



ARKANSAS
Department of Environmental Quality

CERTIFIED MAIL: 91 7199 9991 7030 4789 2262

July 30, 2018

City of Springfield Environmental Services – Clean Water Operations
Attn: Ms. Heather Hoggard
Pretreatment Inspector
755 N. Franklin Ave.
Springfield, Missouri 65802-4121

Re: NABORS Landfill – 1st Semiannual Leachate Sampling Results
1320 Landfill Road, Mountain Home, Baxter County, Arkansas
AFIN 03-00051; Wastewater Contribution Permit No. #593-002

Dear Ms. Hoggard:

The Arkansas Department of Environmental Quality Office of Land Resources (ADEQ) respectfully submits the NABORS Landfill – 1st Semiannual Leachate Sampling Results for the reporting period of January through June 2018. HARBOR Environmental on behalf of ADEQ collected the leachate samples on April 18, 2018. The reported concentrations were compared to the permitted limits and the testing criteria of 40 CFR 136. Attached is the leachate report and signed certifying document.

If you have any questions, please contact me at 501-682-0870 or lee@adeq.state.ar.us.

Sincerely,

A handwritten signature in dark ink, appearing to read "Weston Lee", is written over a horizontal line.

Weston Lee
Project Engineer/Manager
ADEQ - Office of Land Resources

NABORS Landfill Leachate Monitoring Report Certification Statement

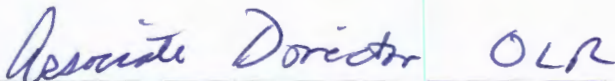
I certify under penalty of law that this document and all attachments were prepared under my supervision by qualified personnel properly trained to gather and evaluate the information submitted. Based on my personnel the management and those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

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

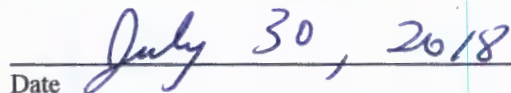
All sampling, measurements, analyses were conducted in accordance with guidelines as prescribed in 40 CFR 136 and the Wastewater Contribution Permit obtained from the City of Springfield, Missouri.



Signature



Title



Date

NABORS LANDFILL
LEACHATE Analytical Results
April 18, 2018

Analyte	Daily Maximum	Results	Units
Arsenic, T	0.51	0.0174	mg/L
Cadmium, T	0.13	< 0.00026	mg/L
Chromium, T	2.91	0.00671	mg/L
Copper, T	2.44	0.0141	mg/L
Cyanide, T	0.33	< 0.010	mg/L
Lead, T	0.53	0.00143	mg/L
Mercury, T	0.02	< 0.0002	mg/L
Nickel, T	5.79	0.0721	mg/L
Zinc, T	6.54	0.0352	mg/L
Oil and Grease (A/V)	100	< 3.50	mg/L
Ammonia Nitrogen	Monitoring Only	100	mg/L
Phosphorus, T	Monitoring Only	0.627	mg/L
pH	12.5 (max) to 5 (min)	5.46	
Flashpoint	<140°F	Did not flash	

NABORS LANDFILL
Landfill Discharge Volumes

Month	Number of Loads	Volume (gallons)
January	6	36,000
February	21	126,000
March	34	204,000
April	27	162,000
May	13	78,000
June	5	30,000
Total	106	636,000



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

27 April 2018

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

Project: NABORS Landfill Leachate Sample(s)

Project Number: April 2018

SDG Number: 1804293

Enclosed are the results of analyses for samples received by the laboratory on 20-Apr-18 08:35. 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	4.0°C

Sincerely,

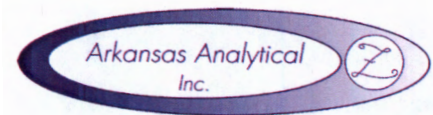
Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

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27 April 2018

Tom Huetter
Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205
Project: NABORS Landfill Leachate Sample(s)
Project Number: April 2018
Date Received: 20-Apr-18 08:35

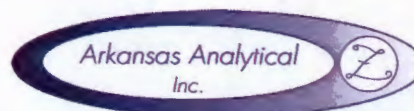


ANALYTICAL RESULTS

Lab Number: 1804293-01
Sample Name: Leachate
Date/Time Collected: 4/18/18 16:45
Sample Matrix: Leachate

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Chloride	mg/L	703		4/24/18 8:11	B804376	EPA 300.0, 2.1-1993
Sulfate as SO4	mg/L	16.7		4/23/18 17:25	B804376	EPA 300.0, 2.1-1993
Total Metals	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Antimony	ug/L	< 2.08		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Arsenic	ug/L	17.0		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Barium	ug/L	2880		4/25/18 9:53	B804392	EPA 200.8, Rev. 5.4(1994)
Beryllium	ug/L	< 0.260		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 0.260		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	6.46		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Cobalt	ug/L	11.2		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	13.2		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Iron	ug/L	29700		4/25/18 10:12	B804392	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	1.39		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Manganese	ug/L	2060		4/25/18 9:53	B804392	EPA 200.8, Rev. 5.4(1994)
Mercury	mg/L	< 0.00200		4/23/18 16:15	B804372	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	70.4		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	0.560		4/25/18 18:56	B804421	EPA 200.7, Rev 4.4 (1994)
Selenium	ug/L	< 2.08		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Silver	ug/L	< 0.260		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Thallium	ug/L	< 0.260		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Tin	ug/L	27.1		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Vanadium	ug/L	5.95		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Zinc	ug/L	34.1		4/24/18 16:24	B804392	EPA 200.8, Rev. 5.4(1994)
Volatiles	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
1,1-Dichloroethane	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
1,1-Dichloroethene	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
1,1,1-Trichloroethane	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
1,1,2-Trichloroethane	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
1,1,2,2-Tetrachloroethane	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
1,2-Dichlorobenzene	ug/L	< 5.00		4/23/18 11:00	B804369	EPA 624
1,2-Dichloropropane	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
1,2-Dichloroethane	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
1,3-Dichlorobenzene	ug/L	< 5.00		4/23/18 11:00	B804369	EPA 624
1,4-Dichlorobenzene	ug/L	< 5.00		4/23/18 11:00	B804369	EPA 624
2-Chloroethyl vinyl ether	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
Acrylonitrile	ug/L	< 20.0		4/23/18 11:00	B804369	EPA 624
Benzene	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
Bromodichloromethane	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
Bromoform	ug/L	< 10.0		4/23/18 11:00	B804369	EPA 624
Acrolein	ug/L	< 50.0		4/23/18 11:00	B804369	EPA 624
Bromomethane	ug/L	< 50.0		4/23/18 11:00	B804369	EPA 624

27 April 2018



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Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205
Project: NABORS Landfill Leachate Sample(s)
Project Number: April 2018
Date Received: 20-Apr-18 08:35

ANALYTICAL RESULTS

Lab Number: 1804293-02
Sample Name: Leachate Duplicate
Date/Time Collected: 4/18/18 16:45
Sample Matrix: Leachate

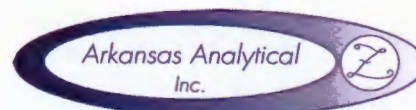
Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Chloride	mg/L	675		4/24/18 8:34	B804376	EPA 300.0, 2.1-1993
Sulfate as SO4	mg/L	16.7		4/23/18 18:32	B804376	EPA 300.0, 2.1-1993

Total Metals	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Antimony	ug/L	< 2.08		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Arsenic	ug/L	17.4		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Barium	ug/L	2900		4/25/18 10:01	B804392	EPA 200.8, Rev. 5.4(1994)
Beryllium	ug/L	< 0.260		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Cadmium	ug/L	< 0.260		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Chromium	ug/L	6.71		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Cobalt	ug/L	11.5		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Copper	ug/L	14.1		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Iron	ug/L	30500		4/25/18 10:20	B804392	EPA 200.8, Rev. 5.4(1994)
Lead	ug/L	1.43		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Manganese	ug/L	2020		4/25/18 10:01	B804392	EPA 200.8, Rev. 5.4(1994)
Mercury	mg/L	< 0.00200		4/23/18 16:17	B804372	SW7470A/EPA245.1,3.0- 1994
Nickel	ug/L	72.1		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Phosphorus	mg/L	0.627		4/25/18 19:00	B804421	EPA 200.7, Rev. 4.4 (1994)
Selenium	ug/L	< 2.08		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Silver	ug/L	< 0.260		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Thallium	ug/L	< 0.260		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Tin	ug/L	< 20.8		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Vanadium	ug/L	5.99		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)
Zinc	ug/L	35.2		4/24/18 16:28	B804392	EPA 200.8, Rev. 5.4(1994)

Volatiles	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
1,1-Dichloroethane	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
1,1-Dichloroethene	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
1,1,1-Trichloroethane	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
1,1,2-Trichloroethane	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
1,1,2,2-Tetrachloroethane	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
1,2-Dichlorobenzene	ug/L	< 5.00		4/23/18 11:34	B804369	EPA 624
1,2-Dichloropropane	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
1,2-Dichloroethane	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
1,3-Dichlorobenzene	ug/L	< 5.00		4/23/18 11:34	B804369	EPA 624
1,4-Dichlorobenzene	ug/L	< 5.00		4/23/18 11:34	B804369	EPA 624
2-Chloroethyl vinyl ether	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
Acrylonitrile	ug/L	< 20.0		4/23/18 11:34	B804369	EPA 624
Benzene	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
Bromodichloromethane	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
Bromoform	ug/L	< 10.0		4/23/18 11:34	B804369	EPA 624
Acrolein	ug/L	< 50.0		4/23/18 11:34	B804369	EPA 624
Bromomethane	ug/L	< 50.0		4/23/18 11:34	B804369	EPA 624

27 April 2018

Tom Huetter
Harbor Environmental & Safety
5800 Evergreen Dr.
Little Rock, AR 72205
Project: NABORS Landfill Leachate Sample(s)
Project Number: April 2018
Date Received: 20-Apr-18 08:35



QUALITY CONTROL RESULTS

Wet Chemistry -- Batch: B804330 (Water)

Prepared: 23-Apr-18 08:11 By: CNW -- Analyzed: 23-Apr-18 08:11 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>
Ammonia as N	<0.500 mg/L	98.2% / NA	95.6% / 92.4%		3.43%	

Wet Chemistry -- Batch: B804332 (Water)

Prepared: 23-Apr-18 09:00 By: SP -- Analyzed: 23-Apr-18 09:00 By: SP

<u>Analyte</u>	<u>BLK</u>	<u>LCS / LCSD</u>	<u>MS / MSD</u>	<u>Dup</u>	<u>RPD</u>	<u>Qualifiers</u>
Sulfide	<0.100 mg/L	106% / 106%	83.0% / NA		0.473%	

Wet Chemistry -- Batch: B804335 (Water)

Prepared: 24-Apr-18 13:00 By: SP -- Analyzed: 24-Apr-18 13:00 By: SP

<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	107% / 105%	106% / NA		1.26%	

Wet Chemistry -- Batch: B804365 (Water)

Prepared: 23-Apr-18 08:23 By: SP -- Analyzed: 23-Apr-18 08:25 By: SP

<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	104% / 104%	NA / NA		0.00%	

27 April 2018

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QUALITY CONTROL RESULTS

Anions -- Batch: B804376 (Water)

Prepared: 23-Apr-18 13:46 By: MB -- Analyzed: 24-Apr-18 00:09 By: MB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chloride	<0.500 mg/L	90.6% / NA	90.1% / 90.2%		0.126%	
Sulfate as SO4	<0.500 mg/L	90.5% / NA	94.4% / 94.5%		0.0371%	

Wet Chemistry -- Batch: B804385 (Water)

Prepared: 24-Apr-18 08:29 By: ST -- Analyzed: 24-Apr-18 13:04 By: ST

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TOC	<1.00 mg/L	103% / NA	95.5% / 88.7%		3.07%	

Wet Chemistry -- Batch: B804390 (Water)

Prepared: 24-Apr-18 09:27 By: SP -- Analyzed: 24-Apr-18 16:20 By: CNW

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TDS	<5.00 mg/L	78.0% / 114%	NA / NA		37.5%	D

Total Metals -- Batch: B804392 (Water)

Prepared: 24-Apr-18 10:10 By: HF -- Analyzed: 24-Apr-18 16:04 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Antimony	<2.08 ug/L	92.5% / NA	93.2% / 85.2%		8.78%	
Arsenic	<0.260 ug/L	96.6% / NA	101% / 99.0%		1.67%	
Barium	<0.260 ug/L	96.3% / NA	93.5% / 94.1%		0.472%	
Beryllium	<0.260 ug/L	90.1% / NA	74.6% / 74.7%		0.194%	%D1
Cadmium	<0.260 ug/L	96.2% / NA	92.9% / 93.9%		1.06%	
Chromium	<0.260 ug/L	95.8% / NA	93.0% / 93.3%		0.303%	
Cobalt	<0.260 ug/L	96.1% / NA	96.4% / 97.4%		1.08%	
Copper	<0.260 ug/L	96.9% / NA	95.4% / 96.2%		0.774%	
Iron	<20.8 ug/L	95.5% / NA	86.8% / 85.5%		0.755%	
Lead	<0.260 ug/L	96.1% / NA	94.9% / 95.1%		0.211%	
Manganese	<0.500 ug/L	95.3% / NA	95.6% / 96.4%		0.583%	
Nickel	<0.26 ug/L	95.5% / NA	95.2% / 95.6%		0.365%	
Selenium	<2.08 ug/L	98.6% / NA	101% / 94.1%		6.93%	
Silver	<0.260 ug/L	95.1% / NA	93.7% / 94.1%		0.435%	
Thallium	<0.260 ug/L	96.0% / NA	95.4% / 94.5%		0.949%	
Tin	<20.8 ug/L	94.7% / NA	92.2% / 98.9%		6.96%	
Vanadium	<2.08 ug/L	94.4% / NA	91.6% / 93.4%		1.91%	
Zinc	<20.8 ug/L	95.5% / NA	95.9% / 98.3%		1.55%	

Wet Chemistry -- Batch: B804408 (Water)

Prepared: 25-Apr-18 08:14 By: CNW -- Analyzed: 25-Apr-18 08:15 By: CNW

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Oil and Grease	<3.50 mg/L	80.4% / 81.5%	84.4% / NA		1.39%	

[illegible]