

Module 12: Treatment Systems

Instructions: 25 Pa. Code §91.23 requires that all plans, reports, and specifications for treatment facilities be certified by a licensed professional engineer and bear an imprint or legible facsimile of his/her seal. (At least one copy must bear an original seal and signature.)

12.1 Discharges

A National Pollutant Discharge Elimination System (NPDES) permit is needed for all mining permits. Application for an NPDES permit can be made at the same time as the mining permit using the options described below.

Please check which option is being used for this permit.

1. **Coverage under General Permit BMR GP-104** (Document No. 5600-PM-MR0388).

This type of NPDES coverage is applicable for non-special protection watersheds where the only potential discharge to surface waters of the Commonwealth will be composed entirely of **stormwater**, in which the main potential pollutant is sediment. To apply for coverage under GP104, complete the Notice of Intent form no. 5600-PM-MR0008 and submit it with this mining permit application.

2. **Individual NPDES Permit**

An individual NPDES permit is applicable for those sites that have any one of the following characteristics:

- Permit area is in a special protection watershed (HQ/EV).
- The permit specifies a discharge of treated water (beyond simple containment of stormwater runoff), mine drainage treatment facilities discharge, process water or pumped groundwater.
- Discharge authorization does not qualify under the GP-104.

To apply for coverage under an individual NPDES permit associated with mining activities, complete form no. 5600-PM-MR0032.

3. **Other Option**

Check here if another option is chosen and provide an explanation: _____

12.2 Waste Streams

Describe the anticipated volume and quality of water that will be generated by the following sources (address flow rate, flow duration, and periodic increments, as appropriate):

a. Drainage from underground workings, include basis for estimate;

Based on water pumped from the underground workings and the mined area through July 2021, the Rustic Ridge #1 Mine is producing 0.17 gpm/acre. Using this measured mine water rate per acre, the maximum developed mine (approx. 4,297 acres) will not require additional storage capacity. Since a maximum of approximately 4,297 acres of the underground permit area will be deep mined on the Lower Kittanning coal seam, the total projected amount of water to be produced at the full extent of mining is 731 gpm or 43,860 gph. The water will be pumped to the treatment ponds (TP-1 and TP-2) at a total maximum rate of 1,500¹ gpm. Treatment ponds TP-1 and TP-2 will be used for the development of the portal area and dewatering the active sections of the mine. The anticipated water quality, from mining on the Lower Kittanning seam in the local area, will be acidic with slightly elevated metals content.

¹ As per private settlement agreement between LCT Energy, L.P. and Mountain Watershed Association, the mine water pumping rate will be limited to 1.44 MGD.

- b. Runoff which will come into contact with coal or other polluttional materials at surface mining activity sites.
Not applicable to this application. Previously approved.
- c. Drainage from leachate drains at coal refuse disposal sites.
None. Not applicable.

12.3 Systems Overview

Describe all treatment systems that will be used to handle mine drainage and other waters requiring treatment prior to discharge. Include design capacity of each system and the projected effluent quality.

Not applicable to this application. Previously approved.

12.4 Flow Diagrams

- a. Provide a flow diagram for each system described in the preceding section describing sources, flow patterns, flow volumes, and key system components.
Not applicable to this application. Previously approved.
- b. For sites where coal preparation, coal refuse disposal, and mine drainage treatment will take place, provide a copy of the Operations Map (Exhibit 9.1) with the following information added or highlighted. Label the map Exhibit 12.4 - Water Handling Plan.

Not applicable to this application. Previously approved.

- i. The exact location of each outfall,
- ii. Sources of flow to each outfall (Color coded so that all sources contributing to an individual outfall can be identified.),
- iii. The direction of flow in each collector pipe or channel,
- iv. Surface water monitoring points, and
- v. Other mining-related discharges that enter the receiving stream within the mapped area.

12.5 Chemical Feed Systems

Describe the equipment that will be used to feed and mix treatment chemicals.

Not applicable to this application. Previously approved.

12.6 Settling/Treatment Facilities

Describe tanks, ponds and other containment facilities that will be used in the treatment process, including their respective volumes, construction, and detention capacities.

Not applicable to this application. Previously approved.

12.7 Sludge Disposal

Describe the anticipated volume of sludge that will be generated by each treatment system and the frequency of sludge removal operations. Describe the means of sludge disposal and the disposal site.

Not applicable to this application. Previously approved.