**Section 300.220 Monitoring**

a) Duties of the Operator

1) When the scaled distance has a value less than 65 at the closest protected structure, the operator shall make a seismographic recording and airblast recording at or as near as possible to that structure.

2) When any blast is within 500 feet of a landfill, the operator shall make a seismograph recording at or near the closest part of the landfill to the blast. This requirement shall not apply if a protected structure is located between the blast and the landfill or if an alternative compliance method has been approved by the Department in accordance with Section 300.225(f).

3) When the cubed root scaled distance to the nearest protected structure has a value less than 350 and when the burden to hole depth ratio is greater than 1.0, or the top stemming height is less than 70% of the burden dimension, the airblast produced by the blast shall be measured at or as near as possible to the closest protected structure.

4) When field programmed times of electronic, or programmable detonators are unable to be electronically documented or verified in subsection (a)(5)(a)(xiv), the operator shall make a seismographic and airblast recording for Department review, at or as near as possible to the closest protected structure.

5) The operator shall maintain blasting records as follows:

A) A record of each blast shall be made, retained by the operator for at least five years and made available for inspection by the Department. Each blast record, as well as other documentation deemed relevant to that record, shall not be falsified or misrepresented. Units of measure shall be included on each blast record. The blast record should be based on the maximum pounds in any given hole in the blast. Records of blasts conducted since the Department's last inspection, or copies of such blasting records, shall be made available at the operation for inspection by the Department. The record is to be completed by the end of the work day following the day in which the blast occurred, including the seismograph meter reading, if required, and shall contain the following data:

i) Name of the mine operator for whom the blast is being conducted.

ii) The location, using global positioning data points, date and time of the blast.

iii) Name, signature and licensure number of the licensed blaster responsible for the blast.

iv) Type of material blasted.

v) Number of holes, burden and spacing.

vi) Diameter and depth of holes.

vii) Type and amount of each explosive used, including any variation from the heaviest hole.

viii) Total weight of explosives used in pounds.

ix) Maximum weight, in pounds, of explosives used in any one hole.

x) Maximum weight of explosives, in pounds, detonated within any eight millisecond period.

xi) Maximum number of holes or explosive decks detonated within any eight millisecond period.

xii) Initiation system, including number of circuits and the timer interval, if a sequential timer is used.

xiii) Type and length of stemming (deck and top).

xiv) Type of detonator and delay periods used, in milliseconds. When electronic or programmable detonators are used, field programmed times shall be documented utilizing a date stamp which is derived from the machine used to detonate the blast. This documentation should be representative of the firing times at the instant of detonation. This documentation is not required when detonators are pre-programmed by the manufacturing facility with labels indicating, in milliseconds, the nominal firing time.

xv) Sketch of delay pattern, including decking, which indicates all hole to hole connections and the firing times of each hole as well as a directional indicator.

xvi) Distance and scaled distance to the closest protected structure, using global positioning data points.

xvii) Location, using global positioning data points, of the closest protected structure.

xviii) Distance and scaled distance to the closest part of any landfill within 500 feet of the blast.

xix) A hole diagram indicating borehole depth, subdrill, borehole diameter, type and length of stemming, primer location, location and size of inert decks, weight and type of explosives used per explosive column.

xx) List of persons assisting with blast loading and initiation.

xxi) Drill log showing the physical characteristics of each hole.

xxii) Seismograph recordings of airblast and ground vibration, when required.

xxiii) Seismograph identification number.

xxiv) The type of seismograph, sensitivity, and certification date of annual calibration which must be conducted within one year of the previous calibration date.

B) Air blast and/or ground vibration recordings, or photographic copies thereof, where required by the Department, shall be kept for a period of five years following the date of the blast, and shall be available for inspection by the Department. Records of blasts conducted since the Department's last inspection, or copies of such blasting records, shall be made available at the operation for inspection by the Department. The recordings shall include the following information:

i) Maximum airblast and/or ground vibration levels recorded.

ii) The specific location of the monitoring equipment, its distance from the blast and the date and time of the recording.

iii) Name of the person and/or firm making the recording.

iv) Name of the person and/or firm analyzing the recordings.

v) The type of seismograph, sensitivity and certification date of annual calibration which must be conducted within one year of the previous calibration date.

C) As used herein, "seismographic recording", or "record of airblast recording", or "record" shall mean a visually inspectable cartesian representation of the time history of the particle velocity levels and/or airblast levels versus time. The particle velocity is shown by three traces representing mutually perpendicular components of motion. The components are oriented vertically, transversely and longitudinally to the horizontal direction from the recording location to the location of the blast. The airblast time history is represented by a single trace. The record or recording includes either an analog representation, or a written description, of the vertical scale for the particle velocity traces and the airblast trace. The units for the particle velocity traces and scale are in inches per second. The units for the airblast trace and scale are millibars, pounds per square inch, or decibels. The recording shall also include an analog or descriptive time scale. The time units are in seconds.

b) Duties of the Department

1) The Department shall conduct seismographic monitoring at any operation at such times and conditions as the Department deems appropriate.

2) The Department shall conduct inspections of the operation as follows:

A) Randomly without notice twice per year.

B) At such other times and conditions as the Department deems appropriate.

C) Less frequently than twice per year at operations where blasting is not regularly conducted.

3) All Department employees conducting official business shall inform the operator or the operator's designated representative, if either is present, upon arrival to and departure from the operation.

(Source: Amended at 48 Ill. Reg. 9650, effective June 24, 2024)