

**ANNUAL INSPECTION REPORT
EXISTING COAL COMBUSTION RESIDUE (CCR) LANDFILL
MUSCATINE POWER & WATER**

REPORT DATE: DECEMBER 23, 2019

A. Rule Requirement – Federal CCR Rule §257.84(b)

Under Federal Rule §257.84(b), existing CCR landfills and any lateral expansion of a CCR landfill must be 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 document comprises the Inspection Report for 2019 required under this rule.

B. Documents Used to Review Status and Conditions – §257.84(b)(i)

This facility is regulated under Iowa Department of Natural Resources Sanitary Disposal Project Permit No. 70-SDP-06-82P which was issued on August 9, 2010 and was last revised April 29, 2019. The permit expires August 9, 2020.

1. Water discharge from this facility is regulated under Iowa Department of Natural Resources National Pollutant Discharge Elimination System (NPDES) Permit No. 7000109 which was issued on January 19, 2010 and expired on January 18, 2015. An application for permit renewal was submitted to DNR on July 18, 2014. This permit requires monitoring of specified constituents at the Farm Pond discharge outfall.
2. Landfill Development, Plans and Specifications, and Reports

	Title
STATE	
11/01/91	-Closure/Post Closure Plan. Original date 11/01/91, revised January 1996 and December 2009
11/21/91	-Supporting Documentation Plans and Specifications (DOPS).
01/29/93	-Supplemental Plan Sheet 16.
Various	-Supplemental information dated 10/02/08, 12/17/09, and 03/30/10.
1/17/12	-CCR Landfill Cell Development – Phase II (Drawings)
10/3/18	-Unstable Areas Determination
Various	-Annual Groundwater and Surface Water Monitoring Report
Various	-Annual Leachate Control System Performance Evaluation Report
4/3/19	-CCR Landfill Cover Improvements –Drawings
FEDERAL	
10/19/15	-CCR Fugitive Dust Prevention and Control Plan; updated 12/5/2018
05/18/16	-Groundwater Monitoring System and Sampling and Analysis Program
10/17/16	-Run-on and Run-off Control System Plan
10/17/16	-Closure and Post-Closure Plan
Various	-Annual CCR Fugitive Dust Control Report
Various	-Annual Inspection Report

C. Visual Inspection of the CCR Landfill – §257.84(b)(ii)

The existing landfill was visually inspected reviewed by a Qualified Professional Engineer to identify signs of distress or malfunction of the CCR unit.

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CCR Unit Location: SW½, Section 16, T76N R3W, Muscatine County, Iowa

Date of Inspection: October 29, 2019

Weather: Mostly sunny, 40 degrees, wind estimate 5 mph

Field Observation By: Jon Scharf, PE, HR Green, Inc.

Others Present: Rose Amundson, CGP, HR Green, Inc.

D. Inspection Report – §257.84(b)(2)

§257.84(b)(2)(i) Changes in Landfill Geometry Since Previous Annual Inspection

In addition to the minor changes resulting from ongoing CRR disposal, significant changes to the geometry of the structure have occurred since the previous annual inspection. These changes are landfill cover and infrastructure improvements that were initiated in the summer of 2019 and were in progress at the time of this inspection. The construction includes:

- Re-grading of existing CCR and installation of final landfill cover over 7.6 acres of Phase I. This final covered area is at final grade and will not receive additional CCR.
- Re-grading of existing CCR and installation of temporary soil cover over 7.4 acres of Phases I & II. This temporary covered area is designed to shed storm water off of the landfill while reducing generation of CCR contact water and leachate. Eventually this temporary covered area will return to active CCR disposal as other active areas are filled and covered.
- Grading and contact water drainage improvements in a designated 4.9-acre active operations area.
- New haul roads and service roads.
- Clay lined pond forebay for management of collected CCR contact water.
- Storm water control system for management of runoff from final and temporary landfill cover and surrounding areas.

§257.84(b)(2)(ii) CCR In-Place Volume

The approximate volume of the unit at the time of the inspection was 779,000 cubic yards. The volume was estimated from cut and fill calculations using updated survey information in 2018 plus additional volume placed since that time calculated from Fee-Exempt Material Quarterly Reports to the Iowa Department of Natural Resources (IDNR). CCR in-place volume will be updated annually based on the best available data (survey, reports, or combination).

§257.84(b)(2)(iii) Structural or other issues affecting operation

There are no obvious appearances of an actual or potential structural weakness of the CCR unit. There are no known existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit.

§257.84(b)(2)(iv) Other changes

There are no known change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

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Other Comments

The following additional comments are based on site inspection, review of pertinent documents, and knowledge of the site and operations.

- Development and Operations
 - MP&W's operator is proceeding in accordance with approved plans and specifications, including fill areas, slopes, height, access roads, monitoring wells, etc.
 - The landfill is operated in accordance with existing permits and amendments.
 - Construction of permanent and temporary soil cover was on-going at the time of this inspection.

- Fugitive Dust Prevention and Control
 - Dust is controlled as described in the *CCR Fugitive Dust Prevention and Control Plan* dated October 19, 2015, updated December 2018, and in the most recent Annual CCR Fugitive Dust Control Report.

- Groundwater Monitoring System
 - During the 2019 construction, monitoring well MW-25 was damaged by construction equipment. MP&W is evaluating options for replacement.
 - Monitoring wells MW-10, MW-11, MW-12, and MW-15A are functional but require maintenance of the top concrete collar. The concrete is either cracked or displaced by frost or water.
 - Semi-annual sampling of both groundwater monitoring wells and surface water points was completed as required by the site permit. Under Federal Rule Part 257.93, groundwater sampling events at monitoring wells for a different list of federal constituents were also completed as required.

- Leachate Collection System
 - The system appeared to be operating as designed. During this inspection, there were no apparent changes to this operation. The system is evaluated and reported annually in the Annual Water Quality Report (AWQR) to the IDNR by January 31.

- Erosion Control and Storm Water Management
 - The goal of the 2019 construction is to establish a combination of final and temporary vegetated soil cover over most of the current active area, leaving a smaller portion open (uncovered) to sustain CCR filling operations at any point in time. Since this construction is currently underway, the efficacy of this work with respect to erosion control and storm water management will be evaluated and reported in next year's Annual Inspection Report.

A copy of this report will be placed in the operating record as required under §257.105(g)(9).

Under §257.84(c) Muscatine Power & Water intends to comply with the recordkeeping requirements specified in §257.105(g)(9), the notification requirements specified in §257.106(g)(7), and the public internet site requirements specified in § 257.107(g)(7).

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As required under §257.84(b)(4), the deadline for completing the next annual inspection report is established as no later than one year following the Report Date on this document.

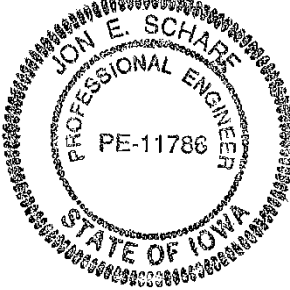
CERTIFICATION

ANNUAL INSPECTION REPORT

CCR LANDFILL

Permit No. #70-SDP-06-82P-CCR

**MUSCATINE POWER & WATER
MUSCATINE, IOWA**

	<p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p>
	<p><i>Jon E. Scharf</i> _____ Jon E. Scharf, P.E. License No. 11786 My renewal date is December 31, 2021 Pages or sheets covered by this seal: ENTIRE DOCUMENT</p> <p>Date: <u>12/23/19</u></p>

Reviewed By:

Name: Rose Amundson, CGP
Certified Groundwater Professional

Signature: *Rose Amundson*

Date: December 23, 2019

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