ERP BLASTING PLAN

February 2019

ERP performs blasting operations in accordance with all Washington State and Federal standards. Blasting operations are contracted out to experienced and licensed professionals. Part One outlines the regulations that ERP operates under. Part Two details our Standard Operating Procedure for blasting. Part Three includes notes and addenda not specific to Parts One or Two.

PART ONE: REGULATIONS

King County Grading Permit

Clearing & Grading

Blasting

47. Blasting shall be conducted under an approved blasting plan in accordance with KCC 21A.22.070.B.

48. In accordance with KCC 21A.22.070.B.3, blasting shall be conducted according to a time schedule, provided to residents within one-half mile of the site, that features regular or predictable times, except in the case of an emergency. If requested by a resident, the operator shall provide notice of changes in the time schedule at least twenty four hours before the changes take effect.

49. All blasting to be performed at the site shall be "confined" blasts and shall be done in accordance with State and Federal regulations. The preparation and actual blasting operation shall be conducted under the supervision of a licensed blasting contractor. All blasting shall be confined to no more than twice a week and only between the hours of 3:00 p.m. and 4:30 p.m., Monday through Friday. Notice shall be given to local area residents at least five minutes prior to detonation. Notice shall either be by way of a bell, siren, or whistle and audible within the surrounding area for at least a distance of one mile from the site. The blast warning signal shall be modulated, directed, or otherwise controlled to reduce its impact on adjacent residents to the maximum extent feasible consistent with assuring audibility of the signal for one mile radius area from the location of the blast. Explosive materials shall only be stored on the subject property with the prior approval of DPER.

50. Blast monitoring shall be conducted consistent with the methods specified in the Office of Surface Mining Enforcement and Reclamation 1987 Blasting Guidance Manual in accordance with KCC 21A.22.070.B, and reports summarizing monitoring results shall be submitted to DPER promptly after the blast. No additional blasting is allowed until the report is submitted to DPER.

51. The quarry operator shall be responsible for any damage to nearby properties, including domestic water supply wells, attributable to blasting on the subject property. Claims for any such damage shall be the responsibility of the affected property owner and the quarry operator to handle directly between themselves, but a failure of the quarry operator to respond in good faith to any such claim may be cause for denial of future grading permits, or prohibition or restriction upon future blasting.

Mining Safety and Health Administration (MSHA)

Section 56.6300 - Control of Blasting Operations

(a) Only persons trained and experienced in the handling and use of explosive material shall direct blasting operations and related activities.

Section 56.6000 - Definitions

Blast site: The area where explosive material is handled during loading, including the perimeter formed by the loaded blast holes and 50 feet (15.2 meters) in all directions from loaded holes. A minimum distance of 30 feet (9.1 meters) may replace the 50 foot requirement if the perimeter of loaded holes is demarcated with a barrier.

Section 56.6306 - Loading, blasting, and security

(a) When explosive materials or initiating systems are brought to the blast site, the blast site shall be attended; barricaded and posted with warning signs, such as “Danger”, “Explosives”, or “Keep Out”, or flagged against unauthorized entry.

(b) Vehicles and Equipment shall not be driven over explosive material or initiating systems in a manner which could contact the material or system, or create other hazards.

(c) Once loading begins, the only activities permitted within the blast site shall be those activities directly related to the blasting operation and the activities of surveying, stemming, sampling of geology, and reopening of holes, provided that reasonable care is exercised. Haulage activity is permitted near the base of bench faces being loaded or awaiting firing, provided no other haulage access exists.

(d) Loading and blasting shall be conducted in a manner designed to facilitate a continuous process, with the blast fired as soon as possible following the completion of loading. If blasting a loaded round may be delayed for more than 72 hours, the operator shall notify the appropriate MSHA district office.

(e) In electric blasting prior to connecting to the power source, and in nonelectric blasting prior to attaching an initiating device, all persons shall leave the blast area except persons in a blasting shelter or other location that protects them from concussion (shock wave), flying material, and gases.

(f) Before firing a blast --
   (1) Ample warning shall be given to allow all persons to be evacuated;
   (2) Clear exit routes shall be provided for persons firing the round; and
   (3) All access routes to the blast area shall be guarded or barricaded to prevent the passage of persons or vehicles.

(g) Work shall not be resumed in the blast area until a post-blast examination addressing potential blast-related hazards has been conducted by a person with the ability and experience to perform the examination.

PART TWO: STANDARD OPERATING PROCEDURE FOR BLASTING

Planning:

a) The tentative blast date is determined, in conjunction with planning the drilling activities and developing the shot design.
b) The licensed blasting subcontractor will utilize best practices when developing each shot design to minimize noise, dust and vibration generated by the blast in keeping with ERP's Noise Management Plan, Dust Mitigation Plan, and generally accepted industry practices.
c) For any planned blasts within 50 feet of any steep slope area at the perimeter of the mining area, ERP will have the proposed blast reviewed and approved by a licensed geotechnical engineer prior to blastng.
d) Designated ERP management will work with the licensed blasting subcontractor to develop each shot design to ensure that all possible efforts are being made to minimize noise, dust, and vibration.

Blasting Notification:

a) ERP will provide details and contact information on its website www.eastsiderock.com for any local residents that would like to be added to the RRQ Blasting Advisory List.
b) RRQ will add any residents to the Blasting Advisory List referred to it by King County DPER.
c) Residents seeking to be added to the RRQ Blasting Advisory List can elect to be contacted for notifications by email, phone or text message.
d) ERP will respond directly (within one week of notification and prior to any subsequent blasts) to any complaints received from blasting including any potential complaints forwarded from DPER.
e) A minimum three-day notification is given to King County DPER and all local residents on the RRQ Blasting Advisory List regarding the scheduled blast date.
f) In the event of a change in scheduling, King County DPER and any local residents on the RRQ Blasting Advisory List will be notified as soon as practically possible, and at a minimum within 24 hours prior to any rescheduled event.
g) Any residents within a one-mile radius may also request to be notified again the day of the blast, and ERP will contact them no later than 15 minutes prior to the blast.
h) A warning horn is sounded approximately 15 minutes prior to the blast, for the purpose of alerting local resident.

Blast Design:

Blast designs will vary greatly according to each individual shot. When designing each blast, in order to minimize noise, dust, and the potential for unintentionally displacing material onto steep slope areas that pose a risk of conveying material outside of permitted mining areas, the subcontracted blaster will thoroughly evaluate all aspects of each blast including expected shot volume, powder factors, hole depths, hole spacing, blasting delays and past blasting history when designing each specific blasting plan. In addition, the subcontracted blaster and ERP will adhere to the following guidelines designed for further impact mitigation:

Noise Mitigation

- Air blast shall be minimized by using high quality crushed rock for stemming.
- Barring unusual circumstances, blasts will be designed such that air blast levels are not intended to exceed 125 db at surrounding properties/structures, versus the 133 db level permit requirement.

Dust Control

- ERP will minimize loose debris (dirt, sand, gravel, etc) present at the surface of each shot when preparing the shot area
- ERP will ensure that the surface of blast areas are wetted down prior to blasting.
- ERP will utilize water cartridges during all blasts
- ERP will avoid blasting during periods of high wind (exceeding 25 mph) or if either quarry personnel or blasting contractor personnel believe that wind directions and/or wind speeds would pose a substantial risk of significantly increasing dust levels at neighboring property lines.

Steep Slope Stability Control

- Blasting hole patterns will be kept a minimum of 15 feet from any steep slope areas that pose a risk of conveying material outside of permitted mining areas.
- Expected blast volumes will be kept to a maximum of 5,000 cubic yards in any area within 25 feet of any steep slope areas that pose a risk of conveying material outside of permitted mining areas.
- Blasts planned within 25 feet of any steep slope areas that pose a risk of conveying unwanted material outside of permitted mining areas, will be conducted in a manner such that material should be directed away from the steep slope area during the blast.

Blasting Procedures:

a) The blast area where explosive material is handled during loading, including the perimeter formed by the loaded blast holes, is demarcated.
b) Once the loading of the blast holes has begun, a licensed blaster remains with the loaded pattern at all times until the shot is fired.
c) ERP quarry operations cease within 50 feet of loaded holes until blasting operations have been cleared by a licensed blaster.
d) A final check of the blast area is conducted by a licensed blaster.

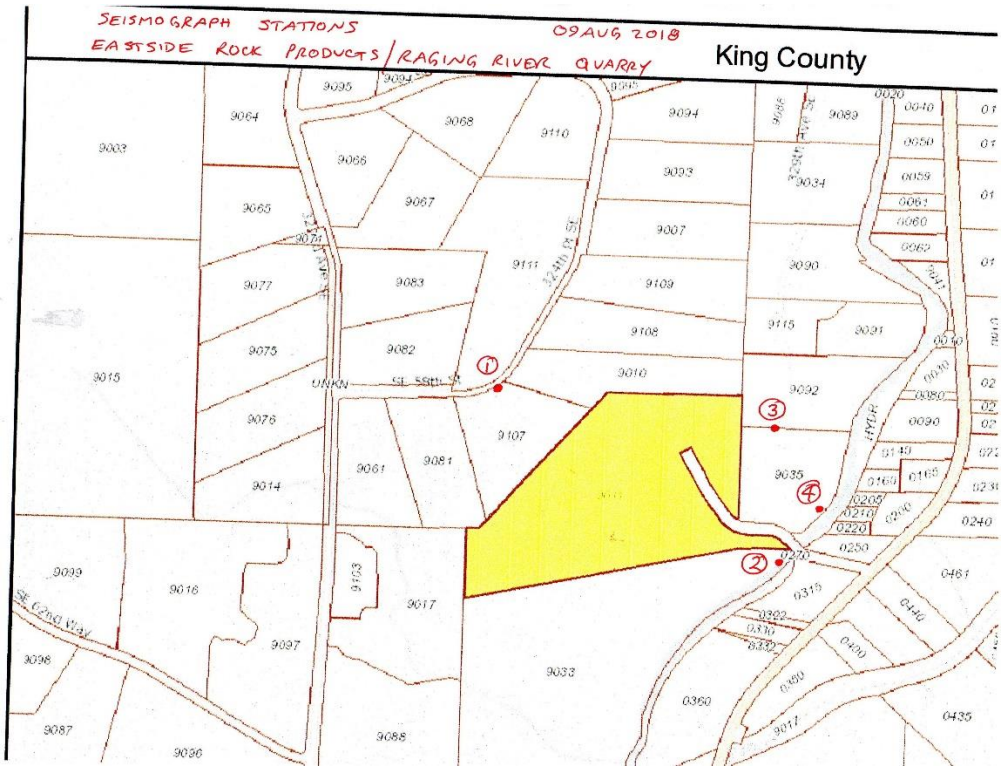
e) Once the setup is complete, any surplus explosive material is removed from the site.
f) Seismographs are set up at each of the four locations shown in the attached map and readings are used to produce USBM form RI8507 Blast Charts to ensure compliance with permissible vibration levels.
g) Approximately thirty minutes prior to the blast, all ERP personnel except those involved with the warning horn are evacuated from the quarry to outside the gate.
h) The last ERP employee then evacuates the quarry and the blaster is cleared to program the pattern.
i) A warning horn is sounded approximately 15 minutes prior to the blast, for the purpose of alerting local resident.
j) The licensed subcontracted blasting company will make best efforts to provide aerial video during the blast, and launch its drone within five minutes of the scheduled blast.
k) Audible alarms are sounded by the blaster for purpose of worker safety, and the shot is fired.
l) The blast site is inspected by the blaster in order to give confirmation the area is safe to enter and resume normal quarry operations.
m) Seismographs are collected.
n) ERP personnel inspect the blast area, surrounding areas, and any aerial video taken during the blast to confirm compliance with all visibly observable permit conditions

Post-blast:

a) Blast reports are created by the licensed blasting contractor for submission to regulatory agencies and to ERP.
b) Blast Reports are forwarded to King County DPER and are reviewed by ERP to confirm permit compliance.

PART THREE: NOTES & ADDENDA

a) The conditions stipulated in Grading Permit GRDE15-0004, Section 13) G-18 meet or exceed those set out in KCC 21A.22.070.B.
b) The ERP warning horn shall be sounded at the highest elevation possible in the quarry in all directions, so as to ensure the greatest audible distance and coverage.



The objective of this operational plan is to establish operational goals and training procedures designed to ensure compliance with relevant King County code provisions, King County DPER established site specific permit conditions, and to mitigate potential environmental impacts of this mining operation. Mining sites are inherently dynamic in nature and unforeseen circumstances can arise. Eastside Rock Products reserves the right to employ alternate methods not specified in these plans in order to achieve established operational goals and benchmarks and to revise these operating plans accordingly.