

June 8, 2023

Ms. Erin Endsley
Hydrogeologist Program Director
Wisconsin Department of Natural Resources
1701 North 4th Street
Superior, WI 54880

Subject: 2023 Semi-annual Inspection Report – First Report
Stoughton City Landfill, Stoughton, Dane County, Wisconsin
USEPA ID #WID980901219; WDNR BRRTS #02-13-000880

Dear Ms. Endsley:

TRC completed the initial semi-annual inspection for the 2023 calendar year for the Stoughton City Landfill (Site). Inspection tasks were completed in concurrence with the December 9, 2019 City of Stoughton Landfill Operation and Maintenance Bidding Documents, follow up correspondences between TRC and the Wisconsin Department of Natural Resources (WDNR), and the April 2020 Quality Assurance/Quality Control Plan (Revision 0) (TRC, 2020). This letter summarizes inspection and monitoring activities completed between February 2023 and June 2023.

Bimonthly Site Monitoring

Gas Probe Monitoring

Currently the Site contains three gas monitoring probes (GMP-1, GMP-2, and GMP-3) along the southern perimeter of the landfill to evaluate if off site landfill gas migration is occurring. TRC mobilized to the site on February 28, 2023, April 25, 2023, and June 7, 2023 to monitor gas concentrations and collect pressure reading at each of these gas monitoring probes. Each probe was field monitored using a Landtec GEM 2000 meter for methane (percent lower explosive limit and percent by volume), carbon dioxide, and oxygen. Volatile organic compounds (VOCs) were field monitored using a Rae Systems MiniRae 3000 and a pressure reading was collected using a Dwyer 475 Series Manometer. Field measurements from these three events are included in Attachment 1.

Field data indicates that methane and VOCs were not detected in any of the gas probes during this inspection period. Oxygen levels varied by probe and inspection event but were generally just below ambient air levels of 20.9%. Low concentrations of carbon dioxide were detected at select probes with the highest reading of 1.4% by volume at GMP-3 during the June 2023 event, all other detectable readings at the site were below 0.5%.

Flow Prevention Monitoring

Mechanical packers are currently installed in wells MW-7I, MW-8I, and MW-10I and were found to be working properly and preventing flow out of each well during the bimonthly inspections.

April Semi-annual Site Inspection

The semi-annual site inspection included a visual evaluation of the landfill cover, storm sewer management system, gas venting system, monitoring well network, security fencing/entrance gate, signage, and the access road (Site features). TRC completed a site walk on April 25, 2023, completing an inspection of the Site features and a summary of the inspection is included in Attachment 2. A photographic log is also included in Attachment 2.

Landfill Cover

No issues were observed with the landfill cover that require immediate maintenance, however there are a small number of animal burrows along the eastern fence adjacent to the wetlands. There are three to four localized areas where animals have dug burrows from inside of the fenced area out to the adjacent wetlands. Trapping animals and filling these burrows would not be a permanent solution due to the high amount of animal activity in the in the area. These areas should be monitored during future inspection events to ensure that these burrows are not expanding into the limits of the waste.

Storm Sewer Management System

The storm sewer management system appeared to be functioning as constructed and no significant erosion damage or lack of vegetation was observed. A small amount of ponding was observed in the area between GV-15 and GV16 during a site visit with the Environmental Protection Agency in March 2023. This area appeared dry with minimal soil saturation during the April 2023 inspection event. The ponding was likely due to the combination of snow melt and recent weather events, however this area should be monitored closely going forward to ensure that the cap vegetation is not damaged.

Landfill Gas Vents

The Site contains 21 gas vents throughout the limits of the landfill. Each vent was inspected by TRC and the only issue found was the signage near GV-3 had fallen over; the base of the sign appeared to be rusted and broken. TRC staff drove the fence post back into the ground, however, it may need to be replaced if issue continues. Additionally, the vents are constructed of, PVC which is beginning to become brittle due to age and there is an increased risk of couplers failing and gas vents falling over. This issue should be monitored and repaired as needed.

Monitoring Well Network

There are currently 37 monitoring, extraction, or observation wells installed surrounding and in close proximity to the landfill. Each well was inspected, and the following observations were found:

- MW-7I is an artesian well and the packer at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.
- MW-8I is an artesian well and the packer at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.
- MW-10I is an artesian well and the packer at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.
- OW-2 has a packer installed and is preventing possible artesian conditions. The packer will continue to be monitored on a bi-monthly basis.
- OW-4 is an artesian well and the expandable cap at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.
- EW-01 is an artesian well and the expandable cap at the time of this inspection was working and will continue to be monitored on a bi-monthly basis.

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Security - Fencing/Gate

The chain link fence that surrounds a portion of the landfill was in good condition. The gate was in good condition and the lock was functioning; however, it is becoming difficult to lock and should be replaced before winter of 2023. There is a section of broken fencing along the western side of the landfill that will need to be repaired. Two of the wooden slats were removed.

Signage

Signs are located along the exterior of the fence surrounding the landfill. The signs were in good condition and labels were visible.

Access Road

No issues were observed with the Site access road during this inspection.

Recommendations

Repairs to the wooden fence should be completed, TRC can assist with the repair if needed. Future inspections should make special note of increased animal activity along the eastern fence line as well as any evidence of ponding between GV-15 and GV-16. A new main gate lock should also be purchased and installed for the Site before winter of 2023.

If you have any questions, please contact me at astehn@trccompanies.com or 608-807-8112.

Sincerely,

TRC



Andrew Stehn, PE
Project Manager

Attachments: 1. Bi-monthly Gas Probe Monitoring Forms (February, April, and June 2023)
2. Semi-annual Site Inspection Form – April 2023

cc: Giang Van Nguyen – USEPA Region V

References

TRC Environmental Corporation. 2020. Quality Assurance/Quality Control Plan. Stoughton City Landfill. Stoughton, Dane County, Wisconsin. April 13, 2020.

Attachment 1

**Bi-monthly Gas Probe Monitoring Forms
(February, April, and June 2023)**



PROJECT NAME:	Stoughton City Landfill
PROJECT NUMBER:	375007.0002.0000
PROJECT MANAGER:	Andrew Stehn
SITE LOCATION:	Stoughton, Wisconsin
DATES OF FIELDWORK:	2/28/2023 TO 6/7/2023
PURPOSE OF FIELDWORK:	Bi-monthly Gas Monitoring and April Semi-annual Site Inspection
WORK PERFORMED BY:	Wes Braga John Roelke

Wesley J. Braga

6/7/2023

SIGNED

DATE

Andrew M. Stehn

6/7/2023

CHECKED BY

DATE

Attachment 2
Semi-annual Site Inspection Form
April 2023



Operation and Maintenance Semi-Annual Inspection Report

**Stoughton City Landfill
Stoughton, Wisconsin**

INSPECTOR: Wesley Braga	LOCATION: STOUGHTON CITY LANDFILL - STOUGHTON, WI
COMPANY: TRC	DATE/TIME: 4/25/2023
PROJECT: STOUGHTON CITY LANDFILL O&M	PROJECT NUMBER: 375007.0002.0000

WEATHER

WEATHER	CLEAR	PARTLY CLOUDY	CLOUDY	FOG
TEMPERATURE	43°F	---	---	---
WIND	CALM	MEDIUM	HIGH	---
PRECIPITATION	RAIN	NONE	LIGHT	MODERATE
	SNOW	NONE	LIGHT	MODERATE
				HEAVY

INSPECTION ITEMS

TYPE OF INSPECTION	ROUTINE	SPECIAL
	<input checked="" type="checkbox"/>	<input type="checkbox"/>

PERSONS/EQUIPMENT PRESENT: Wesley Braga/ GEM 2000, Mini Rae 3000 PID, Dwyer Digital Manometer.

GENERAL DESCRIPTION OF SITE CONDITIONS: Site is in good condition. Vegetation is well established and is not stressed. Some animal burrowing noticed along the eastern fence line during this inspection.

SPECIAL INSPECTION ITEMS	POTENTIAL PROBLEM AREA	STATUS	NOTES
PERIMETER SECURITY FENCING	BROKEN OR MISSING WOOD SLATS, TORN CHAIN LINK FABRIC	2	Two slats of the wood fencing have been removed north of the western gate.
ENTRANCE GATE AND LOCKING MECHANISM	LOCK BROKEN/MISSING, MECHANISM INOPERATIVE	1	Main lock is difficult to close. Lock is still operable but should be replaced in the near future.
MONITORING WELLS AND WELLHEAD COVERS	SIGNS OF TAMPERING, CASING DAMAGED, LOCK MISSING.	1	
FINAL COVER VEGETATION	BARE SPOTS, STRESSED VEGETATION, DEEP ROOTED VEGETATION	1	
FINAL COVER SLOPE (EXPLAIN BELOW)	GULLIES, LACK OF VEGETATION, SUBSIDENCE, PONDING	1	Ponding area noted during the March 2023 EPA's 5-year Site walk was dry with no saturated soil observed during the April 2023 inspection.
EVIDENCE OF BURROWING ANIMALS	DAMAGE TO FINAL COVER, EVIDENCE OF WASTE	1	Some animal burrowing noticed along eastern fence line. Burrows are mainly shallow going under the fence and are unlikely to be within the limits of landfilled material. Due to the adjacent wetlands, trapping animals and/or filling holes are unlikely to be a permanent solution. Burrowing should be evaluated during future inspections to ensure cap integrity continues.
STORMWATER DRAINAGE CHANNELS	GULLIES, EROSION, DEBRIS, CULVERT BLOCKED	1	
LANDFILL GAS VENTING SYSTEM	DAMAGED OR BLOCKED VENT RISERS, STRESSED VEGETATION	1	Danger sign at GV-3 has rusted out at the ground surface and fallen over. Sign was repaired during the inspection by TRC staff. If the sign continues to fall over then sign post will need to be replaced.
ACCESS ROAD	PONDING, RUTTING, EROSION	1	
COVER MOWING AND TALL VEGETATION REMOVAL (OCTOBER INSPECTION ONLY)	MOWING AND TALL VEGETATION REMOVAL DONE TO SPECIFIED VEGETATION HEIGHT, ANY MISSED AREAS	--	--

* (1)ACCEPTABLE - NO MAINTENANCE REQUIRED. (2) NOT ACCEPTABLE - IDENTIFY REQUIRED MAINTENANCE

SUMMARY OF DEFICIENCIES AND/OR CORRECTIVE ACTIONS: Wooden slats along western fence need to be replaced. Animal burrowing along eastern fence line should be monitored and addressed if issues worsen. Danger sign at GV-3 was reinstalled, monitor for post replacement. Main gate lock should be replaced prior to winter 2023.

SIGNATURE OF INSPECTOR: Wesley A Braga DATE: 4/25/2023

Photographic Log

Client Name: Wisconsin Department of Natural Resources		Site Location: Stoughton City Landfill	Project No.: 375007.0004
Photo No. 1	Date 4/25/2023		
Time: 13:06			
Weather: Overcast/ 43°F			
Description: Broken fence looking southeast.			
Photographer: <i>Wesley J Braga</i>			
Wes Braga			

Photo No. 2	Date 4/25/2023		
Time: 13:30			
Weather: Overcast/ 43°F			
Description: Sign repaired at GV-3.			
Photographer: <i>Wesley J Braga</i>			
Wes Braga			

Photographic Log

Client Name: Wisconsin Department of Natural Resources		Site Location: Stoughton City Landfill	Project No.: 375007.0004
Photo No. 3	Date 4/25/2023		
Time: 13:45 Weather: Overcast/ 43°F Description: Animal burrow near east fence. Photographer: <i>Wesley J Braga</i> <hr/> Wes Braga			

Photo No. 4	Date 4/25/2023		
Time: 13:50 Weather: Overcast/ 43°F Description: Animal burrow near east fence. Photographer: <i>Wesley J Braga</i> <hr/> Wes Braga			