



# **2020 Annual Landfill Inspection**

## ***R.M. Heskett Station Coal Ash Landfill***

Prepared for  
Montana-Dakota Utilities Company

January 2021

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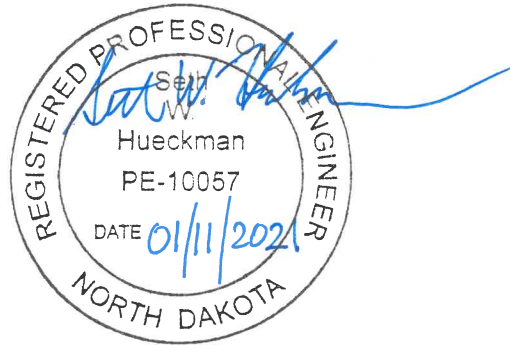
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## Certifications

I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR 257 Subp. D, attest that this Annual Landfill Inspection report has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 40 CFR §257.84.



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Seth W. Hueckman  
Barr Engineering Co.  
ND Registration Number PE-10057

Dated this 11<sup>th</sup> day of January, 2021

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## 1.0 Introduction

Montana-Dakota Utilities Co. (MDU) operates the R.M. Heskett Station (Heskett), in Mandan, North Dakota. MDU operates two coal-fired boilers at Heskett, resulting 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). MDU currently hauls dry CCR material from the Heskett plant to the on-site landfill. Under 40 CFR §257.84, CCR landfills are subject to annual inspections by a qualified professional engineer (QPE). This report documents the annual landfill inspection performed by Seth W. Hueckman, P.E. on September 23, 2020, as required by the CCR Rule. Other annual inspection duties, including a review of the available information regarding the status and condition of the CCR unit and storage capacity evaluations, were performed prior and following the on-site inspection.

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## 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 is consistent with recognized and generally accepted good engineering standards.

### 2.1 Results of Weekly Inspections

Weekly inspection reports from December 24, 2019 through December 29, 2020 were reviewed as part of this annual inspection. No deficiencies were found.

### 2.2 Results of Previous Annual Inspections

The annual inspection performed in September 2019 was reviewed as part of this annual inspection. The annual inspection documented the following visual observations and associated remedial activities:

- No significant erosion identified. Recommend upgrading erosion control at north end of culvert located at northwest corner of leachate evaporation pond.
- Leachate evaporation pond perimeter road impassible during times of high precipitation. Recommend establishing vegetated road surface or re-establishing gravel road surface.
- Vegetation appeared well established and well maintained. Minor erosion feature at southwest corner of Phase 1 Cover area. Observe area in Spring 2020 to confirm condition is acceptable and not worsening.

## 3.0 Structural Integrity and Operational Review

An on-site inspection was performed on September 23, 2020 to visually identify signs of distress or malfunction of the landfill. The inspection consisted of an on-foot inspection of the perimeter embankments, the active landfill face, final covered areas, and the evaporation pond. 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	Waste contained within active landfill limits.
2	Adequate slope stability and erosion control	Yes	No significant erosion identified.
3	Run-on and Run-off controls properly functioning	Yes – Except as Noted	Surface water controls appeared adequate. Clean surface water culvert on the northwest corner of the evaporation pond partially obstructed with sediment. MDU removed sediment from culvert.
4	Surface water percolation minimized	Yes	No surface water ponding or excessive leachate generation observed.
5	Liner systems properly operated and maintained	Yes	Liner system in good condition at time of inspection.
6	Leachate collection systems properly operated and maintained	Yes	No leachate collection system issues identified. MDU added gravel to the evaporation pond perimeter road in 2020.
7	Water quality monitoring systems maintained and operating	Yes	Existing monitoring wells were accessible and appeared to be in good condition.
8	Dust adequately controlled	Yes	No dust issues present at time of inspection.
9	Landfill geometry consistent with facility plan	Yes	No geometry changes observed.
10	Animal burrows absent or of no significance	Yes	No burrows of significance identified.
11	Adequate vegetation density and vegetation maintenance	Yes – Except as Noted	Vegetation appeared well established and well maintained. Phase 1 Cover area vegetation mowed and nearing full coverage (Phase 1 Cover constructed in 2019). MDU re-seeded a couple small areas in Fall 2020. Minor tree/brush growth on perimeter embankment outer slopes on east side and final covered area on north side. MDU removed tree/brush growth in these areas in Fall 2020.
12	Debris controlled or absent	Yes	No debris present.

No appearances of an actual or potential structural weakness of the landfill, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the landfill, were observed during the inspection. Furthermore, no other changes to the landfill design, maintenance, or operations were observed that could affect the stability or operation of the landfill.

## 4.0 Volume of CCR Contained

A topographic survey of the landfill was performed in October 2020 to calculate volumes of CCR contained in the CCR unit and capacity remaining. The following table summarizes the volume of CCR contained in the landfill:

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

Slot/Cell	Approximate Permitted Design CCR Capacity (cy)	Current CCR Capacity Consumed (cy)	Approximate Remaining CCR Capacity (cy)	Status of Slot/Cell
Slots 1-5	700k	700k	0	Closed
Slots 6-10	1,150k	1,144k	6k	Slots 6 & 7 Closed, Slots 8, 9, & 10 Partially Closed and Partially Active
Cells 1-8	1,420k	53k	1,367k	Entered Vertical Expansion Space to Construct Phase 1 Cover in 2019