

July 25, 2023

Sent via Certified Mail and Email to
hhoggard@springfieldmo.gov

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

AFIN: 03-00051
PMT#: 0249-S1-R2
Received By Karen Blue at 8:50 am, Jul 27, 2023
DOC ID#: 84392
TO: MM>FILE <KMB

**Re: Semi-Annual Leachate Report
 First Half 2023
 NABORS Landfill
 Mountain Home, Arkansas
 Wastewater Contribution Permit No. 593**

Dear Ms. Hoggard:

On behalf of the Arkansas Department of Energy and Environment’s Division of Environmental Quality (DEQ), please find attached the results of leachate analysis for the First Half 2023 reporting period for the referenced facility. A total of 220,000 gallons of leachate was generated during the six-month 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 on June 12, 2023, 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. The metals results were converted from micrograms per liter to milligrams per liter for comparison to the permit requirements.

Table 1 – Summary of Leachate Analytical Results – June 2023

Parameter	Analytical Method	Units	Permit Requirement	Leachate	Leachate Duplicate
Ammonia as N	SM 4500-NH3 B,D,C-2011	mg/L	Monitoring Requirement Only	135	183
Cyanide (total)	SM 4500-CN B,E-2011	mg/L	0.33	< 0.010	< 0.010
Flashpoint	SW 1010B, 2018	°C	<140°F	Did Not Flash	Did Not Flash
Oil and Grease	EPA 1664 Mod, Rev. B 2010	mg/L	100	< 5.10	< 5.00
pH	SM 4500-H+ B-2011	S.U.	5.0 (minimum) 12.5 (maximum)	6.63	6.66
Arsenic	EPA 200.8 Rev 5.4 (1994)	mg/L	0.51	0.00803	0.00835
Cadmium	EPA 200.8 Rev 5.4 (1994)	mg/L	0.13	< 0.00026	< 0.00026

Table 1 – Summary of Leachate Analytical Results – June 2023 (Continued)

Parameter	Analytical Method	Units	Permit Requirement	Leachate	Leachate Duplicate
Chromium	EPA 200.8 Rev 5.4 (1994)	mg/L	2.91	0.00369	0.00365
Copper	EPA 200.8 Rev 5.4 (1994)	mg/L	2.44	0.00131	0.00073
Lead	EPA 200.8 Rev 5.4 (1994)	mg/L	0.53	0.00305	0.00287
Mercury	SW7470A/EPA245.1,3.0 (1994)	mg/L	0.02	< 0.00020	< 0.00020
Nickel	EPA 200.8 Rev 5.4 (1994)	mg/L	5.79	0.0305	0.0305
Phosphorus	EPA 200.8 Rev 5.4 (1994)	mg/L	Monitoring Requirement Only	0.210	0.162
Zinc	EPA 200.8 Rev 5.4 (1994)	mg/L	6.54	0.0259	0.0258

Notes: S.U. – standard units; °C – degrees Celsius; mg/L – milligrams per liter; metals results converted from micrograms per liter 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.
Division of Environmental Quality
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

ASSOCIATE DIRECTOR
Title

NABORS LANDFILL
Name of Facility

7/24/2023
Date



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

21 June 2023

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

Project: NABORS Landfill Leachate Sample(s)

Project Number: June 2023

SDG Number: 2306268

Enclosed are the results of analyses for samples received by the laboratory on 12-Jun-23 15:34. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

<u>Custody Seals</u>	✓
<u>Containers Correct</u>	✓
<u>COC/Labels Agree</u>	✓
<u>Received On Ice</u>	✓
Temperature on Receipt	6.0°C

Sincerely,

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

Norma James
Technical Director

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21 June 2023



Tom Huetter
Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205
Project: NABORS Landfill Leachate Sample(s)
Project Number: June 2023
Date Received: 12-Jun-23 15:34

CASE NARRATIVE

Sample Delivery Group – 2306268

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>
DF	Sample DID FLASH below method required temperature of 60 degrees C or 140 degrees F.
DNF	Sample DID NOT FLASH at or below method required temperature of 100 degrees C or 212 degrees F.

QUALITY CONTROL QUALIFIERS:

<u>Qualifier</u>	<u>Description</u>
E20	Sample used as "parent" for the associated analytical batch.
%D3/S-01	Surrogate failed to recover within acceptance criteria (%D3/S-01).
E1	Results associated with this surrogate were qualified as "estimated" (E1).
B	Present in the Associated Blank
B1	Present in Blank, but Not In the Sample.
%D2 / E5	Laboratory Control Spike (LCS) and/or Laboratory Control Spike Duplicate (LCSD) failed to recover with acceptance criteria (%D2). Associated results were qualified as "estimated" (E5).
%D1	Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) failed acceptance criteria.
MBA	Failed criteria due to the high concentration of analyte in the parent sample.
MBI	Failed criteria due to an interference in the parent sample.
%D3	Quality Control Surrogate failed acceptance criteria.
NREC	Quality Control Surrogate failed.

Tom Huetter
Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205
Project: NABORS Landfill Leachate Sample(s)
Project Number: June 2023
Date Received: 12-Jun-23 15:34

ANALYTICAL RESULTS

Lab Number: 2306268-01
Sample Name: Leachate
Date/Time Collected: 6/12/23 11:44
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	8.03		6/19/23 12:22	B306326	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 0.260		6/19/23 12:22	B306326	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	3.69		6/19/23 12:22	B306326	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	1.31		6/19/23 12:22	B306326	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	3.05		6/19/23 12:22	B306326	EPA 200.8, Rev. 5.4(1994)
Mercury	ug/L	< 0.200		6/19/23 15:19	B306401	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	30.5		6/19/23 12:22	B306326	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	0.210		6/15/23 13:26	B306329	EPA 200.7, Rev 4.4 (1994)
Zinc	ug/L	25.9		6/19/23 12:22	B306326	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	135		6/15/23 9:00	B306345	SM 4500-NH3 B,D,C-2011
Cyanide (total)	mg/L	< 0.010		6/15/23 7:30	B306319	SM 4500-CN B,C,E 2016
Flashpoint	°C	Did Not Flash	DNF*	6/13/23 17:11	B306267	EPA 1010B, 2018
Oil and Grease	mg/L	< 5.10		6/14/23 9:34	B306282	EPA1664 Mod, Rev. B 2010
pH	S.U.	6.63	E2	6/14/23 8:36	B306277	SM 4500-H+ B-2011
Temperature	°C	32.3	E2	6/14/23 8:36	B306277	SM 2550 B-2010

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Project: NABORS Landfill Leachate Sample(s)
Project Number: June 2023
Date Received: 12-Jun-23 15:34

ANALYTICAL RESULTS

Lab Number: 2306268-02
Sample Name: Leachate Duplicate
Date/Time Collected: 6/12/23 11:44
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	8.35		6/19/23 12:29	B306326	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 0.260		6/19/23 12:29	B306326	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	3.65		6/19/23 12:29	B306326	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	0.730		6/19/23 12:29	B306326	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	2.87		6/19/23 12:29	B306326	EPA 200.8, Rev. 5.4(1994)
Mercury	ug/L	< 0.200		6/19/23 15:22	B306401	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	30.5		6/19/23 12:29	B306326	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	0.162		6/15/23 13:28	B306329	EPA 200.7, Rev 4.4 (1994)
Zinc	ug/L	25.8		6/19/23 12:29	B306326	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	183		6/15/23 9:00	B306345	SM 4500-NH3 B,D,C-2011
Cyanide (total)	mg/L	< 0.010		6/15/23 7:30	B306319	SM 4500-CN B,C,E 2016
Flashpoint	°C	Did Not Flash	DNF*	6/13/23 17:11	B306267	EPA 1010B, 2018
Oil and Grease	mg/L	< 5.00		6/14/23 9:34	B306282	EPA1664 Mod, Rev. B 2010
pH	S.U.	6.66	E2	6/14/23 8:36	B306277	SM 4500-H+ B-2011
Temperature	°C	30.5	E2	6/14/23 8:36	B306277	SM 2550 B-2010

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QUALITY CONTROL RESULTS
Wet Chemistry -- Batch: B306267 (Water)

Prepared: 13-Jun-23 13:07 By: CNW -- Analyzed: 13-Jun-23 17:11 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% / 107%	NA / NA		0.00%	

Wet Chemistry -- Batch: B306277 (Water)

Prepared: 14-Jun-23 08:36 By: CGF -- Analyzed: 14-Jun-23 08:36 By: CGF

<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	101% / 100%	NA / NA		0.712%	

Wet Chemistry -- Batch: B306282 (Water)

Prepared: 14-Jun-23 09:34 By: JY -- Analyzed: 14-Jun-23 09:34 By: JY

<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	80.5% / 81.4%	78.4% / NA		1.08%	

Wet Chemistry -- Batch: B306319 (Water)

Prepared: 15-Jun-23 07:30 By: JB -- Analyzed: 15-Jun-23 07:30 By: JB

<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	108% / 102%	90.0% / NA		5.71%	

Total Metals -- Batch: B306326 (Water)

Prepared: 15-Jun-23 10:58 By: ST -- Analyzed: 19-Jun-23 12:14 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	99.4% / NA	107% / 107%		0.453%	
Cadmium	<0.260 ug/L	97.0% / NA	97.5% / 95.9%		1.65%	
Chromium	<0.260 ug/L	97.3% / NA	97.0% / 95.8%		1.20%	
Copper	<0.395 ug/L	98.6% / NA	100% / 100%		0.0420%	
Lead	<0.260 ug/L	94.5% / NA	94.3% / 93.9%		0.385%	
Nickel	<0.52 ug/L	97.7% / NA	99.8% / 99.4%		0.357%	
Zinc	<20.8 ug/L	99.0% / NA	105% / 108%		1.48%	

Total Metals -- Batch: B306329 (Water)

Prepared: 15-Jun-23 12:32 By: BS -- Analyzed: 15-Jun-23 13:21 By: BS

<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	99.0% / NA	MBI / MBI		1.28%	MBI

21 June 2023



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QUALITY CONTROL RESULTS

Wet Chemistry -- Batch: B306345 (Water)

Prepared: 15-Jun-23 09:00 By: KJ -- Analyzed: 15-Jun-23 09:00 By: KJ

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.500 mg/L	96.1% / NA	91.3% / 94.5%		3.06%	

Total Metals -- Batch: B306401 (Water)

Prepared: 19-Jun-23 11:22 By: ST -- Analyzed: 19-Jun-23 15:09 By: ST

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Mercury	<0.200 ug/L	98.5% / NA	96.8% / 97.4%		0.662%	

QUALIFIER(S)

- *DNF*: Sample 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
- *MBI*: Masked By Interference

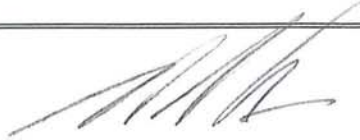




All Analysis performed according to EPA approved methodology when available :
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Reviewed by: _____
Norma James
Technical Director



8100 National Drive
 Little Rock, AR 72209
 PHONE: 501-455-3233
 FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION			Project Description			Turnaround Time		Preservation Codes:							
Harbor Environmental & Safety			NABORS Landfill			1 Day (100%)		1. Cool, 6 Degrees Centigrade			4. Thiosulfate for Dechlorination				
5800 Evergreen Dr.			Leachate Sample			2 Day (50%)		2. Sulfuric Acid (H ₂ SO ₄), pH < 2			5. Hydrochloric Acid(HCl)				
Little Rock, AR 72205			Reporting Information			3 Day (25%)		3. Nitric Acid (HNO ₃), pH < 2			6. Sodium Hydroxide (NaOH), pH > 12				
Attn: Tom Huetter			Telephone: 501-663-8800			5 Day (Routine)		TEST PARAMETERS						Bottle Type Code	
Email: thuetter@harborenv.com			Preservative Code:			1	1,2	1,6	1,2	1,3					G = Glass; P = Plastic
			Bottle Type:			P	P	P	GA	P					V = Septum; A = Amber
 Sampler(s) Signature			THOMAS HUETTER Sampler(s) Printed					Flashpoint, pH	Ammonia	Cyanide	Oil and Grease	P (200.7), Hg	200.8-(As, Cd, Cr, Cu, Pb, Ni, Zn)	Arkansas Analytical Work Order Number: 2306268	
Field Number	SAMPLE COLLECTION		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	6/12/23	1144	X		5	Liquid	Leachate	X	X	X	X	X			01
L-1 DUP	"	"	X		5	Liquid	Leachate Duplicate	X	X	X	X	X			02
1. Relinquished by: (Signature)			Date/Time		2. Received by: (Signature)			SAMPLE CONDITION UPON RECEIPT IN LAB				REMARKS / SAMPLE COMMENTS			
			6/12/23 1534					1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes ___ No							
3. Relinquished by: (Signature)			Date/Time		4. Received by lab: (Signature)			2. CONTAINERS CORRECT: ___ Yes ___ No							
								3. COC/LABELS AGREE: ___ Yes ___ No							
								4. RECEIVED ON ICE: ___ Yes ___ No							
								5. TEMPERATURE ON RECEIPT: 6 °C							
								6. TEMPERATURE GUN ID: HHT#5							
FOR COMPLETION BY LAB ONLY															