913 681-0030 FAX 913 681-0012 www.scsengineers.com

## SCS ENGINEERS

October 6, 2017 File No. 27214218.01

Heather Hoggard City of Springfield, Environmental Services 755 N. Franklin Ave. Springfield, MO 65802

Subject: NABORS Landfill Leachate Report Permit No. #593 1320 Landfill Road Mountain Home, AR 72653

Dear Ms. Hoggard:

On behalf of the Arkansas Department of Environmental Quality, SCS Engineers (SCS) is pleased to submit this semi-annual discharge monitoring report for the NABORS Landfill. This report covers leachate discharges at the City of Springfield Southwest Wastewater Treatment Plant between January 1, 2017 and March 29, 2017.

A leachate sample was collected on March 29, 2017 and submitted for analysis for the required parameters listed in the permit. Reported concentrations were compared to the daily maximum permit effluent limitations (permit limits). Due to project staff turnover, Oil & Grease, Ammonia Nitrogen, Phosphorus, and Flashpoint were not analyzed. These parameters will be included in the second half 2017 semi-annual report. Of the remaining required parameters, no permit limits were exceeded for the March 29, 2017 sample.

Attached is the signed certification form, summary of the leachate sample results, leachate analytical report, and summary of discharge volumes.

SCS appreciates the opportunity to provide the NABORS Landfill leachate discharge monitoring report to the City of Springfield. If you have any questions or would like to further discuss this letter, please feel free to contact us at (913) 681-0030.

Sincerely,

Pillon Baint

Dillon Baird, P.E. Project Engineer SCS ENGINEERS

dmb/fec

# ) L

Floyd Cotter, P.E. Vice President/Project Director SCS ENGINEERS

Attachments: Certification Form Summary of Leachate Sample Results Leachate Analytical Report Summary of Discharge Volumes

## CERTIFICATION FORM

•

## 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.

Weston Lee

Project Enginee

9 OCT 2017

SUMMARY OF LEACHATE SAMPLE RESULTS

## NABORS LANDFILL Leachate Analytical Results March 29, 2017

	Daily Maximum	Result	Units
Arsenic, T	0.51	0.00906	mg/L
Cadmium, T	0.13	ND (0.001)	mg/L
Chromium, T	2.91	0.00685	mg/L
Copper, T	2.44	0.00284	mg/L
Cyanide, T	0.33	0.00272	mg/L
Lead, T	0.53	0.000383	mg/L
Mercury, T	0.02	ND (0.0002)	mg/L
Nickel, T	5.79	0.0426	mg/L
Zinc, T	6.54	0.0129	mg/L
Oil & Grease (A/V) <sup>1</sup>	100		mg/L
Ammonia Nitrogen <sup>1</sup>	Monitoring Only		mg/L
Phosphorus, T <sup>1</sup>	Monitoring Only		mg/L
pH (Field)	5.0 - 12.5	7.15	SU
Flashpoint <sup>1</sup>	<140° F		-

<sup>1</sup> - Parameters not included in the first half 2017 semi-annual report.

ND - Non Detect

LEACHATE ANALYTICAL REPORT

LEACHATE Collected date/time: 03/29/17 14:12

# SAMPLE RESULTS - 24

ONE LAB. NATIONWIDE.

Ср

Тс

Ss

Cn

Śr

GI

Al

### Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Dissolved Solids	1560000		2820	10000	1	04/05/2017 19:55	WG967186	

#### Wet Chemistry by Method 4500S2 D-2011

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/I		ug/l	ug/l		date / time	
Sulfide	U		6.50	50.0	1	03/31/2017 20:22	WG966157

#### Wet Chemistry by Method 9012B

-	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Cyanide	2.72	J	1.80	5.00	1	04/03/2017 23:27	WG966153

#### Wet Chemistry by Method 9056A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	800
Analyte	ug/l		ug/l	ug/I		date / time		SC
Chloride	676000		1040	20000	20	04/03/2017 21:17	WG966430	
Sulfate	6750		77.4	5000	1	04/03/2017 21:01	WG966430	

#### Wet Chemistry by Method 9060A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/I		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	64000		102	1000	1	04/08/2017 10:52	WG968304

#### Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	U		0.0490	0.200	1	04/03/2017 14:13	WG966170

#### Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	_
Analyte	ug/l		ug/l	ug/l		date / time		
Antimony	U		0.754	2.00	1	04/07/2017 17:40	WG966614	
Arsenic	9.06		0.250	2.00	1	04/07/2017 17:40	WG966614	
Barium	2250		0.360	5.00	1	04/07/2017 17:40	WG966614	
Beryllium	U		0.120	2.00	1	04/07/2017 17:40	WG966614	
Cadmium	U		0.160	1.00	1	04/07/2017 17:40	WG966614	
Chromium	6.85		0.540	2.00	1	04/05/2017 19:56	WG966614	
Copper	2.84	ī	0.520	5.00	1	04/07/2017 17:40	WG966614	
Cobalt	6.61	_	0.260	2.00	1	04/07/2017 17:40	WG966614	
Iron	39100		15.0	100	1	04/07/2017 17:40	WG966614	
Lead	0.383	Ţ	0.240	2.00	1	04/07/2017 17:40	WG966614	
Manganese	990	_	0.250	5.00	1	04/07/2017 17:40	WG966614	
Nickel	42.6		0.350	2.00	1	04/05/2017 19:56	WG966614	
Selenium	0.770	L	0.380	2.00	1	04/05/2017 19:56	WG966614	
Silver	U		0.310	2.00	1	04/07/2017 17:40	WG966614	
Thallium	U		0.190	2.00	1	04/07/2017 17:40	WG966614	
Tin	6.64		0.300	2.00	1	04/07/2017 17:40	WG966614	
Vanadium	1.31	J	0.180	5.00	1	04/07/2017 17:40	WG966614	
Zinc	12.9	J	2.56	25.0	1	04/07/2017 17:40	WG966614	

#### LEACHATE Collected date/time: 03/29/17 14:12

# SAMPLE RESULTS - 24

Volatile Organic Compounds (GC/MS) by Method 8260B

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Acetone	U	13	10.0	50.0	1	04/07/2017 10:38	WG967225
Acrylonitrile	U		1.87	10.0	1	04/07/2017 10:38	WG967225
Benzene	U		0.331	1.00	1	04/07/2017 10:38	WG967225
Bromochloromethane	U		0.520	1.00	1	04/07/2017 10:38	WG967225
Bromodichloromethane	U		0.380	1.00	1	04/07/2017 10:38	WG967225
Bromoform	U		0.469	1.00	1	04/07/2017 10:38	WG967225
Bromomethane	U		0.866	5.00	1	04/07/2017 10:38	WG967225
Carbon disulfide	U		0.275	1.00	1	04/07/2017 10:38	WG967225
Carbon tetrachloride	U		0.379	1.00	1	04/07/2017 10:38	WG967225
Chlorobenzene	U		0.348	1.00	1	04/07/2017 10:38	WG967225
Chlorodibromomethane	U		0.327	1.00	1	04/07/2017 10:38	WG967225
Chloroethane	0.510	J	0.453	5.00	1	04/07/2017 10:38	WG967225
Chloroform	U	-	0.324	5.00	1	04/07/2017 10:38	WG967225
Chloromethane	U		0.276	2.50	1	04/07/2017 10:38	WG967225
Dibromomethane	U		0.346	1.00	1	04/07/2017 10:38	WG967225
1.2-Dibromoethane	U		0.381	1.00	1	04/07/2017 10:38	WG967225
1.2-Dibromo-3-Chloropropane	U	J3	1.33	5.00	1	04/07/2017 10:38	WG967225
12-Dichlorobenzene	U		0.349	100	1	04/07/2017 10:38	WG967225
14-Dichlorobenzene	0.690	1	0.274	100	1	04/07/2017 10:38	WG967225
trans-1 4-Dichloro-2-butene	11	3	0.866	2 50	1	04/07/2017 10:38	WG967225
11-Dichloroethane	0 348	1	0.259	1.00	1	04/07/2017 10:38	WG967225
1.2-Dichloroethane	0.366	3	0.361	1.00	1	04/07/2017 10:38	WG967225
11-Dichloroethene	0.500	51	0.308	1.00	1	04/07/2017 10:38	WG967225
cis-1 2-Dichloroothono	U U		0.350	1.00	1	04/07/2017 10:38	WG967225
trans_1.2-Dichloroothono	0		0.200	1.00	1	04/07/2017 10:38	WG967225
1.2-Dichloropropage	0		0.306	1.00	1	04/07/2017 10:38	WG967225
cis-1 3-Dichloropropene	0	13 14	0.300	1.00	1	04/07/2017 10:38	WG967225
trans 12 Dichloropropene		13 14	0.410	1.00	1	04/07/2017 10:38	WC967225
Ethylbonzono		<u> </u>	0.394	1.00	1	04/07/2017 10:38	WG067225
2-Woxanono	U U		2.82	10.0	1	04/07/2017 10:38	WC967225
2-nexatione		12 14	1.71	10.0	1	04/07/2017 10:38	WC067225
2 Butanono /MEV)	0	15 54	2.02	15.0	1	04/07/2017 10:38	WC067225
Z-buildhone (MER)	1.15	2	1.00	5.00	1	04/07/2017 10:38	WG907225
A Mothud 2 postazono (MIRK)	2 70	1.12	2.14	5.00	1	04/07/2017 10:38	WC067225
Shropo	5.76	555	0.207	10.0	1	04/07/2017 10:38	WC067225
1112 Totrachloroothano	0		0.307	1.00	1	04/07/2017 10:30	WC067225
1,1,2-Tetrachloroethane	0		0.305	1.00	1	04/07/2017 10.38	WC067225
Totrachloroothono	0		0.130	1.00	1	04/07/2017 10:38	WC067225
Teluano	U		0.372	1.00	1	04/07/2017 10.38	WC067225
10iuerie	0		0.310	1.00	1	04/07/2017 17:30	WC067225
1,1,1-menioroethane	0		0.319	1.00	1	04/07/2017 10:38	WC067225
I,I,Z-IIICIIIOIOeuridiie	0		0.303	1.00	1	04/07/2017 10:38	WG907223
Trichloroeurene	0		1.20	1.00	1	04/07/2017 10:38	WG907225
1 nonioronuorometnane	0		1.20	5.00	4	04/07/2017 10:38	WG907225
1,2,3-1 richloropropane	0	12	0.807	2.50	1	04/07/2017 10:38	WG967225
Vinyl acetate	U	<u>J3</u>	1.63	10.0	1	04/07/2017 10:38	WG967225
Vinyi chioride	U		0.259	1.00	1	04/07/2017 10:38	WG967225
Xylenes, Total	0		1.06	3.00	1	04/07/2017 10:38	WG967225
(S) Toluene-d8	103			80.0-120		04/07/2017 17:30	WG967225
(S) Toluene-d8	108			80.0-120		04/07/2017 10:38	WG967225
(S) Dibromotiuoromethane	103			76.0-123		04/07/2017 10:38	WG967225
(S) Dibromofluoromethane	108			/6.0-123		04/07/201/ 17:30	WG967225
(S) 4-Bromofluorobenzene	89.9			80.0-120		04/07/2017 10:38	WG967225
(S) 4-Bromofluorobenzene	94.8			80.0-120		04/07/2017 17:30	WG967225

Cp <sup>2</sup>Tc <sup>3</sup>Ss <sup>4</sup>Cn <sup>5</sup>Sr <sup>6</sup>GI <sup>7</sup>AI <sup>8</sup>Sc

DATE/TIME: 04/10/17 22:46

### SUMMARY OF DISCHARGE VOLUMES

	Volume
Date	(gallons)
January 2, 2017	12,000
January 3, 2017	12,000
January 10, 2017	6,000
January 11, 2017	12,000
January 17, 2017	6,000
January 24, 2017	6,000
January 30, 2017	12,000
February 1, 2017	12,000
February 2, 2017	12,000
February 3, 2017	12,000
February 6, 2017	12,000
February 8, 2017	12,000
February 9, 2017	12,000
February 10, 2017	12,000
February 13, 2017	12,000
February 16, 2017	12,000
February 20, 2017	6,000
February 22, 2017	12,000
February 23, 2017	12,000
February 24, 2017	12,000
February 27, 2017	12,000
February 28, 2017	6,000
March 2, 2017	12,000
March 3, 2017	12,000
March 7, 2017	6,000
March 8, 2017	12,000
March 9, 2017	6,000
March 16, 2017	6,000
March 17, 2017	6,000
March 20, 2017	6,000
March 21, 2017	12,000
March 22, 2017	6,000
March 23, 2017	6,000
March 24, 2017	12,000
Total	336,000

## NABORS LANDFILL Leachate Discharge Volumes