



2016 Annual Landfill Inspection

Hoot Lake Plant - Coal Ash Landfill

Fergus Falls, Minnesota

Prepared for
Otter Tail Power Company

December 2016

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Certifications

I hereby certify that I, or someone under my direct supervision, have examined the Hoot Lake Plant Coal Ash Landfill, and, being familiar with the provisions of 40 CFR 257 Subp. D and standard practices of the industry, I have determined that the Coal Ash Landfill design, construction, operation, and maintenance are consistent with generally accepted good engineering standards.

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.



James C. Berkas, P.E.
Barr Engineering Co.
Registration Number 44916

Dated this 8th day of December, 2016

1.0 Introduction

Otter Tail Power Company (OTP) operates the Hoot Lake Plant (Hoot Lake) in Fergus Falls, Minnesota. Hoot Lake is a coal-fired electrical generator that results in production of coal combustion residuals (CCR). CCR management is subject to Federal Standards for Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments per 40 CFR 257 Subpart D (CCR Rule). OTP currently hauls CCR material from the Hoot Lake Plant to the on-site landfill for disposal.

The landfill is required to meet the CCR Rule requirements for landfills, and is therefore subject to annual inspections by a qualified professional engineer (QPE). This report documents the 2016 annual inspection, as required by the CCR Rule.

2.0 Review of Existing Information

Existing information was reviewed to confirm that the design, construction, operation and maintenance of the landfill is consistent with recognized and generally accepted good engineering standards. No deficiencies were found and the existing information reviewed is described in following subsections.

2.1 Results of Weekly Inspections

Weekly landfill inspections were conducted by a qualified person during 2016. Inspection reports from December 31, 2015 through December 2, 2016 were reviewed as part of the QPE annual inspection.

2.2 Results of Previous Annual Inspections

The 2015 annual inspection report was reviewed in preparing this 2016 report. The 2015 report concluded that the facility was in conformance with industry practices and state permit and rule requirements.

3.0 Structural Integrity and Operational Review

An on-site inspection was performed on October 14, 2016 to visually identify signs of distress or malfunction of the CCR Unit. The results of the inspection are included in the following subsections.

3.1 Visual Inspection of Landfill

Inspection consisted of on-foot inspection of perimeter berms and embankments, the active landfill face, and final covered areas. Visual inspection items and results are summarized in the following table:

Table 3-1 Summary of Visual Inspection

Item	Visual Inspection Description	Visibly Observed (Yes/No)	Notes
1	Proper placement of waste	Yes	No waste placement issues observed at time of inspection.
2	Adequate slope stability and erosion control	Yes	No significant erosion identified at time of inspection.
3	Run-on and Run-off controls properly functioning	Yes	Surface water controls appeared adequate at time of inspection.
4	Surface water percolation minimized	Yes	No surface water ponding or excessive leachate generation observed at time of inspection.
5	Liner systems properly operated and maintained	Yes	No liner systems issues observed at time of inspection.
6	Leachate collection systems properly operated and maintained	Yes	No leachate collection issues observed at time of inspection.
7	Water quality monitoring systems maintained and operating	Yes	Existing monitoring wells were accessible and appeared to be in good condition at time of inspection.
8	Dust adequately controlled	Yes	No dust issues present at time of inspection
9	Geometry of landfill is unchanged from previous inspection.	NA	The geometry of the landfill is unchanged from 2015.
10	Animal burrows absent or of no significance	Yes	No burrows of significance identified at time of inspection.
11	Adequate vegetation density and vegetation maintenance	Yes	Vegetation appeared well established and well maintained at time of inspection.
12	Debris controlled or absent	Yes	No debris present at time of inspection.

3.2 Other Changes

No other changes to the CCR Unit design, maintenance, or operations that could affect the stability or operation of the CCR Unit were observed as part of the annual inspection.

4.0 Volume of CCR Contained

A topographic survey of the landfill was performed in November 2016 to calculate volumes of CCR contained in the CCR unit. The following table summarizes the volume of CCR contained in the landfill.

Table 4-1 **Volume of CCR Contained in Landfill**

Phase/Cell	Current Volume of CCR Contained in Landfill (cy)	Status of Phase/Cell
Phase II Cells 1 & 1A	278,073	Partially closed
Phase II Cell 2	142,640	Open