



NEW MEXICO BUREAU OF MINE SAFETY

801 Leroy Place
Socorro, NM 87801

Phone: 575-835-5460
Website: bmi.state.nm.us
www.nmminesafety.com

November 2017 Newsletter

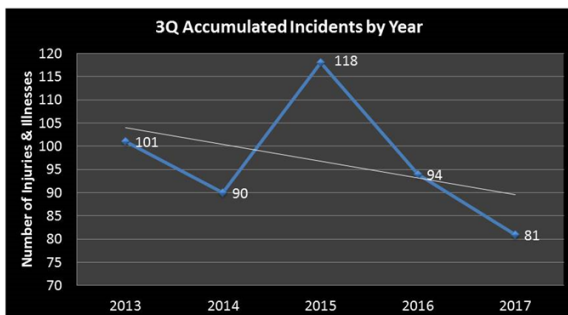
IN RETROSPECT

As we prepare for the end of the calendar year, it may be beneficial to take a look back at the preceding nine months and glean some insight from the mistakes made—both personal and institutional—over the first three quarters of 2017. The following graphic representations are captured from accident, injury and illness data provided by MSHA for the calendar year through September and account only for Coal & M/NM operators. Contractor data is not included. Reportable non-injury or illness data was omitted.

Accumulated Injuries & Illnesses

Comparing the new Mexico mining injury & illness 3Q data over a five-year period (2013-2017)

1-3Q & 3Q New Mexico

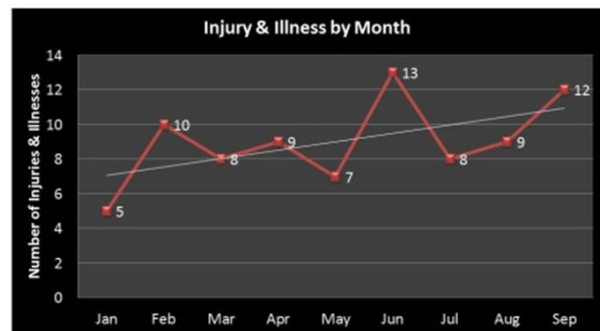


we see a downward trend in the number of injuries and illnesses experienced. The number of incidents peaked in 2015 but have dropped to a five-year low as of September 30 of this year. It will be interesting to see if we see a similar trend in similar a year-end review

Nine Months

The progression by month through the third quarter is not so hopeful. We find that the number of MSHA reportable injuries and illnesses experienced over the nine-month period are scattered between a

1-3Q New Mexico

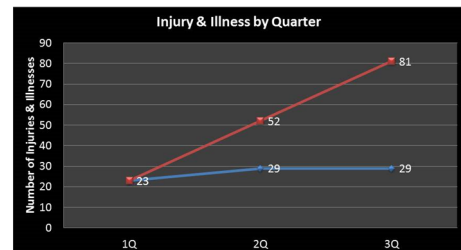


low of five in January and a high of thirteen in June. With an additional twelve recorded in September, the trend is obvious, even without the superimposed trend line. A more tempered look at the same data (by quarter) is a bit more hopeful.

Three Quarters

New Mexico experienced 23 reportable injuries in the first quarter

1-3Q New Mexico



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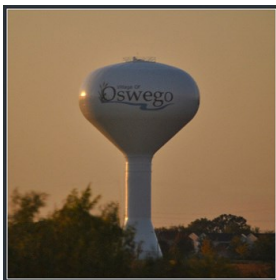
(including a fatality). The second and third quarter saw 29 each quarter. The 29 in June include five reportable injuries attributed to a single incident (Surge Pile Collapse on June 29).

What's Happening?

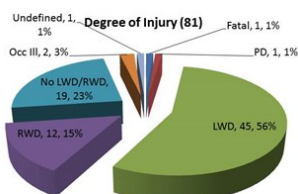
Many of us are familiar with Heinrichs' diagram that describes his theory regarding the association between more severe injuries and less severe injuries. His widely acclaimed theory fit into a nice pyramid.



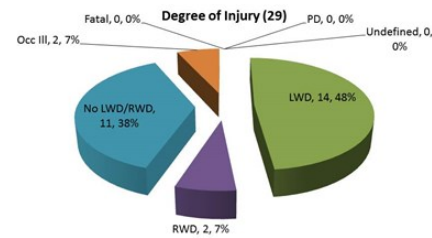
New Mexico reportable injuries seem to fit a much different model—a phenomenon that may be influenced primarily by MSHA's reporting criteria. Consider the shape of the water tower pictured here. The small strobe light at the top represents the fatal injury (1%). The tank segment represents lost-workday cases (56%). The stem represents restricted work-day cases (15%) and the slightly wider base represents the no lost work-day or restricted workday cases (19%). It may not be a perfect fit, but it more accurately reflects the data.



1-3Q 2017 New Mexico



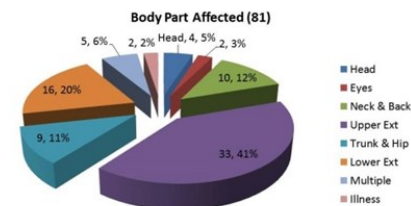
3Q 2017 New Mexico



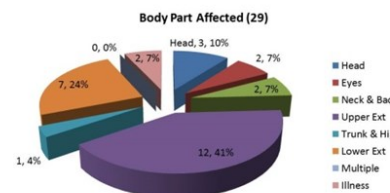
Body Parts

Injuries to the upper extremities (shoulder to finger) represent the leading injury site through the third quarter of 2017 (41%). Lower extremities (20%), Neck and Back (12%) and Trunk and Hip (11%) fell in line with double-digit percentages. Fortunately, Head (5%) and Eye (3%) injuries were less frequent.

1-3Q New Mexico



3Q New Mexico



What Happened?

It seems that New Mexico miners are most susceptible to Sprains & Strains (27%), Fractures

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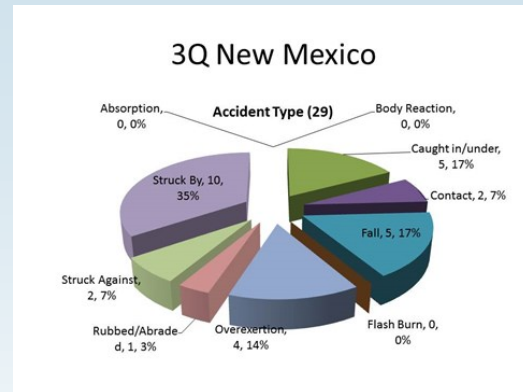
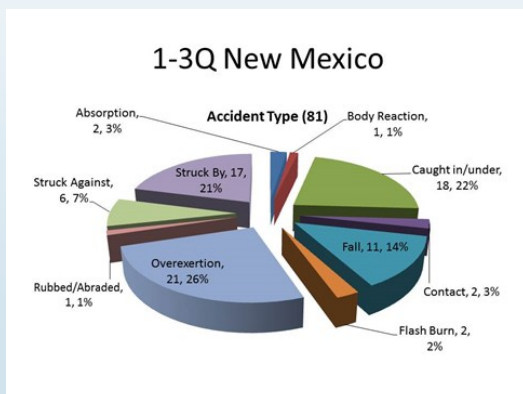
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(20%) and cuts and lacerations (17%). While these three categories remained the same for the third quarter only, the frequency changed as depicted in these diagrams.



How did that Happen?

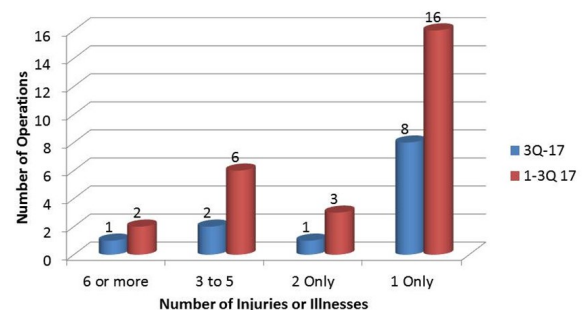
Through the first three quarters, most injured New Mexico miners were involved in situations resulting in Overexertion (26%), Caught in or Under (22%), Struck By (21%) or Falls (14%). During the last three months (July – September), more miners were struck by something than any of the other mechanisms of injury (35%). Overexertion fell to 14% of the injured or ill workers.



Where?

Eighty-one injuries or illnesses were reported to MSHA over the course of the first three quarters of CY 2017. One might expect the frequency of injury to follow the level of exposure—larger operations with greater exposure hours would experience more injuries. Two operators experienced six or more injured or ill employees over the course of the last nine months. Sixteen operators reported only one reportable injury or illness. Nine operators settled in between experiencing two, three, four or five reportable injury/illness incidents.

1-3 Q & 3Q Only New Mexico Operations' Injury Experience



Now What?

Let us not forget that these statistics represent people—our employees and co-workers. The data provides some insight into how folks are affected when our safeguards are overlooked or simply fail to protect.

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That awareness may just provide the key to preventing the next mine injury or illness—one success at a time. The most productive tool may just be the observant supervisor or co-worker who takes the initiative to speak up. Speak up to recognize safe work performance and to correct deficient work performance.



Mining Safety Board

The Mining Safety Board met on September 8 in Albuquerque following the NMMA convention. The board is looking into amending some of the rules for certification and recertification of coal mine officials. Jeff Gordon, Chair formed a committee for the purpose of drafting revised rules. For a copy of the draft meeting minutes, contact Deb McVey at Debora.mcvey@nmt.edu or 575-835-5460



The next scheduled MSB meeting is planned for February 1, 2018 at a time and location to be announced in the Farmington area. Inquiries can be directed to Board Chair Jeff Gordon at:

jeffgordon.nmmsb@yahoo.com.

Thanksgiving - Giving Thanks For Safety

John Drebing, November 8, 2017

In a few weeks, we will celebrate Thanksgiving in the United States. Now would be a good time to remind your employees how much they need to be grateful for safety.

Safety is what gets them home every day to their friends and family.

Safety allows them to continue to earn a living. Safety enables them to enjoy their hobbies and recreation. It wasn't too many years ago in this country that safety was not an important value in the workplace. Only those companies led by people who didn't want to see anyone injured focused on preventing injuries. Even those who believed it was wrong to make a profit from an unsafe workplace may not have believed it was possible to lessen or eliminate those injuries.

We still have a long way to go. With around 4,000 workplace fatalities every year and countless other injuries there is much room for improvement. But we can be grateful we have made it this far on our journey to making the workplace safe for everyone.

Take time to thank them for their part in keeping themselves and others safe. Thank your experienced workers for using the newest and latest safety techniques thereby creating an example for the newer workers to follow. Thank them for actively caring for others and making your workplace safe.



Too often we forget to be grateful for all we have achieved and all we have. This is a good time of the year to remind ourselves how blessed we are and how much we have achieved in the field of safety.

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MSHA PROGRAM POLICY MANUAL—COAL

§75.400 Accumulation of Combustible Materials.

Coal dust, including float coal dust deposited on rock-dusted surfaces, loose coal, and other combustible materials, shall be cleaned up and not be permitted to accumulate in active workings, or on diesel-powered and electric equipment therein.

75.400 Accumulation of Combustible Materials

Experience and tests have shown that accumulations of coal dust can contribute greatly to the propagation and severity of mine explosions. Such accumulations are also potential fire hazards since they are more readily ignitable and, once ignited, are more difficult to control and extinguish. The intent of this Section is to prevent the accumulations of the specified combustible materials in order to reduce the dangers of mine fires and explosions.

Coal dust means particles of coal that pass a No. 20 sieve. It is this fraction of the coal that participates in the dust explosion reaction. Loose coal means coal fragments larger in size than those passing a No. 20 sieve.

Tests have shown that intermittent piles of coal dust are more hazardous than smooth layers because the irregular piles are eroded more readily by the air movement generated during an explosion. As little as two 300-pound piles, under experimental conditions, caused an explosion to propagate when the entry otherwise was adequately rock-dusted.

Coal dust or coal and loose coal accumulations present a fire as well as an explosion hazard. The broken coal has considerably more surface area per unit mass than solid coal. For example, should an electric cable fail and cause an arc, the probability of igniting accumulations is greater than igniting solid coal. Also, when broken coal is ignited, fire propagates faster than in solid coal. As another example, if hydraulic oil is spilled into broken coal, the broken coal would ignite more easily and propagate flame faster than a similar spill on the smooth floor or against the coal rib.

Accumulations of coal dust, loose coal, or the combination of the two offer serious fire and explosion hazards and

must be removed from the mine if, in the judgment of the inspector, they would lead to an intensification or spreading of a fire or an explosion. In evaluating whether the coal dust and loose coal would lead to intensification or spreading of a fire or an explosion, the inspector should consider all the facts concerning the deposit. For example, float coal dust, loose coal and/or coal dust deposited near working faces and in active haulage entries, where sources of ignition are likely to be, are more hazardous than similar deposits in back entries. However, the remoteness of back entries is not necessarily a safeguard.

Stoppings that normally isolate back entries may be destroyed by the force of an explosion, and accumulations of float coal dust, loose coal or coal dust in the back entries would add fuel to the flame.

In citing a violation, the inspector should describe fully the conditions and practices, such as the location, dimensions, etc. Imminent danger conditions normally can be considered to exist when accumulations of coal dust, float coal dust, loose coal, and other combustible materials are exposed to probable explosion and fire ignition sources, and the conditions observed could reasonably be expected to cause death or serious physical harm to a miner if normal mining operations were permitted to proceed in the area before the dangerous conditions are eliminated. There may be times when the inspector's interpretation of what is an accumulation of float coal dust, loose coal and coal dust and/or other combustible materials will differ with the opinion of others. However, the inspector should base his decision upon the facts surrounding each occurrence, and document such facts as the dimensions, type, specific location, and all other related factors. The inspector's decision as to what is an accumulation must be an objective one based on the facts or circumstances surrounding each occurrence.

Experience has demonstrated that the loading of loose coal caused by sloughing ribs creates a hazardous condition in that the pillar size can be substantially reduced and the width of the entry or room dangerously increased; therefore, such loose coal shall not be considered accumulations of combustible material if such material is rendered inert by heavy applications of rock dust. However, such loose coal shall not be permitted to accumulate in the roadways or outby timberlines.

Continued on page 6



§77.1109 Quantity and Location of Firefighting Equipment.

Preparation plants, dryer plants, tipples, drawoff tunnels, shops, and other surface installations shall be equipped with the following firefighting equipment.

(a) Each structure presenting a fire hazard shall be provided with portable fire extinguishers commensurate with the potential fire hazard at the structure in accordance with the recommendations of the National Fire Protection Association.

(b) Preparation plants shall be equipped with waterlines, with outlet valves on each floor, and with sufficient fire hose to project a water stream to any point in the plant. However, where freezing conditions exist or water is not available, a 125-pound multipurpose dry powder extinguisher may be substituted for the purposes of this paragraph (b) for each 2,500 square feet of floor space in a wooden or other flammable structure, or for each 5,000 square feet of floor space in a metal, concrete-block, or other type of non-flammable construction.

(c)(1) Mobile equipment, including trucks, front-end loaders, bulldozers, portable welding units, and augers, shall be equipped with at least one portable fire extinguisher.

(2) Power shovels, draglines, and other large equipment shall be equipped with at least one portable fire extinguisher; however, additional fire extinguishers may be required by an authorized representative of the Secretary.

(3) Auxiliary equipment such as portable drills, sweepers, and scrapers, when operated more than 600 feet from equipment required to have portable fire extinguishers, shall be equipped with at least one fire extinguisher.

(d) Fire extinguishers shall be provided at permanent electrical installations commensurate with the potential fire hazard at such installation in accordance with the recommendations of the National Fire Protection Association.

(e) Two portable fire extinguishers, or the equivalent, shall be provided at each of the following combustible liquid storage installations:

(1) Near each above ground or unburied combustible liquid storage station; and,

(2) Near the transfer pump of each buried combustible liquid storage tank.

(f) Vehicles transporting explosives and blasting agents shall be equipped with fire protection as recommended in Code 495, section 20, National Fire Protection Association Handbook, 12th Edition, 1962.

77.1109 Quantity and Location of Firefighting Equipment

When questions arise concerning paragraph (a), the standards presented in National Fire Protection Code No. 10 shall be used as a guide. Generally, a minimum of one extinguisher having a rating no less than 2A8B or 2A8BC where electrical installations are present shall be provided on each floor or level in the structure. At least one extinguisher shall be provided for each 3,000 square feet of floor space.

Where the floor space exceeds 3,000 square feet, and more than one extinguisher is required, they shall be no more than 75 feet apart. If the area protected contains permanent electrical installations, the maximum distance between extinguishers shall be no more than 50 feet.

The purpose of paragraph (b) is to insure that a water stream or dry powder extinguishing agent can be applied at any location in the building. The 125-pound extinguisher can be a single unit or made up of several smaller units, provided the total weight of powder meets the requirement.

A 125-pound dry chemical extinguishing unit shall be provided for each 5,000 square feet of floor area in a building of noncombustible construction, or 2,500 square feet area in a building of combustible construction.

A single 125-pound unit can provide protection for more than a single floor if the system is permanently installed with rigid piping. Thus, a portable 125-pound unit can serve only a single floor, but a permanently installed unit may serve one or more floors, provided the floor area does not exceed 2,500 or 5,000 square feet, depending on the type of construction.

The following portable fire extinguisher ratings will be acceptable as meeting the requirements of paragraph (c)(1). All trucks up to and including those of 20-ton (load) capacity should be equipped with at least one extinguisher having a minimum rating of 5BC. Trucks larger than 20-ton capacity should be equipped with an extinguisher having at least a 10BC rating. Two 5BC extinguishers are acceptable.

1. A front-end loader or portable welding unit no larger in size (weight) than a 20-ton truck should require the same protection as a 20-ton truck or 5BC.

2. A front-end loader, bulldozer, auger, etc., larger than a 20-ton truck should require the same protection as a truck larger than a 20-ton or 10BC.

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Mobile equipment containing flammable and combustible liquids, including trucks transporting flammable and combustible liquids and diesel-powered motor generator sets, should be protected with extinguishers having a minimum rating twice that required for other mobile equipment in examples 1 and 2; except that additional fire protection shall not be required for equipment using hydraulic fluids only for power-steering and power-breaking systems.

Paragraph (c)(2) requires equipment larger in size than that equivalent to a 50-ton truck to be provided with additional fire protection commensurate with the hazard. A minimum of one extinguisher having the proper rating shall be provided on each of all multilevel equipment such as shovels and draglines. The extinguisher required by paragraph (c)(3) should be rated no less than 5BC.

When implementing paragraph (d), judgment shall be used in the evaluation of the requirements for extinguishers at each permanent electrical installation. One portable extinguisher can serve several adjacent electric motors or transformers. Extinguishers provided and located according to paragraph (a) shall be acceptable as protection for electrical installations within that area, provided such extinguishers are no more than 50 feet from the electrical installation.

Substation - Two extinguishers having a total rating of 20BC shall be provided at permanent substations.

The requirement in paragraph (e) of two portable fire extinguishers at the stated combustible liquid storage depots clarified in NFPA Code No. 30 means that two portable units, each having a rating of not less than 10-B units, shall be provided. Questions will arise as to whether a single extinguisher having a rating of 20-B units can be used instead of two 10-B fire extinguishers. Decisions shall be made for individual circumstances. Two 10-B extinguishers are generally preferred, as a greater chance exists that at least one unit will not be downwind of the fire. Decisions shall be based on the size of liquid storage, location and surrounding conditions. Rock dust in the amount of at least 500 pounds, kept dry and maintained usable, will be acceptable as "equivalent" to two portable extinguishers at remote combustible liquid storage installations, provided a shovel or equivalent means is available for applying the rock dust.

Fire protection referred to in paragraph (f) means two extinguishers having a rating of not less than 5BC each.

MSHA PROGRAM POLICY

MANUAL—METAL/NON-METAL

§56/57.4531 Surface Flammable or Combustible Liquid Storage Buildings or Rooms.

(a) Surface storage buildings or storage rooms in which flammable or combustible liquids, including grease, are stored and that are within 100 feet of any person's work station shall be ventilated with a sufficient volume of air to prevent the accumulation of flammable vapors.

(b) In addition, the buildings or rooms shall be—

(1) Constructed to meet a fire resistance rating of at least one hour; or

(2) Equipped with an automatic fire suppression system;
or

(3) Equipped with an early warning fire detection device that will alert any person who could be endangered by a fire, provided that no person's work station is in the building.

(c) Flammable or combustible liquids in use for day-to-day maintenance and operational activities are not considered in storage under this standard.

§57.4533 Mine Opening Vicinity.

Surface buildings or other similar structures within 100 feet of mine openings used for intake air or within 100 feet of mine openings that are designated escapeways in exhaust air shall be—

(a) Constructed of noncombustible materials; or

(b) Constructed to meet a fire resistance rating of no less than one hour; or

(c) Provided with an automatic fire suppression system;
or

(d) Covered on all combustible interior and exterior structural surfaces with noncombustible material or limited combustible material, such as five-eighth inch, type "X" gypsum wallboard.

56/57.4531 Surface Buildings or Rooms for Flammable or Combustible Liquid Storage

57.4533 Surface Buildings or Structures in Vicinity of Mine Openings

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Standard 56/57.4531 requires that certain ventilation and construction measures be included in buildings and rooms where flammable or combustible liquids are stored on the surface, if the storage is located within 100 feet of a work station. Standard 57.4533 requires that surface buildings and similar structures located within 100 feet of certain mine openings be constructed with specified fire protection characteristics.

Several compliance alternatives are permitted for achieving appropriate fire protection in both standards. If a mine operator chooses alternative (b)(1) of 30 CFR 56/57.4531 or alternative (b) of 57.4533, difficulty may be encountered in determining what types of construction meet a fire-resistance rating of at least one hour. MSHA enforcement personnel may also need assistance in recognizing one hour fire resistant construction due to the numerous combinations of techniques and materials which may be used.

Clarification in this regard is contained in the section on "Fire Safety in Building Design and Construction," pages 6-60 through 6-79 of the Fire Protection Handbook, 14th Edition, Section 6, Chapter 7 entitled Structural Integrity During Fire, published by the National Fire Protection Association (NFPA). This reference material provides fire resistance ratings for certain types of material and its related thickness for such structural components as beams, joists, trusses or girders, load-bearing walls, stud walls and partitions, various finishes over wood framing, and floor and roof construction. Additional information regarding fire resistant building materials and assemblies may be retrieved from Underwriters Laboratories Inc., The Factory Mutual System, The National Bureau of Standards, trade association publications, and various building codes.

**The truth of the matter is
that you always know the
right thing to do.**

The hard part is doing it.

General H. Norman
Schwarzkopf

NM Bureau of Mine Safety Fire Extinguisher Training

The Bureau of Mine Safety training staff will soon be incorporating new technology into the fire-fighting portion of the new miner and annual refresher training curriculum. The Bureau has acquired two BullEx fire extinguisher training units that permit hands-on practice extinguishing digitally created fires on an LED unit using life-like fire extinguishers that produce a broad laser instead of water or dry chemical.

The simulation provides a look, sound and feel that is much like using the PASS (Pull-Aim-Squeeze-Sweep) method for fighting a real fire. The advantage is that the equipment makes no mess so it can be used indoors or out.

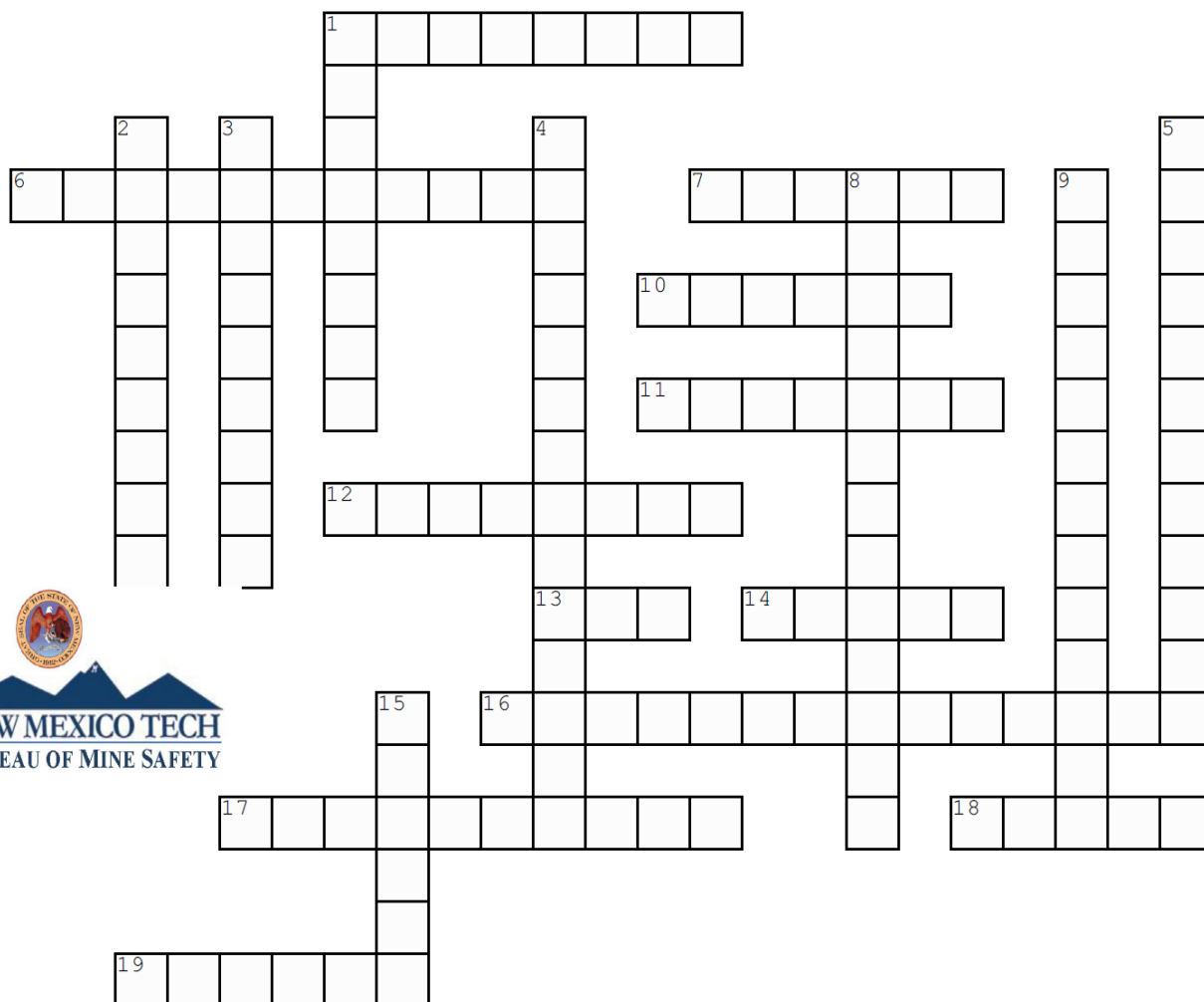
Type A, B and C fires can be programmed and each can be adjusted for variable difficulty.



November 2017 Newsletter

Rights & Responsibilities

Complete the crossword below



Created with TheTeachersCorner.net [Crossword Puzzle Generator](#)

Across

1. You have a responsibility to be _____ in your response to MSHA's questions during an inspection or investigation
6. Miners' reps have the right to _____ in MSHA inspections and investigations
7. You have a responsibility to _____ with rules and regulations
10. Miners and Reps have the right to _____ hazards or infractions directly to MSHA
11. You may be fined for _____ in prohibited areas
12. You may be fined for giving _____ notice of an MSHA inspection
13. The Federal Mine Safety and Health Act of 1977 is often just called the _____
14. Coal miners are entitled to _____ periodically to check for black lung
16. The Act protects against certain types of _____ for miners exercising their rights
17. You may be fined for giving false _____ to an MSHA inspector or investigator
18. Someone who works at a mine, including employees, contractors and others
19. Operators are required to _____ miners (and reps) about health testing, and other official S&H matters

Down

1. You have a right to health and safety _____ prior to starting work and for certain tasks.
2. Operators are prohibited from discrimination against miners who engage in what is commonly called _____ activity
3. Miners or their reps may contest _____ and orders issued by MSHA
4. Under the Act, miners may select a miners' _____
5. If you cannot work because of an order issued by MSHA, you still collect some _____ for a limited period of time
8. The purpose of the rights provided under the act are to encourage _____ by miners and their reps
9. A complaint to MSHA will trigger an _____
15. You have a responsibility to _____ management about health or safety concerns

The correct answers will be attached to the archived November [Newsletter](#) on the BMS website

*Visit the Bureau of Mine Safety website:
www.nmmsafety.com*

Train the Trainer (TTT)

The New Mexico Bureau of Mine Safety (BMS) will be conducting a Train-the-Trainer class on January 9-11, 2018 at the BMS offices on the New Mexico Tech Campus in Socorro, NM. The class is designed to prepare qualified persons who are requesting MSHA approval to provide mine safety training under 30 CFR Part 48



For details, contact:

Contact Debora McVey at 575-835-5460
debora.mcvey@nmt.edu

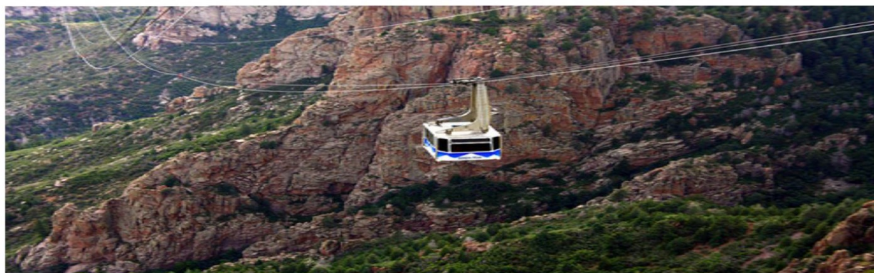


November 2017 Newsletter

Register Online at www.regonline.com/2018nmmhsc



The 2018 New Mexico Mine Health & Safety Conference will be held in Albuquerque, N.M. **May 9 -11 2018**



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Reserved Room Discount



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The NM Bureau of Mine Safety Website has more information about the NMMSHC, registration, exhibiting, scholarships, and the annual Outstanding Contribution to Safety (OCS) Award.

<http://www.bmi.state.nm.us/navConf.htm>