



Barton Mines Mine Permit Modification Compliance Assurance Monitoring

Residual Minerals Facility Stability Monitoring

Aerial Photogrammetry: Barton will collect aerial photogrammetry on an annual basis that will include the generation of an orthophoto as well as topographic information for the RM Facility and quarry areas. This will provide Barton with an assessment of the rate of coarse-grained RM deposition as well as the quantity of ore extracted from the quarry and confirm mine planning assumptions.

Cross Section Analysis: Utilizing the topographic geometry collected, Barton will create cross sections at the locations indicated on Figure 1 of the Geotechnical Review Report and compare historic topographic geometry, previous quarterly topographic position, and the proposed phased positions of the pile.

Compaction Layer Density Testing: Barton will perform modified proctor density sampling at a minimum spacing of one test every 100-foot x 100-foot grid of compaction layer. The extent of the compaction layer and location of all density testing will be surveyed and presented in the report.

Visual Inspection: Barton will perform daily visual inspections of the RM Facility and develop monthly documentation reports that identify any issues that were observed during the month and any remedial actions that were taken. These inspection reports will be submitted to the APA and NYSDEC with the proposed annual reporting.

Continuous Piezometric Readings: Barton has established a system to continuously collect piezometric data within the RM Facility at existing piezometer locations and will expand the network to continuously collect data from future piezometer locations. Piezometric data will be summarized and graphed on a quarterly basis and submitted to the APA and NYSDEC on an annual basis.

Inclinometer Measurements: Barton will install biaxial inclinometer casings at the locations indicated on Figure 1 of the Geotechnical Review Report and collect quarterly readings that will be plotted and compared to baseline readings. Inclinometers will be installed prior to placing coarse-grained material over fine-grained material in the middle pond. As future phases of the RM Facility are constructed, an additional inclinometer will be installed in the vicinity of the upper pond to monitor movement along the north side of the RM Facility.

Factor of Safety Analysis: If any assumptions utilized in the slope stability analysis change during the course of RM Facility development, Barton will revise and update the slope stability analysis accordingly and provide that information to the NYSDEC and APA for their review and comment for all phases included in the life of mine.

Annual Reporting: Annual reporting will include and summarize the monitoring outlined above. The main elements are: orthophotos, piezometric data, cross sectional geometric analysis, rates of deposition, visual inspections, data interpretation and site visit observations by a New York State licensed professional engineer. Barton is proposing to provide annual reporting for the first five years of operation post permit approval and then decrease the frequency to every five years to align with the NYSDEC permit renewal process.

Groundwater Monitoring

Groundwater: Barton will place pressure transducers in five strategic wells, RUB-20-01, RUB-20-02, RUB-20-04, RUB-20-5, and RUB-20-06, and record groundwater elevations on a 24-hour interval. A new groundwater monitoring well will be advanced in the floor of the quarry two years prior to any deepening of the quarry, and pressure transducers will be installed to monitor baseline groundwater elevation conditions. All transducer data will be downloaded quarterly and submitted to the NYSDEC and APA on an annual basis.

Barton commits to relocating the monitoring wells to adjacent locations prior to mining through these areas. Monitoring wells will be relocated to areas where either mining has reached final grade or where no mining is proposed. The depths of the relocated monitoring wells will extend below the bottom of the proposed adjacent excavation depth.

Prior to removing a well within the monitoring network, Barton will coordinate with the agencies to site the new well location and depths. This will ensure that all groundwater conditions will be appropriately monitored as the mineral extraction operation expands either laterally or vertically.