

CITY OF KENNEWICK
ORDINANCE NO. 5876

AN ORDINANCE RELATING TO BLASTING REGULATIONS AND AMENDING
SECTIONS 15.35.010, 15.35.020, 15.35.030, 15.35.040, 15.35.050, 15.35.070, AND
15.35.090 OF THE KENNEWICK MUNICIPAL CODE

THE CITY COUNCIL OF THE CITY OF KENNEWICK, WASHINGTON DO ORDAIN AS
FOLLOWS:

Section 1. Section 15.35.010 of the Kennewick Municipal Code, be, and the same hereby is,
amended to read as follows:

15.35.010: Definitions—Adoption by reference.

- (1) The definitions set forth in WAC 296-52-099, and any amendments thereto, are adopted by reference.
- (2) The definitions set forth in the most recently adopted version of the International Fire Code Chapter 56, Explosives and Fireworks, and any amendments thereto, are adopted by reference.
- (3) The definitions set forth in the most recent edition of the NFPA 495, Explosive Materials Code, and any amendments thereto, are adopted by reference.
- (4) The following definitions are added to the definitions provided in the codes above:
 - (a) Air Overpressure (Air blast): A sound pressure wave from a blast traveling through the atmosphere, Air blast is expressed in units of pounds per square inch (psi) or decibels (Dbl).
 - (b) Controlled Blasting: Careful blasting methods used to minimize the effects of blasting on structures and to minimize damage to surrounding rock. Also see Perimeter Controlled Blasting. Controlled Blasting methods involve distributing and minimizing the explosive charges to minimize stressing and fracturing of the rock behind the neat excavation line.
 - (c) Maximum Charge Weight per Delay: For purposed of vibration control, any charges firing within any 8-millisecond time period are considered to have a cumulative effect on vibration and air blast effects, Therefore, the maximum charge per delay equals the sum of the weight of all charges firing within any 8-millisecond time period.
 - (d) Peak Particle Velocity (PPV): The maximum of the three ground vibration velocities measured in the vertical, longitudinal longitudinal and transverse directions. Velocity units are expressed in inches per second (ins/sec) or millimeters per second (mm/sec) and measured by a blasting seismograph.

- (e) Scaled Distance: The distance from a blast measured in feet, divided by the square root of the charge per delay period measured in pounds. Scaled distance values are used in calculations to predict and evaluate ground vibrations. For air blast calculations, cube root scaling is used and distance is divided by the cube root of the maximum charge per delay.
 - (f) Springing: The blasting practice of detonating a charge in a drill hole to create a cavity in order to place a larger concentrated charge of explosives. Springing will not be permitted in the City of Kennewick.
 - (g) U.S. Bureau of Mines (USBM) RI 8507 PPV Frequency Plot: A plot of measured peak particle velocity vs. measured frequency on a logarithmic horizontal and vertical scales, examples of which are shown in Appendix A of "Structure Response and Damage Produced from Surface Mine Blasting", U.S. Bureau of Mines, Report of Investigation 8507, by D. E., Siskind, et. al., dated 1980
- (5) Whenever any conflict exists between the cited definition or the definitions in the referenced codes, the most restrictive definition shall apply. Whenever any conflict exists between the substantive provision of this chapter and those of the above-referenced codes, the more restrictive provision shall apply.
- (Ord. 5876 Sec. 1, 2020; Ord.5868 Sec. 5(part), 2020)

Section 2. Section 15.35.020 of the Kennewick Municipal Code, be and the same hereby is, amended to read as follows:

15.35.020: Permit required.

- (1) This Statement of Concern is expressly written to alert the CONTRACTOR to the fact that those ordinary practices that are customarily considered as standard for the blasting industry will not be acceptable in the City of Kennewick. The use of Controlled Blasting techniques involving extra caution and skill will be required to complete Blasting Projects in the City in a satisfactory and acceptable manner.
- (2) No person, company or corporation shall be in possession of explosive materials, or conduct an operation or activity requiring the use of explosive materials, or perform, order or supervise the loading and firing of explosive materials without a current and valid blasting permit issued by the city. This chapter shall not apply to those exemptions listed in RCW 70.74.191, as may be amended, and WAC 296-52-401(3) through (4), as may be amended.
- (3) Explosive materials shall not be transported, sold, given, delivered or transferred to anyone in the city not in possession of a valid blasting permit.
- (4) A blasting permit is required for every individual project requiring blasting.
- (5) A permit issued under this chapter to any person, company or corporation is nontransferable to any other person, company or corporation and shall be issued for a period not to exceed one year (12 months from the date of issuance). Permits are only valid for the physical area noted in the application.

- (6) All federal, state and city laws and regulations applicable to obtaining, owning, transporting, storing, handling and using explosive materials shall be followed and be a condition of all blasting permits issued by the city.
- (7) Blasting permits will be subject to review and approval by the Fire Code Official, or their designees.

(Ord. 5876 Sec. 2, 2020; Ord.5868 Sec. 5(part), 2020)

Section 3. Section 15.35.030 of the Kennewick Municipal Code, be, and the same hereby is, amended to read as follows:

15.35.030: Application—Contents.

The city shall have power and authority to issue a permit for blasting but before doing so shall require the person, company or corporation to whom the permit is to be issued to file an application, which shall include the following:

- (1) A completed application form provided by the city specifying the name and address of the person, company or corporation applying for the permit, and the name and address of the blaster or of the person who will actually supervise the blasting. The legal owner of the property or properties where the activity will be conducted will also be noted, along with contact information.
- (2) Copies of current and valid Blaster's License(s) issued by the Washington State Department of Labor and Industries to one or more individuals that will perform the duties of the Blaster in Charge (BIC) for the project.
- (3) Copies of current and valid Employee Possessor License(s) issued by the Federal Department of Alcohol, Tobacco and Firearms (ATF) for those individuals who will be responsible for receiving and possessing explosives for the project.
- (4) An explosives transportation plan as hereinafter provided.
- (5) A General Blasting Plan as hereinafter provided.
- (6) A Blasting Safety Plan as hereinafter provided.
- (7) A traffic control plan as hereinafter provided.
- (8) A pre-blast notification plan as hereinafter provided.
- (9) Pre-blast Property Condition Inspection Reports shall be provided to the Fire Code Official as a Condition of the Permit as hereinafter provided.

- (10) A city of Kennewick business license.
- (Ord. 5876 Sec. 3, 2020; Ord.5868 Sec. 5(part), 2020)

Section 4. Section 15.35.040 of the Kennewick Municipal Code, be, and the same hereby is, amended to read as follows:

15.35.040: Fee.

The fee for blasting permits will be determined based upon actual administrative costs; including review time, consultant costs, and inspection time's incurred by staff of the Fire Code

Official or their designee. The fee shall be posted and updated according to existing processes as noted in KAC 8-40-010 Fire Permit Fee Schedule.
(Ord. 5876 Sec. 4, 2020; Ord.5868 Sec. 5(part), 2020)

Section 5. Section 15.35.050 of the Kennewick Municipal Code, be, and the same hereby is, amended to read as follows:

15.35.050: Insurance policy.

- (1) Before approval to do blasting is issued, the applicant shall deliver a contractor's bond running to the City, in the minimum amount of \$25,000 conditioned upon the indemnification and payment by the permittee of all claims for injury and damages to persons or property, public or private, resulting from any blasting activity of the permittee.
- (2) Before approval to do blasting is issued, the applicant shall furnish evidence of insurance covering bodily injury and property damage liability exposures including the "X, C, U" perils (explosion, collapse and underground) on the comprehensive or commercial general liability occurrence form. Limits of liability are to be no less than one million dollars single limit per occurrence and two million dollars aggregate. If written on the commercial liability form, the aggregate limits shall be no less than two million dollars Coverage will include the City being named as an additional insured and thirty days' prior notice of cancellation, nonrenewal or material policy modification to the City. The Fire Official or their designee may require additional coverage or higher limits as circumstances warrant.

(Ord. 5876 Sec. 5, 2020; Ord.5868 Sec. 5(part), 2020)

Section 6. Section 15.35.070 of the Kennewick Municipal Code, be, and the same hereby is amended to read as follows:

15.35.070: Storage of explosives prohibited.

- (1) No overnight storage of explosive materials is permitted within the city limits. Blast holes loaded with explosives are to be shot on the day they are loaded.
- (2) If misfires or other unexpected blast delays occur such that a shot cannot be detonated within the time window established for detonation, then the licensed BIC, working for the Permittee, shall guard the shot overnight and detonate it the following day. At no time is it permitted to load a blast if that blast cannot be detonated on the same day.
- (3) The required daily method of handling explosives in the city is as follows:
 - (a) Delivery;
 - (b) Standby during loading; and
 - (c) Return of all unused explosive materials used in blasting.

(Ord. 5876 Sec. 6, 2020; Ord.5868 Sec. 5(part), 2020)

Section 7. Section 15.35.090 of the Kennewick Municipal Code, be, and the same hereby is amended to read as follows:

15.35.090: Use of explosives.

The use of explosives within the city must comply with federal and state regulations concerning the use of explosives, including, but not limited to, Chapter 70.74 RCW and the current edition of WAC 296-52

- (1) General Blasting Plan. A blasting plan for each discrete project requiring the use of explosives shall be submitted to and approved by the city prior to the issuance of a blasting permit. The plan shall be accompanied by additional documentation (e.g., maps, site plans and excavation drawings) in order to detail the proposed blasting operation. The plan shall include:
 - (a) The location where the blasting is to occur. This shall include, at a minimum, a plan showing the proposed blast area, construction site and surrounding structures. Provide a second drawing showing the layout of the blast area accompanied by a minimum of one long section and two cross sections showing the limits of the blasting work to be completed. The City may require resubmittal of plans if the limits of the work and the blast area are not clearly defined;
 - (b) The approximate total volume of material to be blasted;
 - (c) The incremental volumes, per blast, of material to be blasted. Provide a plan and two orthogonal cross sections through the first two planned blasts showing proposed blast hole layouts and depths, proposed hole loads and stemming, estimated powder factor, delay sequencing, planned maximum number of pounds of explosive that will detonate in any 8ms period, and predicted Peak Particle Velocities at the closest adjacent structures (in minimum of 4 different orthogonal directions);
 - (d) The types and packaging of explosive materials to be used along with Manufacturer's product information sheets and Material Safety Data Sheets (MSDS) for all explosives, blasting agents, primers and initiator products, blasting devices, lightning detectors, blasting mats, and all other blasting equipment proposed for use;
 - (e) The drill hole diameters, depths, patterns, sub-drilling depths and drill hole orientations to be used;
 - (f) The initiation system, the incremental delay times and the location of the primers in the explosive column;
 - (g) The stemming depths and stemming material for the various estimated depths of drill holes to be blasted;
 - (h) The approximate powder factors anticipated;
 - (i) The fly-rock control procedures and equipment, if any, to be used;
 - (j) The maximum number of blasts to be made in any one day;

- (k) The blast warning sound system and equipment to be used; and
 - (l) The scheduled start date and finish date of blasting operations.
- (2) Blasting Safety Plan
- (a) A complete description of the warning, clearing and guarding procedures that will be employed to ensure personnel, staff, visitors, and all other persons are at safe locations during blasting. This information will include details regarding visible warning signs or flags, audible warning signals, method of determining blast areas (all areas affected by any potentially harmful blast effects), access blocking methods, guard placement and guard release procedures, primary initiation method, and the system by which the blaster-in-charge will communicate with site security guards;
 - (b) Detailed description of how explosives will be safely stored transported and used at the site. Plans will explain how day storage magazines and explosive transport vehicles will satisfy all applicable BATF, OSHA, DOT, Federal, and State regulations. This plan will also indicate how explosives will be inventoried secured and guarded to prevent theft or unauthorized use of explosives.
 - (c) Equipment that will be used to monitor the approach of lightning storms and in the event of such, evacuation and site security plans.
 - (d) Detailed contingency plans for handling of misfires caused by cutoffs or other causes.
 - (e) Fire prevention plan details, including, smoking policies, procedures and limitations for work involving any open flames or sparks, description and location of all firefighting equipment, and firefighting and evacuation plans. The fire prevention plan will be subject to approval by the Fire Code Official.
 - (f) Description of the personal protective equipment that will be used by the Contractor's personnel, including but not limited to safety glasses, hard-toe footwear, hard hats, and gloves and any special provisions required by the Fire Code Official related to PPE.
- (3) Traffic Control Plan. A traffic control plan, acceptable to the city detailing signing, flagging, temporary road closures and detour routes for blasting operations must be provided prior to the issuance of a blasting permit. If any road closures are proposed, the traffic control plan must account for school bus schedules and shall not delay school buses on regularly scheduled routes.
- (4) Pre-Blast Notification Plan. A plan outlining a program of pre-blast public notifications, structural inspections and blast effect monitoring within a specified distance of the blasting is required prior to the issuance of a blasting permit.
- (a) The distances from the blasting within which the (a) notification, (b) pre-blast structural inspection, and (c) blast monitoring are required and shall be determined by the scaled distance formulas set forth below. No blasting

will be permitted until the notification and inspection requirements are completed. The Fire Code Official can increase the minimum distances.

- (i) Distance from the blast within which notification of all occupied structures is required: $D_a = 180\sqrt{w}$.
 - (ii) Distance from the blast within which inspection of all occupied structures is required: $D_b = 150\sqrt{w}$.
 - (iii) Distance from the blast within which monitoring of selected structures is required: $D_c = 120\sqrt{w}$.
 - (b) In the scaled distance formulas (noted above), D_a , D_b , and D_c are the actual distances in feet from the closest point in the blast. " \sqrt{w} " is the square root of the maximum weight of the explosives in pounds detonated with a minimum eight millisecond separation from another detonation event in a sequentially delayed blast.
 - (c) Notification Letter. The pre-blast notification shall consist of a letter advising all residents within a specified distance of the blasts of the character and intent of the blasting program, its anticipated impact on local residents, the proposed duration of blasting activities and providing telephone numbers for public contact. Distribution of this notification shall be made a minimum of seven days prior to the start of blasting. Copies of the Notification Letter(s) shall be provided to the Fire Code Official.
 - (d) Pre-Blast Inspection. A pre-blast inspection of residents' property shall be offered to all residents within the specified distance of the blasting at the permit holder's expense and done by a qualified third party who is not an employee of the contractor. A copy of the individual inspection reports and a log of all photos taken are to be sent to the Fire Code Official or their designees. Where inspections are disallowed by the resident or not possible for other reasons, a certified letter shall be sent to the occupant/owner at the unsurveyed address advising them of their right to a pre-blast inspection and the possible consequences of denying an inspection.
 - (e) The pre-blast inspection program for residences within the specified distance shall be completed no later than two days prior to the start of blasting with notification to the Fire Code Official or their designees.
- (5) Blast Plan Compliance Inspections. During the first scheduled blast operation a representative(s) of the Fire Official's Office shall be present and witness the blast operation. The Fire Code Official, or their designee, shall conduct additional site visits to observe subsequent blasting operations at the discretion of the Fire Code Official.
- (6) Post-Blast Inspection. Building owners may request an inspection of their property if, following a blast, they feel damage has occurred to their property because of the blasting. This request may be made regardless of scaled distance formula criteria given in subsection 4a) of this section. This inspection is to be made by an operator's representative within 15 days of the request. If no

agreement is arrived at between the operator and property owner, the city, upon request by the operator or the property owner, shall arrange to have a qualified third party do an inspection and submit a timely report to all parties concerned. The cost of the inspection will be borne equally between the affected party and the blasting contractor. The report will be provided to both parties and the city.

- (7) **Monitoring.** All blasts are to be monitored using blast-monitored equipment designed for that purpose and carrying a certificate of calibration dated within the current calendar year. The blast monitors shall record Peak Particle Velocity (PPV) and frequency in three orthogonal directions and air over pressure in dBL. For shots in which the pounds detonated per eight millisecond time increment are less than 10 pounds and the closest structures are more than 200-ft away, one blast monitor is required. When 10 or more pounds are detonated per eight millisecond time interval, two blast monitors are required. All blasting-monitoring records are to be signed and submitted to the city within 24 hours of each blast.
- (8) **Maximum Peak Particle Velocity.** The maximum peak particle velocity in any seismic trace at the dominant frequency to be allowed on any residential, business or public structure shall conform to WAC 296-52-67065, Figure 8a or 8b shall be modified as follows:
 - (a) If the estimated/predicted vibration levels at any adjacent structure, for any of the blasts, are greater than 50% of the maximum allowable limits in WAC 296-52-67065, Figure 8a or 8b then the Permittee shall retain a Professional Engineer (PE) licensed in the State of Washington to examine the planned blasting program, adjacent structures and any condition surveys performed and to prepare and stamp a report demonstrating and affirming that the adjacent structures will not be damaged by the proposed or revised blasting program. The City shall review the Professional Report and may increase the allowable limits beyond the 50% maximum allowable limits in WAC 296-52-67065, Figure 8a or 8b at their sole discretion. They may also determine that the 50% maximum allowable limits in WAC 296-52-67065, Figure 8a or 8b be retained to afford mitigation to the potentially affected parties.
 - (b) The methods to be used for blast vibration monitoring shall be provided in the Blast Plan along with the methods used to predict vibration levels and the magnitudes of predicted vibration levels for planned blasts.
- (9) **Air Blast.** The maximum air blast over pressure permitted at the closest residential, business or public structure designed for human occupancy is not to exceed 133 dBL @ 2.0 Hz hi pass system per the USMB RI 8485.
- (10) **Utilities.** Whenever blasting is being conducted in close proximity to or under existing utilities, the utility owner shall be notified a minimum of 24 hours in advance of blasting, by the applicant. The Fire Code Official shall be notified that this was accomplished prior to blasting.
- (11) **Blast (Shot) Report.** A signed Blast (Shot) Report on a form approved by the Fire Code Official, Community Development Director, or their designee, shall be filed

with the city within 24 hours of making the blast. The report shall include the following blast information:

- (a) Date, time and location of shot;
 - (b) Number of drill holes;
 - (c) Maximum, minimum and average drill hole depth;
 - (d) Drill hole diameter;
 - (e) Sub-drill depth;
 - (f) Total pounds of each type of explosive used;
 - (g) A drill hole section schematic showing the loading of a typical hole;
 - (h) Amount and type of stemming material;
 - (i) Schematic showing drill hole pattern;
 - (j) Initiation delay sequence;
 - (k) Maximum pounds of explosives detonated in any eight millisecond time interval;
 - (l) Type and size of any fly-rock protection devices used if any;
 - (m) Seismic reports;
 - (n) Comments regarding the outcomes of the blast.
- (12) The city shall be notified: (1) immediately of any blasting accident, and (2) within 24 hours by the permittee of any incident, damage claim or neighbor annoyance report brought to the permittee's attention.

(Ord. 5876 Sec. 7, 2020; Ord.5868 Sec. 5(part), 2020)

Section 8. This ordinance shall be in full force and effect five days from and after its passage, approval and publication as required by law.

PASSED BY THE CITY COUNCIL OF THE CITY OF KENNEWICK, WASHINGTON, this 18th day of August, 2020, and signed in authentication of its passage this 18th day of August, 2020.

Attest:

TERRI L. WRIGHT, City Clerk

Approved as to Form:

DON BRITAIN, Mayor

ORDINANCE NO. 5876 filed and recorded in the office of the City Clerk of the City of Kennewick, Washington this 19th day of August, 2020.

LISA BEATON, City Attorney

TERRI L. WRIGHT, City Clerk

DATE OF PUBLICATION _____