

LAC Minerals – Richmond Hill Mine  
Annual Report to the Lawrence County Commission  
Conditional Use Permit Nos. 116, 125 and 202  
July 9, 2019

Reclamation Acreage Overview

|  |        |
|--|--------|
| Total Released Acres                     | 265.94 |
| Total Remaining Affected Acres           | 75.09  |
| Un-reclaimed Acres (for water treatment) | 73.33  |
| Acreage reclaimed in 2016                | 0.35   |
| Acreage to be reclaimed in short-term    | 1.41   |

Complaints

No formal complaints were received in 2018

Technical Revisions

A Technical Revision (No. 69) was submitted on August 29 and approved on September 18, 2018 to 1) close and reclaim the original sludge basin; and, 2) remove the discharge ponds and reclaim the disturbed footprint.

Operation and Maintenance Award

LAC Minerals, Richmond Hill Mine, received the 2018 Operation and Maintenance Wastewater Treatment Award from DENR for:

- Outstanding operation of the wastewater treatment system; and,
- Environmental compliance with the state surface water discharge permit.

2018 Activities

- Initiated Reclamation of Sludge Basin and Discharge Ponds
- Continued Water Management and Treatment
- Continued Monitoring Activities

**Sludge Basin and Discharge Pond Reclamation**

*Original Sludge Basin*

- The original sludge basin was constructed in 1995 for disposal of sludge from the RH WTP systems

- The sludge basin is full. LAC converted the barren pond located near the water treatment plant into a new sludge pond in 2011
- Reclamation of the original sludge basin began in 2018
- The sludge basin will be covered with 3 ft. of random fill and graded to promote runoff
- A minimum of 6 in. of topsoil will be placed and the area will be revegetated with the approved seed mix

#### *Removal of Discharge Ponds*

- The discharge ponds were constructed in 1997 to collect treated water from the RH WTP systems
- The discharge ponds are no longer needed for the water treatment system
- HDPE liners, pipes and manholes are being removed
- Pond embankments are being removed
- Area will be graded to follow general contours of the existing draw and a sediment pond will be constructed at lower end of the disturbed area to control stormwater
- A minimum of 6 in. of topsoil will be placed and the area will be revegetated with approved seed mix.

### **Water Management and Treatment**

#### *Leach Pads and Ponds*

- Biological Water Treatment Plant Operations for Se Treatment
- Operated Biological WTP with RO discharging 13 million gallons
- Operated Biological WTP independently over winter months discharging 8.2 million gallons
- Leach Pad – Effluent flows averaged approximately 25 gpm in 2018, similar to previous years with similar precipitation.
- LP effluent flows of 25 gpm in 2018 were higher than 2017 flows of 14 gpm. Precipitation was higher in 2018 (33.66 inches in 2018 and 25.39 inches in 2017)

#### *Spruce Gulch - Reclaimed Site of Waste Rock Disposal Facility*

- Water treatment - pH adjustment with sodium hydroxide (caustic soda) as needed
- Nearby South Gulch water is pumped to Spruce Gulch Treatment Pond for treatment

### **Monitoring Activities**

#### *Pit Impoundment and Leach Pad Monitoring*

- The 2018 Pit Backfill Monitoring/Capping System Monitoring continues to indicate that the cap is functioning to and better design expectations

- The leach pad capping system continues to perform well limiting infiltration

### ***Sitewide Monitoring Results***

#### Water Quality

- Water Quality at the site is generally stable or improving
- Cleopatra Creek water quality monitoring confirms there are no impacts from the Richmond Hill Mine
- Monitoring is continuing and site-specific performance criteria have been developed in consultation with DENR to ensure continued protection of the environment in post-closure.

#### 2019 Plans

- Continue RO and Biological Water Treatment
- Continue Monitoring Activities
- Complete Reclamation of Original Sludge Basin and Discharge Ponds