



CCR Landfill 2018 Annual Inspection Report

NC1 Ash Disposal Area



Omaha Public Power District
Nebraska City Station

Nebraska City, Nebraska
January 18, 2019

**OPPD Nebraska City Station
NC1 Ash Disposal Area
CCR Landfill 2018 Annual Inspection Report**

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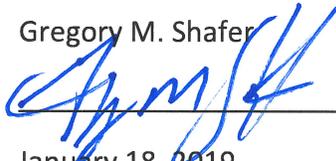
**OPPD Nebraska City Station
NC1 Ash Disposal Area
CCR Landfill 2018 Annual Inspection Report**

Professional Engineer Certification

"I hereby certify that the CCR landfill known as the NC1 Ash Disposal Area at the Nebraska City Generating Station, owned and operated by the Omaha Public Power District, was inspected and this report has been prepared in accordance with the Coal Combustion Residual Rule 40 CFR 257.84(b). I am a duly licensed Professional Engineer under the laws of the State of Nebraska."

Print Name: Gregory M. Shafer

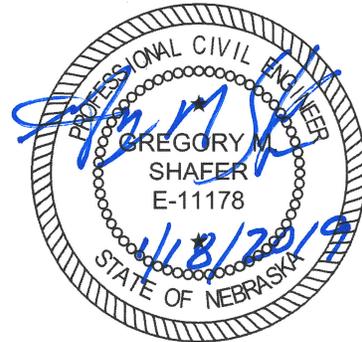
Signature: _____



Date: January 18, 2019

License #: E-11178

My license renewal date is December 31, 2020.



1 Introduction

On April 17, 2015, the U.S. Environmental Protection Agency (EPA) published the final rule for the regulation and management of coal combustion residuals (CCR) under Subtitle D of the Resource Conservation and Recovery Act (RCRA). The CCR rule defines a set of requirements for the disposal and handling of CCR within CCR units (defined as either landfills or surface impoundments). The Omaha Public Power District (OPPD), Nebraska City Generating Station (Station) currently has two (2) active CCR landfills; NC1 Ash Disposal Area and NC2 Ash Disposal Area. Section 40 CFR 257.84(b) specifies that an owner or operator of a CCR landfill or any lateral expansion of a CCR landfill must have the landfill inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. This annual inspection report covers the NC1 Ash Disposal Area.

1.1 Purpose

The CCR rule requires the inspection report for existing CCR landfills must be completed and filed in the operating record on an annual basis. The completion date of the last inspection report (i.e., placed in the facility operating record) establishes the deadline to complete the next inspection. Subsequent inspections and reports must be completed and filed on an annual basis. The requirements of the annual inspection include:

- A review of available information regarding the status and condition of the CCR unit - 257.84 (B)(1)(i),
- A visual inspection of the CCR unit to identify signs of distress or malfunction - 257.84 (B)(1)(ii),
- An inspection report that includes the following:
 - Changes in geometry since the last inspection - 257.84 (B)(2)(i)
 - Approximate volume of CCR in unit at time of inspection - 257.84 (B)(2)(ii)
 - Appearance of actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit - 257.84 (B)(2)(iii)
 - Any other changes which may have affected the stability or operation of the CCR unit since the last inspection - 257.84 (B)(2)(iv)

OPPD, as owner and operator of the Station, must notify the Nebraska Department of Environmental Quality (NDEQ) Director within 30 days of placing the CCR Landfill Annual Inspection Report in the operating record and posting to the CCR web site (40 CFR §257.106 and §257.107).

1.2 Facility Background

OPPD has a two-unit (Nebraska City (NC) Unit 1 and NC Unit 2) fossil fuel-fired generating plant at the Station located 5.5 miles southeast of Nebraska City, Nebraska, along the west shore of the Missouri River. This Station has two (2) existing CCR landfills that are permitted under the current NDEQ Title 132 regulations for fossil fuel combustion ash disposal area; the NC1 Ash

Disposal Area and NC2 Ash Disposal Area that are active after the CCR rule effective date of October 19, 2015. This annual inspection report covers the NC1 Ash Disposal Area (NDEQ Permit No. NE0054712, Facility ID 58343). The NC1 Ash Disposal Area is an unlined CCR landfill of approximately 52 acres that has historically received CCR for disposal. A facility site map is included in Appendix A.

OPPD installed a storm water basin on top of the NC1 Ash Disposal Area in order to collect and control storm water to be discharged into the Plant Runoff Pond.

2 Review of Available Information (40 CFR 257.84(B)(1)(i))

Numerous documents pertaining to the operation and structural integrity of the CCR landfill were reviewed before, during and after the site inspection, including:

- The CCR Landfill weekly inspection records (per Section 257.84(a)) from January 2018, through December 2018
- NDEQ Title 132 permit application
- Recent topographic survey for the permit renewal application

Review of the above documents did not uncover any unresolved issues that indicated operational, safety or structural concerns of the CCR landfill.

3 Visual Site Inspection (40 CFR 257.84(B)(1)(ii))

On December 14, 2018, a site inspection of the NC1 Ash Disposal Area was performed by an independent Professional Engineer, Greg Shafer of HDR, who was accompanied by Mark Hansen of OPPD. Office review of available information was conducted by Greg Shafer.

The weather during the site visit was sunny and clear with temperatures ranging from 45 to 46 degrees Fahrenheit. The site had some minor snow cover.

3.1 Extent of Inspection

The inspection included an extensive site walk of the NC1 Ash Disposal Area. Since the CCR rule only requires the inspection of the existing active CCR landfill itself, this report does not address the condition of the groundwater monitoring system, access roads beyond the landfill perimeter, grades and drainage channels that are not a component of the CCR landfill.

The field visit included inspection of the following:

- Perimeter channel conditions
- Side slope conditions to identify erosion
- Stability of CCR fill areas

3.2 Inspection Findings

The following are the findings of the site inspection:

- Vegetation on the side slopes was well established and there were no signs of erosion.

- Grading of the top of the landfill includes a ditch to allow storm water to drain to the storm water basin area.
- The ditches around the perimeter of the landfill appeared functional but the low areas were mostly covered in snow.
- Along the south side slope, there are two (2) holes. USDA (United States Department of Agriculture) personnel was on site in November and indicated that the holes were a result of badgers looking for food, not dens. The badgers were captured and removed from the site. OPPD is continuing to monitor for holes and will backfill them when the weather is appropriate.

4 Changes in Geometry

The CCR rule requires that the site geometry changes be identified since the last annual inspection.

A topographic survey was conducted on July 24, 2018. At the time of the of that survey top of CCR elevation ranged from approximately 951 to 972.

5 Approximate CCR Volume

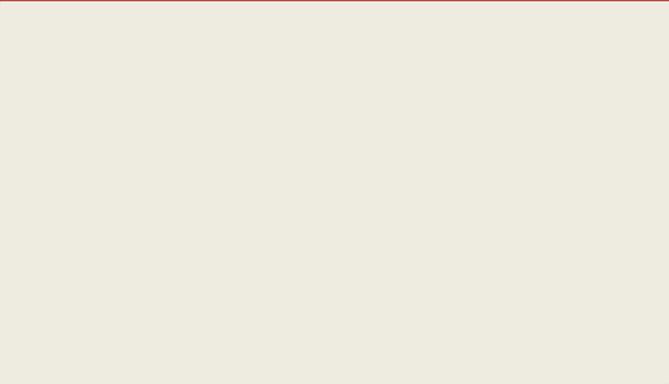
Total ash deposited within the NC1 Ash Disposal Area was estimated by comparing the July 2018 survey to the final permit grades and subtracting that volume from the projected total permit volume (3,300,000 cubic yards – 197,842.38 cubic yards = 3,102,157.62). Ash disposal estimates after the July 2018 survey through to the time of the inspection were estimated to be 80,000 cubic yards based the ash landfill records from that timeframe. The total CCR volume in place at the time of inspection is estimated to be 3,190,000 cubic yards.

6 Appearance of Structural Weakness

Based on the visual inspection, no apparent or potential structural weaknesses were observed.

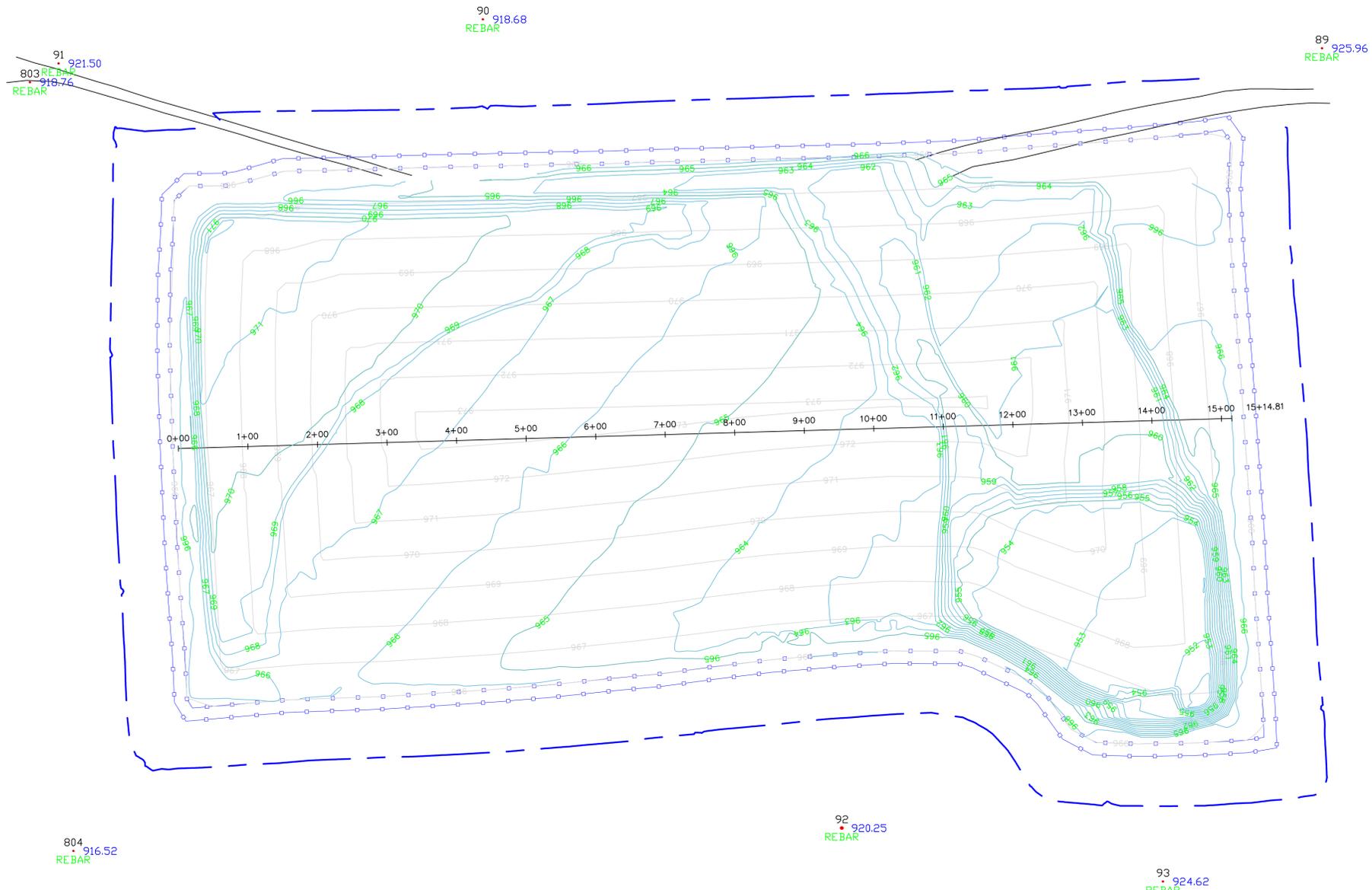
7 Changes Affecting Stability or Operation

The CCR rule requires that changes that affect stability or operation of the CCR landfill be identified since the last annual inspection. There were no reported, observed, or suspected changes that have weakened the site stability or negatively impacted the operation.



Appendix A
Facility Site Map





CONTROL POINTS

Point	Northing	Easting	Elevation	Description
89	315420.520	2811101.130	925.96	REBAR
90	315462.020	2809894.790	918.68	REBAR
91	315398.790	2809284.960	921.50	REBAR
92	314302.830	2810410.800	920.25	REBAR
93	314226.240	2810872.500	924.62	REBAR
803	315371.900	2809243.650	918.76	REBAR
804	314269.970	2809306.160	916.52	REBAR
805	314234.230	2811268.820	916.19	REBAR
806	315617.150	2811236.560	923.02	REBAR

NOTE: THE REFERENCE SYSTEM USED FOR BOTH HORIZONTAL AND VERTICAL CONTROL WAS BASED OFF OF THE CONTROL POINTS LISTED IN THESE DRAWINGS.

REMAINING AIRSPACE VOLUME AS OF 7-24-18
 Fill volume: 5,645,751.7 C.F., 209,101.91 C.Y.
 CUT/SWELL RATION 1:1

CUT VOLUME AS OF 7-24-18
 Cut volume: 304,007.4 C.F., 11,259.53 C.Y.

OVERALL SUMMARY AS OF 7-24-18
 Cut volume: 304,007.4 C.F., 11,259.53 C.Y.
 Fill volume: 5,645,751.7 C.F., 209,101.91 C.Y.

Area in Cut : 168,535.2 S.F., 3.87 Acres
 Area in Fill: 951,387.5 S.F., 21.84 Acres
 Total inclusion area: 1,119,922.7 S.F., 25.71 Acres

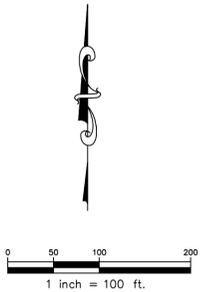
Average Cut Depth: 1.80 feet
 Average Fill Depth: 5.93 feet
 Cut to Fill ratio: 0.05
 Import Volume: 197,842.4 C.Y.
 Elevation Change To Reach Balance: -4.770
 Volume Change Per .1 ft: 4,147.9 C.Y.

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAT, MAP, SURVEY OR REPORT WAS MADE BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION, AND THAT I AM A DULY REGISTERED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEBRASKA.

RANDELL R. RECTOR, LS-742
 DATE 7-26-2018

Randell R Rector



THIS DRAWING IS THE PROPERTY OF OPPD AND IS SUBJECT TO RETURN ON DEMAND. NO PART OF THE INFORMATION CONTAINED WITHIN THIS DRAWING MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM, (ELECTRONIC, MECHANICAL, PHOTOCOPYING OR OTHERWISE), WITHOUT WRITTEN CONSENT OF:

OPPD

REV.	DATE	BY	DESCRIPTION

PHASE 3 UNIT 1 ASH NEBRASKA CITY	DATE PLOTTED: 7-31-18
OPPD Nebraska City Station Unit 1 Ash Landfill	SCALE: 1"=100'
	REV. DATE
	FIG. NO.