AECOM Environment

Fourth Quarter 2019 – October, November, December Operation, Maintenance, and Monitoring Report

CHEM-TROL Site
NYSDEC Site No. 9-15-015
Report.hw915015.2019-12-24.4Q2019OMM

Site:
CHEM-TROL Site
4800 Lake Avenue
Blasdell, New York 14219

Submitted to:
NYSDEC
Region 9 Office
270 Michigan Avenue
Buffalo, NY 14203

Prepared for:
Waste Management
100 Brandywine Boulevard, Suite 300
Newtown, PA 18940

Prepared by:
AECOM
257 West Genesee Street, Suite 400
Buffalo, New York 14202

December 24, 2019

AECOM Project No. 60592091.1

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716 856 5636 tel
716 856 2545 fax

December 24, 2019

SUBMITTED VIA ELECTRONIC MAIL

Mr. Glenn May, PG
NYSDEC
Region 9 Office
270 Michigan Avenue
Buffalo, NY 14203

RE: S.C. Holdings, Inc., 4818 Lake Avenue, Blasdell, New York 14219
Fourth Quarter 2019 Operation, Maintenance, and Monitoring Report
Chem-Trol Site, NYSDEC Site No. 9-15-015, Report.hw915015.2019-12-24.4Q2019OMM

Dear Mr. May:

Enclosed please find the Fourth Quarter 2019 (4Q19 – October, November, December) Operation, Maintenance, and Monitoring Report for the "Chem-Trol" project site. AECOM is submitting this quarterly monitoring report on behalf of our client, S.C. Holdings, Inc.

The enclosed report contains the following information for 4Q19:

- Operation, Maintenance and Monitoring Checklists
- Summary Tables of Analytical Results and Flow Readings
- Copies of Analytical Results and Chain-of-Custody Forms

A summary of each month within 4Q19 is as follows:

October 2019

AECOM collected the monthly monitoring samples on October 4, 2019; analytical data were received on October 23, 2019. As presented on Table 1 (October 4, 2019), there were no exceedances of the treatment or discharge requirements for any parameter in the effluent samples during this month.

November 2019

AECOM collected the monthly monitoring samples on November 26, 2019; analytical data were received on December 16, 2019. As presented on Table 1 (November 26, 2019), exceedances of the treatment requirements for total iron and total suspended soilds (TSS) were observed in the aqueous effluent sample based on concentration but not mass loading.

December 2019

On December 5, 2019 AECOM performed a flush-and-rinse acid wash of the system. AECOM collected the monthly monitoring samples on December 6, 2019; analytical data were received on December 16, 2019. As presented on Table 1 (December 6, 2019), there were no exceedances of the treatment or discharge requirements for any parameter in the effluent samples during this month.

AECOM also collected quarterly groundwater levels on December 20, 2019.

If you have any questions regarding the information presented in this report please contact me at (716) 923-1300.

Very truly yours,
AECOM

James L. Kaczor
Project Manager

Enclosure

cc: Mr. Chad Moose (Waste Management) (electronic copy)
Mr. Brian Sadowski, NYSDEC (electronic copy)
60592091 Project File

October 2019

Operation, Maintenance & Monitoring Checklist

Groundwater Treatment System
CHEM-TROL Site
Town of Hamburg, New York

This summary inspection checklist is to be completed during each site inspection. Note all items, which require repair or maintenance. Use the last page to note any additional comments or unusual events.

General

Service by: Sean P. Connelly Weather/Temperature: 46 ° F, Cloudy, slight breeze
Date: 10/04/19 Arrival Time: 8:45 Departure Time: 10:30

Reason for Service: Inspect system

Inspection Items:	OK:	Comments:
Site Appearance/Condition	X	See comments section.
Building Exterior		
Overhead Door	X	Wood lintel decaying, header exposed.
Siding	X	Metal trim missing from lintel
Roof and Discharge Pipe	X	
Building Interior		
Indication of Spills or Leaks		Condensation on the floor
Building Heater	X	Breaker turned on.
Phone System	X	Disconnected
Exhaust Fan	X	Operable
Fire Extinguisher	X	
First Aid & Eye Wash	X	

Groundwater Treatment System

Air Stripper	**X**	Ratchet straps are used to keep the trays together. Several of the clips for the trays are rusted/broken.
Iron Removal Filter	**X**	Tank in-line but filter media removed; not required.
Flow Meters	**X**	See Notes.
Gauges	**X**	
Stripper Blower	**X**	
Indication of Alarm	**X**	

Groundwater Treatment Wells

EW-1 Pump	**X**	
EW-1 Transducer	**X**	
EW-1 Flow Meter	**X**	
EW-2 Pump	**X**	
EW-2 Transducer	**X**	
EW- 2 Flow Meter	**X**	
EW-3 Pump	**X**	
EW-3 Transducer	**X**	
EW-3 Flow Meter	**X**	

Effluent Discharge

Outfall	**X**	
Cleanout	**X**	

Instrumentation/Readings:

EW-1

Pumping Rate	0 GPM (see Notes section)
Water Level Above Transducer	220 Inches
Flow Meter Reading	8,444,686 Gallons

EW-2

Pumping Rate	0 GPM (see Notes section)
Water Level Above Transducer	162 Inches
Flow Meter Reading	28,501,469 Gallons

EW-3

Pumping Rate	0 GPM (see Notes section)
Water Level Above Transducer	110 Inches
Flow Meter Reading	15,695,898 Gallons

Air Stripper

Stripper Blower Pressure	12.5 Inches H2O

Effluent Flow

Total System Meter Reading	69,209,727 Gallons

Influent/Effluent Sampling

AQUEOUS:
Monthly monitoring samples of aqueous phase system influent and effluent were collected and submitted for the following analyses:

- VOCs by EPA Method 624 (CFR136 624)
- Iron by MCAWW 200.7
- TSS by MCAWW SM18-20 2540 D
- pH by MCAWW SM18-20 4500-H+B

pH measurements must be made in the field:

Influent pH 7 (field test strip)
Effluent pH 7 (field test strip)

Notes/Explanations
(Please include any additional information on those items that require attention as indicated above.)

Collected October 2019 monthly influent and effluent samples on October 4, 2019; hand-delivered iced samples in a secure cooler under chain of custody to TestAmerica, Amherst, NY on October 4, 2019.

Total system flow on system totalizer flow meter timed at 4.5 gpm. During visit, individually closed EW-1, EW-2, and EW-3 influent valve to test flow by reading response on transducer elevation; noted rise in transducer elevation when valve was closed and drop when valve was opened confirming well was pumping.

The SVE building overhead door flashing has wind and header damage.

The AS building overhead door flashing needs replacement.

The most recent round of water levels (3Q2019) was collected September 19, 2019.

The most recent air stripper cleanout was performed August 20, 2019.

All wells were operational upon arrival and departure.

Table 1
October 4, 2019 Summary of Influent and Effluent Data

Chem-Trol Site
Town of Hamburg, New York

Parameters	Concentration				Mass Loading		
	Influent	Effluent	Discharge Limitations	Units	Effluent	Discharge Limitations	Units
Flow*	7,029	7,029	144,000	gpd	NA	NA	NA
pH	7.1	7.8	6.5 to 8.5	standard units	NA	NA	NA
Toluene	< 9.1	< 5.0	5	ug/L	< 0.0003	0.006	lbs/day
Chlorobenzene	< 9.5	< 5.0	10	ug/L	< 0.0003	0.012	lbs/day
cis-1,2-Dichloroethene	< 11	< 5.0	10	ug/L	< 0.0003	0.012	lbs/day
Benzene	< 12	< 5.0	5	ug/L	< 0.0003	0.006	lbs/day
1,1,1-Trichloroethane	< 7.7	< 5.0	10	ug/L	< 0.0003	0.012	lbs/day
Chloroethane	< 17	< 5.0	10	ug/L	< 0.0003	0.012	lbs/day
1,1-Dichloroethane	< 12	< 5.0	10	ug/L	< 0.0003	0.012	lbs/day
1,1-Dichloroethene	< 17	< 5.0	10	ug/L	< 0.0003	0.012	lbs/day
Trichloroethene	< 12	< 5.0	10	ug/L	< 0.0003	0.012	lbs/day
o-Chlorotoluene	2,100	< 5.0	10	ug/L	< 0.0003	0.012	lbs/day
Iron - Total	666	422	3,000	ug/L	0.02	3.61	lbs/day
TSS	11.6	6.8	20	mg/L	0.40		lbs/day

Notes:

*1) **Bold** typeface denotes exceedance of treatment requirements in the effluent sample.*

2) < indicates Not Detected at or above the laboratory reporting limit.

3) NA indicates Not Applicable.

4) "J" indicates an estimated concentration below the method detection limit.

5) E - Estimated Value, result above calibration curve

6) D - Dilution

7) Revision of monitoring parameters (inorganics and TSS) and discharge limitation (iron) approved by NYSDEC letter dated July 27, 2007.

** Average daily flow as measured September 19, 2019 through October 4, 2019.*

Table 2
October 4, 2019 Summary of Influent and Effluent Data

Chem-Trol Site
Town of Hamburg, New York

Instrumentation/Readings:	Current Report 10/4/2019	units	Prior Report 9/19/2019
EW-1			
Pumping Rate	0	GPM	0
Water Level Above Transducer	220	Inches	210
Flow Meter Reading	8,444,686	gallons	8,444,686
EW-2			
Pumping Rate	0	GPM	0
Water Level Above Transducer	162	Inches	156
Flow Meter Reading	28,501,469	gallons	28,501,469
EW-3			
Pumping Rate	0	GPM	0
Water Level Above Transducer	110	Inches	91
Flow Meter Reading	15,695,898	gallons	15,695,056
Air Stripper			
Stripper Blower Pressure	12.5	inches H_2O	12.5
Effluent Flow			
Total System Meter Reading	69,209,727	gallons	69,104,288
Average System Flow Since Prior Report	7,029	gpd	
	292.9	gph	
	4.9	gpm	
Influent o-Chlorotoluene concentration	2,100	ug/L	
Current month mass removal	0.8	kilograms	

Note: NA indicates Not Available.
NW - Not working
ug/L - micrograms per liter

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-160292-1
Client Project/Site: ChemTrol Site-Monthly GW
Sampling Event: ChemTrol Monthly Groundwater

For:
Waste Management
Tullytown Landfill
444 Oxford Valley Road
Morrisville, Pennsylvania 19067

Attn: Chad Moose

Katelyn Ferguson

Authorized for release by:
10/23/2019 11:14:21 AM
Katelyn Ferguson, Project Management Assistant I
katelyn.ferguson@testamericainc.com

Designee for

Denise Giglia, Project Manager I
(716)691-2600
denise.giglia@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Waste Management
Job ID: 480-160292-1
Project/Site: ChemTrol Site-Monthly GW

Qualifiers

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-160292-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-160292-1

Comments
No additional comments.

Receipt
The samples were received on 10/4/2019 11:09 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

GC/MS VOA
Method 624.1: The following samples were diluted to bring the concentration of target analytes within the calibration range: Influent (480-160292-2), (480-160292-D-2 MS) and (480-160292-D-2 MSD). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Methods 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: Effluent (480-160292-1) and Influent (480-160292-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Waste Management
Job ID: 480-160292-1
Project/Site: ChemTrol Site-Monthly GW

Client Sample ID: Effluent — Lab Sample ID: 480-160292-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	422		50.0		ug/L	1		200.7 Rev 4.4	Total Recoverable
Total Suspended Solids	6.8		4.0		mg/L	1		SM 2540D	Total/NA
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: Influent — Lab Sample ID: 480-160292-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
o-Chlorotoluene - DL	2100		16		ug/L	50		624.1	Total/NA
Iron	666		50.0		ug/L	1		200.7 Rev 4.4	Total Recoverable
Total Suspended Solids	11.6		4.0		mg/L	1		SM 2540D	Total/NA
pH	7.1	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 480-160292-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Waste Management
Project/Site: ChemTrol Site-Monthly GW

Job ID: 480-160292-1

Client Sample ID: Effluent

Date Collected: 10/04/19 09:15
Date Received: 10/04/19 11:09

Lab Sample ID: 480-160292-1

Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			10/07/19 14:40	1
1,1-Dichloroethane	ND		5.0		ug/L			10/07/19 14:40	1
1,1-Dichloroethene	ND		5.0		ug/L			10/07/19 14:40	1
Benzene	ND		5.0		ug/L			10/07/19 14:40	1
Chlorobenzene	ND		5.0		ug/L			10/07/19 14:40	1
Chloroethane	ND		5.0		ug/L			10/07/19 14:40	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			10/07/19 14:40	1
Toluene	ND		5.0		ug/L			10/07/19 14:40	1
Trichloroethene	ND		5.0		ug/L			10/07/19 14:40	1
o-Chlorotoluene	ND		5.0		ug/L			10/07/19 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*68 - 130*		*10/07/19 14:40*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 123*		*10/07/19 14:40*	*1*
Toluene-d8 (Surr)	*90*		*77 - 120*		*10/07/19 14:40*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**422**		50.0		ug/L		10/08/19 08:00	10/09/19 00:03	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**6.8**		4.0		mg/L			10/10/19 17:12	1
pH	**7.8**	**HF**	0.1		SU			10/22/19 13:21	1
Temperature	**19.1**	**HF**	0.001		Degrees C			10/22/19 13:21	1

Client: Waste Management
Project/Site: ChemTrol Site-Monthly GW

Job ID: 480-160292-1

Client Sample ID: Influent

Date Collected: 10/04/19 09:35
Date Received: 10/04/19 11:09

Lab Sample ID: 480-160292-2

Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		7.7		ug/L			10/07/19 15:04	20
1,1-Dichloroethane	ND		12		ug/L			10/07/19 15:04	20
1,1-Dichloroethene	ND		17		ug/L			10/07/19 15:04	20
Benzene	ND		12		ug/L			10/07/19 15:04	20
Chlorobenzene	ND		9.5		ug/L			10/07/19 15:04	20
Chloroethane	ND		17		ug/L			10/07/19 15:04	20
cis-1,2-Dichloroethene	ND		11		ug/L			10/07/19 15:04	20
Toluene	ND		9.1		ug/L			10/07/19 15:04	20
Trichloroethene	ND		12		ug/L			10/07/19 15:04	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*68 - 130*		*10/07/19 15:04*	*20*
4-Bromofluorobenzene (Surr)	*100*		*76 - 123*		*10/07/19 15:04*	*20*
Toluene-d8 (Surr)	*90*		*77 - 120*		*10/07/19 15:04*	*20*

Method: 624.1 - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Chlorotoluene	**2100**		16		ug/L			10/08/19 13:22	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*78*		*68 - 130*		*10/08/19 13:22*	*50*
4-Bromofluorobenzene (Surr)	*98*		*76 - 123*		*10/08/19 13:22*	*50*
Toluene-d8 (Surr)	*89*		*77 - 120*		*10/08/19 13:22*	*50*

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**666**		50.0		ug/L		10/08/19 08:00	10/09/19 00:21	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**11.6**		4.0		mg/L			10/10/19 17:12	1
pH	**7.1**	**HF**	0.1		SU			10/22/19 13:24	1
Temperature	**19.3**	**HF**	0.001		Degrees C			10/22/19 13:24	1

Client: Waste Management
Project/Site: ChemTrol Site-Monthly GW

Job ID: 480-160292-1

Client Sample ID: Trip Blank
Date Collected: 10/04/19 00:00
Date Received: 10/04/19 11:09

Lab Sample ID: 480-160292-3
Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			10/07/19 15:28	1
1,1-Dichloroethane	ND		5.0		ug/L			10/07/19 15:28	1
1,1-Dichloroethene	ND		5.0		ug/L			10/07/19 15:28	1
Benzene	ND		5.0		ug/L			10/07/19 15:28	1
Chlorobenzene	ND		5.0		ug/L			10/07/19 15:28	1
Chloroethane	ND		5.0		ug/L			10/07/19 15:28	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			10/07/19 15:28	1
Toluene	ND		5.0		ug/L			10/07/19 15:28	1
Trichloroethene	ND		5.0		ug/L			10/07/19 15:28	1
o-Chlorotoluene	ND		5.0		ug/L			10/07/19 15:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*81*		*68 - 130*		*10/07/19 15:28*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 123*		*10/07/19 15:28*	*1*
Toluene-d8 (Surr)	*90*		*77 - 120*		*10/07/19 15:28*	*1*

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-496268/7
Matrix: Water
Analysis Batch: 496268

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			10/07/19 11:08	1
1,1-Dichloroethane	ND		5.0		ug/L			10/07/19 11:08	1
1,1-Dichloroethene	ND		5.0		ug/L			10/07/19 11:08	1
Benzene	ND		5.0		ug/L			10/07/19 11:08	1
Chlorobenzene	ND		5.0		ug/L			10/07/19 11:08	1
Chloroethane	ND		5.0		ug/L			10/07/19 11:08	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			10/07/19 11:08	1
Toluene	ND		5.0		ug/L			10/07/19 11:08	1
Trichloroethene	ND		5.0		ug/L			10/07/19 11:08	1
o-Chlorotoluene	ND		5.0		ug/L			10/07/19 11:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*68 - 130*		*10/07/19 11:08*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 123*		*10/07/19 11:08*	*1*
Toluene-d8 (Surr)	*89*		*77 - 120*		*10/07/19 11:08*	*1*

Lab Sample ID: LCS 480-496268/5
Matrix: Water
Analysis Batch: 496268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	18.2		ug/L		91	52 - 162
1,1-Dichloroethane	20.0	19.5		ug/L		98	59 - 155
1,1-Dichloroethene	20.0	20.4		ug/L		102	1 - 234
Benzene	20.0	19.5		ug/L		98	37 - 151
Chlorobenzene	20.0	19.4		ug/L		97	37 - 160
Chloroethane	20.0	21.4		ug/L		107	14 - 230
Toluene	20.0	19.3		ug/L		96	47 - 150
Trichloroethene	20.0	19.3		ug/L		97	71 - 157

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*79*		*68 - 130*
4-Bromofluorobenzene (Surr)	*99*		*76 - 123*
Toluene-d8 (Surr)	*91*		*77 - 120*

Lab Sample ID: 480-160292-2 MS
Matrix: Water
Analysis Batch: 496268

Client Sample ID: Influent
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		400	368		ug/L		92	52 - 162
1,1-Dichloroethane	ND		400	400		ug/L		100	59 - 155
1,1-Dichloroethene	ND		400	427		ug/L		107	1 - 234
Benzene	ND		400	402		ug/L		100	37 - 151
Chlorobenzene	ND		400	397		ug/L		99	37 - 160
Chloroethane	ND		400	456		ug/L		114	14 - 230
Toluene	ND		400	399		ug/L		100	47 - 150
Trichloroethene	ND		400	396		ug/L		99	71 - 157

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	77		68 - 130
4-Bromofluorobenzene (Surr)	98		76 - 123
Toluene-d8 (Surr)	89		77 - 120

Lab Sample ID: 480-160292-2 MSD — **Client Sample ID: Influent**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 496268

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		400	353		ug/L		88	52 - 162	4	15
1,1-Dichloroethane	ND		400	385		ug/L		96	59 - 155	4	15
1,1-Dichloroethene	ND		400	404		ug/L		101	1 - 234	5	15
Benzene	ND		400	389		ug/L		97	37 - 151	3	15
Chlorobenzene	ND		400	382		ug/L		95	37 - 160	4	15
Chloroethane	ND		400	441		ug/L		110	14 - 230	3	15
Toluene	ND		400	387		ug/L		97	47 - 150	3	15
Trichloroethene	ND		400	384		ug/L		96	71 - 157	3	15

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	81		68 - 130
4-Bromofluorobenzene (Surr)	97		76 - 123
Toluene-d8 (Surr)	90		77 - 120

Lab Sample ID: MB 480-496521/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 496521

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			10/08/19 11:02	1
1,1-Dichloroethane	ND		5.0		ug/L			10/08/19 11:02	1
1,1-Dichloroethene	ND		5.0		ug/L			10/08/19 11:02	1
Benzene	ND		5.0		ug/L			10/08/19 11:02	1
Chlorobenzene	ND		5.0		ug/L			10/08/19 11:02	1
Chloroethane	ND		5.0		ug/L			10/08/19 11:02	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			10/08/19 11:02	1
Toluene	ND		5.0		ug/L			10/08/19 11:02	1
Trichloroethene	ND		5.0		ug/L			10/08/19 11:02	1
o-Chlorotoluene	ND		5.0		ug/L			10/08/19 11:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		68 - 130		10/08/19 11:02	1
4-Bromofluorobenzene (Surr)	97		76 - 123		10/08/19 11:02	1
Toluene-d8 (Surr)	87		77 - 120		10/08/19 11:02	1

Lab Sample ID: LCS 480-496521/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 496521

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	18.2		ug/L		91	52 - 162
1,1-Dichloroethane	20.0	19.1		ug/L		95	59 - 155

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-496521/5
Matrix: Water
Analysis Batch: 496521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	20.0		ug/L		100	1 - 234
Benzene	20.0	19.5		ug/L		97	37 - 151
Chlorobenzene	20.0	19.9		ug/L		99	37 - 160
Chloroethane	20.0	20.6		ug/L		103	14 - 230
Toluene	20.0	19.7		ug/L		98	47 - 150
Trichloroethene	20.0	19.1		ug/L		95	71 - 157

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*68 - 130*
4-Bromofluorobenzene (Surr)	*101*		*76 - 123*
Toluene-d8 (Surr)	*91*		*77 - 120*

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 480-496463/1-A
Matrix: Water
Analysis Batch: 496813

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 496463

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		50.0		ug/L		10/08/19 08:00	10/08/19 23:45	1

Lab Sample ID: LCS 480-496463/2-A
Matrix: Water
Analysis Batch: 496813

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 496463

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	10000	10470		ug/L		105	85 - 115

Lab Sample ID: 480-160292-1 MS
Matrix: Water
Analysis Batch: 496813

Client Sample ID: Effluent
Prep Type: Total Recoverable
Prep Batch: 496463

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	422		10000	10830		ug/L		104	70 - 130

Lab Sample ID: 480-160292-1 MSD
Matrix: Water
Analysis Batch: 496813

Client Sample ID: Effluent
Prep Type: Total Recoverable
Prep Batch: 496463

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	422		10000	10860		ug/L		104	70 - 130	0	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 480-497283/1
Matrix: Water
Analysis Batch: 497283

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0		mg/L			10/10/19 17:12	1

Client: Waste Management
Project/Site: ChemTrol Site-Monthly GW

Job ID: 480-160292-1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: LCS 480-497283/2
Matrix: Water
Analysis Batch: 497283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	258	240.8		mg/L		93	88 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 480-499518/1
Matrix: Water
Analysis Batch: 499518

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		101	99 - 101

QC Association Summary

Client: Waste Management
Project/Site: ChemTrol Site-Monthly GW

Job ID: 480-160292-1

GC/MS VOA

Analysis Batch: 496268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160292-1	Effluent	Total/NA	Water	624.1	
480-160292-2	Influent	Total/NA	Water	624.1	
480-160292-3	Trip Blank	Total/NA	Water	624.1	
MB 480-496268/7	Method Blank	Total/NA	Water	624.1	
LCS 480-496268/5	Lab Control Sample	Total/NA	Water	624.1	
480-160292-2 MS	Influent	Total/NA	Water	624.1	
480-160292-2 MSD	Influent	Total/NA	Water	624.1	

Analysis Batch: 496521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160292-2 - DL	Influent	Total/NA	Water	624.1	
MB 480-496521/7	Method Blank	Total/NA	Water	624.1	
LCS 480-496521/5	Lab Control Sample	Total/NA	Water	624.1	

Metals

Prep Batch: 496463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160292-1	Effluent	Total Recoverable	Water	200.7	
480-160292-2	Influent	Total Recoverable	Water	200.7	
MB 480-496463/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 480-496463/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
480-160292-1 MS	Effluent	Total Recoverable	Water	200.7	
480-160292-1 MSD	Effluent	Total Recoverable	Water	200.7	

Analysis Batch: 496813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160292-1	Effluent	Total Recoverable	Water	200.7 Rev 4.4	496463
480-160292-2	Influent	Total Recoverable	Water	200.7 Rev 4.4	496463
MB 480-496463/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	496463
LCS 480-496463/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	496463
480-160292-1 MS	Effluent	Total Recoverable	Water	200.7 Rev 4.4	496463
480-160292-1 MSD	Effluent	Total Recoverable	Water	200.7 Rev 4.4	496463

General Chemistry

Analysis Batch: 497283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160292-1	Effluent	Total/NA	Water	SM 2540D	
480-160292-2	Influent	Total/NA	Water	SM 2540D	
MB 480-497283/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 480-497283/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 499518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160292-1	Effluent	Total/NA	Water	SM 4500 H+ B	
480-160292-2	Influent	Total/NA	Water	SM 4500 H+ B	
LCS 480-499518/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Waste Management
Job ID: 480-160292-1
Project/Site: ChemTrol Site-Monthly GW

Client Sample ID: Effluent
Lab Sample ID: 480-160292-1
Date Collected: 10/04/19 09:15
Matrix: Water
Date Received: 10/04/19 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	496268	10/07/19 14:40	S1V	TAL BUF
Total Recoverable	Prep	200.7			496463	10/08/19 08:00	BMB	TAL BUF
Total Recoverable	Analysis	200.7 Rev 4.4		1	496813	10/09/19 00:03	LMH	TAL BUF
Total/NA	Analysis	SM 2540D		1	497283	10/10/19 17:12	CSS	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	499518	10/22/19 13:21	KEB	TAL BUF

Client Sample ID: Influent
Lab Sample ID: 480-160292-2
Date Collected: 10/04/19 09:35
Matrix: Water
Date Received: 10/04/19 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		20	496268	10/07/19 15:04	S1V	TAL BUF
Total/NA	Analysis	624.1	DL	50	496521	10/08/19 13:22	S1V	TAL BUF
Total Recoverable	Prep	200.7			496463	10/08/19 08:00	BMB	TAL BUF
Total Recoverable	Analysis	200.7 Rev 4.4		1	496813	10/09/19 00:21	LMH	TAL BUF
Total/NA	Analysis	SM 2540D		1	497283	10/10/19 17:12	CSS	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	499518	10/22/19 13:24	KEB	TAL BUF

Client Sample ID: Trip Blank
Lab Sample ID: 480-160292-3
Date Collected: 10/04/19 00:00
Matrix: Water
Date Received: 10/04/19 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	496268	10/07/19 15:28	S1V	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Waste Management
Project/Site: ChemTrol Site-Monthly GW

Job ID: 480-160292-1

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature

Method Summary

Client: Waste Management
Project/Site: ChemTrol Site-Monthly GW

Job ID: 480-160292-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
200.7 Rev 4.4	Metals (ICP)	EPA	TAL BUF
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF
200.7	Preparation, Total Recoverable Metals	EPA	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Waste Management
Project/Site: ChemTrol Site-Monthly GW

Job ID: 480-160292-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-160292-1	Effluent	Water	10/04/19 09:15	10/04/19 11:09	
480-160292-2	Influent	Water	10/04/19 09:35	10/04/19 11:09	
480-160292-3	Trip Blank	Water	10/04/19 00:00	10/04/19 11:09	

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: S. Connolly	Lab PM: Giglia, Denise L	Carrier Tracking No(s):	COC No: 480-134080-28522.1
Client Contact: Mr. Dino Zack	Phone: (716)393-0870	E-Mail: denise.giglia@testamericainc.com		Page:
Company: AECOM				
Address: 257 West Genesee Street Suite 400	Due Date Requested:			
City: Buffalo	TAT Requested (days): STANDARD			
State, Zip: NY, 14202-2657				
Phone: 215-269-2114(Tel) 215-699-8315(Fax)	PO #: 5070003206			
Email: dino.zack@aecom.com	WO #:			
Project Name: ChemTrol Site/NY22 Event Desc: ChemTrol Monthly Groundwat	Project #: 48002447			
Site: New York	SSOW#:			

480-160292 Chain of Custody

Analysis

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	200.7 - Iron	624.1_PREC - 624	2540D - Total Suspended Solids	SM4500_H+ - pH	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	A	N	N		
Effluent	10/04/19	0915	G	Water	N	N	1	3	1	1		
Influent	↓	0935	G	Water	N	N	1	3	1	1		
Trip Blank	↓	—	G	Water	N	N		3				

F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
I - Hexane
I - None
) - AsNaO2
) - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)
Other:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	10/4/19 1109	Aecom	[signature]	10/4/19 1109	TAB
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.8 -0.1

Ver: 01/16/2019

November 2019

Operation, Maintenance & Monitoring Checklist

Groundwater Treatment System
CHEM-TROL Site
Town of Hamburg, New York

This summary inspection checklist is to be completed during each site inspection. Note all items, which require repair or maintenance. Use the last page to note any additional comments or unusual events.

General

Service by: Tamara M. Raby Weather/Temperature: 50° F, partly cloudy, slight breeze

Date: 11/26/19 Arrival Time: 13:00 Departure Time: 14:30

Reason for Service: Inspect system

Inspection Items:	OK:	Comments:
Site Appearance/Condition	X	See comments section.
Building Exterior		
Overhead Door	X	Wood lintel decaying, header exposed.
Siding	X	Metal trim missing from lintel
Roof and Discharge Pipe	X	
Building Interior		
Indication of Spills or Leaks		Condensation on the floor
Building Heater	X	Breaker turned on.
Phone System	X	Disconnected
Exhaust Fan	X	Operable
Fire Extinguisher	X	
First Aid & Eye Wash	X	

Groundwater Treatment System

Air Stripper	**X**	Ratchet straps are used to keep the trays together. Several of the clips for the trays are rusted/broken.
Iron Removal Filter	**X**	Tank in-line but filter media removed; not required.
Flow Meters	**X**	See Notes.
Gauges	**X**	
Stripper Blower	**X**	
Indication of Alarm	**X**	

Groundwater Treatment Wells

EW-1 Pump	**X**	
EW-1 Transducer	**X**	
EW-1 Flow Meter	**X**	
EW-2 Pump	**X**	
EW-2 Transducer	**X**	
EW- 2 Flow Meter	**X**	
EW-3 Pump	**X**	
EW-3 Transducer	**X**	
EW-3 Flow Meter	**X**	

Effluent Discharge

Outfall	**X**	
Cleanout	**X**	

Instrumentation/Readings:

EW-1

Pumping Rate	0 GPM (see Notes section)
Water Level Above Transducer	228 Inches
Flow Meter Reading	8,444,686 Gallons

EW-2 (Out of Commission- Scheduled to be Replaced)

Pumping Rate	0 GPM (see Notes section)
Water Level Above Transducer	174 Inches
Flow Meter Reading	28,528,520 Gallons

EW-3

Pumping Rate	0 GPM (see Notes section)
Water Level Above Transducer	128 Inches
Flow Meter Reading	15,696,380 Gallons

Air Stripper

Stripper Blower Pressure	14 Inches H2O

Effluent Flow

Total System Meter Reading	69,687,524 Gallons

Influent/Effluent Sampling

AQUEOUS:
Monthly monitoring samples of aqueous phase system influent and effluent were collected and submitted for the following analyses:

- VOCs by EPA Method 624 (CFR136 624)
- Iron by MCAWW 200.7
- TSS by MCAWW SM18-20 2540 D
- pH by MCAWW SM18-20 4500-H+B

pH measurements must be made in the field:

Influent pH 7 (field test strip)
Effluent pH 7 (field test strip)

Notes/Explanations
(Please include any additional information on those items that require attention as indicated above.)

Collected November 2019 monthly influent and effluent samples on November 26, 2019; hand-delivered iced samples in a secure cooler under chain of custody to TestAmerica, Amherst, NY on November 26, 2019.

Total system flow on system totalizer flow meter timed at 6.5 gpm. During visit, individually closed EW-1, EW-2, and EW-3 influent valve to test flow by reading response on transducer elevation; noted rise in transducer elevation when valve was closed and drop when valve was opened confirming well was pumping.

The SVE building overhead door flashing has wind and header damage.

The AS building overhead door flashing needs replacement.

The most recent round of water levels (3Q2019) was collected September 19, 2019.

The most recent air stripper cleanout was performed August 20, 2019.

All wells were operational upon arrival and departure.

Table 1
November 26, 2019 Summary of Influent and Effluent Data

Chem-Trol Site
Town of Hamburg, New York

Parameters	Concentration				Mass Loading		
	Influent	Effluent	Discharge Limitations	Units	Effluent	Discharge Limitations	Units
Flow*	9,188	9,188	144,000	gpd	NA	NA	NA
pH	7.6	8.0	6.5 to 8.5	standard units	NA	NA	NA
Toluene	< 9.1	< 5.0	5	ug/L	< 0.0004	0.006	lbs/day
Chlorobenzene	< 9.5	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
cis-1,2-Dichloroethene	< 11	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
Benzene	< 12	< 5.0	5	ug/L	< 0.0004	0.006	lbs/day
1,1,1-Trichloroethane	< 7.7	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
Chloroethane	22	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
1,1-Dichloroethane	25	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
1,1-Dichloroethene	< 17	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
Trichloroethene	< 12	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
o-Chlorotoluene	1,800	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
Iron - Total	45,600	**8,450**	3,000	ug/L	0.65	3.61	lbs/day
TSS	39.6	**33.2**	20	mg/L	2.55		lbs/day

Notes:

*1) **Bold** typeface denotes exceedance of treatment requirements in the effluent sample.*

2) < indicates Not Detected at or above the laboratory reporting limit.

3) NA indicates Not Applicable.

4) "J" indicates an estimated concentration below the method detection limit.

5) E - Estimated Value, result above calibration curve

6) D - Dilution

7) Revision of monitoring parameters (inorganics and TSS) and discharge limitation (iron) approved by NYSDEC letter dated July 27, 2007.

** Average daily flow as measured October 4, 2019 through November 26, 2019.*

Table 2
November 26, 2019 Summary of Influent and Effluent Data

Chem-Trol Site
Town of Hamburg, New York

Instrumentation/Readings:	Current Report 11/26/2019	units	Prior Report 10/4/2019
EW-1			
Pumping Rate	0	GPM	0
Water Level Above Transducer	228	Inches	220
Flow Meter Reading	8,444,686	gallons	8,444,686
EW-2			
Pumping Rate	0	GPM	0
Water Level Above Transducer	174	Inches	162
Flow Meter Reading	28,528,520	gallons	28,501,469
EW-3			
Pumping Rate	0	GPM	0
Water Level Above Transducer	128	Inches	110
Flow Meter Reading	15,696,380	gallons	15,695,898
Air Stripper			
Stripper Blower Pressure	14.0	inches H_2O	12.5
Effluent Flow			
Total System Meter Reading	69,687,524	gallons	69,209,727
Average System Flow Since Prior Report	9,188	gpd	
	382.9	gph	
	6.4	gpm	
Influent o-Chlorotoluene concentration	1,800	ug/L	
Current month mass removal	3.3	kilograms	

Note: NA indicates Not Available.
NW - Not working
ug/L - micrograms per liter

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ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-163309-1
Client Project/Site: ChemTrol Site-Mon.GW
Sampling Event: ChemTrol Monthly Groundwater

For:
Waste Management
Tullytown Landfill
444 Oxford Valley Road
Morrisville, Pennsylvania 19067

Attn: Chad Moose

Katelyn Ferguson

Authorized for release by:
12/16/2019 1:07:07 PM
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Designee for

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Table of Contents

Definitions/Glossary

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-163309-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-163309-1

Comments
No additional comments.

Receipt
The samples were received on 11/26/2019 4:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

GC/MS VOA
Method 624.1: The following sample was diluted to bring the concentration of target analytes within the calibration range: Influent (480-163309-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The Total Iron results reported for the following sample do not concur with results previously reported for this site: Effluent (480-163309-1). Reanalysis was performed, and the result(s) confirmed.

Method 200.7 Rev 4.4: The Total Iron results reported for the following sample do not concur with results previously reported for this site: Influent (480-163309-2). This may be due to a large amount of sediment that is present in the sample bottle.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The results reported for the following samples do not concur with results previously reported for this site: Effluent (480-163309-1) and Influent (480-163309-2). Reanalysis was performed, and the result(s) confirmed.

Methods 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: Effluent (480-163309-1) and Influent (480-163309-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

Client Sample ID: Effluent — Lab Sample ID: 480-163309-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	8450		50.0		ug/L	1		200.7 Rev 4.4	Total Recoverable
Total Suspended Solids	33.2		4.0		mg/L	1		SM 2540D	Total/NA
pH	8.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	16.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: Influent — Lab Sample ID: 480-163309-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	25		12		ug/L	20		624.1	Total/NA
Chloroethane	22		17		ug/L	20		624.1	Total/NA
o-Chlorotoluene	1800		6.6		ug/L	20		624.1	Total/NA
Iron	45600		50.0		ug/L	1		200.7 Rev 4.4	Total Recoverable
Total Suspended Solids	39.6		4.0		mg/L	1		SM 2540D	Total/NA
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	15.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 480-163309-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

Client Sample ID: Effluent

Date Collected: 11/26/19 14:15
Date Received: 11/26/19 16:00

Lab Sample ID: 480-163309-1

Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			11/29/19 17:50	1
1,1-Dichloroethane	ND		5.0		ug/L			11/29/19 17:50	1
1,1-Dichloroethene	ND		5.0		ug/L			11/29/19 17:50	1
Benzene	ND		5.0		ug/L			11/29/19 17:50	1
Chlorobenzene	ND		5.0		ug/L			11/29/19 17:50	1
Chloroethane	ND		5.0		ug/L			11/29/19 17:50	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			11/29/19 17:50	1
Toluene	ND		5.0		ug/L			11/29/19 17:50	1
Trichloroethene	ND		5.0		ug/L			11/29/19 17:50	1
o-Chlorotoluene	ND		5.0		ug/L			11/29/19 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*68 - 130*		*11/29/19 17:50*	*1*
4-Bromofluorobenzene (Surr)	*95*		*76 - 123*		*11/29/19 17:50*	*1*
Toluene-d8 (Surr)	*90*		*77 - 120*		*11/29/19 17:50*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**8450**		50.0		ug/L		11/29/19 07:18	12/03/19 15:26	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**33.2**		4.0		mg/L			11/29/19 13:53	1
pH	**8.0**	**HF**	0.1		SU			12/12/19 16:57	1
Temperature	**16.0**	**HF**	0.001		Degrees C			12/12/19 16:57	1

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

Client Sample ID: Influent

Date Collected: 11/26/19 14:30
Date Received: 11/26/19 16:00

Lab Sample ID: 480-163309-2

Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		7.7		ug/L			11/29/19 18:14	20
1,1-Dichloroethane	**25**		12		ug/L			11/29/19 18:14	20
1,1-Dichloroethene	ND		17		ug/L			11/29/19 18:14	20
Benzene	ND		12		ug/L			11/29/19 18:14	20
Chlorobenzene	ND		9.5		ug/L			11/29/19 18:14	20
Chloroethane	**22**		17		ug/L			11/29/19 18:14	20
cis-1,2-Dichloroethene	ND		11		ug/L			11/29/19 18:14	20
Toluene	ND		9.1		ug/L			11/29/19 18:14	20
Trichloroethene	ND		12		ug/L			11/29/19 18:14	20
o-Chlorotoluene	**1800**		6.6		ug/L			11/29/19 18:14	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*68 - 130*		*11/29/19 18:14*	*20*
4-Bromofluorobenzene (Surr)	*99*		*76 - 123*		*11/29/19 18:14*	*20*
Toluene-d8 (Surr)	*94*		*77 - 120*		*11/29/19 18:14*	*20*

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**45600**		50.0		ug/L		12/10/19 08:34	12/10/19 16:30	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**39.6**		4.0		mg/L			11/29/19 13:59	1
pH	**7.6**	**HF**	0.1		SU			12/12/19 17:00	1
Temperature	**15.6**	**HF**	0.001		Degrees C			12/12/19 17:00	1

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

Client Sample ID: Trip Blank
Date Collected: 11/26/19 00:00
Date Received: 11/26/19 16:00

Lab Sample ID: 480-163309-3
Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			11/29/19 18:38	1
1,1-Dichloroethane	ND		5.0		ug/L			11/29/19 18:38	1
1,1-Dichloroethene	ND		5.0		ug/L			11/29/19 18:38	1
Benzene	ND		5.0		ug/L			11/29/19 18:38	1
Chlorobenzene	ND		5.0		ug/L			11/29/19 18:38	1
Chloroethane	ND		5.0		ug/L			11/29/19 18:38	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			11/29/19 18:38	1
Toluene	ND		5.0		ug/L			11/29/19 18:38	1
Trichloroethene	ND		5.0		ug/L			11/29/19 18:38	1
o-Chlorotoluene	ND		5.0		ug/L			11/29/19 18:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*68 - 130*		*11/29/19 18:38*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 123*		*11/29/19 18:38*	*1*
Toluene-d8 (Surr)	*96*		*77 - 120*		*11/29/19 18:38*	*1*

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-507311/7
Matrix: Water
Analysis Batch: 507311

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			11/29/19 13:02	1
1,1-Dichloroethane	ND		5.0		ug/L			11/29/19 13:02	1
1,1-Dichloroethene	ND		5.0		ug/L			11/29/19 13:02	1
Benzene	ND		5.0		ug/L			11/29/19 13:02	1
Chlorobenzene	ND		5.0		ug/L			11/29/19 13:02	1
Chloroethane	ND		5.0		ug/L			11/29/19 13:02	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			11/29/19 13:02	1
Toluene	ND		5.0		ug/L			11/29/19 13:02	1
Trichloroethene	ND		5.0		ug/L			11/29/19 13:02	1
o-Chlorotoluene	ND		5.0		ug/L			11/29/19 13:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*68 - 130*		*11/29/19 13:02*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 123*		*11/29/19 13:02*	*1*
Toluene-d8 (Surr)	*97*		*77 - 120*		*11/29/19 13:02*	*1*

Lab Sample ID: LCS 480-507311/5
Matrix: Water
Analysis Batch: 507311

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	20.6		ug/L		103	52 - 162
1,1-Dichloroethane	20.0	19.6		ug/L		98	59 - 155
1,1-Dichloroethene	20.0	20.0		ug/L		100	1 - 234
Benzene	20.0	19.4		ug/L		97	37 - 151
Chlorobenzene	20.0	18.8		ug/L		94	37 - 160
Chloroethane	20.0	20.0		ug/L		100	14 - 230
Toluene	20.0	18.5		ug/L		92	47 - 150
Trichloroethene	20.0	19.3		ug/L		96	71 - 157

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*68 - 130*
4-Bromofluorobenzene (Surr)	*100*		*76 - 123*
Toluene-d8 (Surr)	*96*		*77 - 120*

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 480-506994/1-A
Matrix: Water
Analysis Batch: 507973

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 506994

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		50.0		ug/L		11/29/19 07:18	12/03/19 14:38	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-506994/2-A
Matrix: Water
Analysis Batch: 507973

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 506994

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	10000	10610		ug/L		106	85 - 115

Lab Sample ID: MB 480-508946/1-A
Matrix: Water
Analysis Batch: 509268

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 508946

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		50.0		ug/L		12/10/19 08:34	12/10/19 15:39	1

Lab Sample ID: LCS 480-508946/2-A
Matrix: Water
Analysis Batch: 509268

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 508946

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	10000	9701		ug/L		97	85 - 115

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 480-507371/1
Matrix: Water
Analysis Batch: 507371

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0		mg/L			11/29/19 13:53	1

Lab Sample ID: LCS 480-507371/2
Matrix: Water
Analysis Batch: 507371

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	260	255.2		mg/L		98	88 - 110

Lab Sample ID: 480-163309-1 DU
Matrix: Water
Analysis Batch: 507371

Client Sample ID: Effluent
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	33.2		34.40		mg/L		4	10

Lab Sample ID: MB 480-507378/1
Matrix: Water
Analysis Batch: 507378

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0		mg/L			11/29/19 13:59	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 480-507378/2
Matrix: Water
Analysis Batch: 507378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			240	240.0		mg/L		100	88 - 110		

Lab Sample ID: 480-163309-2 DU
Matrix: Water
Analysis Batch: 507378

Client Sample ID: Influent
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	39.6			37.60		mg/L				5	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 480-509625/23
Matrix: Water
Analysis Batch: 509625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.0		SU		101	99 - 101		

QC Association Summary

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

GC/MS VOA

Analysis Batch: 507311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163309-1	Effluent	Total/NA	Water	624.1	
480-163309-2	Influent	Total/NA	Water	624.1	
480-163309-3	Trip Blank	Total/NA	Water	624.1	
MB 480-507311/7	Method Blank	Total/NA	Water	624.1	
LCS 480-507311/5	Lab Control Sample	Total/NA	Water	624.1	

Metals

Prep Batch: 506994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163309-1	Effluent	Total Recoverable	Water	200.7	
MB 480-506994/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 480-506994/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 507973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163309-1	Effluent	Total Recoverable	Water	200.7 Rev 4.4	506994
MB 480-506994/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	506994
LCS 480-506994/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	506994

Prep Batch: 508946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163309-2	Influent	Total Recoverable	Water	200.7	
MB 480-508946/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 480-508946/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 509268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163309-2	Influent	Total Recoverable	Water	200.7 Rev 4.4	508946
MB 480-508946/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	508946
LCS 480-508946/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	508946

General Chemistry

Analysis Batch: 507371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163309-1	Effluent	Total/NA	Water	SM 2540D	
MB 480-507371/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 480-507371/2	Lab Control Sample	Total/NA	Water	SM 2540D	
480-163309-1 DU	Effluent	Total/NA	Water	SM 2540D	

Analysis Batch: 507378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163309-2	Influent	Total/NA	Water	SM 2540D	
MB 480-507378/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 480-507378/2	Lab Control Sample	Total/NA	Water	SM 2540D	
480-163309-2 DU	Influent	Total/NA	Water	SM 2540D	

Analysis Batch: 509625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163309-1	Effluent	Total/NA	Water	SM 4500 H+ B	
480-163309-2	Influent	Total/NA	Water	SM 4500 H+ B	

General Chemistry (Continued)

Analysis Batch: 509625 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-509625/23	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

Client Sample ID: Effluent

Lab Sample ID: 480-163309-1

Date Collected: 11/26/19 14:15
Matrix: Water
Date Received: 11/26/19 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	507311	11/29/19 17:50	S1V	TAL BUF
Total Recoverable	Prep	200.7			506994	11/29/19 07:18	EMB	TAL BUF
Total Recoverable	Analysis	200.7 Rev 4.4		1	507973	12/03/19 15:26	LMH	TAL BUF
Total/NA	Analysis	SM 2540D		1	507371	11/29/19 13:53	CSS	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	509625	12/12/19 16:57	NLA	TAL BUF

Client Sample ID: Influent

Lab Sample ID: 480-163309-2

Date Collected: 11/26/19 14:30
Matrix: Water
Date Received: 11/26/19 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		20	507311	11/29/19 18:14	S1V	TAL BUF
Total Recoverable	Prep	200.7			508946	12/10/19 08:34	EMB	TAL BUF
Total Recoverable	Analysis	200.7 Rev 4.4		1	509268	12/10/19 16:30	LMH	TAL BUF
Total/NA	Analysis	SM 2540D		1	507378	11/29/19 13:59	CSS	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	509625	12/12/19 17:00	NLA	TAL BUF

Client Sample ID: Trip Blank

Lab Sample ID: 480-163309-3

Date Collected: 11/26/19 00:00
Matrix: Water
Date Received: 11/26/19 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	507311	11/29/19 18:38	S1V	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature

Method Summary

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
200.7 Rev 4.4	Metals (ICP)	EPA	TAL BUF
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF
200.7	Preparation, Total Recoverable Metals	EPA	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Waste Management
Project/Site: ChemTrol Site-Mon.GW

Job ID: 480-163309-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-163309-1	Effluent	Water	11/26/19 14:15	11/26/19 16:00	
480-163309-2	Influent	Water	11/26/19 14:30	11/26/19 16:00	
480-163309-3	Trip Blank	Water	11/26/19 00:00	11/26/19 16:00	

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: TAMARA RABY	Lab PM: Giglia, Denise L	Carrier Tracking No(s):	COC No: 480-138388-28522.1
Client Contact: Mr. Dino Zack	Phone: 716 870 3446	E-Mail: denise.giglia@testamericainc.com		Page: Page 1 of 1
Company: AECOM				Job #:
Address: 257 West Genesee Street Suite 400	Due Date Requested:			
City: Buffalo	TAT Requested (days): Standard			
State, Zip: NY, 14202-2657				
Phone: 215-269-2114(Tel) 215-699-8315(Fax)	PO #: 5070003206			
Email: dino.zack@aecom.com	WO #:			
Project Name: ChemTrol Site/NY22 Event Desc: ChemTrol Monthly Groundwat	Project #: 48002447			
Site: New York	SSOW#:			

Analysis Requested

480-163309 Chain of Custody

Preservation Codes:
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)
J - DI Water
K - EDTA
L - EDA
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	200.7 - Iron	624.1_PREC - 624	2540D - Total Suspended Solids	SM4500_H+ - pH	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	A	N	N		
Effluent	11/26/19	1413	G	Water								Please HOLD - WAIT FOR DIRECTION FROM JIM KACZOR (716) 866-0522
Influent	11/26/19	1430	G	Water								
Trip Blank	11/26/19	—	G	Water								

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Tamara Raby	11/26/19 1600			11/26/19 1600	TMS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			Sara Markuart	11-26-19 1602	TAB/EF
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.6 #1R

Ver: 01/16/2019

December 2019

Operation, Maintenance & Monitoring Checklist

Groundwater Treatment System
CHEM-TROL Site
Town of Hamburg, New York

This summary inspection checklist is to be completed during each site inspection. Note all items, which require repair or maintenance. Use the last page to note any additional comments or unusual events.

General

Service by: Robert J. Murphy Weather/Temperature: 36° F, cloudy, light rain
Date: 12/6/19 Arrival Time: 9:00 Departure Time: 10:30

Reason for Service: Inspect system

Inspection Items:	OK:	Comments:
Site Appearance/Condition	X	See comments section.
Building Exterior		
Overhead Door	X	Wood lintel decaying, header exposed.
Siding	X	Metal trim missing from lintel
Roof and Discharge Pipe	X	
Building Interior		
Indication of Spills or Leaks		Condensation on the floor
Building Heater	X	Breaker turned on. Was off on arrival.
Phone System	X	Disconnected
Exhaust Fan		Could not get fan to work.
Fire Extinguisher	X	
First Aid & Eye Wash	X	

Groundwater Treatment System

Air Stripper	**X**	Ratchet straps are used to keep the trays together. Several of the clips for the trays are rusted/broken.
Iron Removal Filter	**X**	Tank in-line but filter media removed; not required.
Flow Meters	**X**	See Notes.
Gauges	**X**	
Stripper Blower	**X**	
Indication of Alarm	**X**	

Groundwater Treatment Wells

EW-1 Pump	**X**	
EW-1 Transducer	**X**	
EW-1 Flow Meter	**X**	
EW-2 Pump	**X**	
EW-2 Transducer	**X**	
EW- 2 Flow Meter	**X**	
EW-3 Pump	**X**	
EW-3 Transducer	**X**	
EW-3 Flow Meter	**X**	

Effluent Discharge

Outfall	**X**	
Cleanout	**X**	

Instrumentation/Readings:

EW-1

Pumping Rate	0 GPM (see Notes section)
Water Level Above Transducer	228 Inches
Flow Meter Reading	8,444,686 Gallons

EW-2

Pumping Rate	0 GPM (see Notes section)
Water Level Above Transducer	187 Inches
Flow Meter Reading	28,528,520 Gallons

EW-3

Pumping Rate	0 GPM (see Notes section)
Water Level Above Transducer	150 Inches
Flow Meter Reading	15,696,380 Gallons

Air Stripper

Stripper Blower Pressure	14.0 Inches H2O

Effluent Flow

Total System Meter Reading	69,784,885 Gallons

Influent/Effluent Sampling

AQUEOUS:
Monthly monitoring samples of aqueous phase system influent and effluent were collected and submitted for the following analyses:

- VOCs by EPA Method 624 (CFR136 624)
- Iron by MCAWW 200.7
- TSS by MCAWW SM18-20 2540 D
- pH by MCAWW SM18-20 4500-H+B

pH measurements must be made in the field:

Influent pH 7 (field test strip)
Effluent pH 7 (field test strip)

Notes/Explanations
(Please include any additional information on those items that require attention as indicated above.)

Collected December 2019 monthly influent and effluent samples on December 6, 2019; hand-delivered iced samples in a secure cooler under chain of custody to TestAmerica, Amherst, NY on December 6, 2019.

Total system flow on system totalizer flow meter timed at 7.5 gpm. During visit, individually closed EW-1, EW-2, and EW-3 influent valve to test flow by reading response on transducer elevation; noted rise in transducer elevation when valve was closed and drop when valve was opened confirming well was pumping.

The SVE building overhead door flashing has wind and header damage.

The AS building overhead door flashing needs replacement.

The most recent round of water levels (3Q2019) was collected September 19, 2019.

The most recent acid wash was performed December 5, 2019.

All wells were operational upon arrival and departure.

Table 1
December 6, 2019 Summary of Influent and Effluent Data

Chem-Trol Site
Town of Hamburg, New York

Parameters	Concentration				Mass Loading		
	Influent	Effluent	Discharge Limitations	Units	Effluent	Discharge Limitations	Units
Flow*	9,736	9,736	144,000	gpd	NA	NA	NA
pH	7.6	8.1	6.5 to 8.5	standard units	NA	NA	NA
Toluene	< 9.1	< 5.0	5	ug/L	< 0.0004	0.006	lbs/day
Chlorobenzene	< 9.5	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
cis-1,2-Dichloroethene	< 11	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
Benzene	< 12	< 5.0	5	ug/L	< 0.0004	0.006	lbs/day
1,1,1-Trichloroethane	< 7.7	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
Chloroethane	20	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
1,1-Dichloroethane	< 12	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
1,1-Dichloroethene	< 17	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
Trichloroethene	< 12	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
o-Chlorotoluene	1,200	< 5.0	10	ug/L	< 0.0004	0.012	lbs/day
Iron - Total	756	616	3,000	ug/L	0.05	3.61	lbs/day
TSS	11.6	10	20	mg/L	0.81		lbs/day

Notes:

*1) **Bold** typeface denotes exceedance of treatment requirements in the effluent sample.*

2) < indicates Not Detected at or above the laboratory reporting limit.

3) NA indicates Not Applicable.

4) "J" indicates an estimated concentration below the method detection limit.

5) E - Estimated Value, result above calibration curve

6) D - Dilution

7) Revision of monitoring parameters (inorganics and TSS) and discharge limitation (iron) approved by NYSDEC letter dated July 27, 2007.

** Average daily flow as measured November 26, 2019 through December 6, 2019.*

Table 2
December 6, 2019 Summary of Influent and Effluent Data

Chem-Trol Site
Town of Hamburg, New York

Instrumentation/Readings:	Current Report 12/6/2019	units	Prior Report 11/26/2019
EW-1			
Pumping Rate	0	GPM	0
Water Level Above Transducer	228	Inches	228
Flow Meter Reading	8,444,686	gallons	8,444,686
EW-2			
Pumping Rate	0	GPM	0
Water Level Above Transducer	184	Inches	174
Flow Meter Reading	28,528,520	gallons	28,528,520
EW-3			
Pumping Rate	0	GPM	0
Water Level Above Transducer	150	Inches	128
Flow Meter Reading	15,696,380	gallons	15,696,380
Air Stripper			
Stripper Blower Pressure	14.0	inches H_2O	14.0
Effluent Flow			
Total System Meter Reading	69,784,885	gallons	69,687,524
Average System Flow Since Prior Report	9,736	gpd	
	405.7	gph	
	6.8	gpm	
Influent o-Chlorotoluene concentration	1,800	ug/L	
Current month mass removal	0.7	kilograms	

Note: NA indicates Not Available.
NW - Not working
ug/L - micrograms per liter

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ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-163763-1
Client Project/Site: ChemTrol Site: Monthly GW
Sampling Event: ChemTrol Monthly Groundwater

For:
Waste Management
Tullytown Landfill
444 Oxford Valley Road
Morrisville, Pennsylvania 19067

Attn: Chad Moose

Katelyn Ferguson

Authorized for release by:
12/16/2019 1:47:17 PM
Katelyn Ferguson, Project Management Assistant I
katelyn.ferguson@testamericainc.com

Designee for

Denise Giglia, Project Manager I
(716)691-2600
denise.giglia@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Waste Management
Job ID: 480-163763-1
Project/Site: ChemTrol Site: Monthly GW

Qualifiers

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-163763-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-163763-1

Comments
No additional comments.

Receipt
The samples were received on 12/6/2019 12:02 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

GC/MS VOA
Method 624.1: The following samples were diluted to bring the concentration of target analytes within the calibration range: Influent (480-163763-2), (480-163763-D-2 MS) and (480-163763-D-2 MSD). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Methods 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: Effluent (480-163763-1) and Influent (480-163763-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Waste Management
Project/Site: ChemTrol Site: Monthly GW

Job ID: 480-163763-1

Client Sample ID: Effluent — Lab Sample ID: 480-163763-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	616		50.0		ug/L	1		200.7 Rev 4.4	Total Recoverable
Total Suspended Solids	10		4.0		mg/L	1		SM 2540D	Total/NA
pH	8.1	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: Influent — Lab Sample ID: 480-163763-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroethane	20		17		ug/L	20		624.1	Total/NA
o-Chlorotoluene	1200		6.6		ug/L	20		624.1	Total/NA
Iron	756		50.0		ug/L	1		200.7 Rev 4.4	Total Recoverable
Total Suspended Solids	11.6		4.0		mg/L	1		SM 2540D	Total/NA
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 480-163763-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Waste Management
Project/Site: ChemTrol Site: Monthly GW

Job ID: 480-163763-1

Client Sample ID: Effluent

Date Collected: 12/06/19 09:30
Date Received: 12/06/19 12:02

Lab Sample ID: 480-163763-1

Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			12/09/19 14:16	1
1,1-Dichloroethane	ND		5.0		ug/L			12/09/19 14:16	1
1,1-Dichloroethene	ND		5.0		ug/L			12/09/19 14:16	1
Benzene	ND		5.0		ug/L			12/09/19 14:16	1
Chlorobenzene	ND		5.0		ug/L			12/09/19 14:16	1
Chloroethane	ND		5.0		ug/L			12/09/19 14:16	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			12/09/19 14:16	1
Toluene	ND		5.0		ug/L			12/09/19 14:16	1
Trichloroethene	ND		5.0		ug/L			12/09/19 14:16	1
o-Chlorotoluene	ND		5.0		ug/L			12/09/19 14:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*68 - 130*		*12/09/19 14:16*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 123*		*12/09/19 14:16*	*1*
Toluene-d8 (Surr)	*91*		*77 - 120*		*12/09/19 14:16*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**616**		50.0		ug/L		12/10/19 08:34	12/10/19 15:46	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**10**		4.0		mg/L			12/12/19 13:55	1
pH	**8.1**	**HF**	0.1		SU			12/13/19 13:47	1
Temperature	**19.6**	**HF**	0.001		Degrees C			12/13/19 13:47	1

Client: Waste Management
Project/Site: ChemTrol Site: Monthly GW

Job ID: 480-163763-1

Client Sample ID: Influent

Date Collected: 12/06/19 09:45
Date Received: 12/06/19 12:02

Lab Sample ID: 480-163763-2

Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		7.7		ug/L			12/09/19 14:39	20
1,1-Dichloroethane	ND		12		ug/L			12/09/19 14:39	20
1,1-Dichloroethene	ND		17		ug/L			12/09/19 14:39	20
Benzene	ND		12		ug/L			12/09/19 14:39	20
Chlorobenzene	ND		9.5		ug/L			12/09/19 14:39	20
Chloroethane	**20**		17		ug/L			12/09/19 14:39	20
cis-1,2-Dichloroethene	ND		11		ug/L			12/09/19 14:39	20
Toluene	ND		9.1		ug/L			12/09/19 14:39	20
Trichloroethene	ND		12		ug/L			12/09/19 14:39	20
o-Chlorotoluene	**1200**		6.6		ug/L			12/09/19 14:39	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*68 - 130*		*12/09/19 14:39*	*20*
4-Bromofluorobenzene (Surr)	*99*		*76 - 123*		*12/09/19 14:39*	*20*
Toluene-d8 (Surr)	*92*		*77 - 120*		*12/09/19 14:39*	*20*

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**756**		50.0		ug/L		12/10/19 08:34	12/10/19 16:15	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**11.6**		4.0		mg/L			12/12/19 13:55	1
pH	**7.6**	**HF**	0.1		SU			12/13/19 13:53	1
Temperature	**19.6**	**HF**	0.001		Degrees C			12/13/19 13:53	1

Client: Waste Management
Project/Site: ChemTrol Site: Monthly GW

Job ID: 480-163763-1

Client Sample ID: Trip Blank
Date Collected: 12/06/19 00:00
Date Received: 12/06/19 12:02

Lab Sample ID: 480-163763-3
Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			12/09/19 15:03	1
1,1-Dichloroethane	ND		5.0		ug/L			12/09/19 15:03	1
1,1-Dichloroethene	ND		5.0		ug/L			12/09/19 15:03	1
Benzene	ND		5.0		ug/L			12/09/19 15:03	1
Chlorobenzene	ND		5.0		ug/L			12/09/19 15:03	1
Chloroethane	ND		5.0		ug/L			12/09/19 15:03	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			12/09/19 15:03	1
Toluene	ND		5.0		ug/L			12/09/19 15:03	1
Trichloroethene	ND		5.0		ug/L			12/09/19 15:03	1
o-Chlorotoluene	ND		5.0		ug/L			12/09/19 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*68 - 130*		*12/09/19 15:03*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 123*		*12/09/19 15:03*	*1*
Toluene-d8 (Surr)	*92*		*77 - 120*		*12/09/19 15:03*	*1*

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-508742/7
Matrix: Water
Analysis Batch: 508742

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			12/09/19 11:42	1
1,1-Dichloroethane	ND		5.0		ug/L			12/09/19 11:42	1
1,1-Dichloroethene	ND		5.0		ug/L			12/09/19 11:42	1
Benzene	ND		5.0		ug/L			12/09/19 11:42	1
Chlorobenzene	ND		5.0		ug/L			12/09/19 11:42	1
Chloroethane	ND		5.0		ug/L			12/09/19 11:42	1
cis-1,2-Dichloroethene	ND		5.0		ug/L			12/09/19 11:42	1
Toluene	ND		5.0		ug/L			12/09/19 11:42	1
Trichloroethene	ND		5.0		ug/L			12/09/19 11:42	1
o-Chlorotoluene	ND		5.0		ug/L			12/09/19 11:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*68 - 130*		*12/09/19 11:42*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 123*		*12/09/19 11:42*	*1*
Toluene-d8 (Surr)	*93*		*77 - 120*		*12/09/19 11:42*	*1*

Lab Sample ID: LCS 480-508742/5
Matrix: Water
Analysis Batch: 508742

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	22.8		ug/L		114	52 - 162
1,1-Dichloroethane	20.0	22.2		ug/L		111	59 - 155
1,1-Dichloroethene	20.0	22.4		ug/L		112	1 - 234
Benzene	20.0	22.2		ug/L		111	37 - 151
Chlorobenzene	20.0	19.5		ug/L		98	37 - 160
Chloroethane	20.0	20.0		ug/L		100	14 - 230
Toluene	20.0	19.3		ug/L		97	47 - 150
Trichloroethene	20.0	22.1		ug/L		110	71 - 157

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*68 - 130*
4-Bromofluorobenzene (Surr)	*103*		*76 - 123*
Toluene-d8 (Surr)	*91*		*77 - 120*

Lab Sample ID: 480-163763-2 MS
Matrix: Water
Analysis Batch: 508742

Client Sample ID: Influent
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		400	503		ug/L		126	52 - 162
1,1-Dichloroethane	ND		400	487		ug/L		122	59 - 155
1,1-Dichloroethene	ND		400	506		ug/L		126	1 - 234
Benzene	ND		400	484		ug/L		121	37 - 151
Chlorobenzene	ND		400	403		ug/L		101	37 - 160
Chloroethane	20		400	484		ug/L		116	14 - 230
Toluene	ND		400	411		ug/L		103	47 - 150
Trichloroethene	ND		400	477		ug/L		119	71 - 157

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		68 - 130
4-Bromofluorobenzene (Surr)	100		76 - 123
Toluene-d8 (Surr)	92		77 - 120

Lab Sample ID: 480-163763-2 MSD — **Client Sample ID: Influent**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 508742

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		400	464		ug/L		116	52 - 162	8	15
1,1-Dichloroethane	ND		400	470		ug/L		117	59 - 155	4	15
1,1-Dichloroethene	ND		400	460		ug/L		115	1 - 234	9	15
Benzene	ND		400	454		ug/L		113	37 - 151	6	15
Chlorobenzene	ND		400	392		ug/L		98	37 - 160	3	15
Chloroethane	20		400	452		ug/L		108	14 - 230	7	15
Toluene	ND		400	396		ug/L		99	47 - 150	4	15
Trichloroethene	ND		400	469		ug/L		117	71 - 157	2	15

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		68 - 130
4-Bromofluorobenzene (Surr)	98		76 - 123
Toluene-d8 (Surr)	92		77 - 120

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 480-508946/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 509268 — **Prep Batch: 508946**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		50.0		ug/L		12/10/19 08:34	12/10/19 15:39	1

Lab Sample ID: LCS 480-508946/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 509268 — **Prep Batch: 508946**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	10000	9701		ug/L		97	85 - 115

Lab Sample ID: 480-163763-1 MS — **Client Sample ID: Effluent**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 509268 — **Prep Batch: 508946**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	616		10000	10400		ug/L		98	70 - 130

Lab Sample ID: 480-163763-1 MSD — **Client Sample ID: Effluent**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 509268 — **Prep Batch: 508946**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	616		10000	10170		ug/L		96	70 - 130	2	20

QC Sample Results

Client: Waste Management
Project/Site: ChemTrol Site: Monthly GW

Job ID: 480-163763-1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 480-509574/1
Matrix: Water
Analysis Batch: 509574

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0		mg/L			12/12/19 13:55	1

Lab Sample ID: LCS 480-509574/2
Matrix: Water
Analysis Batch: 509574

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			258	247.6		mg/L		96	88 - 110		

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 480-509831/1
Matrix: Water
Analysis Batch: 509831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.0		SU		100	99 - 101		

Lab Sample ID: LCS 480-509831/23
Matrix: Water
Analysis Batch: 509831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.0		SU		100	99 - 101		

QC Association Summary

Client: Waste Management
Project/Site: ChemTrol Site: Monthly GW

Job ID: 480-163763-1

GC/MS VOA

Analysis Batch: 508742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163763-1	Effluent	Total/NA	Water	624.1	
480-163763-2	Influent	Total/NA	Water	624.1	
480-163763-3	Trip Blank	Total/NA	Water	624.1	
MB 480-508742/7	Method Blank	Total/NA	Water	624.1	
LCS 480-508742/5	Lab Control Sample	Total/NA	Water	624.1	
480-163763-2 MS	Influent	Total/NA	Water	624.1	
480-163763-2 MSD	Influent	Total/NA	Water	624.1	

Metals

Prep Batch: 508946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163763-1	Effluent	Total Recoverable	Water	200.7	
480-163763-2	Influent	Total Recoverable	Water	200.7	
MB 480-508946/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 480-508946/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
480-163763-1 MS	Effluent	Total Recoverable	Water	200.7	
480-163763-1 MSD	Effluent	Total Recoverable	Water	200.7	

Analysis Batch: 509268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163763-1	Effluent	Total Recoverable	Water	200.7 Rev 4.4	508946
480-163763-2	Influent	Total Recoverable	Water	200.7 Rev 4.4	508946
MB 480-508946/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	508946
LCS 480-508946/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	508946
480-163763-1 MS	Effluent	Total Recoverable	Water	200.7 Rev 4.4	508946
480-163763-1 MSD	Effluent	Total Recoverable	Water	200.7 Rev 4.4	508946

General Chemistry

Analysis Batch: 509574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163763-1	Effluent	Total/NA	Water	SM 2540D	
480-163763-2	Influent	Total/NA	Water	SM 2540D	
MB 480-509574/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 480-509574/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 509831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-163763-1	Effluent	Total/NA	Water	SM 4500 H+ B	
480-163763-2	Influent	Total/NA	Water	SM 4500 H+ B	
LCS 480-509831/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 480-509831/23	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Waste Management
Project/Site: ChemTrol Site: Monthly GW

Job ID: 480-163763-1

Client Sample ID: Effluent

Lab Sample ID: 480-163763-1

Date Collected: 12/06/19 09:30
Matrix: Water
Date Received: 12/06/19 12:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	508742	12/09/19 14:16	S1V	TAL BUF
Total Recoverable	Prep	200.7			508946	12/10/19 08:34	EMB	TAL BUF
Total Recoverable	Analysis	200.7 Rev 4.4		1	509268	12/10/19 15:46	LMH	TAL BUF
Total/NA	Analysis	SM 2540D		1	509574	12/12/19 13:55	CSS	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	509831	12/13/19 13:47	AEF	TAL BUF

Client Sample ID: Influent

Lab Sample ID: 480-163763-2

Date Collected: 12/06/19 09:45
Matrix: Water
Date Received: 12/06/19 12:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		20	508742	12/09/19 14:39	S1V	TAL BUF
Total Recoverable	Prep	200.7			508946	12/10/19 08:34	EMB	TAL BUF
Total Recoverable	Analysis	200.7 Rev 4.4		1	509268	12/10/19 16:15	LMH	TAL BUF
Total/NA	Analysis	SM 2540D		1	509574	12/12/19 13:55	CSS	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	509831	12/13/19 13:53	AEF	TAL BUF

Client Sample ID: Trip Blank

Lab Sample ID: 480-163763-3

Date Collected: 12/06/19 00:00
Matrix: Water
Date Received: 12/06/19 12:02

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	508742	12/09/19 15:03	S1V	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Waste Management
Job ID: 480-163763-1
Project/Site: ChemTrol Site: Monthly GW

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature

Method Summary

Client: Waste Management
Project/Site: ChemTrol Site: Monthly GW

Job ID: 480-163763-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
200.7 Rev 4.4	Metals (ICP)	EPA	TAL BUF
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF
200.7	Preparation, Total Recoverable Metals	EPA	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Waste Management
Project/Site: ChemTrol Site: Monthly GW

Job ID: 480-163763-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-163763-1	Effluent	Water	12/06/19 09:30	12/06/19 12:02	
480-163763-2	Influent	Water	12/06/19 09:45	12/06/19 12:02	
480-163763-3	Trip Blank	Water	12/06/19 00:00	12/06/19 12:02	

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Rob Murray	Lab PM: Giglia, Denise L	COC No: 480-?5026-28522.1
Client Contact: Mr. Dino Zack	Phone: 716-923-1176	E-Mail: denise.giglia@testamericainc.com	
Company: AECOM			
Address: 257 West Genesee Street Suite 400	Due Date Requested:		
City: Buffalo	TAT Requested (days): STANDARD		
State, Zip: NY, 14202-2657			
Phone: 215-269-2114(Tel) 215-699-8315(Fax)	PO #: 5070003206		
Email: dino.zack@aecom.com	WO #:		
Project Name: ChemTrol Site/NY22 Event Desc: ChemTrol Monthly Groundwat	Project #: 48002447		
Site: New York	SSOW#:		

480-163763 Chain of Custody

Preservation Codes: A - HCL, B - NaOH, C - Zn..., D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA; M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	200.7 - Iron	624.1_PREC - 624	2540D - Total Suspended Solids	SM4500_H+ - pH	Total Number of containers	Special Instructions/Note:
				Preservation Code:			D	A	N	N		
Effluent	12/6/19	0930	G	Water	N	N	1	3	1	1		
Influent	12/6/19	0945	G	Water	N	N	1	3	1	1		
Trip Blank	12/6/19	—	G	Water	N	N		3				

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal *(A fee may be assessed if samples are retained longer than 1 month)*
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* ____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:		Method of Shipment: DROP OFF	
Relinquished by: Robert J. Murray	Date/Time: 12/6/19 1202	Company: AECOM	Received by: [signature]		Date/Time: 12/06/19 1202	Company: TA
Relinquished by:	Date/Time:	Company:	Received by:		Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:		Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 3.4 #1			

Ver: 01/16/2019