**#[permit] [applicant]**

**GROUNDWATER MONITORING PLAN**

Approved by the Agency of Natural Resources

[date]

The Groundwater Monitoring Zone shall be the area within 2000 feet from the final Quarry boundary. All samples shall be tested for the following analytes - nitrates and nitrites. Sampling reports for each source shall include the blast dates, sampling dates and analyte levels for all sampling events since sampling began.

Prior to any blasting each year, the Applicant shall:

* Provide the Agency’s Drinking Water and Groundwater Protection Division (DWGPD) a current GIS map showing all water supply sources within the Groundwater Monitoring Zone. Provide the name and address of each current water supply source owner, indicating any source ownership changes, new sources added and sources removed from use (disconnected, filled or closed).
* Seek annual written approval by DWGPD for the list of sources within the Groundwater Monitoring Zone selected for monitoring that year.
* Provide the DWGPD written evidence that the owner of each source selected for monitoring was offered monitoring for that given year and each owner’s written authorization or refusal.
* Complete pre-blast sampling once for each source newly selected and/or authorized for monitoring. Provide sampling reports to each source owner and all reports to DWGPD. If there is no exceedance in Groundwater Enforcement Standards, within 1 month of sampling provide owners reports for their sources and provide DWGPD reports for all sources.

After each blasting event, the Applicant shall:

* Complete a sampling series at each authorized source, sampling at 30, 60 and 90 days after blasting. If there is no exceedance in Groundwater Enforcement Standards, within 1 month of sampling provide owners samplings reports for their sources and provide DWGPD reports for all sources.

For any sources where pre- or post-blast sampling reports indicate an exceedance in Groundwater Enforcement Standards, the Applicant shall:

Immediately contact and provide sampling reports to the DWGPD and each source owner. Resample the source within 1 week of receiving the initial results.

If the second sample also exceeds Groundwater Enforcement Standards, immediately contact the DWGPD and each source owner. Conduct a site investigation by a qualified consultant and provide results to the DWGPD.

If the exceedance is from blasting, take a third sample for Volatile Organic Compounds (EPA Method 525 for Benzene, Toluene, Xylene, & Xylene), and Semi-Volatile Organic Compounds (EPA Method 8270 for Poly-nuclear Aromatic Hydrocarbons). Submit all sampling results to the DWGPD, Waste Management and Prevention Division(WMPD) and the source owner within 1 week of receiving the results.

If the third sample indicates an exceedance in Groundwater Enforcement Standards due to blasting, immediately cease blasting activities. Within 2 weeks or another timeframe approved by the Secretary of the Agency, the Applicant shall submit a site investigation work plan to the WMPD for their approval.

The Applicant shall implement corrective actions and revisions to the groundwater monitoring plan, as approved by the Agency.

At any time after the fourth post-blast sampling series is complete, the Applicant may seek written approval from the Agency to discontinue sampling.

The Applicant shall immediately cease all operations in the excavation area and notify the DWGPD in writing within 1 week if the Applicant’s operations intercept the water table and water is in any fashion re-directed or retained (for example, via de-watering operations or water pumped to a different watershed).