



2020 Annual Landfill Inspection

Coyote Station - Blue Pit

Prepared for
Otter Tail Power Company
Beulah, North Dakota



November 2020

This document was originally issued and sealed by Scott F. Korom, Registration Number PE-3835 on November 6, 2020. The original document has been destroyed and is no longer available.

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Certifications

I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR 257 Subpart D, attest that Otter Tail Power Company's Coyote Station, Blue Pit landfill design, construction, operation, and maintenance are consistent with recognized and generally accepted good engineering standards, including consideration of applicable industry standards and the requirements of 40 CFR §257.84.



Scott F. Korom, PhD, PE
Barr Engineering Co.
North Dakota Registration Number PE-3835



Dated this 6th day of November 2020

1.0 Introduction

Otter Tail Power Company (OTP) operates Coyote Station (Coyote), in Beulah, North Dakota. Coyote is a coal-fired steam-electrical generator, operation of which results in coal combustion residuals (CCR) as a by-product. 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).

Blue Pit is a landfill located on the Coyote Station property used for disposal of CCR. Blue Pit is required to meet the CCR Rule requirements for landfills and is therefore subject to annual inspections by a qualified professional engineer. This report includes the information required by § 257.84(b) *Annual inspections by a qualified professional engineer* and documents the annual inspection performed by Scott F. Korom, PE, on October 12, 2020, as required by the CCR Rule.

2.0 Review of Existing Information

A review of existing information was performed to confirm that the design, construction, operation and maintenance of the landfill are 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 2019 Permit Renewal and Modification

The North Dakota Department of Environmental Quality (DEQ) issued a permit renewal and modification on September 19, 2019 (DEQ, September 2019), in response to an application for the modification of Coyote Station Blue Pit (OTP, November 2018). The modifications include a vertical expansion of Blue Pit, increasing the landfill disposal capacity by increasing steepness of the final cover side slopes from 6 percent to 15 percent, thereby increasing the ultimate height by up to 47 feet (OTP, November 2018). These modifications increased the estimated Blue Pit permit capacity from 5,853,000 cubic yards (CY) (OTP, May 2013) to 10,104,336 CY (OTP, November 2018). Some of the capped area, moving from south to north, will be removed to accommodate additional ash.

2.2 Previous Annual Landfill Inspections

Barr Engineering Co. (Barr) has completed the Annual Landfill Inspection Reports since 2015; all previous reports are located on OTP's CCR website (<http://www.ccr-cs.net/blue-pit/>). They stated that existing site information was reviewed, a site inspection was completed, and no deficiencies were found.

2.3 Weekly Inspections

Weekly inspection reports ["intervals not exceeding seven days" §257.84(a)(i)] from November 6, 2019, through October 29, 2020, were reviewed for this report. Starting on April 7, 2020, the reports included a new section on fugitive dust control. The reports were dated at intervals not exceeding seven days and no comments were noted on, or for significant problems with, the design, construction, operation, and maintenance of Blue Pit.

3.0 Structural Integrity and Operational Review

An on-site inspection was conducted on October 12, 2020, to visually identify signs of distress or malfunction of the CCR unit. No deficiencies were found and the results of the inspection are included in the following subsections.

3.1 Visual Inspection of Blue Pit Landfill

The inspection consisted of on-foot inspection of perimeter berms and embankments, the active landfill face, and final covered areas. As a result of the permit renewal and modification (DEQ, September 2019), some of the cover on the capped area was removed to accommodate additional ash placement. This result and other visual inspection items and results are summarized in the following table:

Table 3-1 Summary of Visual Inspection

Item	Visual Inspection Description	Consistent With Good Engineering Standards (Yes/No)	Notes
1	Proper placement of waste	Yes	None.
2	Adequate slope stability and erosion control	Yes	None.
3	Run-on and run-off controls properly functioning	Yes	None.
4	Surface water percolation minimized	Yes	Good slopes on cap minimize ponding and surface water percolation.
5	Liner systems properly operated and maintained	Yes	Clay liner is covered and protected.
6	Contact water systems properly operated and maintained	Yes	None.
7	Water quality monitoring systems maintained and operating	Yes	Groundwater monitoring system appeared to be in good condition.
8	Dust adequately controlled	Yes	Winds during the inspection were 10 to 15 miles per hour and no dust issues were observed.
9	Geometry of landfill is unchanged from previous inspection.	Yes	None.
10	Animal burrows absent or of no significance	Yes	None.
11	Adequate vegetation density and vegetation maintenance	Yes	Vegetation density is sufficient.
12	Debris controlled or absent	Yes	None.

3.2 Other Changes

No other changes to the CCR unit design, maintenance, or operations were observed or reported by OTP as part of the annual inspection that could affect the stability or operation of the CCR unit. The annual inspection did not reveal any conditions that would cause concern with regard to actual or potential structural weakness of the CCR unit, or any existing conditions that are disrupting, or have the potential to disrupt, the operation and safety of the CCR unit.

4.0 Volume of CCR Contained

The average fill rate for the 4th quarter of 2019 was 594.2 ton/day (OTP, January 2020). Using this rate, approximately 45,000 tons of CCR were placed in the landfill from October 16, 2019 (previous inspection), through the end of 2019. OTP reported placing approximately 135,218 tons (OTP, October 2020) in the landfill during the first three quarters of 2020 , with approximately 6,000 tons added from October 1 through October 12, 2020 (most recent inspection). Assuming 1 ton of CCR has a volume of 1 CY, the estimated CCR contained in the landfill as of the date of the 2020 inspection was approximately 3,587,000 CY, as shown in Table 4-1 below.

Table 4-1 Volume of CCR Contained in Landfill

Permitted Design CCR Capacity (CY) (OTP, November 2018)	Current CCR Contained in the Landfill (CY)	Status of Active Cell
10,104,336	3,587,000	Sequence 6: Active Sequence 7: Active with partial intermediate cover Sequence 8A: Active with partial intermediate cover

5.0 References

DEQ, September 2019. Permit for Solid Waste Management Facility, Coyote Station (Blue Pit) (0182).

OTP, May 2013. 2013 Coyote Station Blue Pit – Facility Permit Renewal No. SP-182.

OTP, November 2018. Coyote Station Blue Pit (SP-182) Permit Modification Application.

OTP, January 2020. 4th Quarter 2019 Ash Report, submitted electronically to Solidwaste@nd.gov.

OTP, October 2020. 3rd Quarter 2020 Ash Report, submitted electronically to Solidwaste@nd.gov.