

June 17, 2016

Brenna McDonald
Missouri Geological Survey
111 Fairgrounds Road
Rolla, MO 65401
TEL: (573) 368-2163
FAX:



RE: Bridgeton Landfill

WorkOrder: 16060536

Dear Brenna McDonald:

TEKLAB, INC received 3 samples on 6/8/2016 2:10:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Elizabeth A. Hurley
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

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Client: Missouri Geological Survey

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Abbr Definition

- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
- DNI Did not ignite
- DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|--|---|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| E - Value above quantitation range | H - Holding times exceeded |
| I - Associated internal standard was outside method criteria | J - Analyte detected below quantitation limits |
| M - Manual Integration used to determine area response | ND - Not Detected at the Reporting Limit |
| R - RPD outside accepted recovery limits | S - Spike Recovery outside recovery limits |
| T - TIC(Tentatively identified compound) | X - Value exceeds Maximum Contaminant Level |



Case Narrative

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Cooler Receipt Temp: 1.22 °C

Locations and Accreditations

	<u>Collinsville</u>	<u>Springfield</u>	<u>Kansas City</u>	<u>Collinsville Air</u>
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	3920 Pintail Dr Springfield, IL 62711-9415	8421 Nieman Road Lenexa, KS 66214	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	dthompson@teklabinc.com	EHurley@teklabinc.com

<u>State</u>	<u>Dept</u>	<u>Cert #</u>	<u>NELAP</u>	<u>Exp Date</u>	<u>Lab</u>
Illinois	IEPA	100226	NELAP	1/31/2017	Collinsville
Kansas	KDHE	E-10374	NELAP	7/31/2016	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2017	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2017	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2016	Collinsville
Arkansas	ADEQ	88-0966		3/14/2017	Collinsville
Illinois	IDPH	17584		5/31/2017	Collinsville
Kentucky	KDEP	98006		12/31/2016	Collinsville
Kentucky	UST	0073		1/31/2017	Collinsville
Missouri	MDNR	00930		5/31/2017	Collinsville
Missouri	MDNR	930		1/31/2017	Collinsville
Oklahoma	ODEQ	9978		8/31/2016	Collinsville



Laboratory Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Lab ID: 16060536-001

Client Sample ID: PZ-202-SS

Matrix: GROUNDWATER

Collection Date: 06/06/2016 9:07

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 350.1 R2.0 (DISTILLED) TOTAL								
Nitrogen, Ammonia (as N)	NELAP	0.10		0.46	mg/L	1	06/10/2016 14:05	119702
EPA 600 353.2 R2.0 (TOTAL)								
Nitrogen, Nitrate-Nitrite (as N)	NELAP	0.050	J	0.012	mg/L	1	06/09/2016 10:15	R219711
EPA 600 365.4 (TOTAL)								
Phosphorus, Total (as P)	NELAP	0.050		0.229	mg/L	1	06/15/2016 9:28	119788
EPA 600 410.4								
Chemical Oxygen Demand	NELAP	50		757	mg/L	1	06/09/2016 17:03	R219749
STANDARD METHODS 2540 C (TOTAL)								
Total Dissolved Solids	NELAP	50		4860	mg/L	2.5	06/13/2016 21:06	R219920
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10	S	< 10	mg/L	1	06/16/2016 18:37	R220113
<i>MS and/or MSD did not recover within control limits due to matrix interference.</i>								
SW-846 9060								
Total Organic Carbon (TOC)	NELAP	10.0		195	mg/L	10	06/09/2016 18:24	R219750
<i>Results of MS and MSD have less certainty because values exceed upper quantitation limits.</i>								
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.24	mg/L	1	06/13/2016 15:13	R219862
SW-846 9251 (TOTAL)								
Chloride	NELAP	500		1410	mg/L	100	06/15/2016 20:55	R220049
STANDARD METHODS 2340 B, HARDNESS (TOTAL)								
Hardness, as (CaCO3)	NELAP	1.00		2730	mg/L	1	06/13/2016 0:00	R219837
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	06/13/2016 9:44	119722
Arsenic	NELAP	0.0250		0.0710	mg/L	1	06/13/2016 9:44	119722
Barium	NELAP	0.0025		2.57	mg/L	1	06/13/2016 9:44	119722
Beryllium	NELAP	0.0005		< 0.0005	mg/L	1	06/13/2016 9:44	119722
Boron	NELAP	0.0200	J	0.019	mg/L	1	06/13/2016 9:44	119722
Cadmium	NELAP	0.0020		< 0.0020	mg/L	1	06/13/2016 9:44	119722
Chromium	NELAP	0.0050	J	0.0031	mg/L	1	06/13/2016 9:44	119722
Cobalt	NELAP	0.0050		0.0221	mg/L	1	06/13/2016 9:44	119722
Copper	NELAP	0.0050		< 0.0050	mg/L	1	06/13/2016 9:44	119722
Iron	NELAP	0.0200	S	86.8	mg/L	1	06/13/2016 9:44	119722
Lead	NELAP	0.0150		< 0.0150	mg/L	1	06/13/2016 9:44	119722
Magnesium	NELAP	0.0500	S	282	mg/L	1	06/13/2016 9:44	119722
Manganese	NELAP	0.0030		2.41	mg/L	1	06/13/2016 9:44	119722
Nickel	NELAP	0.0050		0.0646	mg/L	1	06/13/2016 9:44	119722
Selenium	NELAP	0.0400		< 0.0400	mg/L	1	06/13/2016 9:44	119722
Silver	NELAP	0.0050		< 0.0050	mg/L	1	06/13/2016 9:44	119722
Sodium	NELAP	0.0500	S	157	mg/L	1	06/13/2016 9:44	119722
Thallium	NELAP	0.0500		< 0.0500	mg/L	1	06/13/2016 9:44	119722
Vanadium	NELAP	0.0100		0.0104	mg/L	1	06/13/2016 9:44	119722
Zinc	NELAP	0.0100	BJ	0.0073	mg/L	1	06/13/2016 9:44	119722
<i>MS QC limits for Ca, Fe, Mg, and Na are not applicable due to high sample/spike ratio.</i>								
<i>Contamination present in MBLK for Zn. Sample results below the RL are reportable per 2009 TNI Standard (Volume1, Module 4, section 1.7.4.1).</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	06/13/2016 13:45	119724



Laboratory Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Lab ID: 16060536-001

Client Sample ID: PZ-202-SS

Matrix: GROUNDWATER

Collection Date: 06/06/2016 9:07

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
2-Butanone	NELAP	25.0		ND	µg/L	1	06/13/2016 13:38	119762
2-Hexanone	NELAP	25.0		ND	µg/L	1	06/13/2016 13:38	119762
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	06/13/2016 13:38	119762
Acetone	NELAP	25.0	J	6.0	µg/L	1	06/13/2016 13:38	119762
Acrylonitrile	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Benzene	NELAP	2.0		198	µg/L	1	06/13/2016 13:38	119762
Bromochloromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Bromoform	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Bromomethane	NELAP	10.0		ND	µg/L	1	06/13/2016 13:38	119762
Carbon disulfide	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Chlorobenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Chloroethane	NELAP	10.0		ND	µg/L	1	06/13/2016 13:38	119762
Chloroform	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Chloromethane	NELAP	10.0		ND	µg/L	1	06/13/2016 13:38	119762
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Dibromomethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Ethylbenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Iodomethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Methylene chloride	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Styrene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Toluene	NELAP	5.0		5.0	µg/L	1	06/13/2016 13:38	119762
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	06/13/2016 13:38	119762
Trichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762
Vinyl acetate	NELAP	10.0		ND	µg/L	1	06/13/2016 13:38	119762
Vinyl chloride	NELAP	2.0		ND	µg/L	1	06/13/2016 13:38	119762
Xylenes, Total	NELAP	5.0		ND	µg/L	1	06/13/2016 13:38	119762



Laboratory Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Lab ID: 16060536-001

Client Sample ID: PZ-202-SS

Matrix: GROUNDWATER

Collection Date: 06/06/2016 9:07

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Surr: 1,2-Dichloroethane-d4		74.7-129		102.8	%REC	1	06/13/2016 13:38	119762
Surr: 4-Bromofluorobenzene		86-119		97.6	%REC	1	06/13/2016 13:38	119762
Surr: Dibromofluoromethane		81.7-123		96.1	%REC	1	06/13/2016 13:38	119762
Surr: Toluene-d8		84.3-114		96.8	%REC	1	06/13/2016 13:38	119762



Laboratory Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Lab ID: 16060536-002

Client Sample ID: PZ-206-SS

Matrix: GROUNDWATER

Collection Date: 06/08/2016 9:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 350.1 R2.0 (DISTILLED) TOTAL								
Nitrogen, Ammonia (as N)	NELAP	0.10		0.26	mg/L	1	06/10/2016 16:45	119702
EPA 600 353.2 R2.0 (TOTAL)								
Nitrogen, Nitrate-Nitrite (as N)	NELAP	0.050	J	0.010	mg/L	1	06/09/2016 10:12	R219711
EPA 600 365.4 (TOTAL)								
Phosphorus, Total (as P)	NELAP	0.050		0.162	mg/L	1	06/15/2016 8:58	119826
EPA 600 410.4								
Chemical Oxygen Demand	NELAP	50		78	mg/L	1	06/09/2016 17:04	R219749
STANDARD METHODS 2540 C (TOTAL)								
Total Dissolved Solids	NELAP	20		892	mg/L	1	06/10/2016 21:12	R219849
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		48	mg/L	2	06/15/2016 5:06	R219929
SW-846 9060								
Total Organic Carbon (TOC)	NELAP	10.0		25.4	mg/L	10	06/09/2016 18:49	R219750
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		1.67	mg/L	1	06/13/2016 15:14	R219862
SW-846 9251 (TOTAL)								
Chloride	NELAP	25		144	mg/L	5	06/15/2016 21:22	R220049
STANDARD METHODS 2340 B, HARDNESS (TOTAL)								
Hardness, as (CaCO3)	NELAP	1.00		744	mg/L	1	06/13/2016 0:00	R219837
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Antimony	NELAP	0.0500		< 0.0500	mg/L	1	06/13/2016 10:07	119722
Arsenic	NELAP	0.0250		< 0.0250	mg/L	1	06/13/2016 10:07	119722
Barium	NELAP	0.0025		0.0874	mg/L	1	06/13/2016 10:07	119722
Beryllium	NELAP	0.0005		< 0.0005	mg/L	1	06/13/2016 10:07	119722
Boron	NELAP	0.0200		0.170	mg/L	1	06/13/2016 10:07	119722
Cadmium	NELAP	0.0020		< 0.0020	mg/L	1	06/13/2016 10:07	119722
Chromium	NELAP	0.0050		< 0.0050	mg/L	1	06/13/2016 10:07	119722
Cobalt	NELAP	0.0050		< 0.0050	mg/L	1	06/13/2016 10:07	119722
Copper	NELAP	0.0050		< 0.0050	mg/L	1	06/13/2016 10:07	119722
Iron	NELAP	0.0200		3.76	mg/L	1	06/13/2016 10:07	119722
Lead	NELAP	0.0150		< 0.0150	mg/L	1	06/13/2016 10:07	119722
Magnesium	NELAP	0.0500		91.5	mg/L	1	06/13/2016 10:07	119722
Manganese	NELAP	0.0030		0.0753	mg/L	1	06/13/2016 10:07	119722
Nickel	NELAP	0.0050		0.0077	mg/L	1	06/13/2016 10:07	119722
Selenium	NELAP	0.0400		< 0.0400	mg/L	1	06/13/2016 10:07	119722
Silver	NELAP	0.0050		< 0.0050	mg/L	1	06/13/2016 10:07	119722
Sodium	NELAP	0.0500		22.7	mg/L	1	06/13/2016 10:07	119722
Thallium	NELAP	0.0500		< 0.0500	mg/L	1	06/13/2016 10:07	119722
Vanadium	NELAP	0.0100		< 0.0100	mg/L	1	06/13/2016 10:07	119722
Zinc	NELAP	0.0100	BJ	0.0041	mg/L	1	06/13/2016 10:07	119722
<i>Contamination present in MBLK for Zn. Sample results below the RL are reportable per 2009 TNI Standard (Volume 1, Module 4, section 1.7.4.1).</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	06/13/2016 13:48	119724
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762



Laboratory Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Lab ID: 16060536-002

Client Sample ID: PZ-206-SS

Matrix: GROUNDWATER

Collection Date: 06/08/2016 9:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
2-Butanone	NELAP	25.0		ND	µg/L	1	06/13/2016 15:08	119762
2-Hexanone	NELAP	25.0		ND	µg/L	1	06/13/2016 15:08	119762
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	06/13/2016 15:08	119762
Acetone	NELAP	25.0		ND	µg/L	1	06/13/2016 15:08	119762
Acrylonitrile	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Benzene	NELAP	2.0		ND	µg/L	1	06/13/2016 15:08	119762
Bromochloromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Bromoform	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Bromomethane	NELAP	10.0		ND	µg/L	1	06/13/2016 15:08	119762
Carbon disulfide	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Chlorobenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Chloroethane	NELAP	10.0		ND	µg/L	1	06/13/2016 15:08	119762
Chloroform	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Chloromethane	NELAP	10.0		ND	µg/L	1	06/13/2016 15:08	119762
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Dibromomethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Ethylbenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Iodomethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Methylene chloride	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Styrene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Toluene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	06/13/2016 15:08	119762
Trichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Vinyl acetate	NELAP	10.0		ND	µg/L	1	06/13/2016 15:08	119762
Vinyl chloride	NELAP	2.0		ND	µg/L	1	06/13/2016 15:08	119762
Xylenes, Total	NELAP	5.0		ND	µg/L	1	06/13/2016 15:08	119762
Surr: 1,2-Dichloroethane-d4		74.7-129		98.6	%REC	1	06/13/2016 15:08	119762
Surr: 4-Bromofluorobenzene		86-119		98.7	%REC	1	06/13/2016 15:08	119762



Laboratory Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Lab ID: 16060536-002

Client Sample ID: PZ-206-SS

Matrix: GROUNDWATER

Collection Date: 06/08/2016 9:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Surr: Dibromofluoromethane		81.7-123		100.8	%REC	1	06/13/2016 15:08	119762
Surr: Toluene-d8		84.3-114		97.0	%REC	1	06/13/2016 15:08	119762

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Lab ID: 16060536-003

Client Sample ID: Trip Blank

Matrix: TRIP BLANK

Collection Date: 06/08/2016 14:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,1,1-Trichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,1,2,2-Tetrachloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,1,2-Trichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,1-Dichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,1-Dichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,2,3-Trichloropropane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,2-Dibromo-3-chloropropane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,2-Dibromoethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,2-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,2-Dichloroethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,2-Dichloropropane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
1,4-Dichlorobenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
2-Butanone	NELAP	25.0		ND	µg/L	1	06/13/2016 15:38	119762
2-Hexanone	NELAP	25.0		ND	µg/L	1	06/13/2016 15:38	119762
4-Methyl-2-pentanone	NELAP	25.0		ND	µg/L	1	06/13/2016 15:38	119762
Acetone	NELAP	25.0		ND	µg/L	1	06/13/2016 15:38	119762
Acrylonitrile	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Benzene	NELAP	2.0		ND	µg/L	1	06/13/2016 15:38	119762
Bromochloromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Bromodichloromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Bromoform	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Bromomethane	NELAP	10.0		ND	µg/L	1	06/13/2016 15:38	119762
Carbon disulfide	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Carbon tetrachloride	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Chlorobenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Chloroethane	NELAP	10.0		ND	µg/L	1	06/13/2016 15:38	119762
Chloroform	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Chloromethane	NELAP	10.0		ND	µg/L	1	06/13/2016 15:38	119762
cis-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
cis-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Dibromochloromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Dibromomethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Ethylbenzene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Iodomethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Methylene chloride	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Styrene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Tetrachloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Toluene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
trans-1,2-Dichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
trans-1,3-Dichloropropene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
trans-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	1	06/13/2016 15:38	119762
Trichloroethene	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Trichlorofluoromethane	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762
Vinyl acetate	NELAP	10.0		ND	µg/L	1	06/13/2016 15:38	119762
Vinyl chloride	NELAP	2.0		ND	µg/L	1	06/13/2016 15:38	119762
Xylenes, Total	NELAP	5.0		ND	µg/L	1	06/13/2016 15:38	119762



Laboratory Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Lab ID: 16060536-003

Client Sample ID: Trip Blank

Matrix: TRIP BLANK

Collection Date: 06/08/2016 14:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Surr: 1,2-Dichloroethane-d4		74.7-129		99.3	%REC	1	06/13/2016 15:38	119762
Surr: 4-Bromofluorobenzene		86-119		100.3	%REC	1	06/13/2016 15:38	119762
Surr: Dibromofluoromethane		81.7-123		100.2	%REC	1	06/13/2016 15:38	119762
Surr: Toluene-d8		84.3-114		97.5	%REC	1	06/13/2016 15:38	119762



Sample Summary

<http://www.teklabinc.com/>

Client: Missouri Geological Survey
Client Project: Bridgeton Landfill

Work Order: 16060536
Report Date: 17-Jun-16

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
16060536-001	PZ-202-SS	Groundwater	5	06/06/2016 9:07
16060536-002	PZ-206-SS	Groundwater	5	06/08/2016 9:30
16060536-003	Trip Blank	Trip Blank	1	06/08/2016 14:10



Dates Report

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Sample ID	Client Sample ID Test Name	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
16060536-001A	PZ-202-SS Standard Methods 2540 C (Total)	06/06/2016 9:07	06/08/2016 14:10		06/13/2016 21:06
	SW-846 9036 (Total)				06/16/2016 18:37
	SW-846 9214 (Total)				06/13/2016 15:13
	SW-846 9251 (Total)				06/15/2016 20:55
16060536-001B	PZ-202-SS Standard Methods 2340 B, Hardness (Total)	06/06/2016 9:07	06/08/2016 14:10		06/13/2016 0:00
	SW-846 3005A, 6010B, Metals by ICP (Total)			06/10/2016 18:11	06/13/2016 9:44
	SW-846 7470A (Total)			06/10/2016 20:28	06/13/2016 13:45
16060536-001C	PZ-202-SS EPA 600 410.4	06/06/2016 9:07	06/08/2016 14:10		06/09/2016 17:03
	SW-846 9060				06/09/2016 18:24
16060536-001D	PZ-202-SS EPA 600 350.1 R2.0 (Distilled) Total	06/06/2016 9:07	06/08/2016 14:10	06/10/2016 10:12	06/10/2016 14:05
	EPA 600 353.2 R2.0 (Total)				06/09/2016 10:15
	EPA 600 365.4 (Total)			06/13/2016 23:45	06/15/2016 9:28
16060536-001E	PZ-202-SS SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS	06/06/2016 9:07	06/08/2016 14:10		06/13/2016 13:38
16060536-002A	PZ-206-SS Standard Methods 2540 C (Total)	06/08/2016 9:30	06/08/2016 14:10		06/10/2016 21:12
	SW-846 9036 (Total)				06/15/2016 5:06
	SW-846 9214 (Total)				06/13/2016 15:14
	SW-846 9251 (Total)				06/15/2016 21:22
16060536-002B	PZ-206-SS Standard Methods 2340 B, Hardness (Total)	06/08/2016 9:30	06/08/2016 14:10		06/13/2016 0:00
	SW-846 3005A, 6010B, Metals by ICP (Total)			06/10/2016 18:11	06/13/2016 10:07
	SW-846 7470A (Total)			06/10/2016 20:28	06/13/2016 13:48
16060536-002C	PZ-206-SS EPA 600 410.4	06/08/2016 9:30	06/08/2016 14:10		06/09/2016 17:04
	SW-846 9060				06/09/2016 18:49
16060536-002D	PZ-206-SS EPA 600 350.1 R2.0 (Distilled) Total	06/08/2016 9:30	06/08/2016 14:10	06/10/2016 10:12	06/10/2016 16:45
	EPA 600 353.2 R2.0 (Total)				06/09/2016 10:12
	EPA 600 365.4 (Total)			06/14/2016 21:06	06/15/2016 8:58
16060536-002E	PZ-206-SS SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS	06/08/2016 9:30	06/08/2016 14:10		06/13/2016 15:08



Dates Report

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
16060536-003A	Trip Blank	06/08/2016 14:10	06/08/2016 14:10		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				06/13/2016 15:38

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

EPA 600 350.1 R2.0 (DISTILLED) TOTAL

Batch 119702		SampType: MBLK		Units mg/L						Date Analyzed
SampID: MBLK 160610 NH3-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Ammonia (as N)	0.10	J	0.10						06/10/2016	

Batch 119702		SampType: LCS		Units mg/L						Date Analyzed
SampID: LCS 160610 NH3-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Ammonia (as N)	0.10		1.94	2.000	0	96.8	90	110	06/10/2016	

Batch 119702		SampType: MS		Units mg/L						Date Analyzed
SampID: 16060536-002DMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Ammonia (as N)	0.10		2.22	2.000	0.2560	98.0	90	110	06/10/2016	

Batch 119702		SampType: MSD		Units mg/L						RPD Limit 15	Date Analyzed
SampID: 16060536-002DMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Nitrogen, Ammonia (as N)	0.10		2.25	2.000	0.2560	99.6	2.216	1.43	06/10/2016		

EPA 600 353.2 R2.0 (TOTAL)

Batch R219711		SampType: MBLK		Units mg/L						Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Nitrate-Nitrite (as N)	0.050		< 0.050						06/09/2016	

Batch R219711		SampType: LCS		Units mg/L						Date Analyzed
SampID: ICB/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Nitrate-Nitrite (as N)	2.50		12.1	11.50	0	105.3	90	110	06/09/2016	

Batch R219711		SampType: MS		Units mg/L						Date Analyzed
SampID: 16060536-001DMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Nitrate-Nitrite (as N)	0.050		0.259	0.2500	0.01200	98.8	90	110	06/09/2016	

Batch R219711		SampType: MSD		Units mg/L						RPD Limit 10	Date Analyzed
SampID: 16060536-001DMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Nitrogen, Nitrate-Nitrite (as N)	0.050		0.263	0.2500	0.01200	100.4	0.2590	1.53	06/09/2016		



Quality Control Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey
Client Project: Bridgeton Landfill

Work Order: 16060536
Report Date: 17-Jun-16

EPA 600 365.4 (TOTAL)

Batch 119788		SampType: MBLK		Units mg/L						Date Analyzed
SampID: MBLK 160613 TP-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Phosphorus, Total (as P)	0.050		< 0.050							06/14/2016

Batch 119788		SampType: LCS		Units mg/L						Date Analyzed
SampID: LCS 160613 TP-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Phosphorus, Total (as P)	0.050		1.06	1.000	0	106.5	85	115		06/14/2016

Batch 119788		SampType: MS		Units mg/L						Date Analyzed
SampID: 16060536-001DMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Phosphorus, Total (as P)	0.050		1.24	1.000	0.2290	100.9	85	115		06/15/2016

Batch 119788		SampType: MSD		Units mg/L						RPD Limit 15	Date Analyzed
SampID: 16060536-001DMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Phosphorus, Total (as P)	0.050		1.20	1.000	0.2290	97.4	1.238	2.87		06/15/2016	

Batch 119826		SampType: MBLK		Units mg/L						Date Analyzed
SampID: MBLK 160614 TP-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Phosphorus, Total (as P)	0.050		< 0.050							06/15/2016

Batch 119826		SampType: LCS		Units mg/L						Date Analyzed
SampID: LCS 160614 TP-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Phosphorus, Total (as P)	0.100		0.969	1.000	0	96.9	85	115		06/15/2016

EPA 600 410.4

Batch R219749		SampType: MBLK		Units mg/L						Date Analyzed
SampID: MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chemical Oxygen Demand	50		< 50							06/09/2016

Batch R219749		SampType: LCS		Units mg/L						Date Analyzed
SampID: LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chemical Oxygen Demand	50		175	172.0	0	101.6	90	110		06/09/2016



Quality Control Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey
Client Project: Bridgeton Landfill

Work Order: 16060536
Report Date: 17-Jun-16

EPA 600 410.4

Batch R219749		SampType: MS		Units mg/L						
SampID: 16060536-001C MS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chemical Oxygen Demand	100		1730	1000	757.1	97.0	90	110	06/09/2016	

Batch R219749		SampType: MSD		Units mg/L						
SampID: 16060536-001C MSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Chemical Oxygen Demand	100		1760	1000	757.1	99.9	1727	1.67	06/09/2016	

Batch R219749		SampType: MS		Units mg/L						
SampID: 16060536-002C MS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chemical Oxygen Demand	100		1060	1000	77.77	98.4	90	110	06/09/2016	

Batch R219749		SampType: MSD		Units mg/L						
SampID: 16060536-002C MSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Chemical Oxygen Demand	100		1080	1000	77.77	100.2	1061	1.73	06/09/2016	

STANDARD METHODS 2540 C (TOTAL)

Batch R219849		SampType: MBLK		Units mg/L						
SampID: MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids	20		< 20						06/10/2016	
Total Dissolved Solids	20	J	18						06/10/2016	
Total Dissolved Solids	20	J	12						06/10/2016	

Batch R219849		SampType: LCS		Units mg/L						
SampID: LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids	20		1020	1000	0	102.4	90	110	06/10/2016	

Batch R219849		SampType: LCSQC		Units mg/L						
SampID: LCSQC										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids	20		994	1000	0	99.4	90	110	06/10/2016	
Total Dissolved Solids	20		990	1000	0	99.0	90	110	06/10/2016	

Batch R219849		SampType: MS		Units mg/L						
SampID: 16060536-002A MS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids	20		1430	500.0	892.0	107.6	85	115	06/10/2016	



Quality Control Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

STANDARD METHODS 2540 C (TOTAL)

Batch R219849		SampType: MSD		Units mg/L				RPD Limit 15		Date Analyzed
SampID: 16060536-002A MSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Total Dissolved Solids	20		1400	500.0	892.0	102.0	1430	1.98	06/10/2016	

Batch R219920		SampType: MBLK		Units mg/L						Date Analyzed
SampID: MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids	20	J	10						06/13/2016	
Total Dissolved Solids	20		< 20						06/13/2016	
Total Dissolved Solids	20		< 20						06/13/2016	

Batch R219920		SampType: LCS		Units mg/L						Date Analyzed
SampID: LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids	20		966	1000	0	96.6	90	110	06/13/2016	

Batch R219920		SampType: LCSQC		Units mg/L						Date Analyzed
SampID: LCSQC										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids	20		986	1000	0	98.6	90	110	06/13/2016	
Total Dissolved Solids	20		952	1000	0	95.2	90	110	06/13/2016	

Batch R219920		SampType: DUP		Units mg/L				RPD Limit 15		Date Analyzed
SampID: 16060536-001A DUP										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Total Dissolved Solids	50		4930				4855	1.53	06/13/2016	

SW-846 9036 (TOTAL)

Batch R219801		SampType: MBLK		Units mg/L						Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		< 10						06/10/2016	

Batch R219801		SampType: LCS		Units mg/L						Date Analyzed
SampID: ICV/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		19	20.00	0	96.0	90	110	06/10/2016	

Batch R219929		SampType: MBLK		Units mg/L						Date Analyzed
SampID: CCB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		< 10						06/14/2016	

Client: Missouri Geological Survey
Client Project: Bridgeton Landfill

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SW-846 9036 (TOTAL)

Batch R219929		SampType: LCS		Units mg/L						
SampID: CCV/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		19	20.00	0	97.0	90	110	06/14/2016	

Batch R220044		SampType: MBLK		Units mg/L						
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		< 10						06/15/2016	

Batch R220044		SampType: LCS		Units mg/L						
SampID: ICV/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		20	20.00	0	98.0	90	110	06/15/2016	

Batch R220113		SampType: MBLK		Units mg/L						
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		< 10						06/16/2016	

Batch R220113		SampType: LCS		Units mg/L						
SampID: ICV/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		19	20.00	0	92.7	90	110	06/16/2016	

Batch R220113		SampType: MS		Units mg/L						
SampID: 16060536-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10	JS	5	10.00	0	51.3	85	115	06/16/2016	

Batch R220113		SampType: MSD		Units mg/L						
SampID: 16060536-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Sulfate	10	JS	5	10.00	0	52.6	5.130	0.00	06/16/2016	

SW-846 9060

Batch R219750		SampType: MBLK		Units mg/L						
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Organic Carbon (TOC)	1.0		< 1.0						06/09/2016	



Quality Control Results

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Client: Missouri Geological Survey

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Client Project: Bridgeton Landfill

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SW-846 9060

Batch R219750		SampType: LCS		Units mg/L							Date Analyzed
SampID: ICV/LCS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Total Organic Carbon (TOC)	10.0		67.3	68.10	0	98.8	90	110	06/09/2016		

Batch R219750		SampType: MS		Units mg/L							Date Analyzed
SampID: 16060536-001CMS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Total Organic Carbon (TOC)	10.0	E	242	50.00	194.7	94.1	85	115	06/09/2016		

Batch R219750		SampType: MSD		Units mg/L							Date Analyzed
SampID: 16060536-001CMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	RPD Limit 10		
Total Organic Carbon (TOC)	10.0	E	243	50.00	194.7	95.9	241.8	0.37	06/09/2016		

SW-846 9214 (TOTAL)

Batch R219862		SampType: MBLK		Units mg/L							Date Analyzed
SampID: MBLK											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Fluoride	0.10		< 0.10						06/13/2016		

Batch R219862		SampType: LCS		Units mg/L							Date Analyzed
SampID: LCS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Fluoride	0.10		1.05	1.000	0	105.0	90	110	06/13/2016		

Batch R219862		SampType: MS		Units mg/L							Date Analyzed
SampID: 16060536-002AMS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Fluoride	0.10		3.87	2.000	1.673	110.0	85	115	06/13/2016		

Batch R219862		SampType: MSD		Units mg/L							Date Analyzed
SampID: 16060536-002AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	RPD Limit 10		
Fluoride	0.10		3.92	2.000	1.673	112.4	3.872	1.26	06/13/2016		

SW-846 9251 (TOTAL)

Batch R219802		SampType: MBLK		Units mg/L							Date Analyzed
SampID: ICB/MBLK											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Chloride	5	J	3						06/10/2016		



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Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

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SW-846 9251 (TOTAL)

Batch R219802		SampType: LCS		Units mg/L						
SampID: ICV/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride	5		22	20.00	0	107.6	90	110	06/10/2016	

Batch R219930		SampType: MBLK		Units mg/L						
SampID: MBLK/CCB										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride	5	J	2						06/14/2016	

Batch R219930		SampType: LCS		Units mg/L						
SampID: LCS/CCV										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride	5		20	20.00	0	101.8	90	110	06/14/2016	

Batch R220049		SampType: MBLK		Units mg/L						
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride	5	J	3						06/15/2016	

Batch R220049		SampType: LCS		Units mg/L						
SampID: ICV/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride	5		21	20.00	0	105.2	90	110	06/15/2016	

Batch R220049		SampType: MS		Units mg/L						
SampID: 16060536-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride	500		3340	2000	1406	96.7	85	115	06/15/2016	

Batch R220049		SampType: MSD		Units mg/L						
SampID: 16060536-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Limit 15		Date Analyzed	
							RPD Ref Val	%RPD		
Chloride	500		3280	2000	1406	93.5	3339	1.88	06/15/2016	



Quality Control Results

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Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 119722		SampType: MBLK		Units mg/L						
SampID: MBLK-119722										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Antimony	0.0500		< 0.0500	0.05000	0	0	-100	100	06/13/2016	
Arsenic	0.0250		< 0.0250	0.02500	0	0	-100	100	06/13/2016	
Barium	0.0025		< 0.0025	0.002500	0	0	-100	100	06/13/2016	
Beryllium	0.0005		< 0.0005	0.000500	0	0	-100	100	06/13/2016	
Boron	0.0200		< 0.0200	0.02000	0	0	-100	100	06/13/2016	
Cadmium	0.0020		< 0.0020	0.002000	0	0	-100	100	06/13/2016	
Calcium	0.0500		< 0.0500	0.05000	0	0	-100	100	06/13/2016	
Chromium	0.0050		< 0.0050	0.005000	0	0	-100	100	06/13/2016	
Cobalt	0.0050		< 0.0050	0.005000	0	0	-100	100	06/13/2016	
Copper	0.0050		< 0.0050	0.005000	0	0	-100	100	06/13/2016	
Iron	0.0200	J	0.0083	0.02000	0	41.5	-100	100	06/13/2016	
Lead	0.0150		< 0.0150	0.01500	0	0	-100	100	06/13/2016	
Magnesium	0.0500		< 0.0500	0.05000	0	0	-100	100	06/13/2016	
Manganese	0.0030		< 0.0030	0.003000	0	0	-100	100	06/13/2016	
Nickel	0.0050		< 0.0050	0.005000	0	0	-100	100	06/13/2016	
Selenium	0.0400		< 0.0400	0.04000	0	0	-100	100	06/13/2016	
Silver	0.0050		< 0.0050	0.005000	0	0	-100	100	06/13/2016	
Sodium	0.0500		< 0.0500	0.05000	0	0	-100	100	06/13/2016	
Thallium	0.0500		< 0.0500	0.05000	0	0	-100	100	06/13/2016	
Vanadium	0.0100		< 0.0100	0.01000	0	0	-100	100	06/13/2016	
Zinc	0.0100	S	0.0117	0.01000	0	117.0	-100	100	06/13/2016	

Batch 119722		SampType: LCS		Units mg/L						
SampID: LCS-119722										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Antimony	0.0500		0.492	0.5000	0	98.5	85	115	06/13/2016	
Arsenic	0.0250		0.512	0.5000	0	102.5	85	115	06/13/2016	
Barium	0.0025		2.13	2.000	0	106.4	85	115	06/13/2016	
Beryllium	0.0005		0.0522	0.05000	0	104.4	85	115	06/13/2016	
Boron	0.0200		0.500	0.5000	0	100.0	85	115	06/13/2016	
Cadmium	0.0020		0.0507	0.05000	0	101.4	85	115	06/13/2016	
Calcium	0.0500		2.67	2.500	0	106.7	85	115	06/13/2016	
Chromium	0.0050		0.205	0.2000	0	102.5	85	115	06/13/2016	
Cobalt	0.0050		0.501	0.5000	0	100.2	85	115	06/13/2016	
Copper	0.0050		0.258	0.2500	0	103.1	85	115	06/13/2016	
Iron	0.0200		2.08	2.000	0	104.2	85	115	06/13/2016	
Lead	0.0150		0.527	0.5000	0	105.4	85	115	06/13/2016	
Magnesium	0.0500		2.53	2.500	0	101.2	85	115	06/13/2016	
Manganese	0.0030		0.528	0.5000	0	105.6	85	115	06/13/2016	
Nickel	0.0050		0.512	0.5000	0	102.5	85	115	06/13/2016	
Selenium	0.0400		0.520	0.5000	0	104.1	85	115	06/13/2016	
Silver	0.0050		0.0506	0.05000	0	101.2	85	115	06/13/2016	
Sodium	0.0500		2.46	2.500	0	98.4	85	115	06/13/2016	
Thallium	0.0500		0.251	0.2500	0	100.4	85	115	06/13/2016	
Vanadium	0.0100		0.510	0.5000	0	102.0	85	115	06/13/2016	
Zinc	0.0100	B	0.522	0.5000	0	104.5	85	115	06/13/2016	



Quality Control Results

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Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 119722		SampType: MS		Units mg/L						
SampID: 16060536-001BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Antimony	0.0500		0.495	0.5000	0	99.0	75	125	06/13/2016	
Arsenic	0.0250		0.578	0.5000	0.07100	101.5	75	125	06/13/2016	
Barium	0.0025		4.44	2.000	2.566	93.9	75	125	06/13/2016	
Beryllium	0.0005		0.0499	0.05000	0	99.8	75	125	06/13/2016	
Boron	0.0200		0.517	0.5000	0.01860	99.6	75	125	06/13/2016	
Cadmium	0.0020		0.0471	0.05000	0	94.2	75	125	06/13/2016	
Calcium	0.0500	S	647	2.500	626.8	824.0	75	125	06/13/2016	
Chromium	0.0050		0.200	0.2000	0.003100	98.4	75	125	06/13/2016	
Cobalt	0.0050		0.499	0.5000	0.02210	95.4	75	125	06/13/2016	
Copper	0.0050		0.264	0.2500	0	105.5	75	125	06/13/2016	
Iron	0.0200	S	91.0	2.000	86.84	207.5	75	125	06/13/2016	
Lead	0.0150		0.498	0.5000	0	99.5	75	125	06/13/2016	
Magnesium	0.0500	S	291	2.500	282.0	364.0	75	125	06/13/2016	
Manganese	0.0030		2.93	0.5000	2.414	103.0	75	125	06/13/2016	
Nickel	0.0050		0.547	0.5000	0.06460	96.5	75	125	06/13/2016	
Selenium	0.0400		0.511	0.5000	0	102.2	75	125	06/13/2016	
Silver	0.0050		0.0510	0.05000	0	102.0	75	125	06/13/2016	
Sodium	0.0500	S	163	2.500	156.7	264.0	75	125	06/13/2016	
Thallium	0.0500		0.232	0.2500	0	92.7	75	125	06/13/2016	
Vanadium	0.0100		0.508	0.5000	0.01040	99.6	75	125	06/13/2016	
Zinc	0.0100	B	0.482	0.5000	0.007300	94.9	75	125	06/13/2016	

Batch 119722		SampType: MSD		Units mg/L		RPD Limit 20				
SampID: 16060536-001BMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Antimony	0.0500		0.501	0.5000	0	100.1	0.4948	1.17	06/13/2016	
Arsenic	0.0250		0.582	0.5000	0.07100	102.1	0.5784	0.57	06/13/2016	
Barium	0.0025		4.47	2.000	2.566	95.2	4.444	0.58	06/13/2016	
Beryllium	0.0005		0.0502	0.05000	0	100.4	0.04990	0.60	06/13/2016	
Boron	0.0200		0.520	0.5000	0.01860	100.2	0.5168	0.54	06/13/2016	
Cadmium	0.0020		0.0474	0.05000	0	94.8	0.04710	0.63	06/13/2016	
Calcium	0.0500	S	647	2.500	626.8	816.0	647.4	0.03	06/13/2016	
Chromium	0.0050		0.202	0.2000	0.003100	99.2	0.2000	0.75	06/13/2016	
Cobalt	0.0050		0.500	0.5000	0.02210	95.7	0.4989	0.30	06/13/2016	
Copper	0.0050		0.265	0.2500	0	106.0	0.2638	0.49	06/13/2016	
Iron	0.0200	S	91.2	2.000	86.84	216.5	90.99	0.20	06/13/2016	
Lead	0.0150		0.499	0.5000	0	99.9	0.4977	0.34	06/13/2016	
Magnesium	0.0500	S	294	2.500	282.0	460.0	291.1	0.82	06/13/2016	
Manganese	0.0030		2.93	0.5000	2.414	104.0	2.929	0.17	06/13/2016	
Nickel	0.0050		0.551	0.5000	0.06460	97.3	0.5470	0.73	06/13/2016	
Selenium	0.0400		0.521	0.5000	0	104.3	0.5110	2.01	06/13/2016	
Silver	0.0050		0.0512	0.05000	0	102.4	0.05100	0.39	06/13/2016	
Sodium	0.0500	S	164	2.500	156.7	300.0	163.3	0.55	06/13/2016	
Thallium	0.0500		0.233	0.2500	0	93.2	0.2317	0.60	06/13/2016	
Vanadium	0.0100		0.511	0.5000	0.01040	100.1	0.5084	0.51	06/13/2016	
Zinc	0.0100	B	0.484	0.5000	0.007300	95.2	0.4816	0.39	06/13/2016	



Quality Control Results

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Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

SW-846 7470A (TOTAL)

Batch 119724		SampType: MBLK		Units mg/L					
SampID: MBLK-119724									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		< 0.00020	0.000200	0	0	-100	100	06/13/2016

Batch 119724		SampType: LCS		Units mg/L					
SampID: LCS-119724									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00508	0.005000	0	101.6	85	115	06/13/2016

Batch 119724		SampType: MS		Units mg/L					
SampID: 16060536-002BMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00485	0.005000	0	97.0	75	125	06/13/2016

Batch 119724		SampType: MSD		Units mg/L				RPD Limit 15		Date Analyzed
SampID: 16060536-002BMDS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Mercury	0.00020		0.00477	0.005000	0	95.4	0.004850	1.66	06/13/2016	

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 119762 **SampType: MBLK** Units µg/L

SampID: MBLK-R160613A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		ND						06/13/2016
1,1,1-Trichloroethane	5.0		ND						06/13/2016
1,1,2,2-Tetrachloroethane	5.0		ND						06/13/2016
1,1,2-Trichloroethane	5.0		ND						06/13/2016
1,1-Dichloroethane	5.0		ND						06/13/2016
1,1-Dichloroethene	5.0		ND						06/13/2016
1,2,3-Trichloropropane	5.0		ND						06/13/2016
1,2-Dibromo-3-chloropropane	5.0		ND						06/13/2016
1,2-Dibromoethane	5.0		ND						06/13/2016
1,2-Dichlorobenzene	5.0		ND						06/13/2016
1,2-Dichloroethane	5.0		ND						06/13/2016
1,2-Dichloropropane	5.0		ND						06/13/2016
1,4-Dichlorobenzene	5.0		ND						06/13/2016
2-Butanone	25.0		ND						06/13/2016
2-Hexanone	25.0		ND						06/13/2016
4-Methyl-2-pentanone	25.0		ND						06/13/2016
Acetone	25.0		ND						06/13/2016
Acrylonitrile	5.0		ND						06/13/2016
Benzene	2.0		ND						06/13/2016
Bromochloromethane	5.0		ND						06/13/2016
Bromodichloromethane	5.0		ND						06/13/2016
Bromoform	5.0		ND						06/13/2016
Bromomethane	10.0		ND						06/13/2016
Carbon disulfide	5.0		ND						06/13/2016
Carbon tetrachloride	5.0		ND						06/13/2016
Chlorobenzene	5.0		ND						06/13/2016
Chloroethane	10.0		ND						06/13/2016
Chloroform	5.0		ND						06/13/2016
Chloromethane	10.0		ND						06/13/2016
cis-1,2-Dichloroethene	5.0		ND						06/13/2016
cis-1,3-Dichloropropene	5.0		ND						06/13/2016
Dibromochloromethane	5.0		ND						06/13/2016
Dibromomethane	5.0		ND						06/13/2016
Ethylbenzene	5.0		ND						06/13/2016
Iodomethane	5.0		ND						06/13/2016
Methylene chloride	5.0		ND						06/13/2016
Styrene	5.0		ND						06/13/2016
Tetrachloroethene	5.0		ND						06/13/2016
Toluene	5.0		ND						06/13/2016
trans-1,2-Dichloroethene	5.0		ND						06/13/2016
trans-1,3-Dichloropropene	5.0		ND						06/13/2016
trans-1,4-Dichloro-2-butene	10.0		ND						06/13/2016
Trichloroethene	5.0		ND						06/13/2016
Trichlorofluoromethane	5.0		ND						06/13/2016
Vinyl acetate	10.0		ND						06/13/2016
Vinyl chloride	2.0		ND						06/13/2016
Xylenes, Total	5.0		ND						06/13/2016

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 119762 **SampType: MBLK** Units µg/L

SampID: MBLK-R160613A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			48.9	50.00		97.9	74.7	129	06/13/2016
Surr: 4-Bromofluorobenzene			50.0	50.00		99.9	86	119	06/13/2016
Surr: Dibromofluoromethane			49.6	50.00		99.3	81.7	123	06/13/2016
Surr: Toluene-d8			49.1	50.00		98.2	84.3	114	06/13/2016



Quality Control Results

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 119762	SampType: LCSD	Units µg/L						RPD Limit 40		Date
SampID: LCSD-R160613A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Analyzed	
1,1,1,2-Tetrachloroethane	5.0		55.2	50.00	0	110.5	47.50	15.05	06/13/2016	
1,1,1-Trichloroethane	5.0		54.5	50.00	0	109.0	47.93	12.79	06/13/2016	
1,1,2,2-Tetrachloroethane	5.0		50.5	50.00	0	100.9	43.89	13.93	06/13/2016	
1,1,2-Trichloroethane	5.0		51.4	50.00	0	102.8	44.60	14.15	06/13/2016	
1,1-Dichloroethane	5.0		52.5	50.00	0	105.0	46.13	12.95	06/13/2016	
1,1-Dichloroethene	5.0		51.2	50.00	0	102.3	44.59	13.70	06/13/2016	
1,2,3-Trichloropropane	5.0		48.1	50.00	0	96.2	41.08	15.76	06/13/2016	
1,2-Dibromo-3-chloropropane	5.0		49.9	50.00	0	99.8	42.73	15.50	06/13/2016	
1,2-Dibromoethane	5.0		51.2	50.00	0	102.4	44.36	14.35	06/13/2016	
1,2-Dichlorobenzene	5.0		51.2	50.00	0	102.5	44.18	14.80	06/13/2016	
1,2-Dichloroethane	5.0		53.1	50.00	0	106.2	45.93	14.48	06/13/2016	
1,2-Dichloropropane	5.0		53.1	50.00	0	106.2	46.07	14.22	06/13/2016	
1,4-Dichlorobenzene	5.0		51.6	50.00	0	103.3	44.54	14.78	06/13/2016	
2-Butanone	25.0		123	125.0	0	98.5	110.0	11.19	06/13/2016	
2-Hexanone	25.0		128	125.0	0	102.6	111.5	13.90	06/13/2016	
4-Methyl-2-pentanone	25.0		129	125.0	0	103.5	111.3	14.99	06/13/2016	
Acetone	25.0		112	125.0	0	89.9	104.0	7.73	06/13/2016	
Acrylonitrile	5.0		50.2	50.00	0	100.4	43.78	13.70	06/13/2016	
Benzene	2.0		52.1	50.00	0	104.1	45.65	13.12	06/13/2016	
Bromochloromethane	5.0		51.5	50.00	0	103.0	44.51	14.56	06/13/2016	
Bromodichloromethane	5.0		55.9	50.00	0	111.9	48.24	14.76	06/13/2016	
Bromoform	5.0		56.4	50.00	0	112.8	48.51	15.06	06/13/2016	
Bromomethane	10.0		48.7	50.00	0	97.4	37.22	26.70	06/13/2016	
Carbon disulfide	5.0		46.6	50.00	0	93.3	41.23	12.29	06/13/2016	
Carbon tetrachloride	5.0		57.3	50.00	0	114.6	50.04	13.51	06/13/2016	
Chlorobenzene	5.0		52.7	50.00	0	105.4	45.71	14.22	06/13/2016	
Chloroethane	10.0		46.7	50.00	0	93.4	38.62	18.98	06/13/2016	
Chloroform	5.0		50.6	50.00	0	101.1	43.81	14.31	06/13/2016	
Chloromethane	10.0		35.4	50.00	0	70.7	29.67	17.53	06/13/2016	
cis-1,2-Dichloroethene	5.0		53.0	50.00	0	105.9	46.34	13.35	06/13/2016	
cis-1,3-Dichloropropene	5.0		57.6	50.00	0	115.2	49.50	15.11	06/13/2016	
Dibromochloromethane	5.0		56.5	50.00	0	113.1	48.55	15.19	06/13/2016	
Dibromomethane	5.0		52.0	50.00	0	104.1	44.62	15.37	06/13/2016	
Ethylbenzene	5.0		53.5	50.00	0	106.9	46.46	14.03	06/13/2016	
Iodomethane	5.0		52.9	50.00	0	105.8	42.09	22.78	06/13/2016	
Methylene chloride	5.0		49.5	50.00	0	98.9	43.24	13.42	06/13/2016	
Styrene	5.0		55.2	50.00	0	110.3	47.61	14.69	06/13/2016	
Tetrachloroethene	5.0		53.2	50.00	0	106.5	46.81	12.83	06/13/2016	
Toluene	5.0		52.1	50.00	0	104.2	45.03	14.56	06/13/2016	
trans-1,2-Dichloroethene	5.0		52.3	50.00	0	104.7	45.97	12.96	06/13/2016	
trans-1,3-Dichloropropene	5.0		55.6	50.00	0	111.1	47.83	14.97	06/13/2016	
trans-1,4-Dichloro-2-butene	10.0		53.4	50.00	0	106.8	46.84	13.09	06/13/2016	
Trichloroethene	5.0		53.5	50.00	0	107.1	46.41	14.25	06/13/2016	
Trichlorofluoromethane	5.0		57.0	50.00	0	114.0	46.60	20.08	06/13/2016	
Vinyl acetate	10.0		56.8	50.00	0	113.7	49.16	14.47	06/13/2016	
Vinyl chloride	2.0		45.3	50.00	0	90.6	37.33	19.27	06/13/2016	
Xylenes, Total	5.0		163	150.0	0	108.5	141.6	13.84	06/13/2016	

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 119762		SampType: LCSD		Units µg/L				RPD Limit 40		Date
SampID: LCSD-R160613A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Analyzed	
Surr: 1,2-Dichloroethane-d4			48.5	50.00		97.0			06/13/2016	
Surr: 4-Bromofluorobenzene			48.0	50.00		95.9			06/13/2016	
Surr: Dibromofluoromethane			49.6	50.00		99.3			06/13/2016	
Surr: Toluene-d8			48.5	50.00		97.0			06/13/2016	

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 119762 **SampType:** LCS

Units µg/L

SampID: LCS-R160613A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1,1,2-Tetrachloroethane	5.0		47.5	50.00	0	95.0	81.9	115	06/13/2016
1,1,1-Trichloroethane	5.0		47.9	50.00	0	95.9	79.4	124	06/13/2016
1,1,2,2-Tetrachloroethane	5.0		43.9	50.00	0	87.8	74.7	116	06/13/2016
1,1,2-Trichloroethane	5.0		44.6	50.00	0	89.2	80.8	111	06/13/2016
1,1-Dichloroethane	5.0		46.1	50.00	0	92.3	79.4	114	06/13/2016
1,1-Dichloroethene	5.0		44.6	50.00	0	89.2	74.1	117	06/13/2016
1,2,3-Trichloropropane	5.0		41.1	50.00	0	82.2	77.3	112	06/13/2016
1,2-Dibromo-3-chloropropane	5.0		42.7	50.00	0	85.5	76	122	06/13/2016
1,2-Dibromoethane	5.0		44.4	50.00	0	88.7	80.8	114	06/13/2016
1,2-Dichlorobenzene	5.0		44.2	50.00	0	88.4	78.3	112	06/13/2016
1,2-Dichloroethane	5.0		45.9	50.00	0	91.9	70.6	118	06/13/2016
1,2-Dichloropropane	5.0		46.1	50.00	0	92.1	79.6	113	06/13/2016
1,4-Dichlorobenzene	5.0		44.5	50.00	0	89.1	77.8	114	06/13/2016
2-Butanone	25.0		110	125.0	0	88.0	70.7	136	06/13/2016
2-Hexanone	25.0		112	125.0	0	89.2	73.3	125	06/13/2016
4-Methyl-2-pentanone	25.0		111	125.0	0	89.1	76.3	122	06/13/2016
Acetone	25.0		104	125.0	0	83.2	56.4	147	06/13/2016
Acrylonitrile	5.0		43.8	50.00	0	87.6	74.1	128	06/13/2016
Benzene	2.0		45.6	50.00	0	91.3	80	114	06/13/2016
Bromochloromethane	5.0		44.5	50.00	0	89.0	73.3	121	06/13/2016
Bromodichloromethane	5.0		48.2	50.00	0	96.5	81.6	121	06/13/2016
Bromoform	5.0		48.5	50.00	0	97.0	83.1	127	06/13/2016
Bromomethane	10.0		37.2	50.00	0	74.4	44.4	154	06/13/2016
Carbon disulfide	5.0		41.2	50.00	0	82.5	73.2	118	06/13/2016
Carbon tetrachloride	5.0		50.0	50.00	0	100.1	79.4	130	06/13/2016
Chlorobenzene	5.0		45.7	50.00	0	91.4	81.4	110	06/13/2016
Chloroethane	10.0		38.6	50.00	0	77.2	52.1	137	06/13/2016
Chloroform	5.0		43.8	50.00	0	87.6	82.7	116	06/13/2016
Chloromethane	10.0		29.7	50.00	0	59.3	48.2	144	06/13/2016
cis-1,2-Dichloroethene	5.0		46.3	50.00	0	92.7	78.2	116	06/13/2016
cis-1,3-Dichloropropene	5.0		49.5	50.00	0	99.0	83	119	06/13/2016
Dibromochloromethane	5.0		48.6	50.00	0	97.1	81.2	121	06/13/2016
Dibromomethane	5.0		44.6	50.00	0	89.2	78.3	118	06/13/2016
Ethylbenzene	5.0		46.5	50.00	0	92.9	77.2	113	06/13/2016
Iodomethane	5.0		42.1	50.00	0	84.2	61.3	140	06/13/2016
Methylene chloride	5.0		43.2	50.00	0	86.5	74.1	114	06/13/2016
Styrene	5.0		47.6	50.00	0	95.2	83.4	113	06/13/2016
Tetrachloroethene	5.0		46.8	50.00	0	93.6	72.5	125	06/13/2016
Toluene	5.0		45.0	50.00	0	90.1	77.5	113	06/13/2016
trans-1,2-Dichloroethene	5.0		46.0	50.00	0	91.9	79	114	06/13/2016
trans-1,3-Dichloropropene	5.0		47.8	50.00	0	95.7	78	115	06/13/2016
trans-1,4-Dichloro-2-butene	10.0		46.8	50.00	0	93.7	63.3	128	06/13/2016
Trichloroethene	5.0		46.4	50.00	0	92.8	84.4	114	06/13/2016
Trichlorofluoromethane	5.0		46.6	50.00	0	93.2	75.2	132	06/13/2016
Vinyl acetate	10.0		49.2	50.00	0	98.3	64.5	127	06/13/2016
Vinyl chloride	2.0		37.3	50.00	0	74.7	58	134	06/13/2016
Xylenes, Total	5.0		142	150.0	0	94.4	80.1	111	06/13/2016

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 119762		SampType: LCS		Units µg/L					
SampID: LCS-R160613A-1									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			47.9	50.00		95.8	74.7	129	06/13/2016
Surr: 4-Bromofluorobenzene			48.1	50.00		96.3	86	119	06/13/2016
Surr: Dibromofluoromethane			49.5	50.00		99.0	81.7	123	06/13/2016
Surr: Toluene-d8			48.4	50.00		96.9	84.1	114	06/13/2016

Batch 119762		SampType: MS		Units µg/L					
SampID: 16060536-001EMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1-Dichloroethene	5.0		82.5	100.0	0	82.5	35.7	136	06/13/2016
Benzene	2.0	E	297	100.0	198.3	98.8	62.5	121	06/13/2016
Chlorobenzene	5.0		85.0	100.0	0	85.0	78.6	114	06/13/2016
Ethylbenzene	5.0		89.5	100.0	0	89.5	74.4	130	06/13/2016
Toluene	5.0		94.0	100.0	5.030	89.0	69.5	118	06/13/2016
Trichloroethene	5.0		91.1	100.0	0	91.1	69.4	117	06/13/2016
Xylenes, Total	5.0		175	200.0	0	87.5	71.1	125	06/13/2016
Surr: 1,2-Dichloroethane-d4			52.6	50.00		105.3	74.7	129	06/13/2016
Surr: 4-Bromofluorobenzene			48.5	50.00		96.9	86	119	06/13/2016
Surr: Dibromofluoromethane			48.8	50.00		97.6	81.7	123	06/13/2016
Surr: Toluene-d8			47.9	50.00		95.8	84.3	114	06/13/2016

Batch 119762		SampType: MSD		Units µg/L				RPD Limit 20		Date Analyzed
SampID: 16060536-001EMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
1,1-Dichloroethene	5.0		79.0	100.0	0	79.0	82.47	4.26	06/13/2016	
Benzene	2.0	E	288	100.0	198.3	89.9	297.2	3.05	06/13/2016	
Chlorobenzene	5.0		84.2	100.0	0	84.2	84.95	0.92	06/13/2016	
Ethylbenzene	5.0		88.9	100.0	0	88.9	89.54	0.76	06/13/2016	
Toluene	5.0		92.6	100.0	5.030	87.5	94.01	1.54	06/13/2016	
Trichloroethene	5.0		89.1	100.0	0	89.1	91.09	2.21	06/13/2016	
Xylenes, Total	5.0		174	200.0	0	86.9	175.0	0.72	06/13/2016	
Surr: 1,2-Dichloroethane-d4			52.0	50.00		104.0			06/13/2016	
Surr: 4-Bromofluorobenzene			48.7	50.00		97.4			06/13/2016	
Surr: Dibromofluoromethane			48.2	50.00		96.5			06/13/2016	
Surr: Toluene-d8			48.6	50.00		97.1			06/13/2016	



Receiving Check List

<http://www.teklabinc.com/>

Client: Missouri Geological Survey

Work Order: 16060536

Client Project: Bridgeton Landfill

Report Date: 17-Jun-16

Carrier: Nick Reed

Received By: KF

Completed by: *Kalyn Foecke*
On: 08-Jun-16
Kalyn Foecke

Reviewed by: *Elizabeth A. Hurley*
On: 08-Jun-16
Elizabeth A. Hurley

Pages to follow: Chain of custody Extra pages included

- Shipping container/cooler in good condition? Yes No Not Present Temp °C **1.22**
- Type of thermal preservation? None Ice Blue Ice Dry Ice
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Reported field parameters measured: Field Lab NA
- Container/Temp Blank temperature in compliance? Yes No

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

- Water – at least one vial per sample has zero headspace? Yes No No VOA vials
- Water - TOX containers have zero headspace? Yes No No TOX containers
- Water - pH acceptable upon receipt? Yes No NA
- NPDES/CWA TCN interferences checked/treated in the field? Yes No NA

Any No responses must be detailed below or on the COC.

Additional sulfuric acid was needed in PZ-202-SS and PZ-206-SS upon arrival at the laboratory. AMD 6/8/16

Trip Blank collection date and time will be reported as the received date and time (end of trip). KF 6/8/16

CHAIN OF CUSTODY

pg. 1 of 1 Work Order # 16060536

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Missouri Army General / MGS
 Address: _____
 City / State / Zip: _____
 Contact: Brenna McDonald Phone: 573-453-4329
 E-Mail: brenna.mcdonald@dnr.mo.gov Fax: 573-368-2111

Samples on: Ice Blue Ice No Ice 1.22 °C
 Preserved in: Lab Field **FOR LAB USE ONLY**
 Lab Notes: add
* Add 125ml to both 125 Amber Glass Bottles
 Comments: OK headspace KF 6/8/16

- Are these samples known to be involved in litigation? If yes, a surcharge will apply. Yes No
- Are these samples known to be hazardous? Yes No
- Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section. Yes No

Project Name / Number		Sample Collector's Name		MATRIX							INDICATE ANALYSIS REQUESTED																	
Bridgton Landfill Results Requested <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 1-2 Day (100% Surcharge) <input type="checkbox"/> Other _____ <input type="checkbox"/> 3 Day (50% Surcharge)		LYND MILBERG		# and Type of Containers UNPRES HNO ₃ NaOH H ₂ SO ₄ HCL MeOH NaHSO ₄ Other							Water	Drinking Water	Soil	Sludge	Sp. Waste	No App I												
Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO ₃	NaOH	H ₂ SO ₄	HCL	MeOH	NaHSO ₄	Other	Water	Drinking Water	Soil	Sludge	Sp. Waste													
<u>16060536</u>	<u>PZ-202-SS</u>	<u>6/6/16 0907</u>	<u>1</u>	<u>1</u>		<u>2</u>	<u>3</u>				<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	TEKLAB Courier											
<u>002</u>	<u>PZ-206-SS</u>	<u>6/8/16 0930</u>	<u>1</u>	<u>1</u>		<u>2</u>	<u>3</u>				<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>												
<u>003</u>	<u>Trip Blank</u>																											

Relinquished By	Date / Time	Received By	Date / Time
<u>Lynn Miller</u>	<u>6/8/2016 1235</u>	<u>Michelle Reed</u>	<u>6/8/16 1235</u>
<u>Michelle Reed</u>	<u>6/8/16 1410</u>	<u>Kleeche</u>	<u>6/8/16 1410</u>