Stantec

Memo

To:	Geoff Strack, P.E. Waste Connections	From:	Bradley W Sullivan, P.E. Stantec Consulting Services, Inc.
File:	227704387	Date:	January 7, 2022

Reference: **SKB Environmental Cloquet Landfill, dba Shamrock Landfill, Inc. 2021 Annual CCR Inspection Report**

Purpose

This memorandum fulfills the requirements of 40 CFR § 257.84 Inspection Requirements for coal combustion residue (CCR) Surface Landfills, Part b, regarding an annual inspection by a qualified professional engineer.

Background and Applicability

SKB Environmental Cloquet Landfill Inc., f/n/a Shamrock Landfill, Inc. owns and operates the Shamrock Environmental Landfill which is a secure landfill permitted to accept industrial waste, including CCR waste. The facility is located at Section 25, Township 49 North, Range 17 West, Carlton County with a street address of 761 MN Highway 45 in Cloquet, Minnesota. The Facility is operated under the MPCA Solid Waste Permit SW-399. Currently, 36.1 acres of lined landfill are constructed. Most recently, the remaining portions of Phases 4 and 6 were constructed in 2021. All constructed phases, Phase 1 through 6, are permitted to accept CCR. Filling operations in 2021 were primarily in Phases 5 & 6, although Phases 1 through 4 remained operational and received some waste.

Refer to Figures 1 and 2 for the photo locations and current existing conditions plans, respectively.

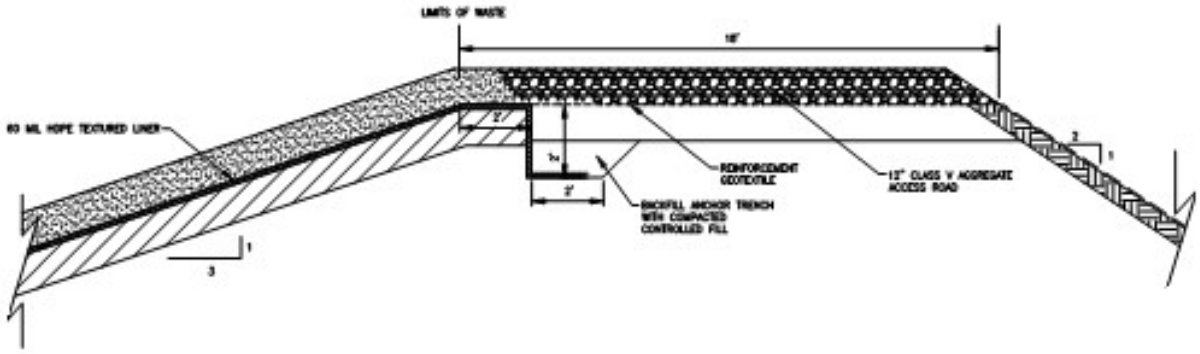
CCR Landfill Inspection (40 CFR § 257.84)

On October 29, 2021, Brad Sullivan, PE of Stantec conducted the on-site inspection of the CCR Landfill. As part of the inspection, the following operating and inspection records were reviewed:

- Review of weekly visual CCR inspections performed by landfill operators;
- Previous annual inspections performed by a licensed professional engineer;
- CCR unit design and construction information required by §257.73(c)(1) and §257.74(c)(1); and
- Previous periodic structural stability assessments required under § 257.73(d).

Landfill Cell Design

Most of the facility's landfill cell embankments were constructed using on-site borrow material, which consisted of silty clay and clayey sand type soils. The fill was placed and compacted to 95% of Standard Proctor Dry Density in lift thicknesses ranging from 8 inches to 12 inches. The final subgrade surface was proof rolled prior to geosynthetics installation. A typical perimeter section taken from the Phase 3 and 4 Construction Documentation Report prepared by Wenck in September 2015 is shown below.



Typical Landfill Berm Detail

During the inspection, no signs of landfill cell embankment distress, no signs of waste slope instability, or other CCR landfill issues were observed. The landfill embankments and interim covered slopes were generally in good condition with a well-established vegetation cover and no signs of significant erosion.

Photos were taken during the inspection. Figure 1 presents the photo locations, and Attachment 1 contains a photo log and the photos taken.

CCR Landfill Inspection Report

40 CFR § 257.84, Subpart b.2 requires the following topics in italics be addressed within this report. The requirements are shown in italics with the response immediately afterwards for each item.

(i) Any changes in geometry of the impounding structure since the previous annual inspection;

Other than the construction of the remaining areas of Phases 4 and 6, there were no apparent changes to the embankment geometry of Phases 1 through 6 when compared to the permit drawings or the past inspection reports. The annual aerial photogrammetry survey was performed on October 16, 2021, which the estimated in-place volume of total waste (including all accepted wastes) is based on. A comparison 2021 and 2020 aerial survey confirm that the embankment and slope topography is substantially unchanged with no significant movement. The 2021 aerial survey is included as Figure 2.

(ii) The approximate volume of CCR contained in the unit at the time of the inspection;

The approximate volume of CCR material contained in the landfill at the time of the inspection is 58,000 cubic yards.

(iii) Any appearances of an 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 and appurtenant structures; and

None of the following were observed that could indicate structural weakness;

- Signs of slumping or rotational movement;
- Lateral or vertical distortion of the embankment crest;
- Seepage on the outboard slope; or
- Borrowing or damage due to vectors.

(iv) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

There were no changes noted that may could potentially affect the stability or operation of the impoundment. Observations were consistent with those noted in that report.

Notification Requirements

Shamrock Landfill is in compliance with the recordkeeping requirements specified in § 257.105(g), the notification requirements specified in § 257.106(g), and the internet requirements specified in § 257.107(g).

Conclusions and Recommendations

All recommendations presented in the previous inspection report were implemented.

The SKB Environmental Cloquet Landfill facility has been constructed and operated in accordance with the facility permit and the CCR regulations. No embankment or waste slope stability issues were observed during the visual inspection.

40 CFR § 257.83, Subpart b.5 and 40 CFR § 257.84, Subpart b.5 each require that if a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

There were no deficiencies or releases identified during the inspection that require remedy as soon as possible.

Stantec Consulting Services Inc.

Bradley W. Sullivan, PE
Civil Engineer, Associate
Cell: (603) 289-5257
Brad.sullivan@stantec.com

I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Minnesota.

Bradley W Sullivan, P.E .# 56502
January 7, 2022

0 100 200
GRAPHIC SCALE IN FEET

LEGEND

- EXISTING CONTOURS
- EXISTING ROAD
- EXISTING MONITORING WELL
- PROPERTY LINE/ COMPLIANCE BOUNDARY
- PROPOSED WASTE LIMITS
- PHASE BOUNDARY
- EXISTING FORCEMAIN
- TELEPHONE
- ELECTRICAL
- RAILROAD
- TREES

NOTEs:

1. COORDINATES ARE BASED ON CARLTON COUNTY COORDINATE SYSTEM.
2. BASE MAPPING HAS BEEN UPDATED BY AERIAL SURVEY PROVIDED BY CONTINENTAL MAPPING COMPLETED ON OCTOBER 16, 2021.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

SEAL

SUB CONSULTANT

PRIME CONSULTANT

Stantec

PROJECT TITLE
2021 CCR INSPECTION REPORT

SKB ENVIRONMENTAL CLOQUET LANDFILL, INC.
f/n/a SHAMROCK LANDFILL, INC.

CLOQUET, MINNESOTA

SHEET TITLE
PHOTO LOCATIONS

DWN BY	CHK'D	APP'D	DWG DATE
JVB	SH	TJS	JAN. 2022

SCALE AS NOTED

PROJECT NO.	SHEET NO.	REV NO.
227704387	FIGURE 1	0

Plot Date & Time: 5 January 2022 11:03 AM

U:\227704387\drafting\Cloquet\2021 CCR Report\cdr\cad\FIGURE 1 PHOTO LOCATIONS.dwg

NOTES:

1. COORDINATES ARE BASED ON CARLTON COUNTY COORDINATE SYSTEM.
2. BASE MAPPING HAS BEEN UPDATED BY AERIAL SURVEY PROVIDED BY CONTINENTAL MAPPING COMPLETED ON OCTOBER 16, 2021. AERIAL PHOTO IS FROM OCTOBER 16, 2021.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

SEAL

SUB CONSULTANT

PRIME CONSULTANT

Stantec

PROJECT TITLE
2021 CCR INSPECTION REPORT

SKB ENVIRONMENTAL CLOQUET LANDFILL, INC.
f/n/a SHAMROCK LANDFILL, INC.

CLOQUET, MINNESOTA

SHEET TITLE
SITE MAP

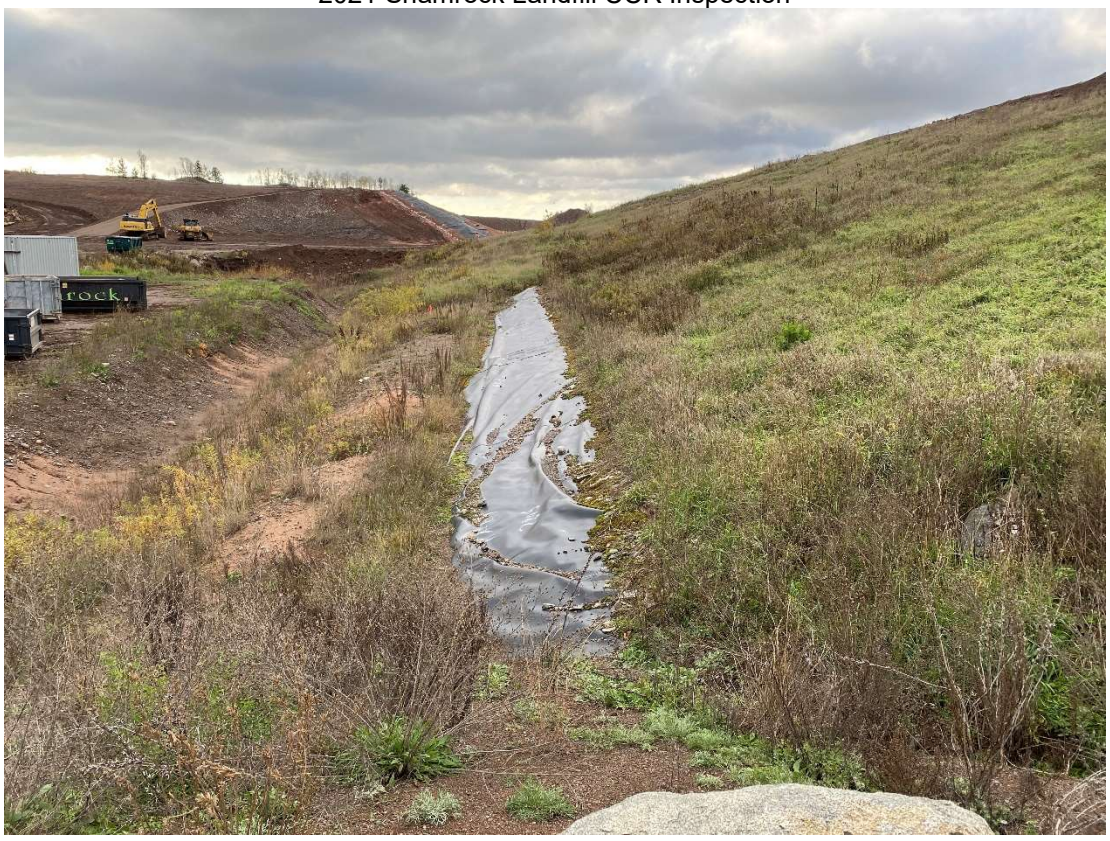
DWN BY	CHK'D	APP'D	DWG DATE
JJT	SH	TJS	JAN. 2022

SCALE AS NOTED

PROJECT NO. 227704387

SHEET NO. FIGURE 2

REV NO. 0



Location 1 – Looking South, Phase 1 Eastern Berm

Location 1 – Looking West, Phase 1 Northern Berm

Location 2 – Looking East, Phase 1 Northern Waste Slope

Location 2 – Looking West, Phase 2 Northern Waste Slope & Berm

Location 3 – Looking South, Phase 2 Perimeter Road

Location 3 – Looking South, Phase 2 Western Berm

Location 3 – Looking East, Phase 2 Road & Berm

Location 4 – Looking North, Phase 2 Western Berm

Location 4 – Looking South, Phase 3 Western Berm

Location 4 – Looking South, Phase 3 Waste Slope

Location 5 – Looking North, Phase 3 Western Waste Slope

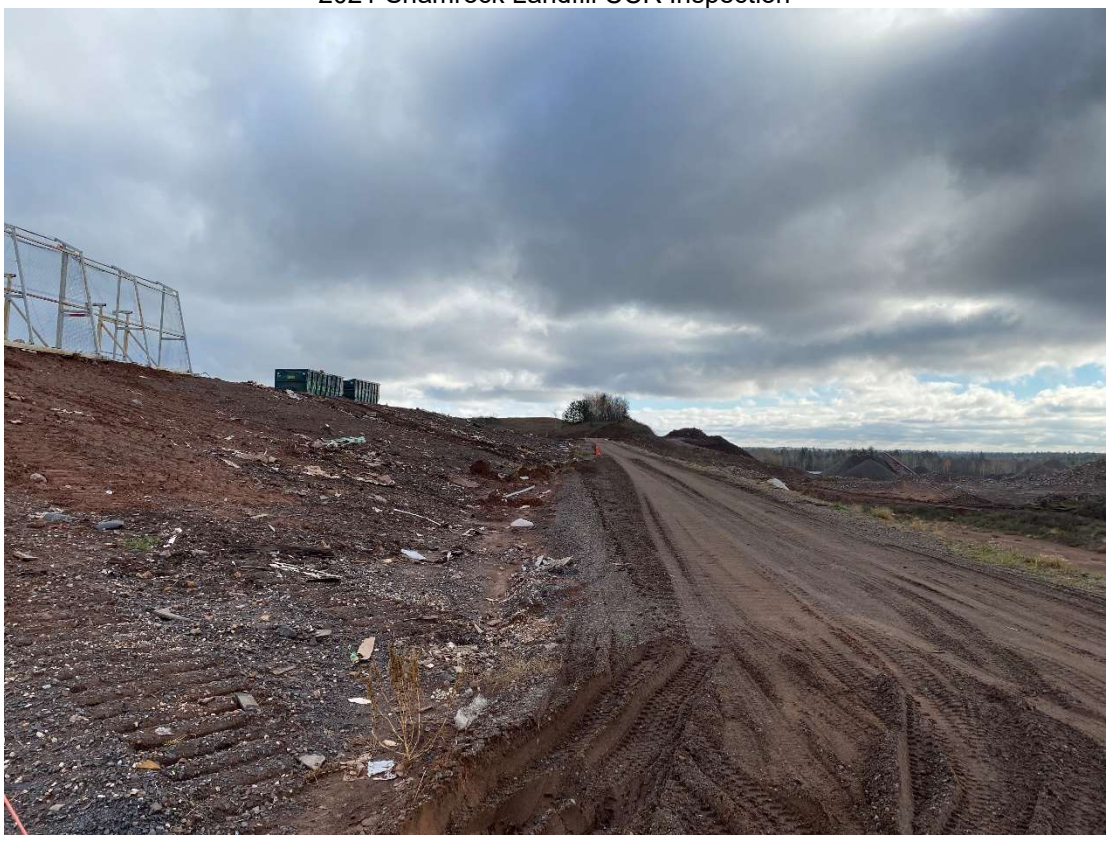
Location 5 – Looking North, Phase 3 LF Western Road

Location 5 – Looking South, Phase 6 Western LF Berm

Location 5 – Looking South, Phase 5 Interior

Location 6 – Looking North, Phase 6 Western LF Berm

Location 6 – Looking North, Phase 6 Interior (Future Waste Slope)



Location 6 – Looking East, Phase 5/6 Southern Anchor Trench

Location 6 – Looking East, Phase 5/6 Southern Berm

Location 7 – Looking West, Cell 5 Southern Anchor Trench

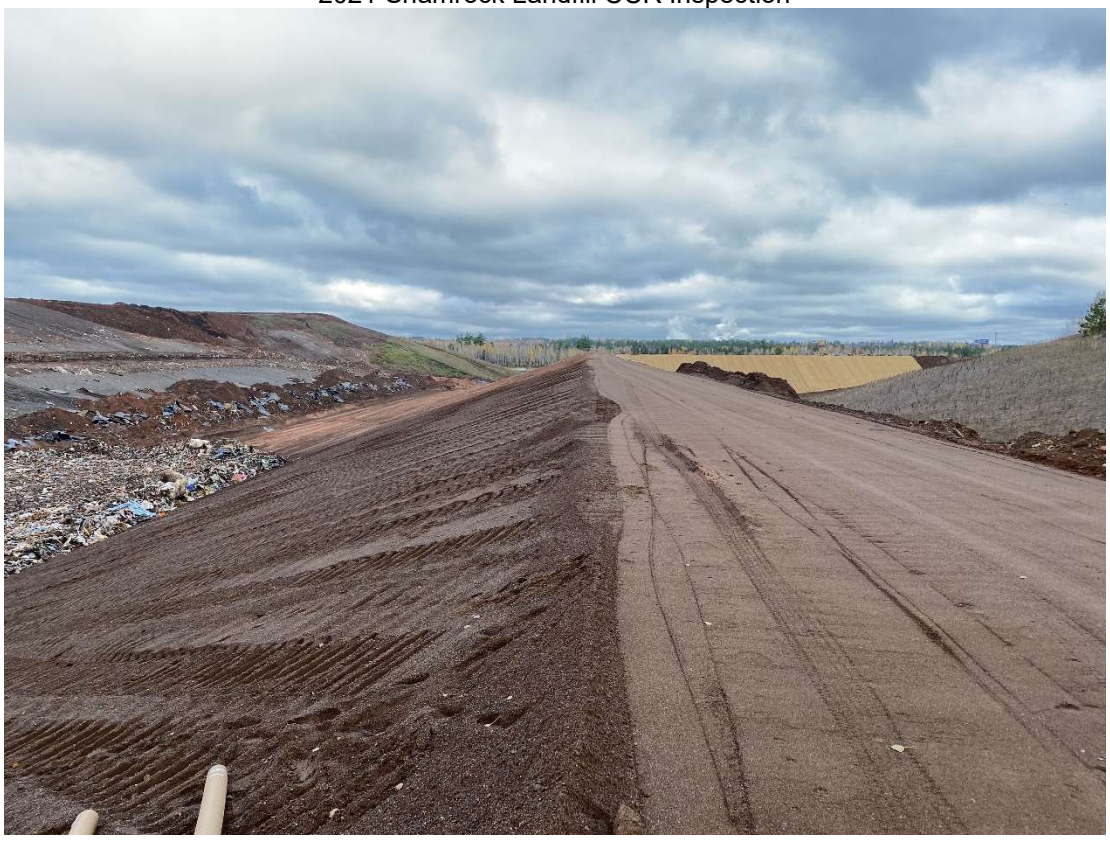
Location 7 – Looking East, Cell 6 Southern Anchor Trench

Location 7 – Looking West, Cell 5 Southern Berm

Location 7 – Looking East, Cell 6 Southern Berm

Location 8 – Looking West, Cell 6 Southern Anchor Trench

Location 8 – Looking West, Cell 6 Southern Berm

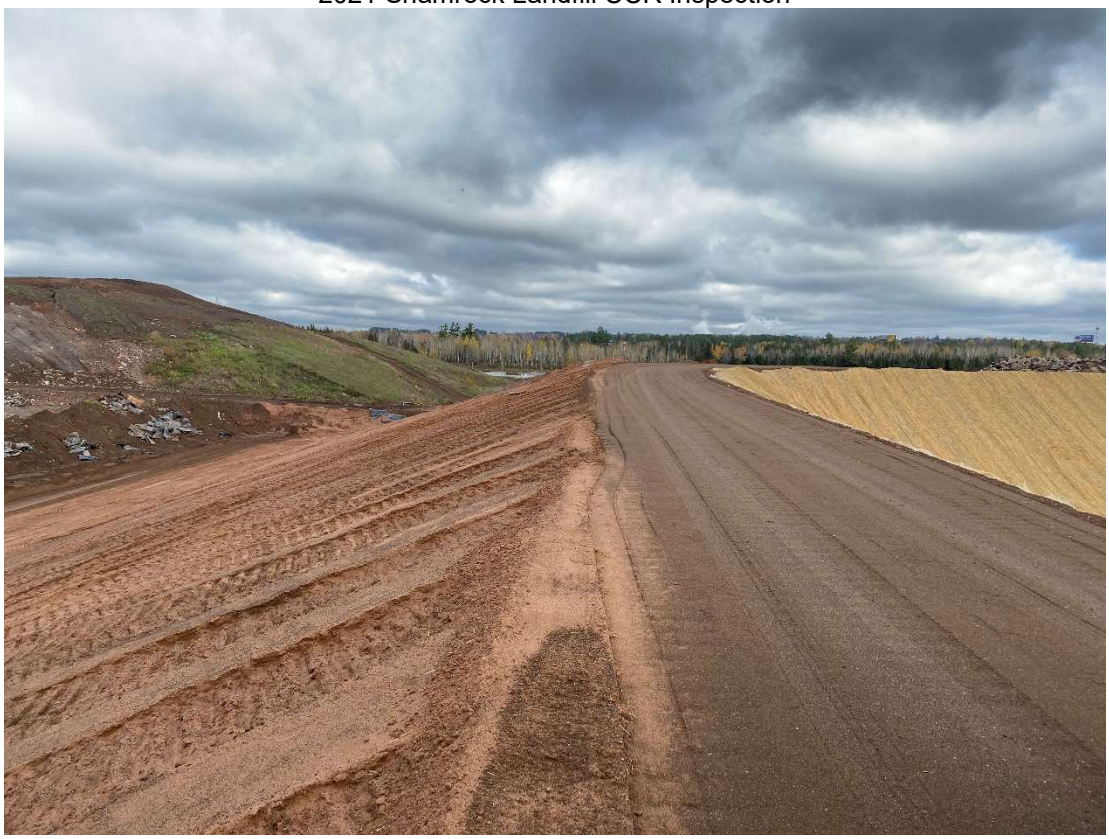


Location 8 – Looking North, Cell 6 Eastern Anchor Trench

Location 8 – Looking North, Cell 6 Eastern Berm

Location 9 – Looking south, Phase 6 eastern anchor trench

Location 9 – Looking south, Phase 6 outer landfill berm



Location 9 – Looking north, Cell 4 eastern anchor trench

Location 9 – Looking north, Cell 4 outer landfill berm

Location 10 – Looking northwest, Phase 4 eastern berm

Location 10 – Looking north, Phase 4 anchor trench

Location 10 – Looking north, Phase 4 outer landfill berm

Location 11 – Looking Southwest, Phase 4 Southern rainflap

Location 11 – Looking North, Phase 1 anchor trench