of Section 29;
- (g) the north-east quarter of Section 30;
- (h) the east half of Section 31;
- (i) the south-west quarter of Section 32”;

(j) by repealing item 300 and substituting the following:

“300 All those lands in Township 49, in Range 10, west of the Second Meridian, described as follows:

- (a) those portions of Legal Subdivisions 9 and 10 of Section 19 lying to the left of the left bank of the Carrot River;
- (b) that portion of the north-east quarter of Section 28 that is Crown owned;
- (c) the south-east quarter of Section 33”;

(k) by repealing item 312 and substituting the following:

“312 The north half of Section 11, in Township 27, in Range 11, west of the Second Meridian”;

(l) by repealing item 319 and substituting the following:

“319 All those lands in Township 40, in Range 11, west of the Second Meridian, described as follows:

- (a) the north half and south-east quarter of Section 5;
- (b) that portion of the north-west quarter of Section 11 not covered by the waters of Kinloch Lake;
- (c) the north-west quarter of Section 13;
- (d) the north-west quarter of Section 22;
- (e) the south-east quarter of Section 24;
- (f) Section 29;
- (g) the east half of Section 30;
- (h) the south-east quarter of Section 31;
- (i) the south-east quarter of Section 35”;

(m) by repealing item 337;

(n) by repealing item 349 and substituting the following:

“349 All those lands in Township 44, in Range 12, west of the Second Meridian, described as follows:

- (a) the north-east quarter of Section 4;
- (b) the north-west quarter of Section 5;
- (c) the north half of Section 6;
- (d) the north-west quarter of Section 9;
- (e) the south-east quarter of Section 17;
- (f) the north half of Section 23”;

(o) by repealing item 377;

(p) by repealing item 400 and substituting the following:

“400 The north-west quarter of Section 13, in Township 39, in Range 15, west of the Second Meridian”;

(q) by repealing item 494 and substituting the following:

“494 All those lands in Township 41, in Range 20, west of the Second Meridian, described as follows:

- (a) that portion of Section 1 covered by the waters of Ranch Lake;
- (b) that portion of Section 2 covered by the waters of Ranch Lake;
- (c) the north-east and south-west quarters of Section 11;
- (d) the west half of Section 12;
- (e) the west half of Section 13;
- (f) that portion of the south-east quarter of Section 14 that is Crown owned;
- (g) the west half of Section 24;
- (h) the north-east quarter of Section 25”;

(r) by repealing item 555 and substituting the following:

“555 That portion of the south-west quarter of Section 11, in Township 43, in Range 23, west of the Second Meridian, that is Crown owned”;

(s) by repealing item 612 and substituting the following:

“612 All those lands in Township 54, in Range 25, west of the Second Meridian, described as follows:

- (a) the south-west quarter of Section 2;
- (b) the west half of Section 5;
- (c) the south-east quarter of Section 7;
- (d) the west half of Section 11;
- (e) Section 18;
- (f) the south half of Section 19;
- (g) the north half of Section 29;
- (h) the north-east quarter of Section 30;
- (i) the east half of Section 31;
- (j) Section 32;
- (k) Section 33;
- (l) Legal Subdivisions 1, 5, 6, 7 and 8 of Section 34;
- (m) the south-west quarter of Section 35”;

(t) by repealing item 632 and substituting the following:

“632 The south-west quarter of Section 18, in Township 1, in Range 27, west of the Second Meridian”;

(u) by repealing item 658 and substituting the following:

“658 All those lands in Township 1, in Range 28, west of the Second Meridian, described as follows:

- (a) the north-east quarter of Section 12;
- (b) the north half and south-east quarter of Section 13;
- (c) the west half of Section 15;
- (d) the north-east and south-west quarters of Section 16;
- (e) the north-west quarter of Section 19;
- (f) Section 20;
- (g) the north-east quarter of Section 21;
- (h) Section 22;
- (i) Section 27;
- (j) Section 28;
- (k) Section 29;
- (l) the north half of Section 30;
- (m) the east half of Section 31;
- (n) the east half of Section 32;
- (o) Section 33;
- (p) Section 34”;

(v) by repealing item 662 and substituting the following:

“662 The east half of Section 1, in Township 7, in Range 28, west of the Second Meridian”;

(w) by repealing item 731 and substituting the following:

“731 All those lands in Township 48, in Range 1, west of the Third Meridian, described as follows:

- (a) the north-west quarter of Section 22;
- (b) the south-east quarter of Section 26;
- (c) the north-west quarter of Section 31”;

(x) by repealing item 791 and substituting the following:

“791 All those lands in Township 47, in Range 4, west of the Third Meridian, described as follows:

- (a) the south-east quarter of Section 4;
- (b) the north-west quarter of Section 5;
- (c) the south-west quarter of Section 8;
- (d) the south half and north-west quarter of Section 9;
- (e) the north half and south-west quarter of Section 10;
- (f) the north-west quarter of Section 14;
- (g) the west half of Section 16;
- (h) the east half of Section 17;
- (i) the south-east quarter of Section 20;
- (j) the south half and north-east quarter of Section 21;
- (k) that portion of the north-east quarter of Section 36 that is Crown owned”;

(y) by repealing item 795;

(z) by repealing item 843;

(aa) by repealing item 878 and substituting the following:

“878 All those lands in Township 52, in Range 7, west of the Third Meridian, described as follows:

- (a) the south-west quarter of Section 5;
- (b) the north-east and south-west quarters of Section 10;
- (c) the east half of Section 15;
- (d) the north-east quarter of Section 19;
- (e) the south half of Section 22”;

(bb) by repealing item 880 and substituting the following:

“880 All those lands in Township 54, in Range 7, west of the Third Meridian, described as follows:

- (a) those portions of the east half and north-west quarter of Section 6 not covered by the waters of Keg Lake;
- (b) the east half of Section 7;
- (c) the south-east quarter of Section 9;
- (d) the south-east quarter of Section 16;
- (e) the south-east quarter of Section 18;
- (f) the south-east quarter of Section 36”;

(cc) by repealing item 908 and substituting the following:

“908 All those lands in Township 42, in Range 8, west of the Third Meridian, described as follows:

- (a) that portion of the north-west quarter of Section 28 covered by the waters of Redberry Lake;
- (b) those portions of the north half of Section 29 that are Crown owned;
- (c) that portion of the north-east quarter of Section 30 covered by the waters of Redberry Lake;
- (d) that portion of the south-west quarter of Section 31 covered by the waters of Redberry Lake;
- (e) that portion of the south-east quarter of Section 32 covered by the waters of Redberry Lake”;

(dd) by repealing item 910 and substituting the following:

“910 All those lands in Township 44, in Range 8, west of the Third Meridian, described as follows:

- (a) those portions of the west half and south-east quarter of Section 4 that are Crown owned;
- (b) that portion of the south half of Section 5 that is Crown owned;
- (c) that portion of the south-east quarter of Section 6 that is Crown owned”;

(ee) by repealing item 961 and substituting the following:

“961 All those lands in Township 21, in Range 10, west of the Third Meridian, described as follows:

- (a) the north half of Section 23;
- (b) the north half of Section 24;
- (c) the north-west quarter of Section 25;
- (d) the south-east quarter of Section 36”;

(ff) by repealing item 979 and substituting the following:

“979 All those lands in Township 52, in Range 10, west of the Third Meridian, described as follows:

- (a) the north-east quarter of Section 12;
- (b) Section 13;
- (c) the north half and south-east quarter of Section 14;
- (d) the north-east quarter of Section 15;
- (e) Section 22;
- (f) the north half and south-west quarter of Section 23;

- (g) Section 24;
- (h) Section 25;
- (i) Section 26;
- (j) Section 27;
- (k) Section 28;
- (l) the south-west quarter of Section 33;
- (m) the south-west quarter of Section 34;
- (n) the east half and south-west quarter of Section 35;
- (o) Section 36”;

(gg) by repealing item 1005 and substituting the following:

“1005 All those lands in Township 49, in Range 11, west of the Third Meridian, described as follows:

- (a) the south half of Section 1;
- (b) the south-west quarter of Section 12;
- (c) the north half and south-west quarter of Section 16;
- (d) Section 29”;

(hh) by repealing item 1061 and substituting the following:

“1061 The east half of Section 29, in Township 44, in Range 13, west of the Third Meridian”;

(ii) by repealing item 1067 and substituting the following:

“1067 All those lands in Township 49, in Range 13, west of the Third Meridian, described as follows:

- (a) Section 25;
- (b) the east half of Section 26;
- (c) Section 35;
- (d) Section 36”;

(jj) by repealing item 1125 and substituting the following:

“1125 All those lands in Township 47, in Range 15, west of the Third Meridian, described as follows:

- (a) the north-east and south-west quarters of Section 4;
- (b) the east half and south-west quarter of Section 11;
- (c) the south-east quarter of Section 27;
- (d) the north half of Section 29;
- (e) the south-east quarter of Section 32;
- (f) the south half of Section 33”;

(kk) by repealing item 1156 and substituting the following:

“1156 All those lands in Township 51, in Range 16, west of the Third Meridian, described as follows:

- (a) that portion of the north-east quarter of Section 10 that is Crown owned;
- (b) the south-west quarter of Section 14;
- (c) that portion of Section 15 that is Crown owned;
- (d) that portion of the south-east quarter of Section 22 that is Crown owned;
- (e) Legal Subdivisions 4 and 5 of Section 23;
- (f) the north-east and south-west quarters of Section 29”;

(ll) by repealing item 1363 and substituting the following:

“1363 All those lands in Township 59, in Range 22, west of the Third Meridian, described as follows:

- (a) the north half of Section 7;
- (b) that portion of Section 8 not covered by the waters of Makwa Lake;
- (c) the south-east quarter of Section 15;
- (d) Section 18;
- (e) the north-west quarter and the south half of Section 19;
- (f) the south half of Section 21;
- (g) the north-west quarter of Section 29;
- (h) Section 32”;

(mm) by repealing item 1393 and substituting the following:

“1393 All those lands in Township 45, in Range 23, west of the Third Meridian, described as follows:

- (a) the south-east quarter of Section 29;
- (b) the north half and south-west quarter of Section 36”;

(nn) by repealing item 1400 and substituting the following:

“1400 All those lands in Township 53, in Range 23, west of the Third Meridian, described as follows:

- (a) the north-west and south-east quarters of Section 11;
- (b) the north-west quarter of Section 29”;

(oo) by repealing item 1446 and substituting the following:

“1446 All of those lands in Township 55, in Range 24, west of the Third Meridian, described as follows:

- (a) the east half of Section 4;
- (b) the west half of Section 5;
- (c) the north-east quarter of Section 6;
- (d) the west half of Section 8;
- (e) the north-west quarter of Section 10;
- (f) the north-east quarter of Section 13;
- (g) the north-west and south-east quarters of Section 17;
- (h) the south-west quarter of Section 18;
- (i) the east half of Section 19;
- (j) the west half of Section 20;
- (k) Section 29;
- (l) Section 30”;

(pp) by repealing item 1471 and substituting the following:

“1471 All those lands in Township 44, in Range 25, west of the Third Meridian, described as follows:

- (a) the east half of Section 14;
- (b) the north-east quarter of Section 28;
- (c) the north-east quarter of Section 34”;

(qq) by repealing item 1480 and substituting the following:

“1480 All those lands in Township 55, in Range 25, west of the Third Meridian, described as follows:

- (a) the north-east quarter of Section 1;
- (b) Section 12;
- (c) the east half of Section 13;
- (d) the north-east and south-west quarters of Section 24;
- (e) Section 25;
- (f) the east half and north-west quarter of Section 26”; **and**

(rr) by repealing item 1580 and substituting the following:

“1580 All those lands in Township 10, in Range 29, west of the Third Meridian, described as follows:

- (a) the north-west quarter of Section 29;
- (b) the north-east quarter of Section 30;
- (c) the west half of Section 32”.

Coming into force

3 These regulations come into force on the day on which they are filed with the Registrar of Regulations.

