



CITY OF COLUMBIA, MISSOURI

UTILITIES DEPARTMENT
SOLID WASTE DIVISION

October 26, 2018

Paul Dickerson, Chief
Water Pollution Compliance/ Enforcement
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RE: Third Quarter 2018 NPDES Monitoring Report, Columbia Sanitary Landfill and Compost Facility, MDNR permit # MO-0112640, Boone County

This letter represents the Third Quarter 2018 NPDES Monitoring Report for permit number MO-0112640 for Outfalls 002, 003, 004, 005, 006 and 007. Quarterly samples were collected from Outfalls 004 and 007 on July 19, 2018. No discharges occurred for the third quarter for outfalls 002, 003, 005, and 006. Daily site precipitation amounts for the Third Quarter of 2018 are enclosed with this letter. The precipitation summarized by month is as follows:

Month	Recorded Precipitation
July	1.12"
August	3.24"
September	1.04"

The results of the quarterly samples collected from Outfalls 004 and 007 indicate no exceedances!

If you have any questions please contact me, at (573)874-7555 or adam.white@como.gov.

Sincerely, 

Adam White
Landfill Superintendent

SSH:wib

Enclosures

c: Steve S. Hunt, P.E., Solid Waste Utility Manger
David A. Sorrell, P.E., Assistant Director

Table 1
3rd Quarter 2018 Precipitation Recorded at the City of Columbia Landfill

2018	Day	Daily Rainfall (inches)
Sep	1	0
	2	0
	3	0
	4	0
	5	0
	6	0.1
	7	0.05
	8	0.7
	9	0
	10	0
	11	0
	12	0
	13	0
	14	0
	15	0
	16	0
	17	0
	18	0
	19	0
	20	0
	21	0.06
	22	0
	23	0
	24	0
	25	0.11
	26	0
	27	0
	28	0
	29	0.02
	30	0
	Monthly Total	1.04

2018	Day	Daily Rainfall (inches)
Aug	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0.12
	8	0
	9	0
	10	0
	11	0
	12	0
	13	0
	14	0.21
	15	0.05
	16	0.19
	17	0
	18	0
	19	0.23
	20	0.18
	21	0
	22	0
	23	0
	24	0.47
	25	0
	26	0
	27	0
	28	0
	29	1.04
	30	0.01
	31	0.74
	Monthly Total	3.24

2018	Day	Daily Rainfall (inches)
July	1	0.08
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
	8	0
	9	0
	10	0
	11	0
	12	0
	13	0.02
	14	0
	15	0
	16	0
	17	0
	18	0
	19	0.83
	20	0
	21	0
	22	0
	23	0
	24	0
	25	0
	26	0
	27	0
	28	0
	29	0.19
	30	0
	31	0
	Monthly Total	1.12

Table 2
 NPDES Monitoring for Non-Municipal Wastewater Discharges
 Outfalls 002, 003, 004, and 007
 Third Quarter 2018

Facility Name: Columbia Sanitary Landfill & Yard Waste Compost
 Permit Number: MO-0112640
 County: Boone
 Owner: City of Columbia, Missouri
 Type of Facility: Sanitary Landfill & Yard Waste Compost Facility

Required Frequency of Monitoring: Quarterly
 Report Period: Third Quarter 2018

Third Quarter 2018

Parameters	Units	Daily Maximum	Sample Type	Outfall 002 Results Collected */**/2018	Outfall 003 Results Collected */**/2018	Outfall 004 Results Collected 7/19/2018	Outfall 007 Results Collected 7/19/2018
Flow	MGD		Est	ND	ND	.005(GPM)	.019(GPM)
Chemical Oxygen Demand	mg/L	90	Grab	ND	ND	29	32
BOD5	mg/L		Grab	ND	ND	<2	<2
Total Suspended Solids	mg/L	80	Grab	ND	ND	<5	74
pH (field)	SU	6.5 - 9.0	Grab	ND	ND	7.44	8.15
Settleable solids	mL/L		Grab	ND	ND	<0.2	<0.2
Ammonia as N	mg/L		Grab	ND	ND	<0.1	0.13
Nitrogen, total	mg/L		Grab	ND	ND	<1.0	<0.5
Phosphorus, total	mg/L		Grab	ND	ND	<0.200	<0.200
Oil & Grease	mg/L	10	Grab	ND	ND	<5	<5
Chloride + Sulfates	mg/L	1000	Grab	ND	ND	499.9	522.9
Chloride	mg/L		Grab	ND	ND	30.9	12.9
Fluoride	mg/L		Grab	ND	ND	<0.500	0.705
Sulfate	mg/L		Grab	ND	ND	469	510
Benzene	ug/L		Grab	ND	ND	<5	<5
Aluminum	ug/L		Grab	ND	ND	401	2720
Aluminum (dissolved)	ug/L		Grab	ND	ND	<15	<15
Antimony	ug/L		Grab	ND	ND	<108	108
Arsenic	ug/L		Grab	ND	ND	<15	<15
Beryllium	ug/L		Grab	ND	ND	<15	<15
Cadmium	ug/L		Grab	ND	ND	<15	<15
Chromium	ug/L		Grab	ND	ND	<15	<15
Cobalt	ug/L		Grab	ND	ND	<15	<15
Copper	ug/L		Grab	ND	ND	<15	<15
Iron	ug/L	4000	Grab	ND	ND	762	1380
Lead	ug/L		Grab	ND	ND	<15	<15
Mercury	ug/L		Grab	ND	ND	<0.2	<0.2
Nickel	ug/L		Grab	ND	ND	<15	<15
Selenium	ug/L		Grab	ND	ND	<15	<15
Silver	ug/L		Grab	ND	ND	<15	<15
Thallium	ug/L		Grab	ND	ND	<15	<15
Zinc	ug/L		Grab	ND	ND	<15	<15
Hexavalent Chromium	ug/L		Grab	ND	ND	<25	<25

NA - Not analyzed

ND - No Discharged

Highlighted cell indicated an exceedance of the daily maximum

Table 3
 NPDES Monitoring for Non-Municipal Wastewater Discharges
 Outfall 005
 Third Quarter 2018

Facility Name: Columbia Sanitary Landfill & Yard Waste Compost
 Permit Number: MO-0112640
 County: Boone
 Owner: City of Columbia, Missouri
 Type of Facility: Sanitary Landfill & Yard Waste Compost Facility

Required Frequency of Monitoring: Quarterly
 Report Period: Third Quarter 2018

Third Quarter 2018

Parameters	Units	Daily Maximum	Sample Type	Outfall 005 Collected on:
Flow	MGD		Est	ND
COD	mg/L		Grab	ND
Settleable Solids	mg/L		Grab	ND
Total Suspended Solids	mg/L		Grab	ND
pH (field)	SU	6.5 - 9.0	Grab	ND
Oil & Grease	mg/L		Grab	ND
Aluminum, Total Recoverable	ug/L		Grab	ND
Copper, Total Recoverable	ug/L		Grab	ND
Iron, Total Recoverable	ug/L		Grab	ND
Lead, Total Recoverable	ug/L		Grab	ND
Zinc, Total Recoverable	ug/l		Grab	ND

ND - No Discharge

Table 4
NPDES Monitoring for Non-Municipal Wastewater Discharges
Outfall 006
Third Quarter 2018

Facility Name: Columbia Sanitary Landfill & Yard Waste Compost
 Permit Number: MO-0112640
 County: Boone
 Owner: City of Columbia, Missouri
 Type of Facility: Sanitary Landfill & Yard Waste Compost Facility

Required Frequency of Monitoring: Quarterly
 Report Period: Third Quarter 2018

Third Quarter 2018

Parameters	Units	Daily Maximum	Sample Type	Outfall 006 Collected on:
Flow	MGD		Est	ND
COD	mg/L	9	Grab	ND
Settleable Solids	mL/L/hr		Grab	ND
Total Suspended Solids	mg/L	100	Grab	ND
pH (field)	SU	6.5 - 9.0	Grab	ND
Oil & Grease	mg/L	10	Grab	ND
TPH	mg/L		Grab	ND
Aluminum	ug/L		Grab	ND
Aluminum (dissolved)	ug/L		Grab	ND
Copper	ug/L		Grab	ND
Iron	ug/L	4000	Grab	ND
Lead	ug/L		Grab	ND
Zinc	ug/L		Grab	ND

NS - Not Sampled

ND-No Discharge



120 East Davis Street
Fayette, MO 65248-1405
(660) 248-1911
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8/3/2018

Page Number: 1 of 3

City of Columbia
PO Box 6015
Columbia, MO 65205
Adam White

Project Name/Number: N/A / N/A
Chain of Custody Number: 18-0761

Date Received: July 19, 2018
Time Received: 15:08
Relinquished by: William Benson
Sampler: William Benson

Enclosed please find analytical results for sample(s) received as described above. The values reported are in conformance with internal and method quality control guidelines, unless otherwise noted. If you have questions or need more information, please contact us.

Thank you for your interest in working with Inovatia Laboratories.

Sincerely,



Jennifer Vandelicht
Quality Assurance

Enclosures: Chain of Custody Record(s)



120 East Davis Street
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ANALYSIS REPORT

Chain of Custody Number: 18-0761
Project Name / Number: N/A / N/A
Date Collected: 07/19/18
Time Collected: 13:45

Sample Number: Outfall 004
Lab Number: 182764
Sample Matrix: Water
Sample Type: Grab

Analysis	Result	Units	Reporting Limit	Analysis Method	Date - Analyst
Biochemical Oxygen Demand (5-day)	< 2	mg/L	2	SM 5210B	7/20/2018 - HM/DS
Chemical Oxygen Demand (COD)	29	mg/L	25	SM 5220D	8/2/2018 - DS
Nitrogen, Total	< 1.0	mg/L	1.0	ASTM 8083	7/31/2018 - SET
Nitrogen, Ammonia	< 0.1	mg/L	0.1	SM4500-NH3.B,D	8/2/2018 - DS
Hexane Extractable Material (HEM)	< 5	mg/L	5	EPA 1664 B	7/23/2018 - BD
Settleable Matter	< 0.2	mL/L/hr	0.2	EPA 160.5	7/20/2018 - BD
Total Suspended Solids (TSS)	< 5	mg/L	5	SM 2540 D	7/19/2018 - HM
Chloride	30.9	mg/L	5.00	EPA 300.0	7/30/2018 - SET
Fluoride	< 0.500	mg/L	0.500	EPA 300.0	7/30/2018 - SET
Sulfate	469	mg/L	25.0	EPA 300.0	7/30/2018 - SET
Beryllium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Aluminum, Total	0.401	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Phosphorus, Total	< 0.200	mg/L	0.200	EPA 200.7	7/27/2018 - SET
Chromium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Chromium, Hexavalent	< 0.025	mg/L	0.025	SM 3500 Cr B	7/19/2018 - HM
Iron, Total	0.762	mg/L	0.250	EPA 200.8	7/27/2018 - DS
Cobalt, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Nickel, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Copper, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Zinc, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Arsenic, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Selenium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Silver, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Cadmium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS

Notes:

Report Date: 08/03/18
Page Number: 2 of 3

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 Fax: (660) 248-1921
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ANALYSIS REPORT

Chain of Custody Number: 18-0761
 Project Name / Number: N/A / N/A
 Date Collected: 07/19/18
 Time Collected: 13:45

Sample Number: Outfall 004
 Lab Number: 182764
 Sample Matrix: Water
 Sample Type: Grab

Analysis	Result	Units	Reporting Limit	Analysis Method	Date - Analyst
Antimony, Total	< 0.108	mg/L	0.108	EPA 200.8	7/27/2018 - SET
Mercury, Total	< 0.0002	mg/L	0.0002	EPA 245.1	7/26/2018 - SET
Thallium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Lead, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Aluminum, Dissolved	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Benzene, Total	< 0.005	mg/L	0.005	EPA 8060	7/24/2018 - DS

Notes:

Report Date: 08/03/18
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8/3/2018

Page Number: 1 of 3

City of Columbia
PO Box 6015
Columbia, MO 65205
Adam White

Project Name/Number: N/A / N/A
Chain of Custody Number: 18-0762

Date Received: July 19, 2018
Time Received: 15:08
Relinquished by: William Benson
Sampler: William Benson

Enclosed please find analytical results for sample(s) received as described above. The values reported are in conformance with internal and method quality control guidelines, unless otherwise noted. If you have questions or need more information, please contact us.

Thank you for your interest in working with Inovatia Laboratories.

Sincerely,

A handwritten signature in cursive script that reads "Jennifer Vandelicht".

Jennifer Vandelicht

Quality Assurance

Enclosures: Chain of Custody Record(s)



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ANALYSIS REPORT

Chain of Custody Number: 18-0762
Project Name / Number: N/A / N/A
Date Collected: 07/19/18
Time Collected: 13:30

Sample Number: Outfall 007
Lab Number: 182765
Sample Matrix: Water
Sample Type: Grab

Analysis	Result	Units	Reporting Limit	Analysis Method	Date - Analyst
Biochemical Oxygen Demand (5-day)	< 2	mg/L	2	SM 5210B	7/20/2018 - HM/DS
Chemical Oxygen Demand (COD)	32	mg/L	25	SM 5220D	8/2/2018 - DS
Nitrogen, Total	< 0.5	mg/L	0.5	Calculation	7/31/2018 - SET
Nitrogen, Ammonia	0.13	mg/L	0.1	SM4500-NH3.B,D	8/2/2018 - DS
Hexane Extractable Material (HEM)	< 5	mg/L	5	EPA 1664 B	7/23/2018 - BD
Settleable Matter	< 0.2	mL/L/hr	0.2	EPA 160.5	7/20/2018 - BD
Total Suspended Solids (TSS)	74	mg/L	5	SM 2540 D	7/19/2018 - HM
Chloride	12.9	mg/L	5.0	EPA 300.0	7/30/2018 - SET
Fluoride	0.705	mg/L	0.500	EPA 300.0	7/30/2018 - SET
Sulfate	510	mg/L	25.0	EPA 300.0	7/30/2018 - SET
Beryllium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Aluminum, Total	2.72	mg/L	0.150	EPA 200.8	7/27/2018 - DS
Phosphorus, Total	< 0.200	mg/L	0.200	EPA 200.7	7/27/2018 - SET
Chromium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Chromium, Hexavalent	< 0.025	mg/L	0.025	SM 3500 Cr B	7/19/2018 - HM
Iron, Total	1.38	mg/L	0.250	EPA 200.8	7/27/2018 - DS
Cobalt, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Nickel, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Copper, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Zinc, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Arsenic, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Selenium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Silver, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Cadmium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS

Notes: Report Date: 08/03/18
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ANALYSIS REPORT

Chain of Custody Number: 18-0762
Project Name / Number: N/A / N/A
Date Collected: 07/19/18
Time Collected: 13:30

Sample Number: Outfall 007
Lab Number: 182765
Sample Matrix: Water
Sample Type: Grab

Analysis	Result	Units	Reporting Limit	Analysis Method	Date - Analyst
Antimony, Total	< 0.108	mg/L	0.108	EPA 200.8	7/27/2018 - SET
Mercury, Total	< 0.0002	mg/L	0.0002	EPA 245.1	7/26/2018 - SET
Thallium, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Lead, Total	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Aluminum, Dissolved	< 0.015	mg/L	0.015	EPA 200.8	7/27/2018 - DS
Benzene, Total	< 0.005	mg/L	0.005	EPA 8260	7/24/2018 - DS

Notes:

Report Date: 08/03/18
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CHAIN OF CUSTODY RECORD

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FAYETTE, MO 65248-0030

PHONE: (660) 248-1911
FAX: (660) 248-1921
IL_CustServ@inovatia.com

CHAIN NUMBER: 18-0762
DATE REPORTED: 8-3-2018
INVOICE NUMBER: 22201

FOR OFFICE USE ONLY:

Contact Name: Adam White
 Company Name: City of Columbia
 Address: PO Box 6015
 City, State, Zip: Columbia, MO 65205
 E-Mail: adam.white@como.gov

Phone Number: 573-874-7555
 Fax Number: 573-214-0141
 Project Name / Number:
 Quote Number:
 Purchase Order Number:

Project Due Date:
 Comments:

Sampler's Name: William Benson
 (please print)
 Sampler's Signature: *[Handwritten Signature]*

DELIVERY METHOD: Hand
 CUSTODY SEALS: YES NO INTACT BROKEN
 COOLANT: ICE ICE PACK NONE
 PACKAGE TYPE: COOLER
 ARRIVAL TEMPERATURE: 15.2 °C
 MEASURED BY: TEMPERATURE BLANK SAMPLE COOLER / CONTAINER

LAB NUMBER	Customer Sample Number	Date Collected	Time Collected	Matrix Soil/Water/ Sludge/Other
1	182765	7-14-18	1:30 PM	Water
2				
3				
4				
5				
6				
7				
8				
9				
10				

G-Grab / C-Composite No. of Containers HCl HNO₃ NaOH H₂SO₄ TSP Other: Other:

Method Number →	NUMBER PER PRESERVATIVE	HCl	HNO ₃	NaOH	H ₂ SO ₄	TSP	Other:	Other:
BOD, TSS, SM			X					
HEM, COD			X					
NH ₃ , Total N			X					
Benzene			X					
CrVI, Sulfate			X					
Chloride, Fluoride			X					
P, Al (D), Hg			X					
Fe, Ni, Se, Ag, Zn,			X					
Sb, As, Pb, Tl, Al			X					
Be, Cd, Cr, Co, Cu			X					

Comments: Please include any information that may be useful in the analysis of the sample, such as: expected concentrations, required detection limits, and method of collection.

Relinquished By: William Benson Date: 7-14-18 Time: 3:08 PM Received By: *[Handwritten Signature]* Date: 7-19-18 Time: 1508

Relinquished By: _____ Date: _____ Time: _____ Received By: _____ Date: _____ Time: _____

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