

TOWN OF CANMORE
PROVINCE OF ALBERTA
BYLAW 32-96

A BYLAW OF THE TOWN OF CANMORE IN THE PROVINCE OF
ALBERTA, REGULATING BLASTING EXPLOSIVES

WHEREAS Section 7 of the Municipal Government Act, Chapter M-26.1 R.S.A. 1994, provides that the Council of a municipality may pass a bylaw for the safety, health and welfare of people and the protection of people and property.

AND WHEREAS Council for the Town of Canmore deems it necessary to regulate the use of explosives within the Town of Canmore.

AND WHEREAS Council for the Town of Canmore hereby repeals Bylaw No. 11 of 1995.

NOW THEREFORE the Municipal Council for the Town of Canmore, duly assembled, enacts as follows:

1. In this Bylaw:
 - (1) "**ACSA**" shall mean the Alberta Construction Safety Association;
 - (2) "**Blaster**" shall mean a worker who is authorized by name in a permit issued by the Director of Inspection in the Province of Alberta to handle, prepare and fire an explosive and includes a shooter or shot-firer;
 - (3) "**Blasting Contractor**" or "**Contractor**" shall mean any company, corporation, owner, partnership, firm, proprietorship or other entity duly licensed to perform blasting in Alberta;
 - (4) "**C.A.O.**" shall mean the Chief Administrative Officer of the Municipality or his authorized representative, subordinates or assistants;
 - (5) "**Municipality**" shall mean Town of Canmore, Alberta or area within the boundaries thereof as the context may require;
 - (6) "**Explosive**" shall mean a substance that is made, manufactured or used to produce an explosion or detonation and includes black blasting powder, blasting agent, dynamite, detonating cord, detonators, as authorized under The Explosives Act R.S., Chapter E-15, s.I, and the Regulations passed thereunder, but does not include propellant powders, being either smokeless powder or black powder, or fireworks;
 - (7) "**Flyrock**" shall mean any rock particle of any size caused to travel through the air as a result of any blasting procedure, exclusive of the heaving action and dust caused by such blasting;
 - (8) "**PPV**" shall mean the Peak Particle Velocity measured in mm/s;
 - (9) "**Structure**" shall mean any building owned by others used for habitation, commercial, manufacturing, storage or any other purpose, any wooden, concrete, masonry, metal or earthen installation (dams, roads, berms, levees, etc.) above the ground surface; and below ground installations such as sewer, water and other municipal utility mains, services and manholes, mine shafts, vents etc.

STORAGE

2. The storage of explosives shall be in accordance with the said Explosives Act, the said Explosives Regulations, this Bylaw and any other applicable Act.
- (1) No person shall, within the limits of the Town of Canmore,
 - (a) construct, erect or place a Licensed Magazine,
 - (b) store explosives overnight, or
 - (c) store explosives in any receptacle other than a Type 6 Magazine (Receptacle).
 - (2) The quantities of explosives which may be kept in a Type 6 Magazine (Receptacle) shall not exceed the recommended maximum storage quantity of blasting explosives for a Type 6 Magazine set out in the said Standards for Blasting Explosives Magazines of the Explosives Branch of the Canada Department of Energy, Mines and Resources.
 - (3) The Type 6 Magazine (Receptacle) shall not be used to store an explosive overnight, during holidays or weekends, or any further period of time when work is not in progress.
 - (4) When explosives are kept at or near the site of any work in progress, a watchman shall be kept on duty at all times when the workmen are away from the site of the work.
 - (5) All explosives not used on the work site shall be returned to a licensed magazine located outside the Town of Canmore.

TRANSPORTATION OF EXPLOSIVES

3. (1) The operation of loading or unloading of explosives, the transportation and quantities of explosives in transit through the Town of Canmore and to any work site within the Town of Canmore shall be in accordance with Part VI of the Explosives Regulations enacted pursuant to the said Explosives Act and in accordance with the Transportation of Dangerous Goods and Control Act R.S.A. 1980 as amended.

BLASTING PROCEDURES

4. (1) Before a blasting contractor begins work in the Municipality of Canmore, the blasting contractor shall supply a detailed blasting proposal. Blasting proposals shall be received by the Town of Canmore or its agent at least five (5) working days prior to issuance of an explosives permit by the C.A.O. Each proposal must include a minimum of the following:
- a) detailed diagram of the blasting area,
 - b) total number of blasts in blasting area,
 - c) location, orientation, diameter, depth, spacing, burden and number of holes in each blast,
 - d) type and quantity of explosive in each blast,
 - e) type and number of delays in each blast,
 - f) type and number of detonators in each blast,
 - g) review and approval by an independent blasting consultant licensed in Alberta.

As the blasting program commences, the Town of Canmore may request an independent inspection of the contractor's work by a certified blasting consultant to determine whether or not approved practices are being followed. After such inspection, the consultant must prepare a written statement as to whether approved practices are being followed and provide it to the C.A.O.

- (2) All blasts shall be monitored with a seismograph that measures both ground vibration and atmospheric overpressure. Ground vibration (PPV's) shall be measured in the longitudinal, transverse and vertical directions. Locations for each seismograph must be reviewed by either an independent blasting consultant, by an employee of the Town of Canmore, or by the engineering consultant for the project.

Seismographs shall be located as follows:

- a) One seismograph shall be located 60 m away from the nearest point of the blast in a location of competent material;
- b) A second seismograph shall be located 120 m away from the nearest point of the blast in a location of competent material.
- c) A third seismograph shall be located adjoining the foundation of any structure that is within 500 m of the nearest point of the blast.

Seismograph PPV's shall not exceed the following at the above noted locations or any location:

- d) 50 mm/s in either the transverse, longitudinal or vertical directions at a distance of 60 m from the nearest point of the blast;
 - e) 25 mm/s in either the transverse, longitudinal or vertical directions at a distance of 120 m from the nearest point of the blast.
 - f) 25 mm/s in either the transverse, longitudinal or vertical directions at any structure, measured from the nearest point of the blast.
- (3) No blasting shall be carried out within a distance of one hundred and sixty-six (166 m) meters from any water storage reservoir, pumping station, water works transformer station or water storage tank without the express written consent of the Director of Environmental Services of the Town of Canmore or his authorized representative.
- (4) No blasting shall be carried out within (30) meters of any water main, gas main, electrical conduit, telephone conduit, sanitary sewer, storm sewer, fire cable, petroleum lines or other underground utility, without the express written consent of the relevant Municipal Department or Utility Company.
- (5) Granting of the written permission referred to in any section or subsection of this Bylaw shall not absolve the holder of the permit from liability for damage caused by the blasting.
- (6) If, in the opinion of the C.A.O., inspection indicates that the permit holder is not adhering strictly to the approved report of the consulting engineers, the C.A.O. may consider that additional inspection or engineering consultant services are necessary for the safety of the neighbouring area, and the full cost of these additional services shall be borne by the permit holder. If, in the opinion of the C.A.O. the permit holder continues to not adhere to the approved report, the C.A.O. may suspend all blasting operations until such time as the C.A.O. feels appropriate measures have been taken to ensure that the report is adhered to.

5. **ADDITIONAL PROVISIONS WHERE BLASTING IS TO BE CARRIED OUT IN AREAS WHICH HAVE BEEN UNDERMINED BY COAL EXTRACTION OR WHERE BLAST HOLES INTERSECT COAL SEAMS**

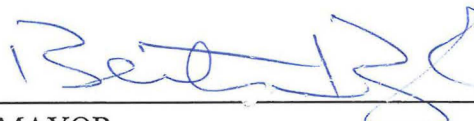
- (1) Alternative methods to blasting should be used for ground breakage in these areas. Blasting should not be used unless the blasting proposal provides detailed reasoning, acceptable to the C.A.O., that blasting is absolutely necessary.

- (2) Prior to charging any blast hole, a test will be made at the mouth of the hole for flammable gas; the results of gas determinations will be included with the records required to be maintained by Clause 8. No blast hole, from which the issue of flammable gas is detected, will be charged.
 - (3) Blast holes that intersect coal seams, old mine workings, or collapsed materials resulting from mining, shall not be charged.
 - (4) Applicant will undertake due diligence investigations to determine if undermined areas, or coal seams, are present within the blasting zone and will include the results of his/her findings with the blasting proposal.
 - (5) The due diligence investigation must be approved by the Town's undermining engineering consultant.
 - (6) All costs accrued by the Town's undermining engineering consultant will be borne by the permit applicant.
- 6.
- (1) No person shall have any explosive within the Town of Canmore without first obtaining a blasting permit from the C.A.O.
 - (2) No blasting permit shall be issued unless and until the C.A.O. has been furnished with satisfactory proof that the applicant has insurance in accordance with the requirements of Section 10, and is in receipt of the permit fee.
 - (3) No person shall carry on any blasting within the Town of Canmore without first providing a copy of the permit to handle; prepare and fire explosives issued by the Province of Alberta.
- 7.
- (1) On application for a blasting permit, the applicant shall complete the prescribed forms and shall furnish to the Town of Canmore such information as the Town of Canmore may direct to be furnished and file the completed application with the C.A.O.
 - (2) The permit fee for a blasting permit shall be \$600.00.
 - (3) Blasting permits issued pursuant to the provisions of this bylaw shall terminate on the date specified in each permit.
 - (4) If the C.A.O. is satisfied that any holder of a blasting permit issued under this bylaw has improperly stored, handled or transported explosives or has not used explosives carefully, competently or safely, the C.A.O. may suspend the permit.
- 8.
- (1) The holder of a blasting permit shall:
 - (a) maintain a continuous record showing the total weight of explosives and the number of detonators delivered each day to the work and the disposal made of the explosives and detonators not used;
 - (b) maintain a record of each blast, indicating the number of holes, time, location, weight of explosives and timing period; and
 - (c) make a return at the end of each month to the C.A.O. clearly setting forth the above information;
 - (d) Seismograph information to be provided to the C.A.O. within 24 hours of the end of each blast;
 - (2) The records referred to in subsection (1) shall at all times be available for checking by the C.A.O.

9. (1) Every applicant for a blasting permit shall provide with the application and maintain during the life of such permit, Comprehensive General Liability Insurance with the Town as a named Insured containing limits of not less than Five Million (\$5,000,000.00) Dollars inclusive per occurrence for bodily injury, death or damage to property including loss of use thereof and including a blanket property damage limit of Fifty Thousand (\$50,000.00) Dollars to cover the handling, storage and use of explosives.
- (2) No person shall carry on blasting in the Town of Canmore,
 - (a) at any time except between the hours of 8:00 am and 5:00 pm, or
 - (b) at any time on Sunday, or
 - (c) at any time on a Saturday holiday, or
 - (d) at any time when atmospheric conditions prevent a clear observation at a distance of ninety (90 m) meters from the place where the blasting is to be carried on.
- (3) Notwithstanding subsection (1), the C.A.O. may by special permission in writing, permit a person to carry on blasting when an emergency situation exists, or special circumstances arise that necessitate the project to proceed.
10. Except as hereinafter provided, no person shall:
 - (1) fire any blast other than by means of an electrical apparatus manufactured or designed for that purpose;
 - (2) use batteries installed in automobiles for blasting purposes;
 - (3) operate an engine within three (3 m) meters of any blasting circuit; or
 - (4) connect any firing wire to the electrical firing device or testing apparatus until everything connected with the blasting operation is in readiness and all clear.
11. Except as hereinafter provided:
 - (1) after the blast has been exploded, the blasting circuit shall be immediately disconnected; or
 - (2) in the event of a misfire, the firing device shall be disconnected immediately from the blasting circuit;
12. (1) All electrical apparatus shall be kept in perfect order and shall be thoroughly inspected before and after each blasting operation and all wiring connected therewith shall be properly and adequately insulated;
- (2) All wiring shall be tested for electrical continuity using an approved appliance prior to connection of an electrical firing device to the blasting circuit.
13. (1) Where a radio-frequency hazard exists in the vicinity of radio-frequency generators such as, for example, radio, television and radar stations and ratio-frequency furnaces, the commissioner may require that non-electrical methods of blasting be used, but in any event no person shall use non-electrical methods of blasting without the written authority of the C.A.O.
- (2) The C.A.O. may, at the expense of the person applying for a blasting permit, require that a radio-frequency field-strength measurement be made in order to determine the magnitude of the hazard.

14. Measures must be taken by the contractor to ensure that no discernible flyrock occurs. Details of the measures to eliminate flyrock must be included in each blasting proposal. Flyrock shall never occur during the course of any blast for any reason. If flyrock occurs, the C.A.O. will suspend any and all blasting until such time as a blasting consultant is retained by the contractor and a report is prepared by the consultant and turned over to the C.A.O. The C.A.O. at his/her discretion shall determine if measures have been taken to eliminate flyrock and may then allow further blasting.
15. All blasting operations shall cease during electrical storms.
16. All electrical apparatus of any nature used in blasting operations shall, when not in use, be kept under lock and key and under the direct charge of the blaster.
17. No person shall carry on blasting within a radius of three hundred (300 m) meters of any school building during school hours, or any hospital until the superintendent or the person in charge thereof shall have been notified six (6) hours previous to the blast being fired.
18. No person to whom a blasting permit has been issued shall:
 - (1) make up primers in advance of loading holes;
 - (2) load up hole while it is still hot from drilling; or
 - (3) load any hole except one to be fired in the next round of blasting.
19. At least three (3) minutes before firing a blast, the blaster shall give warning thereto by causing an ACSA trained flagperson to indicate/warn any person(s) to stay out of the blasting area until such time as complete safety has been restored after the blast. Each flagperson shall be situated at a reasonable distance from the blast at each avenue of approach or point of danger, and the blaster shall give five (5) long blows on a compressed air horn or similar signaling device five (5) minutes before firing the blast and three (3) long blows one (1) minute before setting off the blast, and immediately following the explosion and, ascertaining that complete safety has been restored, shall sound one (1) long and shall then signal the traffic to proceed over such street, roadway, path, walkway, etc.
20. Any person who contravenes any of the provisions of this bylaw is guilty of an offence and on conviction is liable to a fine of not more than Five Thousand (\$5,000.00) Dollars, exclusive of costs.
21. When a person has been convicted of an offence under this bylaw, the Town or any other interested party may apply to any Court of competent jurisdiction thereafter, which Court may, in addition to any other penalty imposed on the person convicted; issue an order prohibiting the continuation and repetition of the offence or the doing of any act or thing by the person convicted directed toward the continuation or repetition of the offence.
22. It is declared that if any section, subsection or part or parts of this bylaw be declared by any Court of Law to be illegal or ultra vires, such section, subsection or part or parts shall be deemed to be severable and all parts hereof are declared to be separate and independent and enacted as such.
23. This bylaw shall take effect and come into force upon the date of final reading thereof.

First reading: 9 July 1996
 Second Reading: 9 July 1996
 Third Reading: 9 July 1996



 MAYOR



 MUNICIPAL SECRETARY

