SANTEK
WasteServices
650 25th Street, N.W., Suite 100
Cleveland, Tennessee 37311
(423) 303-7101
Email: info@santekwasteservices.com
Internet: santekwasteservices.com

January 24, 2020

Mr. Patrick Mulligan
Tennessee Department of Environment and Conservation
Division of Solid Waste Management
3711 Middlebrook Pike
Knoxville, TN 37921-5602

RE: Groundwater Monitoring Report – 2nd Semi-Annual Event
Matlock Bend Landfill
SNL #53-103-0203

Dear Mr. Mulligan:

Please find enclosed a copy of the groundwater monitoring report generated from the second semi-annual groundwater event of 2019 at the Matlock Bend Landfill. This package includes data pertaining to site information, geologic summary, groundwater sampling, analytical laboratory reports, statistical analysis, and groundwater elevations and flow.

If you have any questions and/or comments, please feel free to call at (423) 303-7101.

Sincerely,

Robert Hudson
Environmental Compliance Coordinator

Enclosure

cc: Steve Field, Loudon County Solid Waste Department Chairman
Matt Dillard, Executive V.P. of Operations, Santek
Ron E. Vail, P.E., Executive V.P. of Engineering, Santek
Justin Givens, Landfill Manager, Santek

MATLOCK BEND LANDFILL – PHASE I & PHASE II/IV UPGRADE
GROUNDWATER MONITORING REPORT
2nd SEMI-ANNUAL EVENT - 2019

SANTEK PROJECT NO. 200-1910.3

PREPARED BY:
SANTEK WASTE SERVICES, LLC
650 25TH STREET NW, SUITE 100
CLEVELAND, TN 37311

JANUARY 2020

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1.0 INTRODUCTION

In accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rule 0400-11-01-.04(7), Santek Waste Services, LLC (Santek) is submitting the groundwater monitoring report for the second semi-annual event for 2019 at the Matlock Bend Landfill. The sampling and analytical were performed in accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rules as well as the site's approved groundwater monitoring plan dated December 1996. The groundwater monitoring plan is incorporated in the landfill's Operations Plan. The site's groundwater monitoring network consists of six monitoring wells, three downgradient wells for Phase I, two downgradient wells for Phase II/IV, with one upgradient well for both phases. MW-4R is the upgradient well for Phase I and Phase II/IV. MW-01, MW-1A, and MW-02 are the downgradient wells for Phase I; MW-03 and MW-05 are the downgradient wells for Phase II/IV. In accordance with the TDEC groundwater report review dated September 30, 2016, Santek is now monitoring the facility as one unit with one upgradient monitoring location (MW-4R). However, once Phase I ends the post-closure care period on January 21, 2028, the downgradient monitoring wells associated with Phase I will no longer continue to be monitored. Santek contracted with Environmental Monitoring Services, LLC (EMS) to perform the sampling. Statistical analyses were performed by Santek. Santek contracted with Analytical Environmental Services, Inc. (AES) to perform all analytical testing.

1.1 SITE INFORMATION

The Matlock Bend Landfill is located approximately five miles west of Loudon, TN, at latitude N 35° 44' 48" and longitude W 84° 24' 43". The site consists of 37.4 constructed acres of ridge-top and sloped hillside topography bordering Tennessee Highway 72 for approximately 250 feet extending northward 4,800 feet.

2.0 SAMPLING AND ANALYTICAL

The groundwater sampling event was performed by EMS on November 26, 2019. All samples were analyzed for Appendix I constituents, as well as the required additional 14 parameters at the Phase I wells (MW-01, MW-1A, MW-02, and MW-03). All samples were submitted to AES for analysis. A duplicate was obtained from MW-1A. Field sampling logs are provided in Appendix A. Analytical results are provided in Appendix B.

3.0 STATISTICAL ANALYSIS

3.1 Statistical Analysis Method

Santek is submitting a control chart approach to satisfy the statistical analysis requirement. Well #4R is the upgradient (background) well. Wells #01, #1A, #02, #03 and #05 are the downgradient (compliance) wells. The Appendix I analytical results for this sampling event are used to compare the compliance wells to the background well concentrations for each constituent elevated above detection limit. Parameters not detected above the reporting limits are not included in the control chart comparison. Parameters detected above the reporting limits are compared to the average background concentration. The mean (average) for each well is determined by using the actual analytical value if it exceeds the detection limit, or by using the method detection limit (MDL) if the result was a nondetect. If the average background concentration is greater than the results for the compliance well, then no significant increase is indicated. If the average background concentration is less than the results of the compliance well, then the Tennessee (TN)

Regulatory Limits of the Tennessee Solid Waste regulations are used for additional comparison to indicate potentially elevated concentrations. If there is no published TN Regulatory Limit, the EPA Region 4 Screening Level is used.

In accordance with the February 23, 2018 TDEC Groundwater Report Review and the March 7, 2018 email to Mr. Patrick Mulligan, Santek instructed AES to lower the reporting limits for Appendix I VOCs and metals to the lab's practical quantification limit (PQL). Using the revised reporting limits, Santek recalculated the background data for all groundwater wells. The revised control charts are provided in Appendix C.

AES used elevated reporting limits for some parameters at multiple wells. For the control charts, the elevated reporting limits are highlighted in yellow and do not factor into the well's statistical average. AES has been reminded to use the previous lower reporting limits to keep statistical analysis consistent.

3.2 Statistical Analysis Summary

MW-01

The control chart for MW-01 indicates barium is above the report limit and background well's average. However, the result of this constituent does not exceed the TN Regulatory Limit which establishes the groundwater protection standards at this well.

MW-1A

The control chart for MW-1A indicates barium is above the report limit and background well's average. However, the result of this constituent does not exceed the TN Regulatory limit which establishes the groundwater protection standards at this well.

The control chart for MW-1A indicates zinc is above the report limit. However, the result of this constituent does not exceed the background well's average which establishes the groundwater protection standards at this well.

MW-02

The control chart for MW-02 indicates barium, beryllium, cadmium and nickel are above the report limit and background well's average. However, the results of these constituents do not exceed the TN Regulatory Limit which establishes the groundwater protection standards at this well.

The control chart for MW-02 indicates zinc is above the report limit and the background well's average. However, the result of this constituent does not exceed the EPA Region 4 Screening Level which establishes the groundwater protection standards at this well.

This control chart for MW-02 indicated copper is above the report limit. However, the results of this constituent does not exceed the background well's average which established the groundwater protection standards at this well.

MW-03

The control chart for MW-03 indicates barium is above the report limit and background well's average. However, the result of this constituent does not exceed the TN Regulatory Limit which establishes the groundwater protection standards at this well.

The control chart for MW-03 indicates zinc is above the report limit. However, the result of this constituent does not exceed the background well's average which establishes the groundwater protection standards at this well.

MW-4R

MW-4R is the upgradient (background) well.

MW-05

The control chart for MW-05 indicates barium and zinc are above the report limit. However, the results of these constituents do not exceed the background well's average which establishes the groundwater protection standards at this well.

4.0 FLOW DIRECTION AND RATES

Phase I Geological Summary:

Geologic information of Phase I is based on a Hydrogeologic Evaluation dated January 18, 1984, by G.N. Pruitt (TNDSWM). Phase I is located on a discontinuous, highly dissected upland with elevations ranging from approximately 865 feet (MSL) to 1,020 feet (MSL). The evaluation indicates a thick cover of silty-clayey soil which covers the majority of the site, the absence of shallow groundwater, and the absence of perennial springs and streams. No bedrock outcrops were viewed on site; however, an exposed dolomite limestone ledge resides east of the southeast property boundary. This rock exposure appears to originate from either the uppermost part of the Longview dolomite formation or the lower portion of the Newalla dolomite formation, both belonging to the Knox Group. Phase I is located in the Valley and Ridge physiographic region consisting of northeast/southwest trending valleys and ridges.

Phase II/IV Geological Summary:

Geologic information for Phase II/IV is based on a Hydrogeologic Investigation Report prepared by Theta Engineering, Inc. dated January 11, 1996. Phase II/IV is located in the Valley and Ridge physiographic region consisting commonly of northeast/southwest trending valleys and ridges. This area consists of discontinuous, highly dissected upland with elevations ranging from approximately 865 feet to 1,020 feet. Bedrock formations include the Copper Ridge Dolomite Formation and the Longview Dolomite Formation, both of which belong to the Knox Group. The area is dominantly covered by silty-clayey soil originating from the Fullerton, Clarksville, and Nolichucky Series.

Groundwater Flow:

The overall groundwater flow of Phase I is towards the southwest and will eventually flow to the Tennessee River. The groundwater flow rate ranges from 1.72×10^{-3} ft/day at MW-1A to 1.09×10^{-2} ft/day at MW-03. Groundwater flow direction of Phase II/IV locally flows towards the west and will ultimately flow to the Tennessee River. The groundwater flow rate ranges from 1.09×10^{-2} ft/day at MW-03 to 2.07×10^{-2} ft/day at MW-05. Groundwater flow rate and direction have been determined for each well and are included in Appendix D. A groundwater potentiometric contour map along with the Phase I and Phase II/IV limits is included in Appendix E.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater monitoring network at this site is adequately monitoring the uppermost aquifer and no changes are recommended at this time.

APPENDIX A

EMServices

Environmental Monitoring Services, LLC
Phone (770) 823-7174

December 3, 2019

Robert Hudson
Santek Waste Services
650 25th Street NW, Suite 100
Cleveland, TN 37311

RE: Groundwater monitoring at Loudon County Landfills

Robert,

On November 26th, we completed the semi-annual groundwater monitoring at the referenced site. The sampling activities were performed in accordance with the site's operating permit and EPA Region IV LSASD SOP's.

After collecting the water level, we calculated the purge volume to three well-volumes using a standard formula. At each well, purging continued until at least three well-volumes were removed and the field parameters were stable, or until the well was dry. The purge water was captured in 5-gallon buckets to quantify the purge volumes.

We employed a submersible pump for the purging of all wells except MW-4R. The pumps used were attached to Teflon-lined tubing. The tubing and pump were rinsed after sampling the well. MW-4R was purged using a new disposable poly bailer attached to new nylon string.

The wells were sampled using the same pump or bailer used to purge the well. The VOC and fluoride samples were collected immediately. If turbidity was at an unacceptable level when purging was complete (all other parameters stable), the well was allowed to settle briefly. Those metals samples were collected using disposable poly bailers attached to new nylon string, all of which was discarded upon completion of sampling.

During the purging process, pH, conductivity, temperature and turbidity readings were collected and recorded in the logbook. Turbidity readings were again recorded at the time of metals sample collection if the well was allowed to settle. Field readings were recorded from the initial water pulled (0 gallons), well-volume 1, well-volume 2, well-volume 2.5 and well-volume 3. Stability was based on volume, rather than time (though the time between measurements fell within range of accepted guidance). The stability criteria used based on accepted guidance was at least 3 sets of readings within the following ranges: pH (± 0.1 SU), SC (± 10%), Temperature (± 1°C), and Turbidity (<10 NTU). If the measurements weren't stable as defined by the above criteria at the completion of purging 3 well-volumes, purging continued and readings recorded generally every 0.5 well-volume up to 5 well-volumes. These readings were recorded from YSI Pro Plus's which were calibrated each morning. Turbidity readings were collected using LaMotte 2020t's, which were cal-checked prior to use. The LaMotte contains a factory calibration which is checked in-house using formazine standards.

The samples were collected in containers provided by the laboratory. These containers were of types, sizes and preserved in a manner consistent with SW-846 and other guidance. Upon filling, the containers were placed on ice. The samples were delivered via lab courier under chain of custody to Analytical Environmental Services, (AES), located in Atlanta, Georgia.

We appreciate the opportunity to work with you on this project and look forward to any feedback you have.

Respectfully,

Jeff Johnson

Attachments: Groundwater Field Data

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Waste Services
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-01
Date	11/26/2019
DTW[1]	7.25
DTB[2]	45.00
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN App I VOC/Metals/F + NO3, SO4, TDS, NH3, TOC, COD, CN, D. Mn, Ca, Fe, Mg, K, Na

Time	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
0925	1.00	6.25	8.25	220	12.6	6
0933	1.00	12.50	6.94	271	13.9	193
0937	1.00	15.50	6.61	275	14.3	243
0941	1.00	18.50	6.59	280	14.2	172
0945	1.00	21.50	6.58	281	14.1	113
0949	1.00	24.75	6.57	283	14.1	107

Metals sample collection if allowed to settle:

Date: 11/26/2019 Time: 1345 NTU: 8

Comments
Cloudy, no odor, allowed to settle

Field Tech: J. Roberts

1 Depth to water as measured in feet from top of casing

2 Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Waste Services
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-1A
Date	11/16/2019
DTW[1]	9.77
DTB[2]	38.00
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN App I VOC/Metals/F + NO3, SO4, TDS, NH3, TOC, COD, CN, D. Mn, Ca, Fe, Mg, K, Na

DTW[1]	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
1100	1.00	4.75	5.30	250	7.7	75
1104	1.00	9.25	6.27	978	9.6	13
1108	1.00	11.50	6.31	985	9.8	11
1112	1.00	14.00	6.30	986	9.8	8

Metals sample collection if allowed to settle:

Date: _____ Time: _____ NTU: _____

Comments
Clear, no odor, Dup collected here

Field Tech: J. Roberts

1 Depth to water as measured in feet from top of casing

2 Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Waste Services
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-02
Date	11/26/2019
DTW[1]	19.67
DTB[2]	43.10
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN App I VOC/Metals/F + NO3, SO4, TDS, NH3, TOC, COD, CN, D. Mn, Ca, Fe, Mg, K, Na

DTW[1]	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
1010	0.75	4.00	6.43	42	13.5	105
1014	0.75	6.00	5.68	47	13.6	81
1018	0.75	7.75	5.40	41	14.0	41
1022	0.75	10.00	5.38	40	14.0	38
1026	0.75	11.50	5.37	38	14.1	38

Metals sample collection if allowed to settle:

Date: _____ Time: _____ NTU: _____

Comments
Cloudy, no odor

Field Tech: J. Roberts

1 Depth to water as measured in feet from top of casing

2 Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Waste Services
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-03
Date	11/26/2019
DTW[1]	12.75
DTB[2]	41.60
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN App I VOC/Metals/F + NO3, SO4, TDS, NH3, TOC, COD, CN, D. Mn, Ca, Fe, Mg, K, Na

DTW[1]	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
1150	1.00	4.75	7.17	232	16.5	2
1155	1.00	9.50	6.31	253	15.7	4
1158	1.00	12.00	6.25	256	15.5	4
1201	1.00	14.25	6.23	257	15.4	5

Metals sample collection if allowed to settle:

Date: _____ Time: _____ NTU: _____

Comments
Clear, no odor, dup pulled here

Field Tech: N. Walker

1 Depth to water as measured in feet from top of casing

2 Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Waste Services
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-4R
Date	11/26/2019
DTW[1]	101.21
DTB[2]	106.50
Purge/Sample Method	Disposable Bailer
Decon Method	Field Appendix B
Parameters	TN Appendix I VOCs / Metals / F

DTW[1]	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
0950	-	1.00	6.81	228	13.1	58

Metals sample collection if allowed to settle:

Date: 11/26/2019 Time: 1221 NTU: 9

Comments
Cloudy, no odor, allowed to settle

Field Tech: N. Walker

1 Depth to water as measured in feet from top of casing

2 Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Waste Services
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-05
Date	11/26/2019
DTW[1]	97.69
DTB[2]	172.71
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN Appendix I VOCs / Metals / F

DTW[1]	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
1110	1.00	12.25	7.66	208	13.1	9
1122	1.00	24.50	7.75	204	14.8	8
1128	1.00	30.75	7.80	203	15.1	6
1134	1.00	36.75	7.82	202	15.2	6

Metals sample collection if allowed to settle:

Date: _____ Time: _____ NTU: _____

Comments
Clear, no odor

Field Tech: N. Walker

1 Depth to water as measured in feet from top of casing

2 Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Waste Services
Site	Loudon County (Matlock Bend) Landfills
Sample ID	Equipment Blank
Date / Time	11/26/19 17:00
Sample Method	Directly into bottles
Parameters	TN Appendix I VOCs / Metals / F

Comments
DI Water provided by AES

Field Tech: J. Roberts

EM Services

Environmental Monitoring Services, LLC

Client	Santek Waste Services
Site	Loudon County (Matlock Bend) Landfills
Date	11/26/2019

Well ID	TOC Elevation[1]	DTW[2]	Water Level FMSL
MW-01	830.87	7.25	823.62
MW-1A	805.13	9.77	795.36
MW-02	825.20	19.67	805.53

Well	TOC Elevation[1]	DTW[2]	Water Level FMSL
MW-03	867.86	12.75	855.11
MW-4R	992.32	101.21	891.11
MW-05	936.84	172.71	764.13

1 Elevation of Reference Point on Wellhead, Generally Top of Casing

2 Measured in feet from Top of Casing

APPENDIX B

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

December 06, 2019

Robert Hudson
Santek Waste Services, LLC

650 25th Street NW, Suite 100
Cleveland TN 37311

RE: Loudon Co (Matlock Bend) Landfill

Dear Robert Hudson: Order No: 1911S55

Analytical Environmental Services, Inc. received 12 samples on November 27, 2019 3:32 pm for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/19-06/30/20.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective through 06/30/20 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/21.
These results relate only to the items tested as received. This report may only be reproduced in full.

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

Sincerely,

Chris Pafford

Project Manager

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

ANALYTICAL ENVIRONMENTAL SERVICES, INC.
3080 Presidential Drive Atlanta, GA 30340-3704
Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1911955

Date: 11/27/19 Page 1 of 1

COMPANY: Santek Environmental Inc.	ADDRESS: 650 25th St NW Ste 100 Cleveland, TN 37311
PHONE: 423-303-7101	EMAIL:
SAMPLED BY: N/Work / JRobert	SIGNATURE:

#	SAMPLE ID	SAMPLED: DATE	SAMPLED: TIME	GRAB	COMPOSITE	MATRIX (see codes)	TN App VOC (8260)	TN App VOC (5011)	TN App Metals (incl Hg, Mg, K, Na)	Diss Mn	COD, NH_3	TDS	F, Cl, NO_3, SO_4	CN	TOC	TN App Metals (incl Hg)	Fluoride			Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.	Number of Containers
							PRESERVATION (see codes)													REMARKS	
							H+I	I	N	I	S+I	I	I	N+H	S+I	N	I				
1	MW-01	11/26/19	0949	✓		GW	2	2		1	1	1	1	1	2						11
2	↳	11/26/19	1345	✓		GW			1												1
3	MW-1A	11/26/19	1112	✓		GW	2	2	1	1	1	1	1	1	2						12
4	MW-02	11/26/19	1026	✓		GW	2	2		1	1	1	1	1	2						11
5	↳	11/26/19	1330	✓		GW			1												1
6	MW-03	11/26/19	1201	✓		GW	2	2	1	1	1	1	1	1	2						12
7	MW-4R	11/26/19	0950	✓		GW	2	2									1				5
8	↳	11/26/19	1221	✓		GW										1					1
9	MW-05	11/26/19	1134	✓		GW	2	2								1	1				6
10	Equipment Blank	11/26/19	1700	✓		W	2	2	1	1	1	1	1	1	2						12
11	Duplicate	11/26/19	1056	✓		GW	2	2	1	1	1	1	1	1	2						12
12	Trip Blank	11/26/19	0900	✓		W	2														2
13																					
14																					

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1.	11/27/19 0630	1.	11-27 1215
2.	11-27 1512	2.	11.27.19 1532
3.		3.	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT: / / VIA:
IN: / / VIA:
(Client) FedEx UPS US mail (courier)
other: _____

PROJECT INFORMATION
PROJECT NAME: Loudon CO (Mattpack Beach) Landfill
PROJECT #:
SITE ADDRESS: 21712 Hwy 72N Loudon TN 37774
SEND REPORT TO: Robert Hudson
INVOICE TO (IF DIFFERENT FROM ABOVE):
QUOT #: _____ PO#: _____

RECEIPT
Total # of Containers: 86

Turnaround Time (TAT) Request
- [x] Standard
- [ ] 2 Business Day Rush
- [ ] Next Business Day Rush
- [ ] Same-Day Rush (auth req.)
- [ ] Other _____

STATE PROGRAM (if any): TN
E-mail? [x] Fax? [ ]
DATA PACKAGE: I ○ II ⊗ III ○ IV ○

Submission of samples to the laboratory constitutes acceptance of AES's Terms & Conditions. Client assumes sole responsibility for damage or loss of samples before we accept them. Samples received after 3PM or on Saturday are considered as received the following business day. If no TAT is marked on COC, AES will proceed with standard TAT. Samples are disposed of 30 days after completion of report unless other arrangements are made.

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water ST=Stormwater WW = Waste Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify)

Preservative Codes: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

7.11.18_CO

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc

Date: 6-Dec-19

Client: Santek Waste Services, LLC
Project: Loudon Co (Matlock Bend) Landfill
Lab ID: 1911S55

Case Narrative

Sample Receiving Nonconformance:

Sample bottle for Total Dissolved Solids was not received. The laboratory proceeded with analysis using the other bottles provided.

A bottle was received unlabeled. This bottle was not used for analysis.

Laboratory Non-conformance:

As the result of a power outage and the ensuing power surge associated with the return of the power, one of our refrigerators temporarily cooled samples below the target holding temperature (approximately 3-4 °C). Consequently, several water samples had frozen and the resulting ice fractured the glass containers causing a loss of sample. As a result samples for Micro VOC analysis of 1,2-Dibromo-3-chloropropane and 1,2-Dibromoethane were analyzed from the standard Appendix I volatiles list.

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-01
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 9:49:00 AM
Lab ID:	1911S55-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	3.00	1.00		mg/L	R413100	1	12/03/2019 23:43	SK
Total Cyanide (SM4500 CN-C, E)					(SM4500-CN-E)			
Cyanide, Total	BRL	0.010		mg/L	288877	1	12/03/2019 11:20	AA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	301	10		mg/L	288799	1	12/03/2019 15:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	288798	1	11/29/2019 11:22	JM
Inorganic Anions by IC EPA 300.0								
Chloride	37.1	10.0		mg/L	R412869	10	11/27/2019 22:30	KV
Fluoride	BRL	0.200		mg/L	R412869	1	11/27/2019 19:18	KV
Nitrogen, Nitrate (As N)	2.11	0.250		mg/L	R412869	1	11/27/2019 19:18	KV
Sulfate	6.16	1.00		mg/L	R412869	1	11/27/2019 19:18	KV
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	BRL	0.0100		mg/L	288824	1	11/29/2019 20:20	DK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	11.7	10.0		mg/L	R412920	1	12/02/2019 16:30	EM
APPENDIX I VOLATILE ORGANICS SW8260D					(SW5030B)			
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,1,1-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,1-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,1-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,2,3-Trichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,2-Dibromoethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,2-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,2-Dichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
2-Butanone	BRL	50		ug/L	288879	1	11/30/2019 01:20	NP
2-Hexanone	BRL	10		ug/L	288879	1	11/30/2019 01:20	NP
4-Methyl-2-pentanone	BRL	10		ug/L	288879	1	11/30/2019 01:20	NP
Acetone	BRL	50		ug/L	288879	1	11/30/2019 01:20	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-01
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 9:49:00 AM
Lab ID:	1911S55-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
Acrylonitrile	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Benzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Bromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Bromodichloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Bromoform	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Bromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Carbon disulfide	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Carbon tetrachloride	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Chlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Chloroethane	BRL	10		ug/L	288879	1	11/30/2019 01:20	NP
Chloroform	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Chloromethane	BRL	10		ug/L	288879	1	11/30/2019 01:20	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Dibromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Dibromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Ethylbenzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Iodomethane	BRL	10		ug/L	288879	1	11/30/2019 01:20	NP
m,p-Xylene	BRL	10		ug/L	288879	1	11/30/2019 01:20	NP
Methylene chloride	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
o-Xylene	BRL	10		ug/L	288879	1	11/30/2019 01:20	NP
Styrene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Tetrachloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Toluene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	288879	1	11/30/2019 01:20	NP
Trichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Trichlorofluoromethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:20	NP
Vinyl acetate	BRL	10		ug/L	288879	1	11/30/2019 01:20	NP
Vinyl chloride	BRL	2.0		ug/L	288879	1	11/30/2019 01:20	NP
Surr: 4-Bromofluorobenzene	96.3	64-125		%REC	288879	1	11/30/2019 01:20	NP
Surr: Dibromofluoromethane	88.7	76.4-125		%REC	288879	1	11/30/2019 01:20	NP
Surr: Toluene-d8	91.7	78.3-116		%REC	288879	1	11/30/2019 01:20	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-01
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 1:45:00 PM
Lab ID:	1911S55-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020B				(SW3005A)				
Antimony	BRL	0.00150		mg/L	288805	1	12/03/2019 02:20	DK
Arsenic	BRL	0.00250		mg/L	288805	1	12/03/2019 02:20	DK
Barium	0.0332	0.0100		mg/L	288805	1	12/03/2019 02:20	DK
Beryllium	BRL	0.00100		mg/L	288805	1	12/03/2019 02:20	DK
Cadmium	BRL	0.000700		mg/L	288805	1	12/03/2019 02:20	DK
Calcium	48.1	0.100		mg/L	288805	1	12/03/2019 02:20	DK
Chromium	BRL	0.00500		mg/L	288805	1	12/03/2019 02:20	DK
Cobalt	BRL	0.00500		mg/L	288805	1	12/03/2019 02:20	DK
Copper	BRL	0.00200		mg/L	288805	1	12/03/2019 02:20	DK
Iron	0.323	0.100		mg/L	288805	1	12/03/2019 02:20	DK
Lead	BRL	0.00100		mg/L	288805	1	12/03/2019 02:20	DK
Magnesium	32.3	1.00		mg/L	288805	10	12/03/2019 19:48	DK
Nickel	BRL	0.00500		mg/L	288805	1	12/03/2019 02:20	DK
Potassium	3.18	0.100		mg/L	288805	1	12/03/2019 02:20	DK
Selenium	BRL	0.00500		mg/L	288805	1	12/03/2019 02:20	DK
Silver	BRL	0.00100		mg/L	288805	1	12/03/2019 02:20	DK
Sodium	13.3	0.500		mg/L	288805	1	12/03/2019 02:20	DK
Thallium	BRL	0.000500		mg/L	288805	1	12/03/2019 02:20	DK
Vanadium	BRL	0.00500		mg/L	288805	1	12/03/2019 02:20	DK
Zinc	BRL	0.0100		mg/L	288805	1	12/03/2019 02:20	DK
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00200		mg/L	288867	1	12/03/2019 16:07	EH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-1A
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 11:12:00 AM
Lab ID:	1911S55-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	2.21	1.00		mg/L	R413100	1	12/04/2019 00:02	SK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Antimony	BRL	0.00150		mg/L	288805	1	12/03/2019 02:23	DK
Arsenic	BRL	0.00250		mg/L	288805	1	12/03/2019 02:23	DK
Barium	0.181	0.0100		mg/L	288805	1	12/03/2019 02:23	DK
Beryllium	BRL	0.00100		mg/L	288805	1	12/03/2019 02:23	DK
Cadmium	BRL	0.000700		mg/L	288805	1	12/03/2019 02:23	DK
Calcium	114	2.00		mg/L	288805	20	12/03/2019 19:52	DK
Chromium	BRL	0.00500		mg/L	288805	1	12/03/2019 02:23	DK
Cobalt	BRL	0.00500		mg/L	288805	1	12/03/2019 02:23	DK
Copper	BRL	0.00200		mg/L	288805	1	12/03/2019 02:23	DK
Iron	0.238	0.100		mg/L	288805	1	12/03/2019 02:23	DK
Lead	BRL	0.00100		mg/L	288805	1	12/03/2019 02:23	DK
Magnesium	38.2	2.00		mg/L	288805	20	12/03/2019 19:52	DK
Nickel	BRL	0.00500		mg/L	288805	1	12/03/2019 02:23	DK
Potassium	33.4	0.100		mg/L	288805	1	12/03/2019 02:23	DK
Selenium	BRL	0.00500		mg/L	288805	1	12/03/2019 02:23	DK
Silver	BRL	0.00100		mg/L	288805	1	12/03/2019 02:23	DK
Sodium	124	10.0		mg/L	288805	20	12/03/2019 19:52	DK
Thallium	BRL	0.000500		mg/L	288805	1	12/03/2019 02:23	DK
Vanadium	BRL	0.00500		mg/L	288805	1	12/03/2019 02:23	DK
Zinc	0.0152	0.0100		mg/L	288805	1	12/03/2019 02:23	DK
Total Cyanide (SM4500 CN-C, E)					(SM4500-CN-E)			
Cyanide, Total	BRL	0.010		mg/L	288877	1	12/03/2019 11:22	AA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	869	10		mg/L	288799	1	12/03/2019 15:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	288798	1	11/29/2019 11:24	JM
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	288867	1	12/03/2019 15:08	EH
Inorganic Anions by IC EPA 300.0								
Chloride	314	10.0		mg/L	R412869	10	11/27/2019 22:46	KV
Fluoride	BRL	0.200		mg/L	R412869	1	11/27/2019 19:34	KV
Nitrogen, Nitrate (As N)	12.2	2.50		mg/L	R412869	10	11/27/2019 22:46	KV
Sulfate	33.0	1.00		mg/L	R412869	1	11/27/2019 19:34	KV

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-1A
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 11:12:00 AM
Lab ID:	1911S55-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Dissolved Metals by ICP/MS SW6020B				(SW3005A)				
Manganese	0.0435	0.0100		mg/L	288824	1	11/29/2019 20:09	DK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	16.2	10.0		mg/L	R412920	1	12/02/2019 16:30	EM
APPENDIX I VOLATILE ORGANICS SW8260D				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,1,1-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,1-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,1-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,2,3-Trichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,2-Dibromoethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,2-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,2-Dichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
2-Butanone	BRL	50		ug/L	288879	1	11/30/2019 01:44	NP
2-Hexanone	BRL	10		ug/L	288879	1	11/30/2019 01:44	NP
4-Methyl-2-pentanone	BRL	10		ug/L	288879	1	11/30/2019 01:44	NP
Acetone	BRL	50		ug/L	288879	1	11/30/2019 01:44	NP
Acrylonitrile	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Benzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Bromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Bromodichloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Bromoform	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Bromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Carbon disulfide	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Carbon tetrachloride	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Chlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Chloroethane	BRL	10		ug/L	288879	1	11/30/2019 01:44	NP
Chloroform	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Chloromethane	BRL	10		ug/L	288879	1	11/30/2019 01:44	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Dibromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Dibromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Ethylbenzene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Iodomethane	BRL	10		ug/L	288879	1	11/30/2019 01:44	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-1A
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 11:12:00 AM
Lab ID:	1911S55-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
m,p-Xylene	BRL	10		ug/L	288879	1	11/30/2019 01:44	NP
Methylene chloride	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
o-Xylene	BRL	10		ug/L	288879	1	11/30/2019 01:44	NP
Styrene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Tetrachloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Toluene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	288879	1	11/30/2019 01:44	NP
Trichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Trichlorofluoromethane	BRL	5.0		ug/L	288879	1	11/30/2019 01:44	NP
Vinyl acetate	BRL	10		ug/L	288879	1	11/30/2019 01:44	NP
Vinyl chloride	BRL	2.0		ug/L	288879	1	11/30/2019 01:44	NP
Surr: 4-Bromofluorobenzene	96.4	64-125		%REC	288879	1	11/30/2019 01:44	NP
Surr: Dibromofluoromethane	93.6	76.4-125		%REC	288879	1	11/30/2019 01:44	NP
Surr: Toluene-d8	93.9	78.3-116		%REC	288879	1	11/30/2019 01:44	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-02
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 10:26:00 AM
Lab ID:	1911S55-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R413100	1	12/04/2019 00:20	SK
Total Cyanide (SM4500 CN-C, E)					(SM4500-CN-E)			
Cyanide, Total	BRL	0.010		mg/L	288877	1	12/03/2019 11:25	AA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	60	10		mg/L	288799	1	12/03/2019 15:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	288798	1	11/29/2019 11:30	JM
Inorganic Anions by IC EPA 300.0								
Chloride	5.34	1.00		mg/L	R412869	1	11/27/2019 19:50	KV
Fluoride	BRL	0.200		mg/L	R412869	1	11/27/2019 19:50	KV
Nitrogen, Nitrate (As N)	4.35	0.250		mg/L	R412869	1	11/27/2019 19:50	KV
Sulfate	BRL	1.00		mg/L	R412869	1	11/27/2019 19:50	KV
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	0.149	0.0100		mg/L	288824	1	11/29/2019 20:13	DK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R412920	1	12/02/2019 16:30	EM
APPENDIX I VOLATILE ORGANICS SW8260D					(SW5030B)			
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,1,1-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,1-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,1-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,2,3-Trichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,2-Dibromoethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,2-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,2-Dichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
2-Butanone	BRL	50		ug/L	288879	1	11/30/2019 02:07	NP
2-Hexanone	BRL	10		ug/L	288879	1	11/30/2019 02:07	NP
4-Methyl-2-pentanone	BRL	10		ug/L	288879	1	11/30/2019 02:07	NP
Acetone	BRL	50		ug/L	288879	1	11/30/2019 02:07	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-02
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 10:26:00 AM
Lab ID:	1911S55-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
Acrylonitrile	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Benzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Bromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Bromodichloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Bromoform	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Bromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Carbon disulfide	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Carbon tetrachloride	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Chlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Chloroethane	BRL	10		ug/L	288879	1	11/30/2019 02:07	NP
Chloroform	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Chloromethane	BRL	10		ug/L	288879	1	11/30/2019 02:07	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Dibromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Dibromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Ethylbenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Iodomethane	BRL	10		ug/L	288879	1	11/30/2019 02:07	NP
m,p-Xylene	BRL	10		ug/L	288879	1	11/30/2019 02:07	NP
Methylene chloride	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
o-Xylene	BRL	10		ug/L	288879	1	11/30/2019 02:07	NP
Styrene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Tetrachloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Toluene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	288879	1	11/30/2019 02:07	NP
Trichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Trichlorofluoromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:07	NP
Vinyl acetate	BRL	10		ug/L	288879	1	11/30/2019 02:07	NP
Vinyl chloride	BRL	2.0		ug/L	288879	1	11/30/2019 02:07	NP
Surr: 4-Bromofluorobenzene	95.5	64-125		%REC	288879	1	11/30/2019 02:07	NP
Surr: Dibromofluoromethane	89.2	76.4-125		%REC	288879	1	11/30/2019 02:07	NP
Surr: Toluene-d8	91.4	78.3-116		%REC	288879	1	11/30/2019 02:07	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-02
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 1:30:00 PM
Lab ID:	1911S55-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020B				(SW3005A)				
Antimony	BRL	0.00150		mg/L	288805	1	12/03/2019 02:27	DK
Arsenic	BRL	0.00250		mg/L	288805	1	12/03/2019 02:27	DK
Barium	0.0518	0.0100		mg/L	288805	1	12/03/2019 02:27	DK
Beryllium	0.00190	0.00100		mg/L	288805	1	12/03/2019 02:27	DK
Cadmium	0.00178	0.000700		mg/L	288805	1	12/03/2019 02:27	DK
Calcium	2.60	0.100		mg/L	288805	1	12/03/2019 02:27	DK
Chromium	BRL	0.00500		mg/L	288805	1	12/03/2019 02:27	DK
Cobalt	BRL	0.00500		mg/L	288805	1	12/03/2019 02:27	DK
Copper	0.00210	0.00200		mg/L	288805	1	12/03/2019 02:27	DK
Iron	0.167	0.100		mg/L	288805	1	12/03/2019 02:27	DK
Lead	BRL	0.00100		mg/L	288805	1	12/03/2019 02:27	DK
Magnesium	1.37	0.100		mg/L	288805	1	12/03/2019 02:27	DK
Nickel	0.0289	0.00500		mg/L	288805	1	12/03/2019 02:27	DK
Potassium	2.16	0.100		mg/L	288805	1	12/03/2019 02:27	DK
Selenium	BRL	0.00500		mg/L	288805	1	12/03/2019 02:27	DK
Silver	BRL	0.00100		mg/L	288805	1	12/03/2019 02:27	DK
Sodium	2.80	0.500		mg/L	288805	1	12/03/2019 02:27	DK
Thallium	BRL	0.000500		mg/L	288805	1	12/03/2019 02:27	DK
Vanadium	BRL	0.00500		mg/L	288805	1	12/03/2019 02:27	DK
Zinc	0.289	0.0100		mg/L	288805	1	12/03/2019 02:27	DK
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00200		mg/L	288867	1	12/03/2019 16:11	EH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-03
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 12:01:00 PM
Lab ID:	1911S55-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	6.08	1.00		mg/L	R413100	1	12/04/2019 00:38	SK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Antimony	BRL	0.00150		mg/L	288890	1	12/04/2019 17:19	DK
Arsenic	BRL	0.00250		mg/L	288890	1	12/04/2019 17:19	DK
Barium	0.0449	0.0100		mg/L	288890	1	12/04/2019 17:19	DK
Beryllium	BRL	0.00100		mg/L	288890	1	12/04/2019 17:19	DK
Cadmium	BRL	0.000700		mg/L	288890	1	12/04/2019 17:19	DK
Calcium	12.6	0.100		mg/L	288890	1	12/04/2019 17:19	DK
Chromium	BRL	0.00500		mg/L	288890	1	12/04/2019 17:19	DK
Cobalt	BRL	0.00500		mg/L	288890	1	12/04/2019 17:19	DK
Copper	BRL	0.00200		mg/L	288890	1	12/04/2019 17:19	DK
Iron	BRL	0.100		mg/L	288890	1	12/04/2019 17:19	DK
Lead	BRL	0.00100		mg/L	288890	1	12/04/2019 17:19	DK
Magnesium	3.75	0.100		mg/L	288890	1	12/04/2019 17:19	DK
Nickel	BRL	0.00500		mg/L	288890	1	12/04/2019 17:19	DK
Potassium	5.07	0.100		mg/L	288890	1	12/04/2019 17:19	DK
Selenium	BRL	0.00500		mg/L	288890	1	12/04/2019 17:19	DK
Silver	BRL	0.00100		mg/L	288890	1	12/04/2019 17:19	DK
Sodium	36.5	0.500		mg/L	288890	1	12/04/2019 17:19	DK
Thallium	BRL	0.000500		mg/L	288890	1	12/04/2019 17:19	DK
Vanadium	BRL	0.00500		mg/L	288890	1	12/04/2019 17:19	DK
Zinc	0.0153	0.0100		mg/L	288890	1	12/04/2019 17:19	DK
Total Cyanide (SM4500 CN-C, E)					(SM4500-CN-E)			
Cyanide, Total	BRL	0.010		mg/L	288877	1	12/03/2019 11:32	AA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	187	10		mg/L	288799	1	12/03/2019 15:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	1.17	0.200		mg/L	288798	1	11/29/2019 11:31	JM
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	288867	1	12/03/2019 16:15	EH
Inorganic Anions by IC EPA 300.0								
Chloride	56.8	10.0		mg/L	R412869	10	11/27/2019 23:18	KV
Fluoride	BRL	0.200		mg/L	R412869	1	11/27/2019 20:06	KV
Nitrogen, Nitrate (As N)	0.820	0.250		mg/L	R412869	1	11/27/2019 20:06	KV
Sulfate	28.6	1.00		mg/L	R412869	1	11/27/2019 20:06	KV

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-03
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 12:01:00 PM
Lab ID:	1911S55-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Dissolved Metals by ICP/MS SW6020B				(SW3005A)				
Manganese	2.16	0.0100		mg/L	288824	1	11/29/2019 20:16	DK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R412920	1	12/02/2019 16:30	EM
APPENDIX I VOLATILE ORGANICS SW8260D				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,1,1-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,1-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,1-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,2,3-Trichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,2-Dibromoethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,2-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,2-Dichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
2-Butanone	BRL	50		ug/L	288879	1	11/30/2019 02:31	NP
2-Hexanone	BRL	10		ug/L	288879	1	11/30/2019 02:31	NP
4-Methyl-2-pentanone	BRL	10		ug/L	288879	1	11/30/2019 02:31	NP
Acetone	BRL	50		ug/L	288879	1	11/30/2019 02:31	NP
Acrylonitrile	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Benzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Bromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Bromodichloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Bromoform	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Bromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Carbon disulfide	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Carbon tetrachloride	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Chlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Chloroethane	BRL	10		ug/L	288879	1	11/30/2019 02:31	NP
Chloroform	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Chloromethane	BRL	10		ug/L	288879	1	11/30/2019 02:31	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Dibromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Dibromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Ethylbenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Iodomethane	BRL	10		ug/L	288879	1	11/30/2019 02:31	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-03
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 12:01:00 PM
Lab ID:	1911S55-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
m,p-Xylene	BRL	10		ug/L	288879	1	11/30/2019 02:31	NP
Methylene chloride	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
o-Xylene	BRL	10		ug/L	288879	1	11/30/2019 02:31	NP
Styrene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Tetrachloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Toluene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	288879	1	11/30/2019 02:31	NP
Trichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Trichlorofluoromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:31	NP
Vinyl acetate	BRL	10		ug/L	288879	1	11/30/2019 02:31	NP
Vinyl chloride	BRL	2.0		ug/L	288879	1	11/30/2019 02:31	NP
Surr: 4-Bromofluorobenzene	96.2	64-125		%REC	288879	1	11/30/2019 02:31	NP
Surr: Dibromofluoromethane	93.2	76.4-125		%REC	288879	1	11/30/2019 02:31	NP
Surr: Toluene-d8	90.8	78.3-116		%REC	288879	1	11/30/2019 02:31	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-4R
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 9:50:00 AM
Lab ID:	1911S55-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	0.200		mg/L	R412867	1	11/30/2019 10:45	KV
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,1,1-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,1-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,1-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,2,3-Trichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,2-Dibromoethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,2-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,2-Dichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
2-Butanone	BRL	50		ug/L	288879	1	11/30/2019 02:55	NP
2-Hexanone	BRL	10		ug/L	288879	1	11/30/2019 02:55	NP
4-Methyl-2-pentanone	BRL	10		ug/L	288879	1	11/30/2019 02:55	NP
Acetone	BRL	50		ug/L	288879	1	11/30/2019 02:55	NP
Acrylonitrile	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Benzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Bromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Bromodichloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Bromoform	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Bromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Carbon disulfide	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Carbon tetrachloride	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Chlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Chloroethane	BRL	10		ug/L	288879	1	11/30/2019 02:55	NP
Chloroform	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Chloromethane	BRL	10		ug/L	288879	1	11/30/2019 02:55	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Dibromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Dibromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Ethylbenzene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Iodomethane	BRL	10		ug/L	288879	1	11/30/2019 02:55	NP
m,p-Xylene	BRL	10		ug/L	288879	1	11/30/2019 02:55	NP
Methylene chloride	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
o-Xylene	BRL	10		ug/L	288879	1	11/30/2019 02:55	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-4R
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 9:50:00 AM
Lab ID:	1911S55-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Tetrachloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Toluene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	288879	1	11/30/2019 02:55	NP
Trichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Trichlorofluoromethane	BRL	5.0		ug/L	288879	1	11/30/2019 02:55	NP
Vinyl acetate	BRL	10		ug/L	288879	1	11/30/2019 02:55	NP
Vinyl chloride	BRL	2.0		ug/L	288879	1	11/30/2019 02:55	NP
Surr: 4-Bromofluorobenzene	95.1	64-125		%REC	288879	1	11/30/2019 02:55	NP
Surr: Dibromofluoromethane	88.4	76.4-125		%REC	288879	1	11/30/2019 02:55	NP
Surr: Toluene-d8	91.4	78.3-116		%REC	288879	1	11/30/2019 02:55	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-4R
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 12:21:00 PM
Lab ID:	1911S55-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					**(SW7470A)**			
Mercury	BRL	0.00200		mg/L	288867	1	12/03/2019 14:45	EH
APPENDIX I METALS SW6020B					**(SW3005A)**			
Antimony	BRL	6.00		ug/L	288805	1	12/03/2019 02:31	DK
Arsenic	BRL	10.0		ug/L	288805	1	12/03/2019 02:31	DK
Barium	20.5	20.0		ug/L	288805	1	12/03/2019 02:31	DK
Beryllium	BRL	4.00		ug/L	288805	1	12/03/2019 02:31	DK
Cadmium	BRL	5.00		ug/L	288805	1	12/03/2019 02:31	DK
Chromium	BRL	20.0		ug/L	288805	1	12/03/2019 02:31	DK
Cobalt	BRL	50.0		ug/L	288805	1	12/03/2019 02:31	DK
Copper	BRL	20.0		ug/L	288805	1	12/03/2019 02:31	DK
Lead	BRL	10.0		ug/L	288805	1	12/03/2019 02:31	DK
Nickel	BRL	40.0		ug/L	288805	1	12/03/2019 02:31	DK
Selenium	BRL	50.0		ug/L	288805	1	12/03/2019 02:31	DK
Silver	BRL	5.00		ug/L	288805	1	12/03/2019 02:31	DK
Thallium	BRL	2.00		ug/L	288805	1	12/03/2019 02:31	DK
Vanadium	BRL	50.0		ug/L	288805	1	12/03/2019 02:31	DK
Zinc	20.9	20.0		ug/L	288805	1	12/03/2019 02:31	DK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-05
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 11:34:00 AM
Lab ID:	1911S55-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					**(SW7470A)**			
Mercury	BRL	0.00200		mg/L	288867	1	12/03/2019 16:19	EH
Inorganic Anions by IC E300.0								
Fluoride	BRL	0.200		mg/L	R412867	1	11/30/2019 11:01	KV
APPENDIX I VOLATILE ORGANICS SW8260D					**(SW5030B)**			
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,1,1-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,1-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,1-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,2,3-Trichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,2-Dibromoethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,2-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,2-Dichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
2-Butanone	BRL	50		ug/L	288879	1	11/30/2019 03:18	NP
2-Hexanone	BRL	10		ug/L	288879	1	11/30/2019 03:18	NP
4-Methyl-2-pentanone	BRL	10		ug/L	288879	1	11/30/2019 03:18	NP
Acetone	BRL	50		ug/L	288879	1	11/30/2019 03:18	NP
Acrylonitrile	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Benzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Bromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Bromodichloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Bromoform	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Bromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Carbon disulfide	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Carbon tetrachloride	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Chlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Chloroethane	BRL	10		ug/L	288879	1	11/30/2019 03:18	NP
Chloroform	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Chloromethane	BRL	10		ug/L	288879	1	11/30/2019 03:18	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Dibromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Dibromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Ethylbenzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Iodomethane	BRL	10		ug/L	288879	1	11/30/2019 03:18	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-05
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 11:34:00 AM
Lab ID:	1911S55-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
m,p-Xylene	BRL	10		ug/L	288879	1	11/30/2019 03:18	NP
Methylene chloride	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
o-Xylene	BRL	10		ug/L	288879	1	11/30/2019 03:18	NP
Styrene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Tetrachloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Toluene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	288879	1	11/30/2019 03:18	NP
Trichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Trichlorofluoromethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:18	NP
Vinyl acetate	BRL	10		ug/L	288879	1	11/30/2019 03:18	NP
Vinyl chloride	BRL	2.0		ug/L	288879	1	11/30/2019 03:18	NP
Surr: 4-Bromofluorobenzene	97.1	64-125		%REC	288879	1	11/30/2019 03:18	NP
Surr: Dibromofluoromethane	94.3	76.4-125		%REC	288879	1	11/30/2019 03:18	NP
Surr: Toluene-d8	91.3	78.3-116		%REC	288879	1	11/30/2019 03:18	NP
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	6.00		ug/L	288805	1	12/03/2019 02:34	DK
Arsenic	BRL	10.0		ug/L	288805	1	12/03/2019 02:34	DK
Barium	172	20.0		ug/L	288805	1	12/03/2019 02:34	DK
Beryllium	BRL	4.00		ug/L	288805	1	12/03/2019 02:34	DK
Cadmium	BRL	5.00		ug/L	288805	1	12/03/2019 02:34	DK
Chromium	BRL	20.0		ug/L	288805	1	12/03/2019 02:34	DK
Cobalt	BRL	50.0		ug/L	288805	1	12/03/2019 02:34	DK
Copper	BRL	20.0		ug/L	288805	1	12/03/2019 02:34	DK
Lead	BRL	10.0		ug/L	288805	1	12/03/2019 02:34	DK
Nickel	BRL	40.0		ug/L	288805	1	12/03/2019 02:34	DK
Selenium	BRL	50.0		ug/L	288805	1	12/03/2019 02:34	DK
Silver	BRL	5.00		ug/L	288805	1	12/03/2019 02:34	DK
Thallium	BRL	2.00		ug/L	288805	1	12/03/2019 02:34	DK
Vanadium	BRL	50.0		ug/L	288805	1	12/03/2019 02:34	DK
Zinc	BRL	20.0		ug/L	288805	1	12/03/2019 02:34	DK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Equipment Blank
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 5:00:00 PM
Lab ID:	1911S55-010	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R413101	1	12/04/2019 05:04	SK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Antimony	BRL	0.00150		mg/L	288890	1	12/03/2019 21:33	DK
Arsenic	BRL	0.00250		mg/L	288890	1	12/03/2019 21:33	DK
Barium	BRL	0.0100		mg/L	288890	1	12/03/2019 21:33	DK
Beryllium	BRL	0.00100		mg/L	288890	1	12/03/2019 21:33	DK
Cadmium	BRL	0.000700		mg/L	288890	1	12/03/2019 21:33	DK
Calcium	BRL	0.100		mg/L	288890	1	12/03/2019 21:33	DK
Chromium	BRL	0.00500		mg/L	288890	1	12/03/2019 21:33	DK
Cobalt	BRL	0.00500		mg/L	288890	1	12/03/2019 21:33	DK
Copper	BRL	0.00200		mg/L	288890	1	12/03/2019 21:33	DK
Iron	BRL	0.100		mg/L	288890	1	12/03/2019 21:33	DK
Lead	BRL	0.00100		mg/L	288890	1	12/03/2019 21:33	DK
Magnesium	BRL	0.100		mg/L	288890	1	12/03/2019 21:33	DK
Nickel	BRL	0.00500		mg/L	288890	1	12/03/2019 21:33	DK
Potassium	BRL	0.100		mg/L	288890	1	12/03/2019 21:33	DK
Selenium	BRL	0.00500		mg/L	288890	1	12/03/2019 21:33	DK
Silver	BRL	0.00100		mg/L	288890	1	12/03/2019 21:33	DK
Sodium	BRL	0.500		mg/L	288890	1	12/03/2019 21:33	DK
Thallium	BRL	0.000500		mg/L	288890	1	12/03/2019 21:33	DK
Vanadium	BRL	0.00500		mg/L	288890	1	12/03/2019 21:33	DK
Zinc	BRL	0.0100		mg/L	288890	1	12/03/2019 21:33	DK
Total Cyanide (SM4500 CN-C, E)					(SM4500-CN-E)			
Cyanide, Total	BRL	0.010		mg/L	288877	1	12/03/2019 11:35	AA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	BRL	10		mg/L	288799	1	12/03/2019 15:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	288798	1	11/29/2019 11:10	JM
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	288867	1	12/03/2019 16:23	EH
Inorganic Anions by IC EPA 300.0								
Chloride	BRL	1.00		mg/L	R412869	1	11/27/2019 20:22	KV
Fluoride	BRL	0.200		mg/L	R412869	1	11/27/2019 20:22	KV
Nitrogen, Nitrate (As N)	BRL	0.250		mg/L	R412869	1	11/27/2019 20:22	KV
Sulfate	BRL	1.00		mg/L	R412869	1	11/27/2019 20:22	KV

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Equipment Blank
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 5:00:00 PM
Lab ID:	1911S55-010	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Dissolved Metals by ICP/MS SW6020B				**(SW3005A)**				
Manganese	BRL	0.0100		mg/L	288824	1	11/29/2019 19:37	DK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	11.7	10.0		mg/L	R412920	1	12/02/2019 16:30	EM
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,1,1-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,1-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,1-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,2,3-Trichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,2-Dibromoethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,2-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,2-Dichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
2-Butanone	BRL	50		ug/L	288879	1	11/30/2019 03:42	NP
2-Hexanone	BRL	10		ug/L	288879	1	11/30/2019 03:42	NP
4-Methyl-2-pentanone	BRL	10		ug/L	288879	1	11/30/2019 03:42	NP
Acetone	BRL	50		ug/L	288879	1	11/30/2019 03:42	NP
Acrylonitrile	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Benzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Bromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Bromodichloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Bromoform	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Bromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Carbon disulfide	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Carbon tetrachloride	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Chlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Chloroethane	BRL	10		ug/L	288879	1	11/30/2019 03:42	NP
Chloroform	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Chloromethane	BRL	10		ug/L	288879	1	11/30/2019 03:42	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Dibromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Dibromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Ethylbenzene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Iodomethane	BRL	10		ug/L	288879	1	11/30/2019 03:42	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Equipment Blank
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 5:00:00 PM
Lab ID:	1911S55-010	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
m,p-Xylene	BRL	10		ug/L	288879	1	11/30/2019 03:42	NP
Methylene chloride	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
o-Xylene	BRL	10		ug/L	288879	1	11/30/2019 03:42	NP
Styrene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Tetrachloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Toluene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	288879	1	11/30/2019 03:42	NP
Trichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Trichlorofluoromethane	BRL	5.0		ug/L	288879	1	11/30/2019 03:42	NP
Vinyl acetate	BRL	10		ug/L	288879	1	11/30/2019 03:42	NP
Vinyl chloride	BRL	2.0		ug/L	288879	1	11/30/2019 03:42	NP
Surr: 4-Bromofluorobenzene	94.6	64-125		%REC	288879	1	11/30/2019 03:42	NP
Surr: Dibromofluoromethane	88.8	76.4-125		%REC	288879	1	11/30/2019 03:42	NP
Surr: Toluene-d8	91.5	78.3-116		%REC	288879	1	11/30/2019 03:42	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Duplicate
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 10:56:00 AM
Lab ID:	1911S55-011	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	4.04	1.00		mg/L	R413101	1	12/04/2019 05:23	SK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Antimony	BRL	0.00150		mg/L	288890	1	12/03/2019 21:36	DK
Arsenic	BRL	0.00250		mg/L	288890	1	12/03/2019 21:36	DK
Barium	0.188	0.0100		mg/L	288890	1	12/03/2019 21:36	DK
Beryllium	BRL	0.00100		mg/L	288890	1	12/03/2019 21:36	DK
Cadmium	BRL	0.000700		mg/L	288890	1	12/03/2019 21:36	DK
Calcium	115	1.00		mg/L	288890	10	12/04/2019 17:34	DK
Chromium	BRL	0.00500		mg/L	288890	1	12/03/2019 21:36	DK
Cobalt	BRL	0.00500		mg/L	288890	1	12/03/2019 21:36	DK
Copper	BRL	0.00200		mg/L	288890	1	12/03/2019 21:36	DK
Iron	0.179	0.100		mg/L	288890	1	12/03/2019 21:36	DK
Lead	BRL	0.00100		mg/L	288890	1	12/03/2019 21:36	DK
Magnesium	37.5	1.00		mg/L	288890	10	12/04/2019 17:34	DK
Nickel	BRL	0.00500		mg/L	288890	1	12/03/2019 21:36	DK
Potassium	35.0	0.100		mg/L	288890	1	12/03/2019 21:36	DK
Selenium	BRL	0.00500		mg/L	288890	1	12/03/2019 21:36	DK
Silver	BRL	0.00100		mg/L	288890	1	12/03/2019 21:36	DK
Sodium	134	5.00		mg/L	288890	10	12/04/2019 17:34	DK
Thallium	BRL	0.000500		mg/L	288890	1	12/03/2019 21:36	DK
Vanadium	BRL	0.00500		mg/L	288890	1	12/03/2019 21:36	DK
Zinc	0.0118	0.0100		mg/L	288890	1	12/03/2019 21:36	DK
Total Cyanide (SM4500 CN-C, E)					(SM4500-CN-E)			
Cyanide, Total	BRL	0.010		mg/L	288877	1	12/03/2019 11:37	AA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	862	10		mg/L	288799	1	12/03/2019 15:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	288798	1	11/29/2019 11:16	JM
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	288867	1	12/03/2019 16:27	EH
Inorganic Anions by IC EPA 300.0								
Chloride	306	10.0		mg/L	R412869	10	11/27/2019 23:51	KV
Fluoride	BRL	0.200		mg/L	R412869	1	11/27/2019 20:38	KV
Nitrogen, Nitrate (As N)	12.2	2.50		mg/L	R412869	10	11/27/2019 23:51	KV
Sulfate	32.8	1.00		mg/L	R412869	1	11/27/2019 20:38	KV

Qualifiers:

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- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Duplicate
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 10:56:00 AM
Lab ID:	1911S55-011	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Dissolved Metals by ICP/MS SW6020B				(SW3005A)				
Manganese	BRL	0.0100		mg/L	288824	1	11/29/2019 20:23	DK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	23.0	10.0		mg/L	R412920	1	12/02/2019 16:30	EM
APPENDIX I VOLATILE ORGANICS SW8260D				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,1,1-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,1-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,1-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,2,3-Trichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,2-Dibromoethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,2-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,2-Dichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
2-Butanone	BRL	50		ug/L	288879	1	11/30/2019 04:05	NP
2-Hexanone	BRL	10		ug/L	288879	1	11/30/2019 04:05	NP
4-Methyl-2-pentanone	BRL	10		ug/L	288879	1	11/30/2019 04:05	NP
Acetone	BRL	50		ug/L	288879	1	11/30/2019 04:05	NP
Acrylonitrile	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Benzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Bromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Bromodichloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Bromoform	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Bromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Carbon disulfide	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Carbon tetrachloride	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Chlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Chloroethane	BRL	10		ug/L	288879	1	11/30/2019 04:05	NP
Chloroform	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Chloromethane	BRL	10		ug/L	288879	1	11/30/2019 04:05	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Dibromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Dibromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Ethylbenzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Iodomethane	BRL	10		ug/L	288879	1	11/30/2019 04:05	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Duplicate
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 10:56:00 AM
Lab ID:	1911S55-011	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
m,p-Xylene	BRL	10		ug/L	288879	1	11/30/2019 04:05	NP
Methylene chloride	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
o-Xylene	BRL	10		ug/L	288879	1	11/30/2019 04:05	NP
Styrene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Tetrachloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Toluene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	288879	1	11/30/2019 04:05	NP
Trichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Trichlorofluoromethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:05	NP
Vinyl acetate	BRL	10		ug/L	288879	1	11/30/2019 04:05	NP
Vinyl chloride	BRL	2.0		ug/L	288879	1	11/30/2019 04:05	NP
Surr: 4-Bromofluorobenzene	95.3	64-125		%REC	288879	1	11/30/2019 04:05	NP
Surr: Dibromofluoromethane	93.7	76.4-125		%REC	288879	1	11/30/2019 04:05	NP
Surr: Toluene-d8	91.6	78.3-116		%REC	288879	1	11/30/2019 04:05	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Trip Blank
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 9:00:00 AM
Lab ID:	1911S55-012	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,1,1-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,1-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,1-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,2,3-Trichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,2-Dibromoethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,2-Dichloroethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,2-Dichloropropane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
2-Butanone	BRL	50		ug/L	288879	1	11/30/2019 04:29	NP
2-Hexanone	BRL	10		ug/L	288879	1	11/30/2019 04:29	NP
4-Methyl-2-pentanone	BRL	10		ug/L	288879	1	11/30/2019 04:29	NP
Acetone	BRL	50		ug/L	288879	1	11/30/2019 04:29	NP
Acrylonitrile	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Benzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Bromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Bromodichloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Bromoform	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Bromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Carbon disulfide	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Carbon tetrachloride	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Chlorobenzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Chloroethane	BRL	10		ug/L	288879	1	11/30/2019 04:29	NP
Chloroform	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Chloromethane	BRL	10		ug/L	288879	1	11/30/2019 04:29	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Dibromochloromethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Dibromomethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Ethylbenzene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Iodomethane	BRL	10		ug/L	288879	1	11/30/2019 04:29	NP
m,p-Xylene	BRL	10		ug/L	288879	1	11/30/2019 04:29	NP
Methylene chloride	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
o-Xylene	BRL	10		ug/L	288879	1	11/30/2019 04:29	NP
Styrene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Tetrachloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Toluene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 6-Dec-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Trip Blank
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	11/26/2019 9:00:00 AM
Lab ID:	1911S55-012	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
trans-1,2-Dichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	288879	1	11/30/2019 04:29	NP
Trichloroethene	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Trichlorofluoromethane	BRL	5.0		ug/L	288879	1	11/30/2019 04:29	NP
Vinyl acetate	BRL	10		ug/L	288879	1	11/30/2019 04:29	NP
Vinyl chloride	BRL	2.0		ug/L	288879	1	11/30/2019 04:29	NP
Surr: 4-Bromofluorobenzene	95	64-125		%REC	288879	1	11/30/2019 04:29	NP
Surr: Dibromofluoromethane	87.8	76.4-125		%REC	288879	1	11/30/2019 04:29	NP
Surr: Toluene-d8	91.8	78.3-116		%REC	288879	1	11/30/2019 04:29	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

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ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Santek Waste Services, LLC** AES Work Order Number: **1911555**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ☐ Courier ■ Other ____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	●	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	○	●	○		
5.	Custody seals intact on shipping container?	○	○	●		
6.	Temperature blanks present?	○	○	●		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	○	○	●	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	●	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	●	○	○		
10.	Sampler name and/or signature on COC?	●	○	○		
11.	Were all samples received within holding time?	●	○	○		
12.	TAT marked on the COC?	●	○	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 0.9 °C Cooler 2 Temperature 1.2 °C Cooler 3 Temperature ____ °C Cooler 4 Temperature ____ °C

14. Cooler 5 Temperature ____ °C Cooler 6 Temperature ____ °C Cooler 7 Temperature ____ °C Cooler 8 Temperature ____ °C

15. Comments: ____

I certify that I have completed sections 1-15 (dated initials). AP 11/27/19

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	●	○	○		
17.	Custody seals present on sample containers?	○	●	○		
18.	Custody seals intact on sample containers?	○	○	●		
19.	Do sample container labels match the COC?	●	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	●	○	○		
21.	Were all of the samples listed on the COC received?	●	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	●	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	●	○	○		
24.	Were samples received in appropriate containers?	●	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	●	○	○		
26.	Were trip blanks submitted?	●	○	○	listed on COC ☐ not listed on COC ■	

27. Comments: ____

I certify that I have completed sections 16-27 (dated initials). TD 11/27/19

This section only applies to samples where pH can be checked at Sample Receipt.

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	●	○	○		
29.	Containers meet preservation guidelines?	●	○	○		
30.	Was pH adjusted at Sample Receipt?	○	○	●		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials). TD 11/27/19

Checklist 6.9.17 Rev 2

Locked

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Lab Order: 1911S55

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1911S55-001A	MW-01	11/26/2019 9:49:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/29/2019 5:38:00PM	11/30/2019
1911S55-001C	MW-01	11/26/2019 9:49:00AM	Groundwater	Dissolved Metals by ICP/MS		11/29/2019 1:22:00PM	11/29/2019
1911S55-001D	MW-01	11/26/2019 9:49:00AM	Groundwater	Nitrogen, Ammonia (as N)		11/29/2019 8:53:42AM	11/29/2019
1911S55-001D	MW-01	11/26/2019 9:49:00AM	Groundwater	Chemical Oxygen Demand (COD)			12/02/2019
1911S55-001E	MW-01	11/26/2019 9:49:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		12/3/2019 2:00:00PM	12/03/2019
1911S55-001F	MW-01	11/26/2019 9:49:00AM	Groundwater	Inorganic Anions by IC			11/27/2019
1911S55-001G	MW-01	11/26/2019 9:49:00AM	Groundwater	Total Cyanide		12/2/2019 1:30:00PM	12/03/2019
1911S55-001H	MW-01	11/26/2019 9:49:00AM	Groundwater	Total Organic Carbon by SM5310B			12/03/2019
1911S55-002A	MW-01	11/26/2019 1:45:00PM	Groundwater	Total Metals by ICP/MS		11/29/2019 4:01:00PM	12/03/2019
1911S55-002A	MW-01	11/26/2019 1:45:00PM	Groundwater	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-003A	MW-1A	11/26/2019 11:12:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/29/2019 5:38:00PM	11/30/2019
1911S55-003C	MW-1A	11/26/2019 11:12:00AM	Groundwater	Dissolved Metals by ICP/MS		11/29/2019 1:22:00PM	11/29/2019
1911S55-003D	MW-1A	11/26/2019 11:12:00AM	Groundwater	Nitrogen, Ammonia (as N)		11/29/2019 8:53:42AM	11/29/2019
1911S55-003D	MW-1A	11/26/2019 11:12:00AM	Groundwater	Chemical Oxygen Demand (COD)			12/02/2019
1911S55-003E	MW-1A	11/26/2019 11:12:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		12/3/2019 2:00:00PM	12/03/2019
1911S55-003F	MW-1A	11/26/2019 11:12:00AM	Groundwater	Inorganic Anions by IC			11/27/2019
1911S55-003G	MW-1A	11/26/2019 11:12:00AM	Groundwater	Total Cyanide		12/2/2019 1:30:00PM	12/03/2019
1911S55-003H	MW-1A	11/26/2019 11:12:00AM	Groundwater	Total Organic Carbon by SM5310B			12/04/2019
1911S55-003I	MW-1A	11/26/2019 11:12:00AM	Groundwater	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-003I	MW-1A	11/26/2019 11:12:00AM	Groundwater	Total Metals by ICP/MS		11/29/2019 4:01:00PM	12/03/2019
1911S55-003I	MW-1A	11/26/2019 11:12:00AM	Groundwater	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-004A	MW-02	11/26/2019 10:26:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/29/2019 5:38:00PM	11/30/2019
1911S55-004C	MW-02	11/26/2019 10:26:00AM	Groundwater	Dissolved Metals by ICP/MS		11/29/2019 1:22:00PM	11/29/2019
1911S55-004D	MW-02	11/26/2019 10:26:00AM	Groundwater	Nitrogen, Ammonia (as N)		11/29/2019 8:53:42AM	11/29/2019
1911S55-004D	MW-02	11/26/2019 10:26:00AM	Groundwater	Chemical Oxygen Demand (COD)			12/02/2019
1911S55-004E	MW-02	11/26/2019 10:26:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		12/3/2019 2:00:00PM	12/03/2019
1911S55-004F	MW-02	11/26/2019 10:26:00AM	Groundwater	Inorganic Anions by IC			11/27/2019
1911S55-004G	MW-02	11/26/2019 10:26:00AM	Groundwater	Total Cyanide		12/2/2019 1:30:00PM	12/03/2019
1911S55-004H	MW-02	11/26/2019 10:26:00AM	Groundwater	Total Organic Carbon by SM5310B			12/04/2019

Analytical Environmental Services, Inc

Date: 6-Dec-19

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Lab Order: 1911S55

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1911S55-005A	MW-02	11/26/2019 1:30:00PM	Groundwater	APPENDIX I METALS		11/29/2019 4:01:00PM	12/03/2019
1911S55-005A	MW-02	11/26/2019 1:30:00PM	Groundwater	Total Metals by ICP/MS		11/29/2019 4:01:00PM	12/03/2019
1911S55-005A	MW-02	11/26/2019 1:30:00PM	Groundwater	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-006A	MW-03	11/26/2019 12:01:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/29/2019 5:38:00PM	11/30/2019
1911S55-006C	MW-03	11/26/2019 12:01:00PM	Groundwater	Dissolved Metals by ICP/MS		11/29/2019 1:22:00PM	11/29/2019
1911S55-006D	MW-03	11/26/2019 12:01:00PM	Groundwater	Nitrogen, Ammonia (as N)		11/29/2019 8:53:42AM	11/29/2019
1911S55-006D	MW-03	11/26/2019 12:01:00PM	Groundwater	Chemical Oxygen Demand (COD)			12/02/2019
1911S55-006E	MW-03	11/26/2019 12:01:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		12/3/2019 2:00:00PM	12/03/2019
1911S55-006F	MW-03	11/26/2019 12:01:00PM	Groundwater	Inorganic Anions by IC			11/27/2019
1911S55-006G	MW-03	11/26/2019 12:01:00PM	Groundwater	Total Cyanide		12/2/2019 1:30:00PM	12/03/2019
1911S55-006H	MW-03	11/26/2019 12:01:00PM	Groundwater	Total Organic Carbon by SM5310B			12/04/2019
1911S55-006I	MW-03	11/26/2019 12:01:00PM	Groundwater	Total Metals by ICP/MS		12/3/2019 1:33:00PM	12/04/2019
1911S55-006I	MW-03	11/26/2019 12:01:00PM	Groundwater	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-007A	MW-4R	11/26/2019 9:50:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/29/2019 5:38:00PM	11/30/2019
1911S55-007C	MW-4R	11/26/2019 9:50:00AM	Groundwater	Inorganic Anions by IC			11/30/2019
1911S55-008A	MW-4R	11/26/2019 12:21:00PM	Groundwater	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-008A	MW-4R	11/26/2019 12:21:00PM	Groundwater	APPENDIX I METALS		11/29/2019 4:01:00PM	12/03/2019
1911S55-008A	MW-4R	11/26/2019 12:21:00PM	Groundwater	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-009A	MW-05	11/26/2019 11:34:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/29/2019 5:38:00PM	11/30/2019
1911S55-009C	MW-05	11/26/2019 11:34:00AM	Groundwater	Inorganic Anions by IC			11/30/2019
1911S55-009D	MW-05	11/26/2019 11:34:00AM	Groundwater	APPENDIX I METALS		11/29/2019 4:01:00PM	12/03/2019
1911S55-009D	MW-05	11/26/2019 11:34:00AM	Groundwater	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-010A	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		11/29/2019 5:38:00PM	11/30/2019
1911S55-010C	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	Dissolved Metals by ICP/MS		11/29/2019 1:22:00PM	11/29/2019
1911S55-010D	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	Nitrogen, Ammonia (as N)		11/29/2019 8:53:42AM	11/29/2019
1911S55-010D	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	Chemical Oxygen Demand (COD)			12/02/2019
1911S55-010F	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	Inorganic Anions by IC			11/27/2019
1911S55-010F	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		12/3/2019 2:00:00PM	12/03/2019
1911S55-010G	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	Total Cyanide		12/2/2019 1:30:00PM	12/03/2019

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Lab Order: 1911S55

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1911S55-010H	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	Total Organic Carbon by SM5310B			12/04/2019
1911S55-010I	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	Total Metals by ICP/MS		12/2/2019 1:35:00PM	12/03/2019
1911S55-010I	Equipment Blank	11/26/2019 5:00:00PM	Aqueous	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-011A	Duplicate	11/26/2019 10:56:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/29/2019 5:38:00PM	11/30/2019
1911S55-011C	Duplicate	11/26/2019 10:56:00AM	Groundwater	Dissolved Metals by ICP/MS		11/29/2019 1:22:00PM	11/29/2019
1911S55-011D	Duplicate	11/26/2019 10:56:00AM	Groundwater	Nitrogen, Ammonia (as N)		11/29/2019 8:53:42AM	11/29/2019
1911S55-011D	Duplicate	11/26/2019 10:56:00AM	Groundwater	Chemical Oxygen Demand (COD)			12/02/2019
1911S55-011E	Duplicate	11/26/2019 10:56:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		12/3/2019 2:00:00PM	12/03/2019
1911S55-011F	Duplicate	11/26/2019 10:56:00AM	Groundwater	Inorganic Anions by IC			11/27/2019
1911S55-011G	Duplicate	11/26/2019 10:56:00AM	Groundwater	Total Cyanide		12/2/2019 1:30:00PM	12/03/2019
1911S55-011H	Duplicate	11/26/2019 10:56:00AM	Groundwater	Total Organic Carbon by SM5310B			12/04/2019
1911S55-011I	Duplicate	11/26/2019 10:56:00AM	Groundwater	Total Metals by ICP/MS		12/2/2019 1:35:00PM	12/03/2019
1911S55-011I	Duplicate	11/26/2019 10:56:00AM	Groundwater	Total Metals by ICP/MS		12/2/2019 1:35:00PM	12/04/2019
1911S55-011I	Duplicate	11/26/2019 10:56:00AM	Groundwater	TOTAL MERCURY		12/3/2019 10:28:00AM	12/03/2019
1911S55-012A	Trip Blank	11/26/2019 9:00:00AM	Aqueous	APPENDIX I VOLATILE ORGANICS		11/29/2019 5:38:00PM	11/30/2019

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288798

Sample ID: **MB-288798**	Client ID:			Units: **mg/L**	Prep Date: **11/29/2019**	Run No: **412786**
SampleType: **MBLK**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **288798**	Analysis Date: **11/29/2019**	Seq No: **9303826**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	BRL	0.200									

Sample ID: **LCS-288798**	Client ID:			Units: **mg/L**	Prep Date: **11/29/2019**	Run No: **412786**
SampleType: **LCS**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **288798**	Analysis Date: **11/29/2019**	Seq No: **9303827**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	5.320	0.200	5.000		106	90	110				

Sample ID: **1911S55-010DMS**	Client ID: **Equipment Blank**			Units: **mg/L**	Prep Date: **11/29/2019**	Run No: **412786**
SampleType: **MS**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **288798**	Analysis Date: **11/29/2019**	Seq No: **9303829**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	5.270	0.200	5.000		105	90	110				

Sample ID: **1911S55-011DMS**	Client ID: **Duplicate**			Units: **mg/L**	Prep Date: **11/29/2019**	Run No: **412786**
SampleType: **MS**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **288798**	Analysis Date: **11/29/2019**	Seq No: **9303832**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	5.330	0.200	5.000		107	90	110				

Sample ID: **1911S55-010DMSD**	Client ID: **Equipment Blank**			Units: **mg/L**	Prep Date: **11/29/2019**	Run No: **412786**
SampleType: **MSD**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **288798**	Analysis Date: **11/29/2019**	Seq No: **9303830**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	5.490	0.200	5.000		110	90	110	5.270	4.09	30	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288799

Sample ID: **MB-288799**	Client ID:				Units: **mg/L**		Prep Date: **12/03/2019**		Run No: **412932**
SampleType: **MBLK**	TestCode: **Residue, Dissolved (TDS) by SM2540C**				BatchID: **288799**		Analysis Date: **12/03/2019**		Seq No: **9310378**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Residue, Dissolved (TDS)	BRL	10									

Sample ID: **1911S55-001EDUP**	Client ID: **MW-01**				Units: **mg/L**		Prep Date: **12/03/2019**		Run No: **412932**
SampleType: **DUP**	TestCode: **Residue, Dissolved (TDS) by SM2540C**				BatchID: **288799**		Analysis Date: **12/03/2019**		Seq No: **9310384**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Residue, Dissolved (TDS)	302.0	10						301.0	0.332	5	

Sample ID: **1912262-005ADUP**	Client ID:				Units: **mg/L**		Prep Date: **12/04/2019**		Run No: **412932**
SampleType: **DUP**	TestCode: **Residue, Dissolved (TDS) by SM2540C**				BatchID: **288799**		Analysis Date: **12/03/2019**		Seq No: **9312702**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Residue, Dissolved (TDS)	153.0	10						151.0	1.32	5	

Qualifiers:					
	>	Greater than Result value	<	Less than Result value	B Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix	

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288805

Sample ID: **MB-288805** Client ID:
SampleType: **MBLK** TestCode: **Total Metals by ICP/MS** **SW6020B**
Units: **mg/L** Prep Date: **11/29/2019** Run No: **412991**
BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308504**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	BRL	0.00150									
Arsenic	BRL	0.00250									
Barium	BRL	0.0100									
Beryllium	BRL	0.00100									
Cadmium	BRL	0.000700									
Calcium	BRL	0.100									
Chromium	BRL	0.00500									
Cobalt	BRL	0.00500									
Copper	BRL	0.00200									
Iron	BRL	0.100									
Lead	BRL	0.00100									
Magnesium	BRL	0.100									
Nickel	BRL	0.00500									
Potassium	BRL	0.100									
Selenium	BRL	0.00500									
Silver	BRL	0.00100									
Sodium	BRL	0.500									
Thallium	BRL	0.000500									
Vanadium	BRL	0.00500									
Zinc	BRL	0.0100									

Sample ID: **MB-288805** Client ID:
SampleType: **MBLK** TestCode: **APPENDIX I METALS** **SW6020B**
Units: **mg/L** Prep Date: **11/29/2019** Run No: **412992**
BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308549**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	BRL	0.00600									
Arsenic	BRL	0.0100									
Barium	BRL	0.00300									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288805

Sample ID: **MB-288805** Client ID: Units: **mg/L** Prep Date: **11/29/2019** Run No: **412992**
SampleType: **MBLK** TestCode: **APPENDIX I METALS** **SW6020B** BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308549**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Beryllium	BRL	0.00400									
Cadmium	BRL	0.00500									
Chromium	BRL	0.0200									
Cobalt	BRL	0.0500									
Copper	BRL	0.0200									
Lead	BRL	0.0100									
Nickel	BRL	0.0400									
Selenium	BRL	0.0500									
Silver	BRL	0.00500									
Thallium	BRL	0.00200									
Vanadium	BRL	0.0500									
Zinc	BRL	0.0200									

Sample ID: **LCS-288805** Client ID: Units: **mg/L** Prep Date: **11/29/2019** Run No: **412991**
SampleType: **LCS** TestCode: **Total Metals by ICP/MS** **SW6020B** BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308505**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1062	0.00500	0.1000		106	80	120				
Arsenic	0.1103	0.00500	0.1000		110	80	120				
Barium	0.1064	0.0100	0.1000		106	80	120				
Beryllium	0.1018	0.00100	0.1000		102	80	120				
Cadmium	0.1042	0.000700	0.1000		104	80	120				
Calcium	1.020	0.100	1.000		102	80	120				
Chromium	0.1158	0.00500	0.1000		116	80	120				
Cobalt	0.1117	0.00500	0.1000		112	80	120				
Copper	0.1142	0.00200	0.1000		114	80	120				
Iron	1.146	0.100	1.000		115	80	120				
Lead	0.1071	0.00100	0.1000		107	80	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288805

Sample ID: **LCS-288805** Client ID:
SampleType: **LCS** TestCode: **Total Metals by ICP/MS** **SW6020B**
Units: **mg/L** Prep Date: **11/29/2019** Run No: **412991**
BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308505**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Magnesium	1.131	0.100	1.000		113	80	120				
Nickel	0.1141	0.00500	0.1000	0.0002966	114	80	120				
Potassium	1.007	0.100	1.000		101	80	120				
Selenium	0.1053	0.00500	0.1000		105	80	120				
Silver	0.01070	0.00100	0.0100		107	80	120				
Sodium	1.130	0.500	1.000		113	80	120				
Thallium	0.09975	0.00100	0.1000		99.7	80	120				
Vanadium	0.1125	0.00500	0.1000		112	80	120				
Zinc	0.1197	0.0100	0.1000	0.002668	117	80	120				

Sample ID: **LCS-288805** Client ID:
SampleType: **LCS** TestCode: **APPENDIX I METALS** **SW6020B**
Units: **mg/L** Prep Date: **11/29/2019** Run No: **412992**
BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308550**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1062	0.00600	0.1000		106	80	120				
Arsenic	0.1103	0.0100	0.1000		110	80	120				
Barium	0.1064	0.0200	0.1000		106	80	120				
Beryllium	0.1018	0.00400	0.1000		102	80	120				
Cadmium	0.1042	0.00500	0.1000		104	80	120				
Chromium	0.1158	0.0200	0.1000		116	80	120				
Cobalt	0.1117	0.0500	0.1000		112	80	120				
Copper	0.1142	0.0200	0.1000		114	80	120				
Lead	0.1071	0.0100	0.1000		107	80	120				
Nickel	0.1141	0.0400	0.1000	0.0002966	114	80	120				
Selenium	0.1053	0.0500	0.1000		105	80	120				
Silver	0.01070	0.00500	0.0100		107	80	120				
Thallium	0.09975	0.00200	0.1000		99.7	80	120				
Vanadium	0.1125	0.0500	0.1000		112	80	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288805

Sample ID: **LCS-288805**	Client ID:				Units: **mg/L**		Prep Date: **11/29/2019**		Run No: **412992**	
SampleType: **LCS**	TestCode: **APPENDIX I METALS**	**SW6020B**			BatchID: **288805**		Analysis Date: **12/03/2019**		Seq No: **9308550**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Zinc	0.1197	0.0200	0.1000	0.002668	117	80	120			

Sample ID: **1911R40-001BMS**	Client ID:				Units: **mg/L**		Prep Date: **11/29/2019**		Run No: **412991**	
SampleType: **MS**	TestCode: **Total Metals by ICP/MS**	**SW6020B**			BatchID: **288805**		Analysis Date: **12/03/2019**		Seq No: **9308507**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Antimony	0.1059	0.00500	0.1000		106	75	125			
Arsenic	0.1067	0.00500	0.1000		107	75	125			
Barium	0.1966	0.0100	0.1000	0.08876	108	75	125			
Beryllium	0.09740	0.00100	0.1000		97.4	75	125			
Cadmium	0.1056	0.000700	0.1000		106	75	125			
Calcium	1.922	0.100	1.000	0.9036	102	75	125			
Chromium	0.1195	0.00500	0.1000	0.006055	113	75	125			
Cobalt	0.1116	0.00500	0.1000	0.002023	110	75	125			
Copper	0.1142	0.00200	0.1000	0.003557	111	75	125			
Iron	3.482	0.100	1.000	2.284	120	75	125			
Lead	0.1098	0.00100	0.1000		110	75	125			
Magnesium	5.855	0.100	1.000	4.773	108	75	125			
Nickel	0.1123	0.00500	0.1000	0.003833	109	75	125			
Potassium	2.878	0.100	1.000	1.844	103	75	125			
Selenium	0.1042	0.00500	0.1000		104	75	125			
Silver	0.01091	0.00100	0.0100		109	75	125			
Sodium	2.424	0.500	1.000	1.392	103	75	125			
Thallium	0.1020	0.00100	0.1000	0.0005530	101	75	125			
Vanadium	0.1183	0.00500	0.1000	0.005402	113	75	125			
Zinc	0.1283	0.0100	0.1000	0.01826	110	75	125			

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288805

Sample ID: **1911R40-001BMS** Client ID:
SampleType: **MS** TestCode: **APPENDIX I METALS** **SW6020B**
Units: **mg/L** Prep Date: **11/29/2019** Run No: **412992**
BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308552**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1059	0.00600	0.1000		106	75	125				
Arsenic	0.1067	0.0100	0.1000		107	75	125				
Barium	0.1966	0.0200	0.1000	0.08876	108	75	125				
Beryllium	0.09740	0.00400	0.1000		97.4	75	125				
Cadmium	0.1056	0.00500	0.1000		106	75	125				
Chromium	0.1195	0.0200	0.1000	0.006055	113	75	125				
Cobalt	0.1116	0.0500	0.1000	0.002023	110	75	125				
Copper	0.1142	0.0200	0.1000	0.003557	111	75	125				
Lead	0.1098	0.0100	0.1000		110	75	125				
Nickel	0.1123	0.0400	0.1000	0.003833	109	75	125				
Selenium	0.1042	0.0500	0.1000		104	75	125				
Silver	0.01091	0.00500	0.0100		109	75	125				
Thallium	0.1020	0.00200	0.1000	0.0005530	101	75	125				
Vanadium	0.1183	0.0500	0.1000	0.005402	113	75	125				
Zinc	0.1283	0.0200	0.1000	0.01826	110	75	125				

Sample ID: **1911R40-001BMSD** Client ID:
SampleType: **MSD** TestCode: **Total Metals by ICP/MS** **SW6020B**
Units: **mg/L** Prep Date: **11/29/2019** Run No: **412991**
BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308508**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1047	0.00500	0.1000		105	75	125	0.1059	1.11	20	
Arsenic	0.1075	0.00500	0.1000		108	75	125	0.1067	0.827	20	
Barium	0.1979	0.0100	0.1000	0.08876	109	75	125	0.1966	0.678	20	
Beryllium	0.1097	0.00100	0.1000		110	75	125	0.09740	11.9	20	
Cadmium	0.1217	0.000700	0.1000		122	75	125	0.1056	14.2	20	
Calcium	1.837	0.100	1.000	0.9036	93.4	75	125	1.922	4.51	20	
Chromium	0.1201	0.00500	0.1000	0.006055	114	75	125	0.1195	0.457	20	
Cobalt	0.1101	0.00500	0.1000	0.002023	108	75	125	0.1116	1.36	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288805

Sample ID: **1911R40-001BMSD** Client ID:
SampleType: **MSD** TestCode: **Total Metals by ICP/MS SW6020B**
Units: **mg/L** Prep Date: **11/29/2019** Run No: **412991**
BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308508**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Copper	0.1152	0.00200	0.1000	0.003557	112	75	125	0.1142	0.898	20	
Iron	3.495	0.100	1.000	2.284	121	75	125	3.482	0.375	20	
Lead	0.1087	0.00100	0.1000		109	75	125	0.1098	0.967	20	
Magnesium	5.947	0.100	1.000	4.773	117	75	125	5.855	1.56	20	
Nickel	0.1134	0.00500	0.1000	0.003833	110	75	125	0.1123	0.985	20	
Potassium	2.863	0.100	1.000	1.844	102	75	125	2.878	0.531	20	
Selenium	0.1053	0.00500	0.1000		105	75	125	0.1042	1.08	20	
Silver	0.01077	0.00100	0.0100		108	75	125	0.01091	1.30	20	
Sodium	2.377	0.500	1.000	1.392	98.5	75	125	2.424	1.96	20	
Thallium	0.1028	0.00100	0.1000	0.0005530	102	75	125	0.1020	0.794	20	
Vanadium	0.1166	0.00500	0.1000	0.005402	111	75	125	0.1183	1.41	20	
Zinc	0.1273	0.0100	0.1000	0.01826	109	75	125	0.1283	0.758	20	

Sample ID: **1911R40-001BMSD** Client ID:
SampleType: **MSD** TestCode: **APPENDIX I METALS SW6020B**
Units: **mg/L** Prep Date: **11/29/2019** Run No: **412992**
BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308553**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1047	0.00600	0.1000		105	75	125	0.1059	1.11	20	
Arsenic	0.1075	0.0100	0.1000		108	75	125	0.1067	0.827	20	
Barium	0.1979	0.0200	0.1000	0.08876	109	75	125	0.1966	0.678	20	
Beryllium	0.1097	0.00400	0.1000		110	75	125	0.09740	11.9	20	
Cadmium	0.1217	0.00500	0.1000		122	75	125	0.1056	14.2	20	
Chromium	0.1201	0.0200	0.1000	0.006055	114	75	125	0.1195	0.457	20	
Cobalt	0.1101	0.0500	0.1000	0.002023	108	75	125	0.1116	1.36	20	
Copper	0.1152	0.0200	0.1000	0.003557	112	75	125	0.1142	0.898	20	
Lead	0.1087	0.0100	0.1000		109	75	125	0.1098	0.967	20	
Nickel	0.1134	0.0400	0.1000	0.003833	110	75	125	0.1123	0.985	20	
Selenium	0.1053	0.0500	0.1000		105	75	125	0.1042	1.08	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288805

Sample ID: **1911R40-001BMSD** Client ID:
SampleType: **MSD** TestCode: **APPENDIX I METALS** **SW6020B**
Units: **mg/L** Prep Date: **11/29/2019** Run No: **412992**
BatchID: **288805** Analysis Date: **12/03/2019** Seq No: **9308553**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Silver	0.01077	0.00500	0.0100		108	75	125	0.01091	1.30	20	
Thallium	0.1028	0.00200	0.1000	0.0005530	102	75	125	0.1020	0.794	20	
Vanadium	0.1166	0.0500	0.1000	0.005402	111	75	125	0.1183	1.41	20	
Zinc	0.1273	0.0200	0.1000	0.01826	109	75	125	0.1283	0.758	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288824

Sample ID: **MB-288824**	Client ID:				Units: **mg/L**		Prep Date: **11/29/2019**		Run No: **412913**	
SampleType: **MBLK**	TestCode: **Dissolved Metals by ICP/MS SW6020B**				BatchID: **288824**		Analysis Date: **11/29/2019**		Seq No: **9305855**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Manganese	BRL	0.0100								

Sample ID: **LCS-288824**	Client ID:				Units: **mg/L**		Prep Date: **11/29/2019**		Run No: **412913**	
SampleType: **LCS**	TestCode: **Dissolved Metals by ICP/MS SW6020B**				BatchID: **288824**		Analysis Date: **11/29/2019**		Seq No: **9305856**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Manganese	0.1051	0.00500	0.1000		105	80	120			

Sample ID: **1911S55-010CMS**	Client ID: **Equipment Blank**				Units: **mg/L**		Prep Date: **11/29/2019**		Run No: **412913**	
SampleType: **MS**	TestCode: **Dissolved Metals by ICP/MS SW6020B**				BatchID: **288824**		Analysis Date: **11/29/2019**		Seq No: **9305858**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Manganese	0.09510	0.00500	0.1000		95.1	75	125			

Sample ID: **1911S55-010CMSD**	Client ID: **Equipment Blank**				Units: **mg/L**		Prep Date: **11/29/2019**		Run No: **412913**	
SampleType: **MSD**	TestCode: **Dissolved Metals by ICP/MS SW6020B**				BatchID: **288824**		Analysis Date: **11/29/2019**		Seq No: **9305859**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Manganese	0.1026	0.00500	0.1000		103	75	125	0.09510	7.58	20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288867

Sample ID: **MB-288867**	Client ID:					Units: **mg/L**		Prep Date: **12/03/2019**		Run No: **412980**
SampleType: **MBLK**	TestCode: **Mercury, Total SW7470A**					BatchID: **288867**		Analysis Date: **12/03/2019**		Seq No: **9309849**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	BRL	0.00020								

Sample ID: **LCS-288867**	Client ID:					Units: **mg/L**		Prep Date: **12/03/2019**		Run No: **412980**
SampleType: **LCS**	TestCode: **Mercury, Total SW7470A**					BatchID: **288867**		Analysis Date: **12/03/2019**		Seq No: **9309851**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	0.003806	0.00020	0.0040	0.0001425	91.6	80	120			

Sample ID: **1911S55-008AMS**	Client ID: **MW-4R**					Units: **mg/L**		Prep Date: **12/03/2019**		Run No: **412980**
SampleType: **MS**	TestCode: **Mercury, Total SW7470A**					BatchID: **288867**		Analysis Date: **12/03/2019**		Seq No: **9309854**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	0.003645	0.00020	0.0040	0.00006150	89.6	75	125			

Sample ID: **1911S55-008AMSD**	Client ID: **MW-4R**					Units: **mg/L**		Prep Date: **12/03/2019**		Run No: **412980**
SampleType: **MSD**	TestCode: **Mercury, Total SW7470A**					BatchID: **288867**		Analysis Date: **12/03/2019**		Seq No: **9309858**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	0.003819	0.00020	0.0040	0.00006150	93.9	75	125	0.003645	4.66	20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288877

Sample ID: **MB-288877** Client ID:
SampleType: **MBLK** TestCode: **Total Cyanide (SM4500 CN-C, E)**
Units: **mg/L** Prep Date: **12/02/2019** Run No: **412935**
BatchID: **288877** Analysis Date: **12/02/2019** Seq No: **9306668**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	BRL	0.010									

Sample ID: **LCS-288877** Client ID:
SampleType: **LCS** TestCode: **Total Cyanide (SM4500 CN-C, E)**
Units: **mg/L** Prep Date: **12/02/2019** Run No: **412935**
BatchID: **288877** Analysis Date: **12/02/2019** Seq No: **9306670**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.09800	0.010	0.1000		98.0	85	115				

Sample ID: **1911P59-001AMS** Client ID:
SampleType: **MS** TestCode: **Total Cyanide (SM4500 CN-C, E)**
Units: **mg/L** Prep Date: **12/02/2019** Run No: **412935**
BatchID: **288877** Analysis Date: **12/02/2019** Seq No: **9306674**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.09500	0.010	0.1000		95.0	90	110				

Sample ID: **1911R94-014AMS** Client ID:
SampleType: **MS** TestCode: **Total Cyanide (SM4500 CN-C, E)**
Units: **mg/L** Prep Date: **12/02/2019** Run No: **412935**
BatchID: **288877** Analysis Date: **12/03/2019** Seq No: **9308156**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.09600	0.010	0.1000	0.003000	93.0	90	110				

Sample ID: **1911P59-001AMSD** Client ID:
SampleType: **MSD** TestCode: **Total Cyanide (SM4500 CN-C, E)**
Units: **mg/L** Prep Date: **12/02/2019** Run No: **412935**
BatchID: **288877** Analysis Date: **12/02/2019** Seq No: **9306675**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.09300	0.010	0.1000		93.0	90	110	0.09500	2.13	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288879

Sample ID: **MB-288879** Client ID:
SampleType: **MBLK** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D**
Units: **ug/L** Prep Date: **11/29/2019** Run No: **412903**
BatchID: **288879** Analysis Date: **11/29/2019** Seq No: **9305763**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	BRL	5.0									
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,3-Trichloropropane	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Acrylonitrile	BRL	5.0									
Benzene	BRL	5.0									
Bromochloromethane	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288879

Sample ID: **MB-288879** Client ID: Units: **ug/L** Prep Date: **11/29/2019** Run No: **412903**
SampleType: **MBLK** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **288879** Analysis Date: **11/29/2019** Seq No: **9305763**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloroform	BRL	5.0									
Chloromethane	BRL	10									
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dibromomethane	BRL	5.0									
Ethylbenzene	BRL	5.0									
Iodomethane	BRL	10									
m,p-Xylene	BRL	10									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	10									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
trans-1,4-Dichloro-2-butene	BRL	10									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl acetate	BRL	10									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	55.99	0	50.00		112	64	125				
Surr: Dibromofluoromethane	47.38	0	50.00		94.8	76.4	125				
Surr: Toluene-d8	45.13	0	50.00		90.3	78.3	116				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288879

Sample ID: **LCS-288879** Client ID:
SampleType: **LCS** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D**
Units: **ug/L** Prep Date: **11/29/2019** Run No: **412903**
BatchID: **288879** Analysis Date: **11/29/2019** Seq No: **9305762**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	57.21	5.0	50.00		114	69.2	141				
Benzene	52.24	5.0	50.00		104	72.3	126				
Chlorobenzene	52.20	5.0	50.00		104	73.3	135				
Toluene	53.26	5.0	50.00		107	70.5	128				
Trichloroethene	57.25	5.0	50.00		114	70.3	133				
Surr: 4-Bromofluorobenzene	47.43	0	50.00		94.9	64	125				
Surr: Dibromofluoromethane	43.60	0	50.00		87.2	76.4	125				
Surr: Toluene-d8	46.17	0	50.00		92.3	78.3	116				

Sample ID: **1911S65-005AMS** Client ID:
SampleType: **MS** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D**
Units: **ug/L** Prep Date: **11/29/2019** Run No: **412903**
BatchID: **288879** Analysis Date: **12/02/2019** Seq No: **9306312**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	204.9	50	200.0		102	63.8	146				
Benzene	208.3	50	200.0		104	70.2	137				
Chlorobenzene	205.3	50	200.0		103	72.7	141				
Toluene	214.8	50	200.0	4.100	105	67	141				
Trichloroethene	261.0	50	200.0	22.90	119	69.3	141				
Surr: 4-Bromofluorobenzene	486.0	0	500.0		97.2	64	125				
Surr: Dibromofluoromethane	458.0	0	500.0		91.6	76.4	125				
Surr: Toluene-d8	473.6	0	500.0		94.7	78.3	116				

Sample ID: **1911S65-005ADUP** Client ID:
SampleType: **DUP** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D**
Units: **ug/L** Prep Date: **11/29/2019** Run No: **412903**
BatchID: **288879** Analysis Date: **12/02/2019** Seq No: **9306311**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	BRL	50						0	0	20	
1,1,1-Trichloroethane	BRL	50						0	0	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288879

Sample ID: **1911S65-005ADUP** Client ID: Units: **ug/L** Prep Date: **11/29/2019** Run No: **412903**
SampleType: **DUP** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **288879** Analysis Date: **12/02/2019** Seq No: **9306311**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,2,2-Tetrachloroethane	BRL	50						0	0	20	
1,1,2-Trichloroethane	BRL	50						0	0	20	
1,1-Dichloroethane	BRL	50						0	0	20	
1,1-Dichloroethene	BRL	50						0	0	20	
1,2,3-Trichloropropane	BRL	50						0	0	20	
1,2-Dibromo-3-chloropropane	BRL	50						0	0	20	
1,2-Dibromoethane	BRL	50						0	0	20	
1,2-Dichlorobenzene	BRL	50						0	0	20	
1,2-Dichloroethane	BRL	50						0	0	20	
1,2-Dichloropropane	BRL	50						0	0	20	
1,4-Dichlorobenzene	BRL	50						0	0	20	
2-Butanone	BRL	500						0	0	20	
2-Hexanone	BRL	100						0	0	20	
4-Methyl-2-pentanone	BRL	100						0	0	20	
Acetone	BRL	500						0	0	20	
Acrylonitrile	BRL	50						0	0	20	
Benzene	BRL	50						0	0	20	
Bromochloromethane	BRL	50						0	0	20	
Bromodichloromethane	BRL	50						0	0	20	
Bromoform	BRL	50						0	0	20	
Bromomethane	BRL	50						0	0	20	
Carbon disulfide	BRL	50						0	0	20	
Carbon tetrachloride	BRL	50						0	0	20	
Chlorobenzene	BRL	50						0	0	20	
Chloroethane	BRL	100						0	0	20	
Chloroform	BRL	50						0	0	20	
Chloromethane	BRL	100						0	0	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288879

Sample ID: **1911S65-005ADUP** Client ID: Units: **ug/L** Prep Date: **11/29/2019** Run No: **412903**
SampleType: **DUP** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **288879** Analysis Date: **12/02/2019** Seq No: **9306311**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	72.40	50						74.70	3.13	20	
cis-1,3-Dichloropropene	BRL	50						0	0	20	
Dibromochloromethane	BRL	50						0	0	20	
Dibromomethane	BRL	50						0	0	20	
Ethylbenzene	BRL	50						0	0	20	
Iodomethane	BRL	100						0	0	20	
m,p-Xylene	BRL	100						0	0	20	
Methylene chloride	BRL	50						0	0	20	
o-Xylene	BRL	100						0	0	20	
Styrene	BRL	50						0	0	20	
Tetrachloroethene	797.3	50						807.8	1.31	20	
Toluene	BRL	50						4.100	0	20	
trans-1,2-Dichloroethene	BRL	50						0	0	20	
trans-1,3-Dichloropropene	BRL	50						0	0	20	
trans-1,4-Dichloro-2-butene	BRL	100						0	0	20	
Trichloroethene	BRL	50						22.90	0	20	
Trichlorofluoromethane	BRL	50						0	0	20	
Vinyl acetate	BRL	100						0	0	20	
Vinyl chloride	BRL	20						0	0	20	
Surr: 4-Bromofluorobenzene	487.2	0	500.0		97.4	64	125	502.1	0	0	
Surr: Dibromofluoromethane	458.6	0	500.0		91.7	76.4	125	471.7	0	0	
Surr: Toluene-d8	468.8	0	500.0		93.8	78.3	116	459.5	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288890

Sample ID: **MB-288890** Client ID: Units: **mg/L** Prep Date: **12/02/2019** Run No: **413072**
SampleType: **MBLK** TestCode: **Total Metals by ICP/MS SW6020B** BatchID: **288890** Analysis Date: **12/03/2019** Seq No: **9310124**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	BRL	0.00150									
Arsenic	BRL	0.00250									
Barium	BRL	0.0100									
Beryllium	BRL	0.00100									
Cadmium	BRL	0.000700									
Calcium	BRL	0.100									
Chromium	BRL	0.00500									
Cobalt	BRL	0.00500									
Copper	BRL	0.00200									
Iron	BRL	0.100									
Lead	BRL	0.00100									
Magnesium	BRL	0.100									
Nickel	BRL	0.00500									
Potassium	BRL	0.100									
Selenium	BRL	0.00500									
Silver	BRL	0.00100									
Sodium	BRL	0.500									
Thallium	BRL	0.000500									
Vanadium	BRL	0.00500									
Zinc	BRL	0.0100									

Sample ID: **LCS-288890** Client ID: Units: **mg/L** Prep Date: **12/02/2019** Run No: **413072**
SampleType: **LCS** TestCode: **Total Metals by ICP/MS SW6020B** BatchID: **288890** Analysis Date: **12/03/2019** Seq No: **9310125**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1030	0.00500	0.1000		103	80	120				
Arsenic	0.1032	0.00500	0.1000		103	80	120				
Barium	0.1006	0.0100	0.1000		101	80	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288890

Sample ID: **LCS-288890** Client ID: Units: **mg/L** Prep Date: **12/02/2019** Run No: **413072**
SampleType: **LCS** TestCode: **Total Metals by ICP/MS SW6020B** BatchID: **288890** Analysis Date: **12/03/2019** Seq No: **9310125**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Beryllium	0.1002	0.00100	0.1000		100	80	120				
Cadmium	0.09728	0.000700	0.1000		97.3	80	120				
Calcium	0.9846	0.100	1.000		98.5	80	120				
Chromium	0.1064	0.00500	0.1000		106	80	120				
Cobalt	0.1044	0.00500	0.1000		104	80	120				
Copper	0.1034	0.00200	0.1000		103	80	120				
Iron	1.025	0.100	1.000		103	80	120				
Lead	0.1048	0.00100	0.1000		105	80	120				
Magnesium	1.080	0.100	1.000		108	80	120				
Nickel	0.1078	0.00500	0.1000		108	80	120				
Potassium	1.009	0.100	1.000		101	80	120				
Selenium	0.09818	0.00500	0.1000		98.2	80	120				
Silver	0.01028	0.00100	0.0100		103	80	120				
Sodium	1.175	0.500	1.000		118	80	120				
Thallium	0.1076	0.00100	0.1000		108	80	120				
Vanadium	0.1050	0.00500	0.1000		105	80	120				
Zinc	0.1065	0.0100	0.1000		106	80	120				

Sample ID: **1911S54-001CMS** Client ID: Units: **mg/L** Prep Date: **12/02/2019** Run No: **413072**
SampleType: **MS** TestCode: **Total Metals by ICP/MS SW6020B** BatchID: **288890** Analysis Date: **12/03/2019** Seq No: **9310127**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09855	0.00500	0.1000	0.001141	97.4	75	125				
Arsenic	0.1033	0.00500	0.1000		103	75	125				
Barium	0.1518	0.0100	0.1000	0.04868	103	75	125				
Beryllium	0.09950	0.00100	0.1000		99.5	75	125				
Cadmium	0.09164	0.000700	0.1000		91.6	75	125				
Calcium	54.81	0.100	1.000	50.67	414	75	125				S

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288890

Sample ID: **1911S54-001CMS** Client ID:
SampleType: **MS** TestCode: **Total Metals by ICP/MS** **SW6020B**
Units: **mg/L** Prep Date: **12/02/2019** Run No: **413072**
BatchID: **288890** Analysis Date: **12/03/2019** Seq No: **9310127**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chromium	0.1048	0.00500	0.1000		105	75	125				
Cobalt	0.1020	0.00500	0.1000	0.0004479	102	75	125				
Copper	0.09563	0.00200	0.1000		95.6	75	125				
Iron	1.083	0.100	1.000	0.1188	96.4	75	125				
Lead	0.1008	0.00100	0.1000		101	75	125				
Magnesium	33.88	0.100	1.000	31.44	245	75	125				S
Nickel	0.1031	0.00500	0.1000	0.001146	102	75	125				
Potassium	1.961	0.100	1.000	0.8882	107	75	125				
Selenium	0.09318	0.00500	0.1000		93.2	75	125				
Silver	0.01017	0.00100	0.0100		102	75	125				
Sodium	3.355	0.500	1.000	2.215	114	75	125				
Thallium	0.1081	0.00100	0.1000	0.0005618	108	75	125				
Vanadium	0.1045	0.00500	0.1000		104	75	125				
Zinc	0.1019	0.0100	0.1000	0.005914	95.9	75	125				

Sample ID: **1911S54-001CMSD** Client ID:
SampleType: **MSD** TestCode: **Total Metals by ICP/MS** **SW6020B**
Units: **mg/L** Prep Date: **12/02/2019** Run No: **413072**
BatchID: **288890** Analysis Date: **12/03/2019** Seq No: **9310128**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09604	0.00500	0.1000	0.001141	94.9	75	125	0.09855	2.58	20	
Arsenic	0.1024	0.00500	0.1000		102	75	125	0.1033	0.899	20	
Barium	0.1434	0.0100	0.1000	0.04868	94.7	75	125	0.1518	5.69	20	
Beryllium	0.09814	0.00100	0.1000		98.1	75	125	0.09950	1.38	20	
Cadmium	0.09204	0.000700	0.1000		92.0	75	125	0.09164	0.433	20	
Calcium	52.98	0.100	1.000	50.67	231	75	125	54.81	3.38	20	S
Chromium	0.1044	0.00500	0.1000		104	75	125	0.1048	0.348	20	
Cobalt	0.1026	0.00500	0.1000	0.0004479	102	75	125	0.1020	0.588	20	
Copper	0.09576	0.00200	0.1000		95.8	75	125	0.09563	0.131	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: 288890

Sample ID: **1911S54-001CMSD** Client ID:
SampleType: **MSD** TestCode: **Total Metals by ICP/MS SW6020B**
Units: **mg/L** Prep Date: **12/02/2019** Run No: **413072**
BatchID: **288890** Analysis Date: **12/03/2019** Seq No: **9310128**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Iron	1.056	0.100	1.000	0.1188	93.7	75	125	1.083	2.49	20	
Lead	0.1001	0.00100	0.1000		100	75	125	0.1008	0.759	20	
Magnesium	32.43	0.100	1.000	31.44	99.6	75	125	33.88	4.38	20	
Nickel	0.1032	0.00500	0.1000	0.001146	102	75	125	0.1031	0.132	20	
Potassium	1.859	0.100	1.000	0.8882	97.1	75	125	1.961	5.36	20	
Selenium	0.09386	0.00500	0.1000		93.9	75	125	0.09318	0.729	20	
Silver	0.01016	0.00100	0.0100		102	75	125	0.01017	0.140	20	
Sodium	3.312	0.500	1.000	2.215	110	75	125	3.355	1.30	20	
Thallium	0.1096	0.00100	0.1000	0.0005618	109	75	125	0.1081	1.41	20	
Vanadium	0.1046	0.00500	0.1000		105	75	125	0.1045	0.108	20	
Zinc	0.1040	0.0100	0.1000	0.005914	98.1	75	125	0.1019	2.11	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
RptLim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: R412867

Sample ID: **MB-R412867**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **412867**
SampleType: **MBLK**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R412867**		Analysis Date: **11/29/2019**		Seq No: **9304939**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	BRL	0.200									

Sample ID: **LCS-R412867**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **412867**
SampleType: **LCS**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R412867**		Analysis Date: **11/29/2019**		Seq No: **9304938**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.952	0.200	5.000		99.0	90	110				

Sample ID: **1911R40-006BMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **412867**
SampleType: **MS**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R412867**		Analysis Date: **11/30/2019**		Seq No: **9304962**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.950	0.200	5.000	0.1142	96.7	90	110				

Sample ID: **1911S55-009CMS**	Client ID: **MW-05**				Units: **mg/L**		Prep Date:		Run No: **412867**
SampleType: **MS**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R412867**		Analysis Date: **11/30/2019**		Seq No: **9304964**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	5.021	0.200	5.000		100	90	110				

Sample ID: **1911R40-006BMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **412867**
SampleType: **MSD**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R412867**		Analysis Date: **11/30/2019**		Seq No: **9304963**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.988	0.200	5.000	0.1142	97.5	90	110	4.950	0.766	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: R412869

Sample ID: **MB-R412869** Client ID:
SampleType: **MBLK** TestCode: **Inorganic Anions by IC EPA 300.0**
Units: **mg/L** Prep Date: Run No: **412869**
BatchID: **R412869** Analysis Date: **11/27/2019** Seq No: **9305038**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	BRL	1.00									
Fluoride	BRL	0.200									
Nitrogen, Nitrate (As N)	BRL	0.250									
Sulfate	BRL	1.00									

Sample ID: **LCS-R412869** Client ID:
SampleType: **LCS** TestCode: **Inorganic Anions by IC EPA 300.0**
Units: **mg/L** Prep Date: Run No: **412869**
BatchID: **R412869** Analysis Date: **11/27/2019** Seq No: **9305037**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	10.48	1.00	10.00		105	90	110				
Fluoride	5.244	0.200	5.000		105	90	110				
Nitrogen, Nitrate (As N)	5.276	0.250	5.000		106	90	110				
Sulfate	24.49	1.00	25.00		98.0	90	110				

Sample ID: **1911S44-001DMS** Client ID:
SampleType: **MS** TestCode: **Inorganic Anions by IC EPA 300.0**
Units: **mg/L** Prep Date: Run No: **412869**
BatchID: **R412869** Analysis Date: **11/27/2019** Seq No: **9305050**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	455.1	20.0	200.0	291.6	81.7	90	110				S
Fluoride	109.4	4.00	100.0	1.668	108	90	110				
Nitrogen, Nitrate (As N)	106.1	5.00	100.0	2.637	103	90	110				
Sulfate	559.2	20.0	500.0	69.54	97.9	90	110				

Sample ID: **1911S44-001DMSD** Client ID:
SampleType: **MSD** TestCode: **Inorganic Anions by IC EPA300.0**
Units: **mg/L** Prep Date: Run No: **412869**
BatchID: **R412869** Analysis Date: **11/27/2019** Seq No: **9305051**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	442.4	20.0	200.0	291.6	75.4	90	110	455.1	2.83	20	S

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: R412869

Sample ID: **1911S44-001DMSD** Client ID:
SampleType: **MSD** TestCode: **Inorganic Anions by IC EPA 300.0**
Units: **mg/L** Prep Date: Run No: **412869**
BatchID: **R412869** Analysis Date: **11/27/2019** Seq No: **9305051**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	110.0	4.00	100.0	1.668	108	90	110	109.4	0.515	20	
Nitrogen, Nitrate (As N)	106.3	5.00	100.0	2.637	104	90	110	106.1	0.223	20	
Sulfate	558.0	20.0	500.0	69.54	97.7	90	110	559.2	0.205	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: R412920

Sample ID: **MB-412920**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **412920**	
SampleType: **MBLK**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R412920**		Analysis Date: **12/02/2019**		Seq No: **9307002**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	BRL	10.0									

Sample ID: **LCS-412920**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **412920**	
SampleType: **LCS**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R412920**		Analysis Date: **12/02/2019**		Seq No: **9307003**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	476.3	10.0	500.0		95.3	90	110				

Sample ID: **1911S30-003AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **412920**	
SampleType: **MS**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R412920**		Analysis Date: **12/02/2019**		Seq No: **9307005**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	416.9	12.5	375.0	63.83	94.1	90	110				

Sample ID: **1911S55-006DMS**	Client ID: **MW-03**				Units: **mg/L**		Prep Date:		Run No: **412920**	
SampleType: **MS**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R412920**		Analysis Date: **12/02/2019**		Seq No: **9307018**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	411.2	12.5	375.0	9.440	107	90	110				

Sample ID: **1911S30-003AMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **412920**	
SampleType: **MSD**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R412920**		Analysis Date: **12/02/2019**		Seq No: **9307006**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	422.5	12.5	375.0	63.83	95.7	90	110	416.9	1.35	30	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: R413100

Sample ID: **MB-R413100**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **413100**
SampleType: **MBLK**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R413100**		Analysis Date: **12/03/2019**		Seq No: **9310683**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	BRL	1.00									

Sample ID: **LCS-R413100**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **413100**
SampleType: **LCS**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R413100**		Analysis Date: **12/03/2019**		Seq No: **9310678**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	24.22	1.00	25.00		96.9	90	110				

Sample ID: **1912110-001AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **413100**
SampleType: **MS**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R413100**		Analysis Date: **12/03/2019**		Seq No: **9310687**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	22.65	1.00	25.00		90.6	80	120				

Sample ID: **1912110-001AMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **413100**
SampleType: **MSD**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R413100**		Analysis Date: **12/03/2019**		Seq No: **9310688**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	22.65	1.00	25.00		90.6	80	120	22.65	0	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1911S55

ANALYTICAL QC SUMMARY REPORT

BatchID: R413101

Sample ID: **MB-R413101**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **413101**	
SampleType: **MBLK**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R413101**		Analysis Date: **12/04/2019**		Seq No: **9310589**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	BRL	1.00								

Sample ID: **LCS-R413101**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **413101**	
SampleType: **LCS**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R413101**		Analysis Date: **12/04/2019**		Seq No: **9310587**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	23.57	1.00	25.00		94.3	90	110			

Sample ID: **1912110-002AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **413101**	
SampleType: **MS**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R413101**		Analysis Date: **12/04/2019**		Seq No: **9310592**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	22.07	1.00	25.00		88.3	80	120			

Sample ID: **1912110-002AMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **413101**	
SampleType: **MSD**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R413101**		Analysis Date: **12/04/2019**		Seq No: **9310593**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	22.13	1.00	25.00		88.5	80	120	22.07	0.271	20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

APPENDIX C

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #01

INORGANIC	TN REGULATORY LIMITS	11-17-17	3-26-18	5-7-18	5-23-18	11-14-18	5-30-19	11-26-19	MW-01 Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.50	2.50
Barium	2000	33	30.6	29.8	29.4	50.4	33.4	33.2	34.26	14.67
Beryllium	4	1	1	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5	5	5.00	6.74
Copper	800**	2	2	2	2	2	2	2	2.00	2.07
Fluoride*	4	1	1	1	1	1	1	0.2	0.89	0.89
Lead	15	1	1	1	1	1	1	1	1.00	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	2	0.50	0.50
Nickel	100	5	5	5	5	5	5	5	5.00	9.53
Selenium	50	5	5	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.72
Vanadium	86**	5	5	5	5	5	5	5	5.00	5.09
Zinc	6000**	10	10	10	10	10	10	10	10.00	26.20

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL
NOT INCLUDED IN AVERAGE

ORGANIC	11-16-17	3-26-18	5-7-18	5-22-18	11-13-18	5-29-19	11-26-19
Acetone	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlor	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #1A

INORGANIC	TN REGULATORY LIMITS	11-18-17	3-7-18	5-3-18	5-23-18	11-14-18	5-29-19	11-26-19	MW-1A Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.50	2.50
Barium	2000	87.1	67.2	104	69.3	99.5	201	181	115.59	14.67
Beryllium	4	1	1	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5	5	5.00	6.74
Copper	800**	2	2	2.2	2	2	2	2	2.03	2.07
Fluoride*	4	1	1	1	1	1	1	0.2	0.89	0.89
Lead	15	1	1	1.39	1	1	1	1	1.06	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	2	0.50	0.50
Nickel	100	5	5	5	5	5	5	5	5.00	9.53
Selenium	50	5	5	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.72
Vanadium	86**	5	5	5	5	5	5	5	5.00	5.09
Zinc	6000**	10	14.3	14.9	12.5	14	12.4	15.2	13.33	26.20

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL
NOT INCLUDED IN AVERAGE

ORGANIC	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18	5-29-19	11-26-19
Acetone	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlor	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #02

INORGANIC	TN REGULATORY LIMITS	11-16-17	3-7-18	5-7-18	5-23-18	11-13-18	5-29-19	11-26-19	MW-02 Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.50	2.50
Barium	2000	68.8	38.5	54.3	52.3	86.4	57.1	51.8	58.46	14.67
Beryllium	4	1.87	1.38	2.45	1.78	2.31	1.33	1.9	1.86	1.00
Cadmium	5	2.27	1.34	1.92	1.62	2.28	1.67	1.78	1.84	0.70
Chromium	100	5	5	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5	5	5.00	6.74
Copper	800**	2	2	2	2	2.52	2	2.1	2.09	2.07
Fluoride*	4	1	1	1	1	1	1	0.2	0.89	0.89
Lead	15	1	1	1	1	1	1	1	1.00	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	2	0.50	0.50
Nickel	100	33.7	21.8	28.4	26.9	37	29.3	28.9	29.43	9.53
Selenium	50	5	5	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.72
Vanadium	86**	5	5	5	5	5	5	5	5.00	5.09
Zinc	6000**	350	219	296	278	404	289	289	303.57	26.20

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL
NOT INCLUDED IN AVERAGE

ORGANIC	11-16-17	3-7-18	5-7-18	5-23-18	11-13-18	5-29-19	11-26-19
Acetone	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlor	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #03

INORGANIC	TN REGULATORY LIMITS	11-16-17	3-26-18	5-7-18	5-23-18	11-13-18	5-29-19	11-26-19	MW-03 Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.50	2.50
Barium	2000	62.7	53.7	79.8	102	142	81.5	44.9	80.94	14.67
Beryllium	4	1	1	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5	5	5.00	5.00
Cobalt	6**	9.74	5	10.3	13.3	18.9	11.7	5	10.56	6.74
Copper	800**	5.2	3.91	3.21	3.35	2.09	2.36	2	3.16	2.07
Fluoride*	4	1	1	1	1	1	1	0.2	0.89	0.89
Lead	15	1.39	1	1	2.14	1	1.32	1	1.26	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.91	2	0.57	0.50
Nickel	100	7.5	7.51	8.75	10.5	11.3	9.23	5	8.54	9.53
Selenium	50	5	5	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.72
Vanadium	86**	5	5	5	5	5	5	5	5.00	5.09
Zinc	6000**	11.9	28.2	10	15.5	13.2	12.1	15.3	15.17	26.20

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL
NOT INCLUDED IN AVERAGE

ORGANIC	11-16-17	3-26-18	5-7-18	5-23-18	11-13-18	5-29-19	11-26-19
Acetone	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlor	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND

LOUDON COUNTY
BACKGROUND WELL
MONITORING WELL #4R

INORGANIC	TN REGULATORY LIMITS	11-17-17	3-7-18	5-3-18	5-23-18	11-14-18	5-30-19	11-26-19	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.5	6	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.5	10	2.50
Barium	2000	11.3	21.3	10.1	11.8	16.4	11.3	20.5	14.67
Beryllium	4	1	1	1	1	1	1	4	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	5	0.70
Chromium	100	5	5	5	5	5	5	20	5.00
Cobalt	6**	5	13.6	5	5	6.86	5	50	6.74
Copper	800**	2	2	2	2	2	2.4	20	2.07
Fluoride*	4	1	1	1	1	1	1	0.2	0.89
Lead	15	1	1	1	1	1.1	1.11	10	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	2	0.50
Nickel	100	7.69	14.3	5	8.3	13.7	8.2	40	9.53
Selenium	50	5	5	5	5	5	5	50	5.00
Silver	100	1	1	1	1	1	1	5	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	1.79	2	0.72
Vanadium	86**	5	5	5.53	5	5	5	50	5.09
Zinc	6000**	21.2	32.9	12.6	16.6	33.2	46	20.9	26.20

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL
NOT INCLUDED IN AVERAGE

ORGANIC	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18	5-29-19	11-26-19
Acetone	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlor	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #05

INORGANIC	TN REGULATORY LIMITS	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18	5-29-19	11-26-19	MW-05 Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.5	6	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.5	10	2.50	2.50
Barium	2000	10	10	11.9	10.2	10.6	10.5	172	33.60	14.67
Beryllium	4	1	1	1	1	1	1	4	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	5	0.70	0.70
Chromium	100	5	5	5	5	5	5	20	5.00	5.00
Cobalt	6**	5	5	5	5	5	5	50	5.00	6.74
Copper	800**	2	2	2	2	2	2	20	2.00	2.07
Fluoride*	4	1	1	1	1	1	1	0.2	0.89	0.89
Lead	15	1	1	1	1	1	1	10	1.00	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	2	0.50	0.50
Nickel	100	5	5	5	5	5	5	40	5.00	9.53
Selenium	50	5	5	5	5	5	5	50	5.00	5.00
Silver	100	1	1	1	1	1	1	5	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.934	2	0.57	0.72
Vanadium	86**	5	5	5	5	5	5	50	5.00	5.09
Zinc	6000**	10.0	10.3	10.0	11.7	11.8	12.2	20	11.00	26.20

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL
NOT INCLUDED IN AVERAGE

ORGANIC	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18	5-29-19	11-26-19
Acetone	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlor	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND

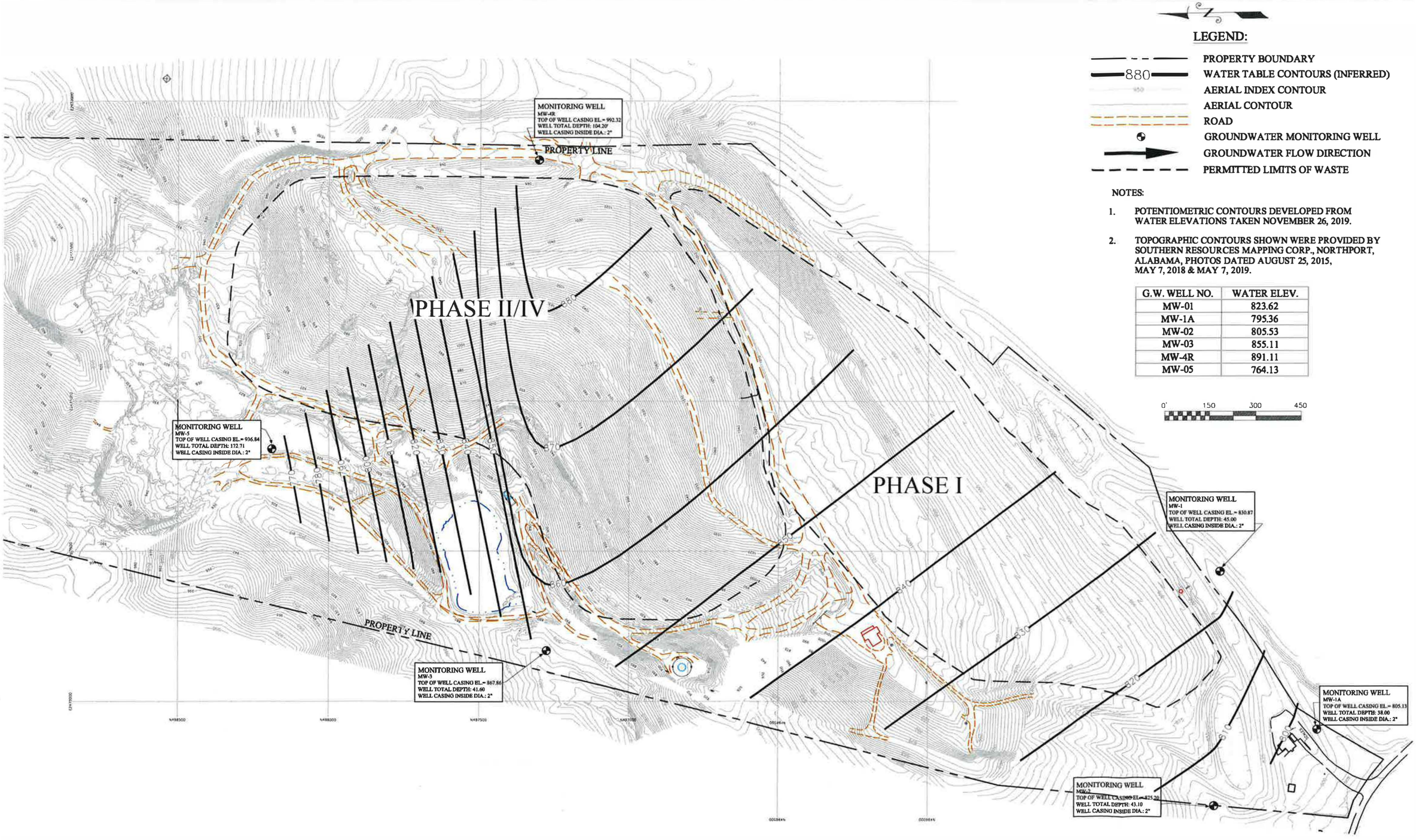
APPENDIX D

GROUNDWATER DATA
Matlock Bend Landfill
November 26, 2019

Well No.	Elev. Of TOC	Depth to GW (ft below TOC)	Water Elevation	Contour Elevation	Distance	Hydraulic Conductivity	Effective Porosity (n)	Hydraulic Gradient	Average Linear Velocity		Directions
									ft/min	ft/day	
MW-01	830.87	7.25	823.62	820	65	4.70E-06	0.18	5.57E-02	1.45E-06	2.09E-03	SW
MW-1A*	805.13	9.77	795.36	800	85	3.93E-06	0.18	5.46E-02	1.19E-06	1.72E-03	S
MW-02	825.20	19.67	805.53	800	100	5.90E-06	0.18	5.53E-02	1.81E-06	2.61E-03	SW
MW-03	867.86	12.75	855.11	850	45	1.20E-05	0.18	1.14E-01	7.57E-06	1.09E-02	NW
MW-4R**	992.32	101.21	891.11	880	85	1.90E-05	0.18	1.31E-01	1.38E-05	1.99E-02	NW
MW-05	936.84	172.71	764.13	770	50	2.20E-05	0.18	1.17E-01	1.43E-05	2.07E-02	NW

*-The hydraulic conductivity for MW-1A is an average from monitoring wells MW-01, MW-02 and MW-03.
**-The hydraulic conductivity for MW-4R is from MW-04.

APPENDIX E



LEGEND:

- PROPERTY BOUNDARY
- 880 WATER TABLE CONTOURS (INFERRED)
- AERIAL INDEX CONTOUR
- AERIAL CONTOUR
- ROAD
- GROUNDWATER MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- PERMITTED LIMITS OF WASTE

NOTES:

1. POTENTIOMETRIC CONTOURS DEVELOPED FROM WATER ELEVATIONS TAKEN NOVEMBER 26, 2019.
2. TOPOGRAPHIC CONTOURS SHOWN WERE PROVIDED BY SOUTHERN RESOURCES MAPPING CORP., NORTHPORT, ALABAMA, PHOTOS DATED AUGUST 25, 2015, MAY 7, 2018 & MAY 7, 2019.

G.W. WELL NO.	WATER ELEV.
MW-01	823.62
MW-1A	795.36
MW-02	805.53
MW-03	855.11
MW-4R	891.11
MW-05	764.13

REV	DATE	DRWN	CHKD	REVISION

PHASE I/II/IV 2ND SEMI-ANN AL 2019
POTENTIOMETRIC CONTO R MAP

MATLOCK BEND LANDFILL
LOUDON CO NTY, TENNESSEE

SANTEK Waste Services
650 25TH STREET NW
SUITE 100
CLEVELAND,
TENNESSEE
(423)303-7101

SCALE: 1"=300	
DATE: 1/14/19	
DRAWN BY: WM	
CHECKED BY: RH	
APPROVED BY:	
FILE: 1910-F1	
JOB NO: 200-1910	

F-1
sheet number