

DATE: August 27, 2024

TO: Emily Brickman, P.G., *Senior Project Manager – Geologist, EnSafe*

FROM: Ian Klein, *Staff Engineer, Harbor*

RE: Bi-weekly Site Inspection
NABORS Landfill
Mountain Home, AR
Harbor Project No: ENSF-23299

Harbor visited the NABORS landfill in Mountain Home, Arkansas on August 22, 2024, to conduct the bi-weekly site inspection to assess the condition general condition of the landfill and the leachate collection system. The leachate collection system was last fully repaired by Advanced Fluid Technologies (AFT) in October and November of 2022; however, within a few weeks of these repairs, the system began malfunctioning. By March 2023, most of the leachate collection points were malfunctioning. A quote was then requested and received from AFT to again repair the system. No authorization for the subsequent repairs was provided prior to the expiration of Harbor's contract with DEQ in June 2023.

Upon commencement of the subcontract with EnSafe, Inc. (EnSafe) in April 2024, Harbor retained Comfort Systems USA (CSUSA) to begin repairs of the leachate collection system. CSUSA conducted partial repairs of the system; however, they were unable or unwilling to conduct all of the repairs necessary and have since been terminated as the repair contractor. Harbor contracted C2R, a company specializing in leachate collection system installation and service, to assess the leachate collection system (LCS). C2R visited the NABORS Landfill site on August 12, 2024, to assess the LCS. Findings of that assessment are summarized below:

- LCS-1 – operating in hand only; needs new transducer; auto control wire not connected to contactor.
 - LCS-2 – not functioning; needs new pump and transducer, control panel needs to be re-wired to original.
 - LCS-3 – operating in hand only; needs new transducer; auto control wire not connected to contactor.
 - LCS-4 – not functioning; needs new pump and transducer, control panel needs to be re-wired to original.
 - LCS-5 – operating in hand only; pump cuts off; needs new pump motor and transducer.
 - LCS-6 – functioning correctly
 - LCS-7 – operating in hand only; needs new transducer; auto control wire not connected to contactor.
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- LCS-8 – not functioning; needs new pump and transducer, control panel needs to be re-wired to original.
- LCS-9 – operating in hand only; pump cuts off; needs new pump motor and transducer.

C2R indicated that all LCS points needed a software update, and that specific computer software would be required to interface with the programmable logic controllers (PLCs) at each LCS point. The computer software information was not available.

The leachate collection system remains largely unchanged from previous inspections. Findings and observations from the current landfill inspection are summarized below:

- Vertical leachate collection sump (VLCS)-1 was at 3/4 capacity (See photograph 1).
- VLCS-2 appeared to be functioning correctly. The sump was at approximately 1/4 capacity.
- No stormwater was observed in the leachate tank battery secondary containment (See photograph 2).
- The panel displays were off at LCS-1 through LCS-5, and LCS-7 through LCS-9. The VFDs did not activate when the sump was placed in “hand” or “auto” mode.
- LCS-6 displayed a pump fault; however, the green and red strobes were active.
- The closure turf is damaged around several vent pipes near LCS-4. A turbine vent near LCS-8 has also detached. A turbine vent near LCS-6 has also detached (See photograph 3).
- The closure turf has some significant rills present between LCS-1 and LCS-2 on the north side of Area 1-2. These rills have sediment deposited in them which is allowing vegetation to grow. Woody vegetation is growing on the edges of the liner throughout the landfill. An erosional washout is present along the road between LCS-4 and LCS-5 (see photographs 4-17).

Attachment A is a map showing the LCS points. Photographs are included in Attachment B. Copies of the field notes and the LCS status form are included in Attachment C.

The leachate collection system has been functioning at a minimal level, resulting in some leachate generation, mainly by placing some of the LCS points in “hand” mode. Harbor contract water hauler 417 Services LLC (417 Services) began hauling leachate on July 2, 2024. As of August 17, 2024, 417 Services hauled 43 loads of leachate totaling 162,150 gallons to the City of Springfield, Missouri wastewater treatment plant under wastewater contribution permit #593.

Attachments:

Attachment A – Site Map

Attachment B – Site Photographs

Attachment C – Field Notes and Leachate Collection System Status Form

Attachment A

Site Map

Attachment B

Site Photographs



Photograph 1: View of VLCS-1 near capacity.



Photograph 2: View of dry leachate tank battery secondary containment.



Photograph 3: View of detached turbine vent near LCS-6.



Photograph 4: View of rills present in closure turf of north side of Area 1-2.



Photograph 5: View of rills present in closure turf of north side of Area 1-2.



Photograph 6: View of rills present in closure turf of north side of Area 1-2.



Photograph 7: View of rills present in closure turf of north side of Area 1-2.



Photograph 8: View of rills present in closure turf of north side of Area 1-2.



Photograph 9: View of rills present in closure turf near LCS-3.



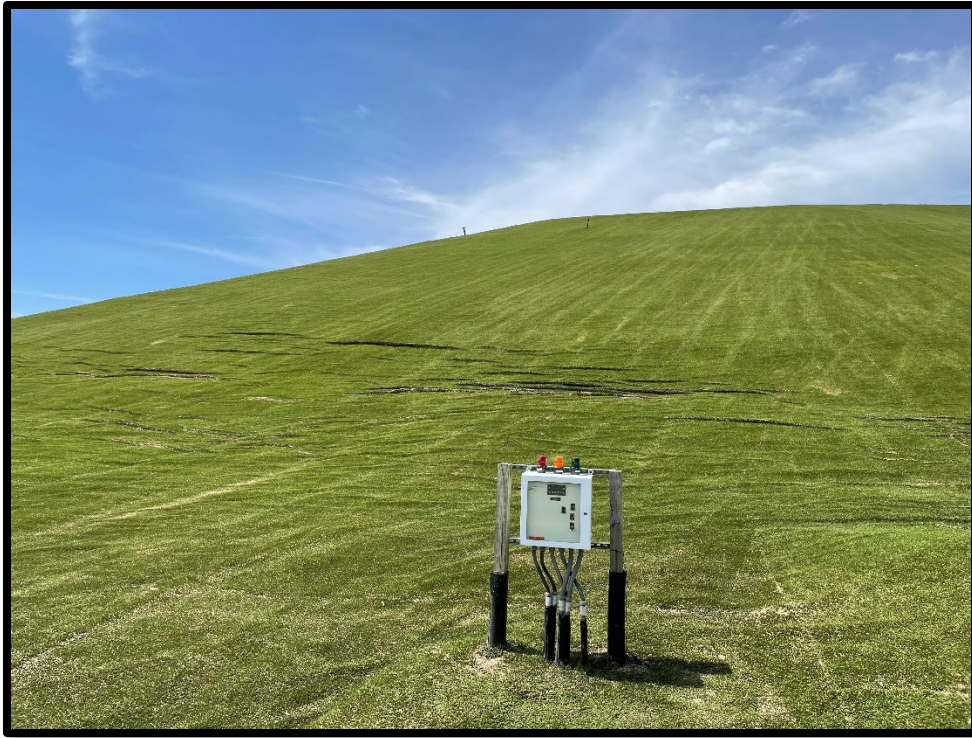
Photograph 10: View of rills present in closure turf near LCS-3.



Photograph 11: View of woody vegetation near LCS-4.



Photograph 12: View of rills near LCS-8.



Photograph 13: View of rills near LCS-7.



Photograph 14: View of rills near LCS-6.



Photograph 15: View of damaged closure turf around vent near LCS-4.



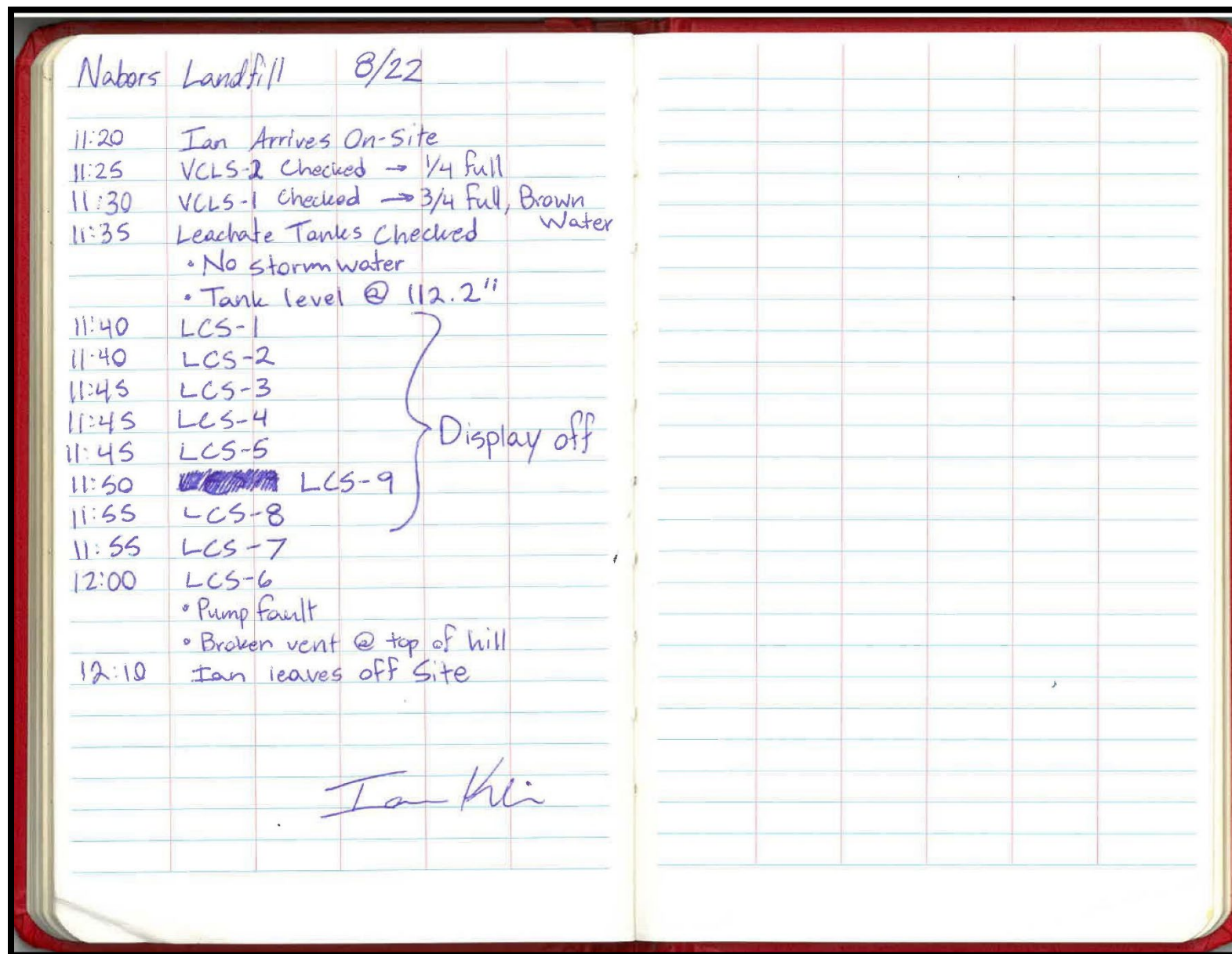
Photograph 16: View of sediment present on closure turf near LCS-4.



Photograph 17: View of washout present in road between LCS-4 and LCS-5.

Attachment C

Field Notes and Leachate Collection System Status Inspection Form





Leachate Collection System Status

Date: 8/22/24 Arrival Time: 11:20 Location: NABORS Landfill Leachate Tank Battery Level (inches): 112.2
 Weather Conditions: Sunny, Partly Cloudy

Panel Number	Display Functioning (Yes/No)	Leachate Level (inches)	Green Flashing? (Yes/No)	Amber Flashing? (Yes/No)	Red Flashing? (Yes/No)	Working in Hand? (Yes/No)	Working in Auto? (Yes/No)	VFD Status	Hours	Alarm	Comments
VLCS-1	N/A	N/A	N/A	N/A	N	—	—	N/A	N/A	N/A	Sump status: 3/4 Full
VLCS-2	N/A	N/A	N/A	N/A	N	—	—	N/A	N/A	N/A	Sump status: 1/4 Full
LCS-1	N	—	N	N	N	—	—	—	—	—	Not Operational
LCS-2	N	—	N	N	N	—	—	—	—	—	Odor ← N.O.
LCS-3	N	—	N	N	N	—	—	—	—	—	N.O.
LCS-4	N	—	N	N	N	—	—	—	—	—	N.O.
LCS-5	N	—	N	N	N	—	—	—	—	—	N.O.
LCS-6	Y	9.4	Y	N	Y	N	—	—	26	Y	Pump Fault Alarm
LCS-7	N	—	N	N	N	—	—	—	—	—	N.O.
LCS-8	N	—	N	N	N	—	—	—	—	—	N.O.
LCS-9	N	—	N	N	N	—	—	—	—	—	N.O.
General Comments:											