



July 29, 2022

Certified Mail No. 9489 0090 0027 6186 0696 08

Ms. Heather Hoggard
 Pretreatment Inspector
 Springfield Clean Water Services
 755 N. Franklin Avenue
 Springfield, MO 65802

**Re: Semi-Annual Leachate Report
 First Half 2022
 NABORS Landfill
 Mountain Home, Arkansas
 Wastewater Contribution Permit No. 593**

Dear Ms. Hoggard:

On behalf of the Arkansas Department of Energy and Environmental Division of Environmental Quality (DEQ), please find attached the results of leachate analysis for the First Half 2022 reporting period for the referenced facility. A total of 438,000 gallons of leachate was generated during the reporting period.

The leachate generated at the NABORS Landfill is transported to the City of Springfield, MO wastewater collection system under Wastewater Contribution Permit #593. A sample of the leachate plus a duplicate sample was collected and submitted for laboratory analysis. None of the detected concentrations exceeded the permit requirements. Table 1 below summarizes the analytical methods and results of the analyses.

Table 1 – Summary of Leachate Analytical Results – April 2022

Parameter	Analytical Method	Units	Permit Requirement	Leachate	Leachate Duplicate
Ammonia as N	SM 4500-NH3 B,D,C-2011	mg/L	Monitoring Requirement Only	38.6	43.6
Cyanide (total)	SM 4500-CN B,E-2011	mg/L	0.33	< 0.010	< 0.010
Flashpoint	SW 1010A, Rev 1, 2004	°C	<140°F	Did Not Flash	Did Not Flash
Oil and Grease	EPA 1664 Mod, Rev. B 2010	mg/L	100	< 4.81	< 4.85
pH	EPA 150.2 (1982)	S.U.	5.0 (minimum) 12.5 (maximum)	7.35	7.37
Arsenic	EPA 200.8 Rev 5.4 (1994)	mg/L	0.51	0.00371	0.00372
Cadmium	EPA 200.8 Rev 5.4 (1994)	mg/L	0.13	< 0.000260	< 0.000260
Chromium	EPA 200.8 Rev 5.4 (1994)	mg/L	2.91	0.00395	0.00401

Table 1 – Summary of Leachate Analytical Results – April 2022 (Continued)

Parameter	Analytical Method	Units	Permit Requirement	Leachate	Leachate Duplicate
Copper	EPA 200.8 Rev 5.4 (1994)	mg/L	2.44	0.0795	0.0798
Lead	EPA 200.8 Rev 5.4 (1994)	mg/L	0.53	0.00243	0.00242
Mercury	SW7470A/EPA245.1,3.0 (1994)	mg/L	0.02	< 0.002	< 0.002
Nickel	EPA 200.8 Rev 5.4 (1994)	mg/L	5.79	0.0228	0.0229
Phosphorus	EPA 200.8 Rev 5.4 (1994)	mg/L	Monitoring Requirement Only	< 1.04	< 1.04
Zinc	EPA 200.8 Rev 5.4 (1994)	mg/L	6.54	0.104	0.104

Notes: S.U. – standard units; °C – degrees Celsius; mg/L – milligrams per liter; µg/L – micrograms per liter; metals results converted to milligrams per liter for comparison to permit requirements.

Also attached is the signed Certification Statement. Let me know if you have any questions or need additional information. Please contact either of the undersigned at 501-663-8800 or via email.

Sincerely,



Thomas A. Huetter, P.G.
Senior Project Manager
thuetter@harborenv.com



Leslie Davis
Principal
ldavis@harborenv.com

cc: Jarrod Zweifel, P.G.
5301 Northshore Drive
North Little Rock, AR 72118-5317

Attachments: *Laboratory Analytical Report*
Certification Statement

Discharge Monitoring Report Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

All samples and measurements taken are to the best of my knowledge representative of the permitted wastewater discharge.

All sampling, measurements, and analyses were conducted in accordance with guidelines prescribed in 40 CFR 136 and the Wastewater Contribution Permit obtained from the City of Springfield, Missouri.



Signature (Legible)

Jarrod Zweifel, Land Resources Associate Director

Title

NABORS Landfill

Name of Facility

7/29/2022

Date



8100 National Dr. - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

12 May 2022

Tom Huetter
Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205

Project: NABORS Landfill Leachate Sample(s)

Project Number: May 2022

SDG Number: 2205096

Enclosed are the results of analyses for samples received by the laboratory on 05-May-22 07:40. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✓
Containers Correct	✓
COC/Labels Agree	✓
Received On Ice	✓
Temperature on Receipt	5.0°C

Sincerely,

A handwritten signature in blue ink that reads "Norma James".

Norma James
Technical Director

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12 May 2022

Tom Huetter
Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205
Project: NABORS Landfill Leachate Sample(s)
Project Number: May 2022
Date Received: 05-May-22 07:40



CASE NARRATIVE

Sample Delivery Group – 2205096

One OR more of the qualifiers described below may appear in this report. Qualifiers in RED apply to this SDG (Sample Delivery Group).

SAMPLE RECEIPT QUALIFIERS:

<u>Qualifier</u>	<u>Description</u>
ET	Samples received above required temperature (6°C).
ET	Samples received above required temperature.
	Although collected and received the same day, no ice was present to indicate the cooling preservation was attempted.
E2	Result qualified as it was received and analyzed outside of holding time. Analysis is considered a "Field" analysis.
E2	Result qualified as it was received and/or analyzed outside of holding time.
E3	Result qualified as it was received in the incorrect container and/or preservation.

FLASHPOINT QUALIFIER:

<u>Qualifier</u>	<u>Description</u>
DNF	Did Not Flash at or below method required temperature of 100 degrees C or 212 degrees F

Tom Huetter
Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205
Project: NABORS Landfill Leachate Sample(s)
Project Number: May 2022
Date Received: 05-May-22 07:40

ANALYTICAL RESULTS

Lab Number: 2205096-01
Sample Name: Leachate
Date/Time Collected: 5/4/22 10:31
Sample Matrix: Leachate

<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Arsenic	ug/L	3.71		5/10/22 14:59	B205166	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 0.260		5/10/22 14:59	B205166	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	3.95		5/10/22 14:59	B205166	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	79.5		5/10/22 14:59	B205166	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	2.43		5/10/22 14:59	B205166	EPA 200.8, Rev. 5.4(1994)
Mercury	ug/L	< 2.00		5/11/22 12:22	B205193	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	22.8		5/10/22 14:59	B205166	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	< 1.04		5/10/22 13:42	B205174	EPA 200.7, Rev 4.4 (1994)
Zinc	ug/L	104		5/10/22 14:59	B205166	EPA 200.8, Rev. 5.4(1994)
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	38.6		5/9/22 8:21	B205146	SM 4500-NH3 B,D,C-2011
Cyanide (total)	mg/L	< 0.010		5/6/22 13:25	B205142	SM 4500-CN B,E-2011
Flashpoint	°C	Did Not Flash	DNF*	5/5/22 16:27	B205090	SW 1010A, Rev 1, 2004
Oil and Grease	mg/L	< 4.81		5/9/22 12:24	B205155	EPA1664 Mod, Rev. B 2010
pH	S.U.	7.35	E2	5/5/22 15:05	B205097	SM 4500-H+ B-2011

ANALYTICAL RESULTS

Lab Number: 2205096-02
Sample Name: Leachate Duplicate
Date/Time Collected: 5/4/22 10:31
Sample Matrix: Leachate

<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Arsenic	ug/L	3.72		5/10/22 15:03	B205166	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 0.260		5/10/22 15:03	B205166	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	4.01		5/10/22 15:03	B205166	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	79.8		5/10/22 15:03	B205166	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	2.42		5/10/22 15:03	B205166	EPA 200.8, Rev. 5.4(1994)
Mercury	ug/L	< 2.00		5/11/22 12:26	B205193	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	22.9		5/10/22 15:03	B205166	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	< 1.04		5/10/22 13:43	B205174	EPA 200.7, Rev 4.4 (1994)
Zinc	ug/L	104		5/10/22 15:03	B205166	EPA 200.8, Rev. 5.4(1994)
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	43.6		5/9/22 8:21	B205146	SM 4500-NH3 B,D,C-2011
Cyanide (total)	mg/L	< 0.010		5/6/22 13:25	B205142	SM 4500-CN B,E-2011
Flashpoint	°C	Did Not Flash	DNF*	5/5/22 16:27	B205090	SW 1010A, Rev 1, 2004
Oil and Grease	mg/L	< 4.85		5/9/22 12:24	B205155	EPA1664 Mod, Rev. B 2010
pH	S.U.	7.37	E2	5/5/22 15:05	B205097	SM 4500-H+ B-2011

12 May 2022

Tom Huetter
Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205
Project: NABORS Landfill Leachate Sample(s)
Project Number: May 2022
Date Received: 05-May-22 07:40



QUALITY CONTROL RESULTS

Wet Chemistry -- Batch: B205090 (Water)

Prepared: 05-May-22 13:57 By: CNW -- Analyzed: 05-May-22 16:27 By: CNW

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
Flashpoint	NA	107% / 111%	NA / NA		3.39%	

Wet Chemistry -- Batch: B205097 (Water)

Prepared: 05-May-22 09:48 By: CJ -- Analyzed: 05-May-22 09:48 By: CJ

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
pH	NA	NA / NA	NA / NA		0.288%	

Wet Chemistry -- Batch: B205142 (Water)

Prepared: 06-May-22 13:25 By: JH -- Analyzed: 06-May-22 13:25 By: JH

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
Cyanide (total)	<0.010 mg/L	109% / 98.0%	109% / NA		10.6%	

Wet Chemistry -- Batch: B205146 (Water)

Prepared: 09-May-22 08:21 By: MB -- Analyzed: 09-May-22 08:21 By: MB

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
Ammonia as N	<0.500 mg/L	84.5% / NA	80.6% / 81.4%		1.03%	

Wet Chemistry -- Batch: B205155 (Water)

Prepared: 09-May-22 12:24 By: JM -- Analyzed: 09-May-22 12:24 By: JM

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
Oil and Grease	<5.00 mg/L	107% / 98.2%	83.3% / NA		8.53%	

Total Metals -- Batch: B205166 (Water)

Prepared: 10-May-22 09:14 By: ST -- Analyzed: 10-May-22 15:50 By: ST

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
Arsenic	<0.260 ug/L	112% / NA	104% / 105%		0.386%	
Cadmium	<0.260 ug/L	106% / NA	97.1% / 96.7%		0.369%	
Chromium	<0.260 ug/L	104% / NA	98.4% / 98.9%		0.554%	
Copper	<0.395 ug/L	109% / NA	98.4% / 99.1%		0.521%	
Lead	<0.260 ug/L	107% / NA	94.2% / 95.1%		0.961%	
Nickel	<0.52 ug/L	110% / NA	101% / 101%		0.135%	
Zinc	<20.8 ug/L	112% / NA	92.1% / 93.7%		0.750%	

12 May 2022



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QUALITY CONTROL RESULTS

Total Metals -- Batch: B205174 (Water)

Prepared: 10-May-22 11:08 By: CF -- Analyzed: 10-May-22 13:00 By: CF

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
Phosphorus	<0.042 mg/L	98.0% / NA	110% / 112%		0.0517%	

Total Metals -- Batch: B205193 (Water)

Prepared: 11-May-22 08:18 By: CF -- Analyzed: 11-May-22 12:19 By: CF

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
Mercury	<0.200 ug/L	98.6% / NA	104% / 98.9%		5.27%	

QUALIFIER(S)

DNF: Did not flash at or below method required temperature of 100 degrees C or 212 degrees F.

*E2: Estimated Result; Analyzed Outside of Holding Time

All Analysis performed according to EPA approved methodology when available:

SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.

Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

A handwritten signature in blue ink, reading "Norma James", is positioned above a horizontal line.

Reviewed by:

Norma James
Technical Director



CLIENT INFORMATION						Project Description				Turnaround Time		Preservation Codes:													
Harbor Environmental & Safety 5800 Evergreen Dr. Little Rock, AR 72205						NABORS Landfill Leachate Sample				1 Day (100%) 2 Day (50%) 3 Day (25%) 5 Day (Routine)		1. Cool, 6 Degrees Centigrade 2. Sulfuric Acid (H ₂ SO ₄), pH < 2 3. Nitric Acid (HNO ₃), pH < 2				4. Thiosulfate for Dechlorination 5. Hydrochloric Acid(HCl) 6. Sodium Hydroxide (NaOH), pH > 12									
Attn: Tom Huetter						Telephone: 501-663-8800 Email: thuetter@harborenv.com				Preservative Code: Bottle Type:		TEST PARAMETERS								Bottle Type Code					
										1 P		1,2 P		1,6 P		1,2 GA		1,3 P						G = Glass; P = Plastic V = Septum; A = Amber	
Sampler(s) Signature						Sampler(s) Printed Thomas A. HUETTER																		Arkansas Analytical Work Order Number: 2005096	
Field Number		SAMPLE COLLECTION Date/s Time/s		Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION		Flashpoint, pH	Ammonia	Cyanide	Oil and Grease	P (200.7), Hg	200.8-(As, Cd, Cr, Cu, Pb, Ni, Zn)										
L-1		5/4/22 HHT		X		11	Liquid	Leachate		X	X	X	X	X									01		
L-1 Dup		5/4/22 1037		X		11	Liquid	Leachate Duplicate		X	X	X	X	X									02		