

Following the approach you have provided in the report submitted on May 7, 2019. No ESA authorizations for impacts to BLTU are necessary. If details were to change and you are no longer able to follow this please let me know as this may change the assessment.

Noise Impact Analysis(Valcoustics Canada Ltd.)

NOTE: The original application had the southeast boundary further to the southeast. This boundary was moved to the location shown on this site plan. The 15 m. setback line represents the boundary shown in the Noise Report north of which a berm/barrier would not need to be built prior to commencing extraction.

1. The sound emission level for all pieces of equipment used for construction activities including site preparation and rehabilitation must comply with the limits outlined in MOE Publication NPC-115, "*Construction Equipment*".
2. Construction activities should only occur during the daytime (i.e. 0700 to 1900 hours) period, Monday to Friday. There should be no construction on weekends or on statutory holidays unless required due to an emergency.
3. Sound emissions from equipment to be used on-site should be measured to confirm that they comply with the levels outlined within this report. For the quiet rock drill the maximum emission level is 80 dBA at 15 m. Alternatively, for equipment brought on-site on an as-needed basis, they should have appropriate portable C's of A or ECA's.
4. Back-up beepers are exempt from assessment by the MOE stationary noise source guidelines. However, to reduce off-site noise impacts, we recommend alternative technologies be used on all equipment operating at the McClintock Quarry/Pit site. Details regarding a potential alternative are included in Appendix C.
5. To maximize the acoustical screening provided by dense woods and minimize the sound exposures at the receptors, it is recommended that drilling not be done when there are no leaves on the trees.
6. Operational activities that involve the use of the portable processing plant and/or rock drill should only occur during the daytime (i.e. 0700 to 1900 hours) period. Evening/nighttime operation of only the front end loader and off-site haul trucks for shipping of aggregate off site is predicted to comply with the nighttime MOE guideline limits for all scenarios.
7. Off-site noise audit measurements should be completed when operations are underway on the site to confirm the MOE noise guideline limits are met. The audit measurements must be done by a qualified acoustical engineer.
8. If other or new equipment is brought to the site, the sound emissions should be checked to ensure the equipment is in compliance with this noise study.
9. If alternate noise mitigation measures are to be implemented, they should be reviewed by a qualified acoustical consultant to ensure the MOE noise guideline limits will be met.

Blast Impact Analysis (EXPLOTECH)

It is recommended that:

- An attenuation study shall be undertaken by an independent blasting consultant during the first 12 months of operation in order to obtain sufficient quarry data for the development of site-specific attenuation relations. This study will be used to confirm the applicability of the initial guideline parameters and assist in developing future blast designs.
- All blasts shall be monitored for both ground vibration and overpressure at the closest privately owned sensitive receptor (with the landowners' approval) adjacent the site, or closer, with a minimum of two (2) digital seismographs – one installed in front of the blast and one installed behind the blast. All monitoring shall be performed by an independent third party engineering firm with specialization in blasting and monitoring.
- Blast designs and vibration data shall be continually reviewed with respect to fragmentation, ground vibration and overpressure. Blast designs shall be modified as required to ensure compliance with applicable guidelines and regulations. Decking, reduced hole diameters and sequential blasting techniques will be used to ensure minimal explosives per delay initiated.
- Clear crushed stone shall be used for stemming.
- Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation and flyrock from the face will be away from structures as much as possible. Accordingly operations have been designed to follow a general North to South retreat.

- Primary and secondary dust collectors will be employed on the rock drills to keep the level of rock dust to a minimum.
- Blasting procedures such as drilling and loading shall be reviewed on a yearly basis and modified as required to ensure compliance with industry standards.
- Detailed blast records shall be maintained. THE MOEE (1985) recommends that the body of blast reports shall include the information as stated in #9 of the Recommendations in the Blast Impact Analysis.

Detailed blast records shall be maintained in accordance with MOE Standards and the blast records should contain the information as specified in the Report:

- location, date and time of blast;
- dimensional sketch including photographs, if necessary, of the location of the blasting operation, and the nearest point of reception;
- physical and topographical description of the ground between the source and the receptor location;
- type of material being blasted;
- sub-soil conditions, if known;
- prevailing meteorological conditions including the wind speed in m/s, wind direction, air temperature in degrees C, relative humidity, degree of cloud cover;
- number of drill holes;
- pattern and pitch of drill holes;
- size of holes; depth of drilling;
- depth of collar (or stemming);
- depth of toe-load;
- weight of charge per delay;
- number and time of delays; t
- the result and calculated value of peak pressure level in dB and peak particle velocity in mm/s.
- applicable limits
- the excess, if any, over the prescribed limit.

NOTE: Environmentally friendly emulsions will be used as the explosive agent as an additional means of protecting the surface and groundwater supply.

Ministry of Natural Resources
and Forestry

APPROVED

Under the Aggregate Resources Act

Date: December 2nd, 2022