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March 2, 2017

COMMITTEE SUBSTITUTE
FOR

SENATE BILL NO. 370

By: Allen

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[ mining - rules and regulations for explosives -
effective date ]
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BE IT ENACTED BY THE PEOPLE OF THE STATE OF OKLAHOMA:

SECTION 1. AMENDATORY 45 O.S. 2011, Section 753, is amended to read as follows:

Section 753. A. The operator shall insure that explosives are used only in accordance with existing state and federal law and the regulations promulgated by the Department, which shall require:

1. Adequate advance written notice to local governments and residents who might be affected by the use of such explosives by publication of the planned blasting schedule in a newspaper of general circulation in the locality, and by mailing a copy of the proposed blasting schedule to every resident living within one-half (1/2) mile of the proposed blasting site and by providing daily notice to resident/occupiers in such areas prior to any blasting;

2. Maintaining for a period of at least three (3) years and making available for public inspection upon request a log detailing

1 the location of the blasts, the pattern and depth of the drill
2 holes, the amount of explosives used per hole, and the order and
3 length of delay in the blasts;

4 3. Limiting the type of explosives and detonating equipment,
5 the size, the timing and frequency of blasts based upon the physical
6 conditions of the site so as to prevent injury to persons, damage to
7 public and private property outside the permit area, adverse impacts
8 on any underground mine, and change in the course, channel, or
9 availability of ground or surface water outside the permit area;

10 4. All blasting operations be conducted by trained and
11 competent persons as certified by the Department; ~~and~~

12 5. Upon the request of a resident or owner of a man-made
13 dwelling or structure within one-half (1/2) mile of any portion of
14 the permitted area the applicant or permittee shall conduct a pre-
15 blasting survey of such structures and submit the survey to the
16 Department and a copy to the resident or owner making the request.
17 The area of the survey shall be decided by the Department; and

18 6. For the purposes of this section:

19 a. for blasting operations using electronic-blasting
20 detonators, a "loaded hole" is defined as one that
21 contains explosives or blasting agents with a primer
22 where the hole has been stemmed and has a short length
23 of connecting wire sticking out but does not have a
24 firing device connected,

- 1 b. for blasting operations not using electronic
2 detonators, a hole with explosives and a blasting cap
3 is considered a "loaded and charged hole",
4 c. for blasting operations using electronic-blasting
5 detonators, a "charged hole" is defined as one that
6 contains explosives or blasting agents with a primer
7 where the hole has been tamped with a short length of
8 connecting device sticking out and it does have a
9 firing device connected,
10 d. "blasting site" is defined as the area within fifty
11 (50) feet, or any alternative distance provided in the
12 blasting plan of the approved permit on file, of any
13 holes loaded with explosives, blasting agents or
14 detonators,
15 e. "blasting area" is defined as the area where flying
16 rock may be considered dangerous, which shall be
17 determined by the certified blaster.

18 B. Rules and procedures for the use of explosives are as
19 follows:

20 1. Persons who use explosives, blasting agents or detonators
21 shall be certified by the Oklahoma Mining Commission. Such persons
22 shall understand the hazards involved, and trainees shall do such
23 work only under the supervision of and in the immediate presence of
24 certified persons;

- 1 2. Blasting operations shall be under the direct control of
2 certified persons designated by the operator for that purpose;
- 3 3. Damaged or deteriorated explosives, blasting agents and
4 detonators shall be disposed of in a safe manner;
- 5 4. For blasting operations using electronic blasting
6 detonators, loaded holes shall be charged as near to blasting time
7 as practical and in compliance with the known physical limitations
8 and properties of the specific blasting materials and equipment
9 specified by the manufacturer. Unless authorized by the appropriate
10 regulatory authority, loaded holes shall be detonated within sixty
11 (60) days from the date of loading;
- 12 5. No person shall smoke within fifty (50) feet of explosives,
13 blasting agents or detonators;
- 14 6. Only wooden or other nonsparking devices shall be used to
15 punch holes in explosives cartridges;
- 16 7. Tamping poles shall be blunt and squared at one end and made
17 of wood or other nonsparking material;
- 18 8. No tamping shall be done directly on primer cartridges;
- 19 9. During the loading of holes, only the work activities
20 associated with the explosives operation will be permitted in the
21 blasting site;
- 22 10. During charging and firing, only the work activities
23 associated with the explosives operation will be permitted in the
24 blasting area;

1 11. Unused explosives and detonators shall be moved to a safe
2 location as soon as charging operations are completed;

3 12. Approaches to areas in which charged holes are awaiting
4 firing shall be guarded or barricaded and posted or flagged against
5 unauthorized entry;

6 13. When a blast is about to be fired, ample warning shall be
7 given to allow all persons to retreat to a safe place. Each mine
8 shall have a definite plan of warning signals that can be clearly
9 seen or heard by anyone in the blasting area. The operator shall
10 inform all employees at the local mine as to the established
11 procedure;

12 14. Enclosed blasting shelters constructed of strong materials
13 shall be provided to protect all persons endangered by flying rock
14 from blasting;

15 15. When safety fuse has been used, persons shall not return to
16 misfired holes for at least thirty (30) minutes;

17 16. When electric blasting caps have been used, persons shall
18 not return to misfired holes for at least fifteen (15) minutes.
19 Leading wires from the power source must be disconnected before
20 persons can be allowed to return to the blasting sites;

21 17. Blasted materials shall be examined for undetonated
22 explosives after each blast and undetonated explosives found shall
23 be disposed of safely;

1 18. Misfires shall be reported to the proper supervisor and
2 shall be disposed of safely before any other work is performed in
3 the blasting area;

4 19. Blast holes in hot-hole areas and holes that have been
5 sprung shall not be charged before tests have been made to insure
6 that the heat has been dissipated to a safe level;

7 20. If explosives are suspected of burning in a hole, all
8 persons in the endangered area shall move to a safe location until
9 the danger has passed;

10 21. Holes shall not be drilled where there is danger of
11 intersecting a charge or misfired hole;

12 22. Fuses and igniters shall be stored in a cool, dry place
13 away from oils or grease;

14 23. Fuses shall not be kinked, bent sharply or handled roughly;

15 24. Fuses shall be cut and capped in safe, dry locations posted
16 with "No Smoking" signs;

17 25. Blasting caps shall be crimped to fuses only with devices
18 designed for that specific purpose;

19 26. Fuses of less than forty-eight (48) inches in length shall
20 not be used for any purpose;

21 27. At least two (2) persons shall be present when lighting
22 fuses, and no person shall light more than fifteen (15) individual
23 fuses. If more than fifteen (15) holes per person are to be fired,
24 igniter cord and connectors or electric blasting shall be used;

1 28. A safe interval of time shall be allowed to light a round
2 and evacuate the blasting area;

3 29. Fuses shall be ignited with hot-wire lighters, lead
4 spitters, igniter cord or other such devices designed for this
5 purpose;

6 30. Fuses shall not be ignited before the primer and the entire
7 charge are securely in place;

8 31. Electric detonators of different brands shall not be used
9 in the same round;

10 32. Electric detonators shall remain shunted until they are
11 being wired into the blasting circuit. Lead lines and wired rounds
12 shall be kept shunted until immediately before blasting;

13 33. Completely wired rounds shall be tested with a blasting
14 galvanometer before connections are made to the blasting line;

15 34. Lead wires and blasting lines shall not be strung across
16 power conductors, pipelines or within twenty (20) feet of bare power
17 lines. They shall be protected from sources of static or other
18 electrical contact;

19 35. Permanent blasting lines shall be properly supported,
20 insulated and kept in good repair;

21 36. Charging shall be stopped immediately when the presence of
22 static electricity or stray current is detected; the condition shall
23 be corrected before charging is resumed;
24

1 37. Charging of holes shall be suspended and the persons
2 withdrawn to a safe location upon the approach of an electrical
3 storm;

4 38. Safety switches and blasting switches shall be labeled,
5 encased in boxes and arranged so that the covers of the boxes cannot
6 be closed with the switches in closed position;

7 39. Blasting switches shall be locked in the open position
8 except when closed to fire the blast. Lead wires shall not be
9 connected to the blasting switch until the shot is ready to be
10 fired;

11 40. The key to a blasting switch shall be entrusted only to the
12 person designated to fire blasts;

13 41. Electric circuits from the blasting switches to the blast
14 area shall not be grounded;

15 42. At least a five-foot air gap shall be provided between the
16 blasting circuit and the power circuit;

17 43. Where electric blasting is to be performed, electric
18 circuits to equipment within twenty-five (25) feet of a hole that is
19 to be charged with an electric blasting cap shall be de-energized
20 before electric detonators are brought into the immediate area, or
21 the electric equipment shall be moved out of the immediate area;

22 44. Power sources shall be suitable for the number of electric
23 detonators to be fired and for the type of circuits used;
24

1 45. When instantaneous blasting is performed, the double-
2 trunkline or loop system shall be used in detonating-cord blasting;

3 46. When instantaneous blasting is performed, trunklines in
4 multiple-row blasting shall make one (1) or more complete loops with
5 crossties between loops at intervals of not over two hundred (200)
6 feet;

7 47. All detonating-cord knots shall be tight and all
8 connections shall be kept at right angles to the trunklines;

9 48. Delay connectors for firing detonating-cord shall be
10 treated and handled with the same safety precautions as blasting
11 caps and electric detonators; and

12 49. Detonating-cord shall not be kinked, bent or otherwise
13 handled in such a manner that the train of detonation may be
14 interrupted.

15 SECTION 2. AMENDATORY 45 O.S. 2011, Section 911, is
16 amended to read as follows:

17 Section 911. A. Rules and procedures ~~as follows shall be~~
18 ~~complied with~~ for storage of explosives shall be as follows:

19 1. Detonators and other cap-sensitive high explosives shall be
20 stored in magazines provided for that purpose. Blasting agents may
21 be stored in van-type trailers, provided they are well-ventilated,
22 kept clean and free of extraneous material that could create a fire
23 hazard;

1 2. Separate magazines shall be provided for the storage of
2 detonators and for explosives;

3 3. Detonators shall not be stored in the same magazine with
4 explosives or blasting agents;

5 4. Blasting agents, safety fuse or detonating cord may be
6 stored with explosives, but blasting agents must be kept physically
7 separated from the fuse, detonating cord and explosives;

8 5. Magazines shall be:

9 a. located in accordance with the current American Table
10 of Distances for Storage of Explosives,

11 b. detached structures located away from power lines,
12 fuel storage area and other possible sources of fire,

13 c. constructed substantially of noncombustible material
14 or covered with fire-resistant material,

15 d. reasonably bullet-resistant,

16 e. electrically bonded and grounded if constructed of
17 metal,

18 f. made of nonsparking materials on the inside, including
19 floors,

20 g. provided with adequate and effectively screened
21 ventilation openings near the floor and ceiling,

22 h. kept securely locked when unattended,
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- i. posted with suitable danger signs so located that a bullet passing through the face of a sign will not strike the magazine,
- j. used exclusively for storage of blasting agents, explosives, or detonators and kept free of all extraneous materials,
- k. kept clean and dry in the interior, and in good repair, and
- l. unheated, unless heated in a manner that does not create a fire or explosion hazard. Electrical heating devices shall not be used inside a magazine;

6. Only permissible lights, worn or carried, shall be used inside magazines;

7. Areas surrounding magazines not less than twenty-five (25) feet in all directions shall be kept free of rubbish and other combustibles;

8. Smoking and open flames shall not be permitted within twenty-five (25) feet of explosives and detonator storage magazines;

9. Cases of explosives shall be stored in such a manner as to assure the use of the oldest stock first;

10. Ammonium nitrate fuel oil mixtures shall be physically separated from dynamite stored in the same magazine and in such a manner that oil does not contaminate the dynamite; and

1 11. Cases of explosives shall not be stored on case ends or
2 sides nor in stacks over six (6) feet high.

3 B. Rules and procedures as follows shall be complied with in
4 the transportation of explosives:

5 1. Explosives and detonators shall be transported in separate
6 vehicles unless separated by four (4) inches of hardwood or the
7 equivalent;

8 2. Self-propelled vehicles used to transport explosives or
9 detonators shall be equipped with suitable fire extinguishers and
10 marked with proper warning signs;

11 3. When vehicles containing explosives or detonators are
12 parked, the brakes shall be set, the motive power shut off when not
13 in use, and if parked on an incline, the vehicle shall be blocked
14 securely against rolling;

15 4. Vehicles containing explosives or detonators shall not be
16 left unattended except in blasting areas where loading or charging
17 is in progress;

18 5. Vehicles containing explosives or detonators shall not be
19 taken to a repair garage or shop for any purpose;

20 6. Vehicles used to transport explosives or detonators shall be
21 maintained in good condition and shall be operated at a safe speed
22 and in accordance with recognized safe operating practices;

23 7. Vehicles used to transport explosives other than Ammonium
24 Nitrate Fuel Oil (ANFO) mixtures shall have substantially

1 constructed bodies, no sparking metal exposed in the cargo space,
2 and the explosives shall not be piled higher than the side or end
3 enclosures;

4 8. Explosives shall be transported at times and over routes
5 that endanger a minimum number of persons;

6 9. Other materials or supplies shall not be placed on or in the
7 cargo space of a conveyance containing explosives or detonators;

8 10. No person shall smoke while transporting or handling
9 explosives or detonators;

10 11. Only the necessary attendants shall ride on or in vehicles
11 containing explosives or detonators;

12 12. Explosives shall be transported promptly without undue
13 delays in transit;

14 13. Nonconductive containers with tight-fitting covers shall be
15 used to transport or carry capped fuses and electric detonators to
16 blasting sites; and

17 14. Substantial nonconductive closed containers shall be used
18 to carry explosives to blasting sites.

19 C. Rules and procedures as follows shall be complied with in
20 the use of explosives, with the exception of persons with a valid
21 coal permit issued by the Department of Mines:

22 1. Persons who use explosives, blasting agents or detonators
23 shall be certified by the ~~State Mining Board~~ Oklahoma Mining
24 Commission. Such persons shall understand the hazards involved, and

1 trainees shall do such work only under the supervision of and in the
2 immediate presence of certified persons;

3 2. Blasting operations shall be under the direct control of
4 certified persons designated by the operator for that purpose;

5 3. Damaged or deteriorated explosives, blasting agents and
6 detonators shall be disposed of in a safe manner;

7 4. Holes to be blasted shall be charged as near to blasting
8 time as practical, and such holes shall be blasted as soon as
9 practical after charging has been completed;

10 5. No person shall smoke within fifty (50) feet of explosives,
11 blasting agents or detonators;

12 6. Explosives and blasting agents shall be kept separated from
13 detonators until charging of holes is started;

14 7. Primers shall be made up at the time of charging and as
15 close to the blasting site as conditions allow;

16 8. Only wooden or other nonsparking devices shall be used to
17 punch holes in explosives cartridges;

18 9. Tamping poles shall be blunt and squared at one end and made
19 of wood or other nonsparking material;

20 10. No tamping shall be done directly on primer cartridges;

21 11. Unused explosives and detonators shall be moved to a safe
22 location as soon as charging operations are completed;

23 12. Approaches to areas in which charged holes are awaiting
24 firing shall be guarded, or barricaded and posted, or flagged,

1 against unauthorized entry. If blasting is done after dark, red
2 flashing lights shall be used at the approaches to the blasting
3 area;

4 13. When a blast is about to be fired, ample warning shall be
5 given to allow all persons to retreat to a safe place. Each mine
6 shall have a definite plan of warning signals that can be clearly
7 seen or heard by anyone in the blasting area. The operator shall
8 inform all employees at the local mine as to the established
9 procedure;

10 14. Enclosed blasting shelters constructed of strong materials
11 shall be provided to protect all persons endangered by flying rock
12 from blasting;

13 15. When safety fuse has been used, persons shall not return to
14 misfired holes for at least thirty (30) minutes;

15 16. When electric blasting caps have been used, persons shall
16 not return to misfired holes for at least fifteen (15) minutes.
17 Leading wires from the power source must be disconnected before
18 persons can be allowed to return to the blasting sites;

19 17. Blasted materials shall be examined for undetonated
20 explosives after each blast and undetonated explosives found shall
21 be disposed of safely;

22 18. Misfires shall be reported to the proper supervisor and
23 shall be disposed of safely before any other work is performed in
24 the blasting area;

1 19. Blast holes in "hot-hole" areas and holes that have been
2 sprung shall not be charged before tests have been made to insure
3 that the heat has been dissipated to a safe level;

4 20. If explosives are suspected of burning in a hole, all
5 persons in the endangered area shall move to a safe location until
6 the danger has passed;

7 21. Holes shall not be drilled where there is danger of
8 intersecting a charge or misfired hole;

9 22. Fuses and igniters shall be stored in a cool, dry place
10 away from oils or grease;

11 23. Fuses shall not be kinked, bent sharply or handled roughly;

12 24. Fuses shall be cut and capped in safe, dry locations posted
13 with "No Smoking" signs;

14 25. Blasting caps shall be crimped to fuses only with devices
15 designed for that specific purpose;

16 26. Fuses of less than forty-eight (48) inches in length shall
17 not be used for any purpose;

18 27. At least two (2) persons shall be present when lighting
19 fuses, and no person shall light more than fifteen (15) individual
20 fuses. If more than fifteen (15) holes per person are to be fired,
21 igniter cord and connectors or electric blasting shall be used;

22 28. A safe interval of time shall be allowed to light a round
23 and evacuate the blasting area;

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1 29. Fuses shall be ignited with hot-wire lighters, lead
2 spitters, igniter cord or other such devices designed for this
3 purpose;

4 30. Fuses shall not be ignited before the primer and the entire
5 charge are securely in place;

6 31. Electric detonators of different brands shall not be used
7 in the same round;

8 32. Electric detonators shall remain shunted until they are
9 being wired into the blasting circuit. Lead lines and wired rounds
10 shall be kept shunted until immediately before blasting;

11 33. Completely wired rounds shall be tested with a blasting
12 galvanometer before connections are made to the blasting line;

13 34. Lead wires and blasting lines shall not be strung across
14 power conductors, pipelines or within twenty (20) feet of bare power
15 lines. They shall be protected from sources of static or other
16 electrical contact;

17 35. Permanent blasting lines shall be properly supported,
18 insulated and kept in good repair;

19 36. Charging shall be stopped immediately when the presence of
20 static electricity or stray current is detected; the condition shall
21 be corrected before charging is resumed;

22 37. Charging of holes shall be suspended and the persons
23 withdrawn to a safe location upon the approach of an electrical
24 storm;

1 38. Safety switches and blasting switches shall be labeled,
2 encased in boxes and arranged so that the covers of the boxes cannot
3 be closed with the switches in closed position;

4 39. Blasting switches shall be locked in the open position
5 except when closed to fire the blast. Lead wires shall not be
6 connected to the blasting switch until the shot is ready to be
7 fired;

8 40. The key to a blasting switch shall be entrusted only to the
9 person designated to fire blasts;

10 41. Electric circuits from the blasting switches to the blast
11 area shall not be grounded;

12 42. At least a five-foot air gap shall be provided between the
13 blasting circuit and the power circuit;

14 43. Where electric blasting is to be performed, electric
15 circuits to equipment within twenty-five (25) feet of a hole that is
16 to be charged with an electric blasting cap shall be de-energized
17 before electric detonators are brought into the immediate area, or
18 the electric equipment shall be moved out of the immediate area;

19 44. Power sources shall be suitable for the number of electric
20 detonators to be fired and for the type of circuits used;

21 45. When instantaneous blasting is performed, the double-
22 trunkline or loop system shall be used in detonating-cord blasting;

23 46. When instantaneous blasting is performed, trunklines in
24 multiple-row blasting shall make one (1) or more complete loops with

1 crossties between loops at intervals of not over two hundred (200)
2 feet;

3 47. All detonating-cord knots shall be tight and all
4 connections shall be kept at right angles to the trunklines;

5 48. Delay connectors for firing detonating-cord shall be
6 treated and handled with the same safety precautions as blasting
7 caps and electric detonators; and

8 49. Detonating-cord shall not be kinked, bent or otherwise
9 handled in such a manner that the train of detonation may be
10 interrupted.

11 D. Rules and procedures as follows shall be complied with in
12 dealing with sensitized ammonium nitrate blasting agents:

13 1. When sensitized ammonium nitrate mixtures and blasting
14 agents are used, the same precautions shall be taken as for high
15 explosives;

16 2. Adequate priming shall be employed to guard against
17 misfires, increased toxic fumes and poor performance;

18 3. Where pneumatic loading is employed, before any type of
19 blasting operation using blasting agents is put into effect, an
20 evaluation of the potential hazard of static electricity shall be
21 made. Adequate steps, including the grounding of the conductive
22 parts of pneumatic loading equipment, shall be taken to eliminate
23 the hazard of static electricity before blasting agent preparation
24 is commenced;

1 4. Pneumatic loading equipment shall not be grounded to water
2 lines, air lines, rails or other permanent electrical grounding
3 systems;

4 5. Hoses used in connection with pneumatic loading machines
5 shall be of the semiconductive type having a total resistance low
6 enough to permit the dissipation of static electricity and high
7 enough to limit the flow of stray electric currents to a safe level.
8 Wire-counteracted hose shall not be used because of the potential
9 hazard from stray electric currents; and

10 6. Plastic tubes shall not be used to protect pneumatically
11 loaded blasting agent charges against water unless a positive
12 grounding system is provided to drain electrostatic charges from the
13 holes.

14 SECTION 3. This act shall become effective November 1, 2017.

15 COMMITTEE REPORT BY: COMMITTEE ON ENERGY
16 March 2, 2017 - DO PASS AS AMENDED
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