



Geosyntec
consultants

Prepared for

DTE Energy
2000 2nd Street
Detroit, Michigan 48226

**MONROE ASH BASIN POST CLOSURE
PLAN
For the
MONROE POWER PLANT
Monroe, Michigan**

Prepared by

Geosyntec
consultants

engineers | scientists | innovators

134 North La Salle Street, Suite 300
Chicago, Illinois 60602

Project Number CHE8242R

October 2016

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1. INTRODUCTION

This Post-Closure Plan was prepared by Geosyntec Consultants (Geosyntec) for DTE Electric Company (DTE) to document the post-closure care at the Monroe Fly Ash Basin located at the DTE, Monroe Power Plant facility in Monroe, Michigan. The permitted Monroe Disposal Facility includes a 79-acre vertical extension (Vertical Extension) and 331-acre fly ash basin (Ash Basin).

The Post-Closure Plan was developed for the Ash Basin in accordance with the United States Environmental Protection Agency (EPA) coal combustion residuals (CCR) rule (“CCR Rule”) (40 CFR Part 257). The Ash Basin is considered to be a “surface impoundment” under the CCR Rule. The purpose of this Post-Closure Plan is to meet the requirements of rule [40 CFR § 257.104 (d)].

2. POST CLOSURE NARRATIVE

This section is a narrative of the monitoring and maintenance activities that will be performed as part of post closure-care of the Ash Basin, which will be closed by leaving most of the CCR in place.

2.1. Site Description

The Ash Basin is a licensed Michigan Type III industrial waste landfill (Facility ID number 397800) located in Monroe, Michigan along Lake Erie. It is also operated to meet the requirements of NPDES permit No. MI001848. The Ash Basin is a manmade surface impoundment contained by an engineered compacted clay embankment, up to 46 feet tall, that was constructed by excavating 5 to 10 feet of clay from within the Ash Basin footprint for use in building the perimeter embankment to contain ash. The Ash Basin is projected to receive sluiced ash until 2023 and projected to be closed by 2028.

Northwest of the Ash Basin, a licensed vertical extension landfill has been constructed and currently receives CCR. A separate post-closure plan will be developed for the Vertical Extension.

2.2. Narrative [40 CFR § 257.104(d)]

The closure of the Ash Basin includes a cover system designed to limit stormwater infiltration and discharge stormwater run-off via gravity drainage to collection ponds, and a leachate collection system designed to collect leachate generated from a pore pressure relief system.

Key features of the post closure care include:

- i) groundwater monitoring;

- ii) regular monitoring and maintenance of the cover system; and
- iii) maintaining and monitoring of the leachate collection system.

Detailed discussion of each component of the closure to meet the requirements of 40 CFR § 257.104(b), 257.104(c), and 257.104(d) are discussed in subsequent sections. After closure, the Ash Basin will most likely be utilized as green open area. In the event the proposed use changes, the post-closure plan will be amended. There are no expected future activities or construction on the cover system that would disturb the integrity of the cover system and its components, or disturb the post-closure monitoring systems.

The vertical extension is a landfill located adjacent to the Ash Basin. Any surface water drainage features associated with the vertical extension that cross the Ash Basin cover will be maintained in accordance with this Post-Closure Care Plan.

2.2.1. Cover System Maintenance [40 CFR § 257.104(b)(1)]

The cover system of the Ash Basin includes a cap, a leachate (pore water draining from the CCR) collection system, and stormwater discharge channels.

The cover system will be inspected on a semi-annual basis. The cap will be visually inspected for settlement, subsidence, erosion, and other features that can cause run-on and run-off to erode the cover system. To allow for effective visual monitoring, the cap will be regularly cleared of large brush and vegetative growth, and the grass cover will be mowed prior to the inspection. Visual inspection will include checking for signs of vegetation distress, tensile cracking, soil movements, water ponding, signs of erosion, large rooted vegetative growth, and water seepage through the cap. Any observed defects to the cover system will be repaired prior to impacting the efficacy of the barrier layer; overall, the repair is expected to be completed as site and weather conditions permit. Areas where there is evidence of settlement or subsidence will be backfilled and regraded to promote gravity flow of stormwater. Areas where there is evidence of erosion or distressed vegetative growth will be regraded and revegetated with native vegetative species.

Discharge channels will be inspected for blockage, grade reversal, and deterioration. Visual inspections will include checking for sediment and vegetative growth limiting water flow, riprap and sidewalls deterioration, and ponding within the channel. Any observed deterioration of the discharge channels will be repaired prior to impacting the efficacy of the barrier layer; overall, the repair is expected to be completed as site and weather conditions permit. Excess sediment and undesirable vegetative growth within the discharge channels will be removed. Segments of the channels that appear to have grade reversal or significant deterioration will be regraded to reestablish gravity flow.

2.2.2. Leachate Collection and Removal System Maintenance [40 CFR §
257.104(b)(2)]

A leachate collection system will be maintained for integrity and effectiveness. This system will be incorporated into the final cover system to relieve pore pressures within the CCR below the cap. The system will operate until pore water drainage from the CCR decreases to the extent that the cover system design criteria are maintained without the need for collection.

If deterioration of the system is observed that precludes performance in accordance with the design intent, the system will be repaired prior to impacting the efficacy of the leachate collection and removal system; overall, the repair is expected to be completed as site and weather conditions permit. The selected frequency of monitoring the leachate collection system will be based on the selected system and the estimated volume of leachate production observed during the post-closure period.

2.2.3. Groundwater Monitoring [40 CFR § 257.104(b)(3)]

Groundwater monitoring will be performed in accordance with §§ 257.90 through 257.98. The monitoring program will be described in the annual groundwater monitoring and corrective action report due on the public website by March 2, 2018.

2.2.4. Post-Closure Care Period [40 CFR § 257.104(c)]

Post-closure care will continue for 30 years. Post-closure care may continue beyond 30 years if continued assessment monitoring is required per § 257.95.

2.2.5. Post Closure Contact Information [40 CFR § 257.104(d)(1)(ii)]

Contact information for the Ash Basin Post-Closure Care is provided below:

Contact: Robert Lee, Manager Environmental Management and Resources

Department: Environmental Management and Resources

Address: One Energy Plaza, 655 G.O., Detroit, MI 48226

Phone Number: (313) 235-7815

Email: leer@dteenergy.com

3. CERTIFICATION STATEMENT

3.1. Initial Written Post-Closure Plan [40 CFR § 257.104(d)(4)]

I, John Seymour, being a Licensed Professional Engineer in good standing in the State of Michigan, do hereby certify, to the best of my knowledge, information, and belief that the information contained in the certification has been prepared in accordance with the accepted practice of engineering. I certify, for the DTE Monroe Ash Basin CCR unit, that the information contained in this post-closure plan, dated October 14, 2016, meets the requirements of 40 CFR § 257.104.



Signature

JOHN SEYMOUR

Printed Name

10/14/2016

Date

