



May 19, 2025

Clay McDaniel
Arkansas Energy & Environment
Division of Environmental Quality – Office of Land Resources
Assessment and Remediation
5301 Northshore Drive
North Little Rock, AR 72118

Vía Email: clay.mcdaniel@arkansas.gov

Subject: Summary of Corrective Measures
Nabors Landfill
Baxter County, AR

Dear Mr. McDaniel,

This document provides a summary of site maintenance activities conducted at the Nabors Landfill facility, located at 1320 Landfill Road, Mountain Home, Arkansas 72653. These maintenance activities were implemented in response to observations made during a site evaluation on March 21, 2024, to mark the conclusion of the 5-year monitoring period for the ClosureTurf® system, as initially outlined in our letter dated April 16, 2019.

The corrective actions were implemented during two site visits: September 23–25, 2024 and December 17–19, 2024. These corrective actions were performed by Cline Environmental under the direction of Watershed Geo® and were based on the scope of work provided in our letter dated June 14, 2024 (provided as Attachment A for your convenience).

Based on observations during the site visit on March 21, 2024, the maintenance activities to be completed were:

- Repair approximately five areas of bird damage by removing and replacing engineered turf, welding new turf edges to existing turf, and infilling with specified aggregate infill and a bound infill product (HydroBinder® or UltraArmor™);

- Conduct a reevaluation of the passive relief vents (PRV) and infill displacement for movement or damage; and
- Place DuraGuard® protection over observed wrinkles and seam separations as needed.

Below is a summary of work completed during each of three site visits:

September 23–25, 2024: Watershed Geo® and Cline Environmental visually assessed Cells 1-2, 1-3 and 1-4. Bird damage, wrinkles and seam separation locations for DuraGuard® protection were noted for corrective action. Examples of bird damage are presented in Figure 1 and Figure 2. Cline Environmental subsequently repaired bird damage by removing and replacing engineered turf, welding new turf edges to existing turf, and infilling with specified aggregate infill and UltraArmor™. Corresponding examples of repaired bird damage are presented in Figure 3 and Figure 4. Other site bird damage locations were addressed in a similar manner.



Figure 1. Bird damage around PRV



Figure 2. Bird damage at previously repaired location



Figure 3. Repairing bird damage around PRV



Figure 4. Repairing bird damage at previously repaired location

Cline Environmental also applied DuraGuard® protection at observed wrinkles in the perimeter ditch, seam separations and locations of bird damage repair as presented in Figure 5 and Figure 6.



Figure 5. DuraGuard® and infill application to wrinkles



Figure 6. DuraGuard® and infill application after bird damage repair at PRV

October 10, 2024: Watershed Geo® conducted a follow-up evaluation of Cells 1-2, 1-3, and 1-4. Maintenance activities had been completed on Cells 1-3 and 1-4. On Cell 1-2, items still requiring maintenance were identified.

December 17–19, 2024: Cline Environmental returned to complete the repairs identified October 10, 2024. Additional completed repairs were:

- Repaired bird damage around the gas well on the northwest slope as presented in Figure 7 and Figure 8;



Figure 7. Bird damage at gas well



Figure 8. Confirming ClosureTurf® bird damage repair at gas well on NW slope

- Addressed turf tears and wrinkles due to settlement near leachate piping on the south slope with new ClosureTurf®, infill, and UltraArmor™ as presented in Figure 9 and Figure 10; and



Figure 9. Settlement induced wrinkles and torn Closuresurf® at leachate piping on south slope



Figure 10. Repaired wrinkles and torn Closuresurf® at leachate piping on south slope

- Completed seam repair on the west area of the top deck and ridge as presented in Figure 11 and Figure 12.



Figure 11. Seam repair on Cell 1-2



Figure 12. UltraArmor™ application to repaired seam

Also, Watershed Geo® reassessed the infill displacement and pressure valve relief systems to check for signs of movement or damage. This assessment revealed no issues requiring repair.

Please do not hesitate to reach out should you have any questions or need additional documentation. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read 'B. Cooley', is positioned above the printed name.

Bradford H. Cooley, PE (Licensed in California)
Senior Vice President
Watershed Geo

Copy To: Bryan Scholl (Watershed Geo)
 Robert Buzzell (Watershed Geo)
 Jeff Albright (Watershed Geo)

Attachment

Attachment A

**Letter from Watershed Geo® to ADEQ
dated June 14, 2024**



June 14, 2024

Clay McDaniel
Arkansas Energy & Environment
Division of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118

Via Email: mcdaniel@adeq.state.ar.us

Subject: Site Visit
Nabors Landfill
Baxter County, AR


Dear Mr. McDaniel,

Watershed Geo® (WG) performed a site visit to Nabors Landfill on March 21st, 2024. Present for the site visit for WG were Bob Buzzell, Bryan Scholl, and me. We met you on-site as well as Chuck Seaton of the Ozark Mountain Solid Waste District.

The purpose of the visit was to evaluate the condition of the ClosureTurf® system prior to the end of our 5-year monitoring period as outlined in our letter dated April 16, 2019. At this site visit we observed the following:

In general, the ClosureTurf system is performing very well. The following items were observed during our site visit:

- There are areas of bird damage to the engineered turf layer. We observed approximately five (5) areas. Photos of the bird damage are shown in Attachment A – Photos 1, 2, and 3. The largest observed area of bird damage was approximately 10-ft by 10-ft as shown in Photo 3.
- The Passive Relief Vents (PRVs) appear to be in good condition with no observed movement or damage.
- The specified granular infill for the engineered turf is in place with no large areas of displacement or movement.
- The wrinkles previously noted along the north and west slopes of Area 1-2 do not appear to have changed since previous site visits.



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- The storm water inlet structure on the south side of Area 1-2 is settling, cracked, and undermined. See Photos 4, 5 and 6 in the Attachment A. This structure is not a part of the ClosureTurf system. If it continues to settle and undermine, it will impact the ClosureTurf and cause significant damage to the cover system, landfill storm water system, and landfill access road. WG suggests that ADEQ have this inlet structure repaired.

To address the above items, WG will schedule and perform a maintenance event to close out our 5-year monitoring commitment. The event will most likely be in August or September 2024. During this maintenance event, WG will walk the site to evaluate areas that may need repairs. WG will perform the following:

- Fix the bird damage by replacing the engineered turf, welding the edges of the new turf to existing turf, and infilling the turf with a bound infill product (i.e., HydroBinder® or UltraArmor™).
- Repair or replace damaged PRVs. None were noted on our site visit, but WG will evaluate again.
- Replace infill in areas where there is no specified granular infill, and the backing geotextile of the engineered turf is exposed. No areas of infill displacement were noted on our site visit, but WG will evaluate again.
- Place DuraGuard™ protection on wrinkles as needed.

In the coming months, WG will coordinate with you to schedule the maintenance event. If you have any questions, or need additional information, please do not hesitate to contact me. Thank you.

Regards,



Bradford H. Cooley, PE (Licensed in California)
Senior Vice President
Watershed Geo

Copy to: Jarrod Zweifel, PG - ADEQ

Attachment

Attachment A

Photos from Site Visit on March 21, 2024 Nabors Landfill

**Photo 1 – Bird Damage of
Engineered Turf**



**Photo 2 – Bird Damage of
Engineered Turf**



**Photo 3 – Bird Damage of
Engineered Turf Around Passive
Relief Vent (PRV)**



**Photo 4 – Storm Water Inlet
Structure**



Photo 5 – Storm Water Inlet
Structure



Photo 6 – Storm Water Inlet
Structure

