

January 5, 2022

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

**Re: Semi-Annual Leachate Report  
Second Half 2021  
NABORS Landfill  
Mountain Home, Arkansas  
Wastewater Contribution Permit No. 593**

<b>Rec'd Digitally</b>	
<b>AFIN:</b>	03-00051
<b>PMT#:</b>	0249-S1-R2
<div style="border: 1px solid black; padding: 2px; display: inline-block;"> <b>RECEIVED</b>  <small>By Kelli Johnson at 12:52 pm, Jan 13, 2022</small> </div>	
<b>DOC ID#:</b>	81290
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<div style="writing-mode: vertical-rl; transform: rotate(180deg);">S W M D</div>	

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 2021 reporting period for the referenced facility. A total of 306,000 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. Table 1 below summarizes the analytical methods and results of the analyses.

**Table 1 – Summary of Leachate Analytical Results – October 2021**

Parameter	Analytical Method	Units	Permit Requirement	Leachate	Leachate Duplicate
Ammonia as N	SM 4500-NH3 B,D,C-2011	mg/L	Monitoring Requirement Only	<b>233</b>	<b>276</b>
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	< 5.32	< 5.32
pH	EPA 150.2 (1982)	S.U.	5.0 (minimum) 12.5 (maximum)	<b>7.03</b>	<b>7.02</b>
Arsenic	EPA 200.8 Rev 5.4 (1994)	mg/L	0.51	0.0252	0.0256
Cadmium	EPA 200.8 Rev 5.4 (1994)	µg/L	130	<0.250	<0.250
Chromium	EPA 200.8 Rev 5.4 (1994)	mg/L	2.91	0.0135	0.0134
Copper	EPA 200.8 Rev 5.4 (1994)	mg/L	2.44	0.108	0.111

**Table 1 – Summary of Leachate Analytical Results – October 2021 (Continued)**

Parameter	Analytical Method	Units	Permit Requirement	Leachate	Leachate Duplicate
Lead	EPA 200.8 Rev 5.4 (1994)	mg/L	0.53	0.00314	0.00315
Mercury	SW7470A/EPA245.1,3.0 (1994)	µg/L	200	<0.200	<0.200
Nickel	EPA 200.8 Rev 5.4 (1994)	mg/L	5.79	0.121	0.121
Phosphorus	EPA 200.8 Rev 5.4 (1994)	mg/L	Monitoring Requirement Only	<b>0.666</b>	<b>0.658</b>
Zinc	EPA 200.8 Rev 5.4 (1994)	mg/L	6.54	0.0844	0.0840

Notes: S.U. – standard units; °C – degrees Celsius; mg/L – milligrams per liter; µg/L – micrograms per liter

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](mailto:thuetter@harborenv.com)



Leslie Davis  
Principal  
[ldavis@harborenv.com](mailto:ldavis@harborenv.com)

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

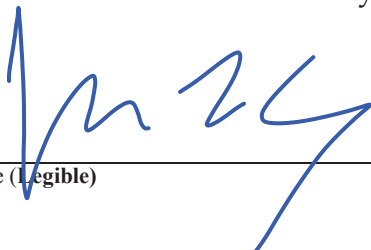
Attachments: *Laboratory Analytical Report*  
*Certification Statement*

# 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

Associate Director, AR Energy and Environment

\_\_\_\_\_  
Title

NABORS Landfill

\_\_\_\_\_  
Name of Facility

1/11/2022

\_\_\_\_\_  
Date



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

26 October 2021

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

Project: NABORS Landfill Leachate Sample(s)  
Project Number: October 2021  
SDG Number: 2110116

Enclosed are the results of analyses for samples received by the laboratory on 07-Oct-21 09:26. 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	3.0°C

Sincerely,

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

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Norma James  
Technical Director

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26 October 2021



Tom Huetter  
Harbor Environmental & Safety  
5800 Evergreen Dr.  
Little Rock, AR 72205  
Project: NABORS Landfill Leachate Sample(s)  
Project Number: October 2021  
Date Received: 07-Oct-21 09:26

## CASE NARRATIVE

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Sample Delivery Group – 2110116

**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: October 2021  
Date Received: 07-Oct-21 09:26

**ANALYTICAL RESULTS**

Lab Number: 2110116-01  
Sample Name: Leachate  
Date/Time Collected: 10/5/21 11:30  
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	25.2		10/25/21 17:24	B110304	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 0.250		10/25/21 17:24	B110304	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	13.5		10/25/21 17:24	B110304	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	108		10/25/21 17:24	B110304	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	3.14		10/25/21 17:24	B110304	EPA 200.8, Rev. 5.4(1994)
Mercury	ug/L	< 0.200		10/13/21 15:29	B110194	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	121		10/25/21 17:24	B110304	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	0.666		10/14/21 12:49	B110193	EPA 200.7, Rev 4.4 (1994)
Zinc	ug/L	84.4		10/25/21 17:24	B110304	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	233		10/12/21 7:36	B110195	SM 4500-NH3 B,D,C-2011
Cyanide (total)	mg/L	< 0.010		10/14/21 10:16	B110226	SM 4500-CN B,E-2011
Flashpoint	°C	Did Not Flash	DNF*	10/13/21 16:20	B110216	SW 1010A, Rev 1, 2004
Oil and Grease	mg/L	< 5.32		10/13/21 7:56	B110191	EPA1664 Mod, Rev. B 2010
pH	S.U.	7.03	E2	10/8/21 10:57	B110131	SM 4500-H+ B-2011

**ANALYTICAL RESULTS**

Lab Number: 2110116-02  
Sample Name: Leachate Duplicate  
Date/Time Collected: 10/5/21 11:30  
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	25.6		10/25/21 17:28	B110304	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 0.250		10/25/21 17:28	B110304	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	13.4		10/25/21 17:28	B110304	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	111		10/25/21 17:28	B110304	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	3.15		10/25/21 17:28	B110304	EPA 200.8, Rev. 5.4(1994)
Mercury	ug/L	< 0.200		10/13/21 15:33	B110194	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	121		10/25/21 17:28	B110304	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	0.658		10/14/21 12:50	B110193	EPA 200.7, Rev 4.4 (1994)
Zinc	ug/L	84.0		10/25/21 17:28	B110304	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	276		10/12/21 7:36	B110195	SM 4500-NH3 B,D,C-2011
Cyanide (total)	mg/L	< 0.010		10/14/21 10:16	B110226	SM 4500-CN B,E-2011
Flashpoint	°C	Did Not Flash	DNF*	10/13/21 16:20	B110216	SW 1010A, Rev 1, 2004
Oil and Grease	mg/L	< 5.32		10/13/21 7:56	B110191	EPA1664 Mod, Rev. B 2010
pH	S.U.	7.02	E2	10/8/21 10:57	B110131	SM 4500-H+ B-2011

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## QUALITY CONTROL RESULTS

### Wet Chemistry -- Batch: B110131 (Water)

Prepared: 08-Oct-21 10:51 By: CJ -- Analyzed: 08-Oct-21 10:51 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	99.7% / 99.7%	NA / NA		0.00%	

### Wet Chemistry -- Batch: B110191 (Water)

Prepared: 13-Oct-21 07:56 By: CF -- Analyzed: 13-Oct-21 07:56 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>
Oil and Grease	<5.00 mg/L	90.0% / 86.2%	85.7% / NA		4.26%	

### Total Metals -- Batch: B110193 (Water)

Prepared: 13-Oct-21 09:12 By: SPS -- Analyzed: 14-Oct-21 12:33 By: SPS

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
Phosphorus	<0.035 mg/L	99.5% / NA	104% / 105%		0.605%	

### Total Metals -- Batch: B110194 (Water)

Prepared: 13-Oct-21 09:24 By: SPS -- Analyzed: 13-Oct-21 14:40 By: SPS

<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	104% / NA	106% / 104%		1.98%	

### Wet Chemistry -- Batch: B110195 (Water)

Prepared: 12-Oct-21 07:36 By: MB -- Analyzed: 12-Oct-21 07:36 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	99.9% / NA	98.4% / 107%		7.90%	

### Wet Chemistry -- Batch: B110216 (Water)

Prepared: 13-Oct-21 15:28 By: CNW -- Analyzed: 13-Oct-21 16:20 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	115% / 115%	NA / NA		0.00%	Pass1

### Wet Chemistry -- Batch: B110226 (Water)

Prepared: 14-Oct-21 10:16 By: JH -- Analyzed: 14-Oct-21 10:16 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	118% / 114%	122% / NA		3.45%	

26 October 2021



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## QUALITY CONTROL RESULTS

Total Metals -- Batch: B110304 (Water)

Prepared: 18-Oct-21 13:29 By: SPS -- Analyzed: 25-Oct-21 15:51 By: ST

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Arsenic	<0.250 ug/L	104% / NA	112% / 111%		0.885%	
Cadmium	<0.250 ug/L	105% / NA	102% / 103%		0.363%	
Chromium	<0.250 ug/L	106% / NA	112% / 111%		0.284%	
Copper	<0.380 ug/L	108% / NA	105% / 104%		0.449%	
Lead	<0.250 ug/L	109% / NA	108% / 107%		0.268%	
Nickel	<0.50 ug/L	103% / NA	103% / 102%		1.30%	
Zinc	<20.0 ug/L	109% / NA	115% / 113%		1.73%	

## 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  
\*Pass1\*: Quality Control Meets Lab Acceptability Requirements

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 written over a horizontal line.

Reviewed by:

Norma James  
Technical Director





## CHAIN OF CUSTODY RECORD

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