SANTEK
WasteServices

650 25th Street, N.W., Suite 100
Cleveland, Tennessee 37311
(423) 303-7101

Email: info@santekwasteservices.com
Internet: santekwasteservices.com

July 26, 2019

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 – 1st 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 first 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
1st SEMI-ANNUAL EVENT - 2019

SANTEK PROJECT NO. 200-1910.2

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

JULY 2019

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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 first 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 May 29 & 30, 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-03. 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.

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.

MW-03

The control chart for MW-03 indicates barium, lead, and mercury 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-03 indicates copper 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.

The control chart for MW-03 indicates nickel 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.

The control chart for MW-03 indicates cobalt is above the report limit, background well's average and EPA Region 4 Screening Level. However, this detection is attributed to cobalt levels in the soils at the Landfill. Appendix G contains an Alternate Source Demonstration using soil samples collected from the Borrow Area at the Landfill. Table 1 in Appendix G details the cobalt levels for MW-03 on 5/29/19, the leachate, and the soil samples. The results indicate cobalt is naturally occurring in the soils approximately 399 times higher than the groundwater. Furthermore, cobalt is present in the leachate as well. However, the presence of this constituent in the leachate is attributable to the use of soils as daily and intermediate cover. Santek believes this report adequately identifies the source of cobalt being the site's natural soil. Therefore, no additional sampling and analysis is recommended for cobalt in MW-03.

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.

The control chart for MW-05 indicates thallium is above the report limit and background well's average. However, the results of this constituent does not exceed the TN Regulatory limit 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 1.09×10^{-3} ft/day at MW-02 to 3.07×10^{-3} 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 3.07×10^{-3} ft/day at MW-03 to 4.86×10^{-3} ft/day at MW-4R. 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

June 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 May 29th – 30th, 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 SESD 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. The pumps used were attached to Teflon-lined tubing. The tubing and pump were rinsed after sampling the well.

The wells were sampled using the same pump 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 overnight, but less than 24 hours (MW-01, 4R). 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 hand-delivered 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	5/29/2019
DTW[1]	4.08
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)
1256	0.92	0.00	5.92	532	15.7	2
1302	0.92	6.75	6.24	548	15.5	240
1308	0.92	13.50	6.35	557	15.5	127
1312	0.92	16.75	6.39	560	15.7	121
1316	0.92	20.00	6.40	562	15.7	123

Metals sample collection if allowed to settle:

Date: 5/30/2019 Time: 1200 NTU: 6

Comments
Cloudy, no odor, allowed to settle overnight

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-1A
Date	5/29/2019
DTW[1]	10.66
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)
1136	0.79	0.00	5.35	1767	15.9	21
1140	0.79	4.50	5.92	1690	15.1	8
1145	0.79	9.00	6.10	1670	15.1	7
1148	0.79	11.25	6.14	1663	15.0	6
1151	0.79	13.50	6.17	1659	15.0	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	MW-02
Date	5/29/2019
DTW[1]	11.24
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)
1214	0.92	0.00	6.04	83	16.3	2
1219	0.92	5.25	4.99	67	16.5	5
1224	0.92	10.50	4.91	63	16.6	5
1227	0.92	13.00	4.88	62	16.7	4
1230	0.92	15.75	4.87	61	16.7	4

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	MW-03
Date	5/29/2019
DTW[1]	13.18
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)
1351	0.92	0.00	5.83	357	18.1	11
1356	0.92	4.75	5.76	340	16.6	5
1400	0.92	9.50	5.69	316	17.5	5
1403	0.92	11.75	5.65	312	18.1	6
1406	0.92	14.00	5.65	311	18.2	7

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	5/29/2019
DTW[1]	95.72
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)
1514	0.38	0.00	7.72	30	32.1	6
1517	0.38	2.00	6.93	79	25.1	128
1519	0.38	2.75	6.28	86	22.6	116
1522	0.38	3.75	6.14	97	22.4	89
1525	0.38	4.50	6.11	114	22.1	87
1529	0.38	5.50	6.19	226	22.6	61

Metals sample collection if allowed to settle:

Date: 5/30/2019 Time: 1220 NTU: 27

Comments
Cloudy, no odor, allowed to settle overnight

Field Tech: B. Weaver

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	5/29/2019
DTW[1]	68.92
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)
1306	0.71	0.00	6.95	322	34.4	7
1328	0.71	17.00	7.74	27	18.9	22
1336	0.71	25.50	7.46	264	18.2	15
1342	0.71	34.00	7.39	263	18.0	9
1349	0.71	42.50	7.34	260	17.8	16
1359	0.71	51.00	7.31	261	17.4	10

Metals sample collection if allowed to settle:

Date: _____ Time: _____ NTU: _____

Comments
Clear, no odor

Field Tech: B. Weaver

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	5/29/19 16:00
Sample Method	Directly into bottles
Parameters	TN Appendix I VOCs / Metals / F

Comments
DI Water provided by AES

Field Tech: N. Walker

EM Services

Environmental Monitoring Services, LLC

Client: Santek Waste Services
Site: Loudon County (Matlock Bend) Landfills
Date: 5/29/2019

Well ID	TOC Elevation[1]	DTW[2]	Water Level FMSL
MW-01	830.87	4.08	826.79
MW-1A	805.13	10.66	794.47
MW-02	825.20	11.24	813.96

Well	TOC Elevation[1]	DTW[2]	Water Level FMSL
MW-03	867.86	13.18	854.68
MW-4R	992.32	95.72	896.60
MW-05	936.84	68.92	867.92

1 Elevation of Reference Point on Wellhead, Generally Top of Casing
2 Measured in feet from Top of Casing

APPENDIX B

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

AES

June 19, 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: 1905T35

Analytical Environmental Services, Inc. received 11 samples on 5/30/2019 4:17:00 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 07/01/18-06/30/19.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/18-06/30/19 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 11/01/19.
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

Revision 6/19/2019

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: 1905T35

Date: 5/29/19 Page 1 of 1

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

#	SAMPLE ID	SAMPLED: DATE	SAMPLED: TIME	GRAB	COMPOSITE	MATRIX (see codes)	TN App I VOC (8260)	TN App I SVOC (8011)	TN App I Metals (Ca, Fe, Mg, K, Na)	Diss Mn	LOD, NH_3	TDS	F, Cl, NO_3, SO_4	CN	TOC	TN App I Metals (Mn, Fe)	Fluoride			Number of Containers
	PRESERVATION (see codes)						H+I	I	N	I	S+I	I	I	N+I	S+I	N	I			
1	MW-01	5/29/19	1316	X		GW	2	2		X	1	1	1	1	2					11
2	LD	5/30	1200	X		GW			1	1	W 10/3/19									1
3	MW-1A	5/29	1151	X		GW	2	2	1	1	1	1	1	1	2					12
4	MW-02	5/29	1230	X		GW	2	2	1	1	1	1	1	1	2					12
5	MW-03	5/29	1406	X		GW	2	2	1	1	1	1	1	1	2					12
6	MW-4R	5/29	1529	X		GW	2	2									1			5
7	LD	5/30	1220	X		GW										1				1
8	MW-05	5/29	1359	X		GW	2	2								1	1			6
9	Equipment Blank	5/29	1600	X		W	2	2	1	1	1	1	1	1	2					12
10	Duplicate	5/29	1600	X		GW	2	2	1	1	1	1	1	1	2					12
11	Trip Blank	5/29	~~1600~~ 1000	X		W	2													2
12																				
13																				
14																				

Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.

REMARKS

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1.	5/30 1617	1.	5-30-19 1617
2.		2. Revised coc received via Chris Hall 10/3/19 9:21am email	
3.		3.	

SPECIAL INSTRUCTIONS/COMMENTS:

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

PROJECT INFORMATION
PROJECT NAME: Loudon CO (Matlock Bend) Landfill
PROJECT #:
SITE ADDRESS: 21712 Hwy 72 N Loudon, TN 37774
SEND REPORT TO: Robert Hudson
INVOICE TO (IF DIFFERENT FROM ABOVE):
QUOTE #: 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.
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: 1905735

Date: 5/29/19 Page 1 of 1

COMPANY:	ADDRESS:
Sautek Environmental Inc	650 25th St NW Ste 100 Cleveland, TN 37311
PHONE: 423-303-7101	EMAIL:
SAMPLED BY: N Walker / B Weaver	SIGNATURE:

#	SAMPLE ID	SAMPLED: DATE	SAMPLED: TIME	GRAB	COMPOSITE	MATRIX (see codes)	TNApp I VOC (8260)	TNApp I VOC (8011)	TNApp I Metals (incl. Hg) (Ca, Mg, K, Na)	Diss Mn	COD, NH_3	TDS	F, Cl, NO_3, SO_4	CN	TOC	TNApp I Metals (excl. Hg)	Fluoride			REMARKS	Number of Containers
	PRESERVATION (see codes)						H+I	I	N	I	S+I	I	I	N+O	S+I	N	I				
1	MW-01	5/29/19	1316	X		GW	2	2		1	1	1	1	1	2						11
2	LD	5/30	1200	X		GW			1												1
3	MW-1A	5/29	1151	X		GW	2	2	1	1	1	1	1	1	2						12
4	MW-02	5/29	1230	X		GW	2	2	1	1	1	1	1	1	2						12
5	MW-03	5/29	1406	X		GW	2	2	1	1	1	1	1	1	2						12
6	MW-4R	5/29	1529	X		GW	2	2									1				5
7	LD	5/30	1220	X		GW										1					1
8	MW-05	5/29	1359	X		GW	2	2								1	1				6
9	Equipment Blank	5/29	1600	X		W	2	2	1	1	1	1	1	1	2						12
10	Duplicate	5/29	1600	X		GW	2	2	1	1	1	1	1	1	2						12
11	Trip Blank	5/29	~~1600~~ 1000	X		W	2														2
12																					
13																					
14																					

Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1.	5/30 1617	1.	5-30-19 1617
2.		2.	
3.		3.	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT: / / VIA:
IN: / / VIA:
client FedEx UPS US mail courier
other: _____

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

RECEIPT
Total # of Containers: 96

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: 19-Jun-19

Client: Santek Waste Services, LLC
Project: Loudon Co (Matlock Bend) Landfill
Lab ID: 1905T35

Case Narrative

Sample Receiving Nonconformance:

Both vials for 1905T35-009 were received with headspace present as signified by >1/4 inch bubble present. The laboratory did not proceed with analysis analysis per Robert Hudson via email 06-03-19.

Vial 2 of 2 for 1905T35-008 was received with headspace present as signified by >1/4 inch bubble present. The laboratory proceeded with analysis using the remaining vial.

Metals containers for samples 1905T35-001 and -006 were received empty. Metals analysis was not requested on the Chain of Custody (COC). Total Metals was not required per Tracy Wardell via email 06-03-19.

Dissolved metals container for 1905T35-001 was received empty. Dissolved Metals was not required per Tracy Wardell via email 06-03-19.

A container for Dissolved metals was received for sample 1905T35-002 but not reqeuested on the the COC. Dissolved Metals was required per Tracy Wardell via email 06-03-19, and an updated COC was submitted via email.

Analytical Environmental Services, Inc **Date:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-01
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 1:16:00 PM
Lab ID:	1905T35-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	9.14	1.00		mg/L	R399566	1	06/03/2019 21:38	SK
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	314	1		mg/L	279752	1	06/03/2019 10:00	NN
Nitrogen, Ammonia (as N) E350.1				**(E350.1)**				
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	279991	1	06/03/2019 13:04	MP
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	279982	1	06/04/2019 00:40	HB
1,2-Dibromoethane	BRL	0.020		ug/L	279982	1	06/04/2019 00:40	HB
Surr: 4-Bromofluorobenzene	115	72.9-137		%REC	279982	1	06/04/2019 00:40	HB
Inorganic Anions by IC EPA 300.0								
Chloride	31.0	1.00		mg/L	R399532	1	05/30/2019 20:33	BC
Fluoride	BRL	1.00		mg/L	R399532	1	05/30/2019 20:33	BC
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R399532	1	05/30/2019 20:33	BC
Sulfate	4.36	1.00		mg/L	R399532	1	05/30/2019 20:33	BC
Cyanide SW9014				**(SW9010C)**				
Cyanide, Total	BRL	0.200		mg/L	279907	1	05/31/2019 15:40	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R399470	1	06/03/2019 12:00	BK
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,1,1-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,2,3-Trichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
2-Butanone	BRL	50		ug/L	279998	1	05/31/2019 10:22	JB
2-Hexanone	BRL	10		ug/L	279998	1	05/31/2019 10:22	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-01
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 1:16:00 PM
Lab ID:	1905T35-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
4-Methyl-2-pentanone	BRL	10		ug/L	279998	1	05/31/2019 10:22	JB
Acetone	BRL	50		ug/L	279998	1	05/31/2019 10:22	JB
Acrylonitrile	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Benzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Bromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Bromodichloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Bromoform	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Bromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Carbon disulfide	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Carbon tetrachloride	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Chlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Chloroethane	BRL	10		ug/L	279998	1	05/31/2019 10:22	JB
Chloroform	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Chloromethane	BRL	10		ug/L	279998	1	05/31/2019 10:22	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Dibromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Dibromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Ethylbenzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Iodomethane	BRL	10		ug/L	279998	1	05/31/2019 10:22	JB
m,p-Xylene	BRL	10		ug/L	279998	1	05/31/2019 10:22	JB
Methylene chloride	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
o-Xylene	BRL	10		ug/L	279998	1	05/31/2019 10:22	JB
Styrene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Tetrachloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Toluene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	279998	1	05/31/2019 10:22	JB
Trichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:22	JB
Vinyl acetate	BRL	10		ug/L	279998	1	05/31/2019 10:22	JB
Vinyl chloride	BRL	2.0		ug/L	279998	1	05/31/2019 10:22	JB
Surr: 4-Bromofluorobenzene	84.4	64-125		%REC	279998	1	05/31/2019 10:22	JB
Surr: Dibromofluoromethane	97.1	76.4-125		%REC	279998	1	05/31/2019 10:22	JB
Surr: Toluene-d8	91.7	78.3-116		%REC	279998	1	05/31/2019 10:22	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-01
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/30/2019 12:00:00 PM
Lab ID:	1905T35-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	56.5	0.500		mg/L	279969	5	06/05/2019 21:23	KP
Iron	0.183	0.100		mg/L	279969	1	06/04/2019 22:13	KP
Magnesium	39.6	0.100		mg/L	279969	1	06/04/2019 22:13	KP
Potassium	2.86	0.500		mg/L	279969	5	06/05/2019 21:23	KP
Sodium	13.6	2.50		mg/L	279969	5	06/06/2019 19:25	KP
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00050		mg/L	280038	1	06/04/2019 23:45	EH
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	BRL	0.0100		mg/L	280102	1	06/05/2019 23:47	KP
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00150		mg/L	279969	1	06/04/2019 22:13	KP
Arsenic	BRL	0.00250		mg/L	279969	1	06/04/2019 22:13	KP
Barium	0.0334	0.0100		mg/L	279969	1	06/04/2019 22:13	KP
Beryllium	BRL	0.00100		mg/L	279969	1	06/04/2019 22:13	KP
Cadmium	BRL	0.000700		mg/L	279969	1	06/04/2019 22:13	KP
Chromium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:13	KP
Cobalt	BRL	0.00500		mg/L	279969	1	06/04/2019 22:13	KP
Copper	BRL	0.00200		mg/L	279969	1	06/04/2019 22:13	KP
Lead	BRL	0.00100		mg/L	279969	1	06/04/2019 22:13	KP
Nickel	BRL	0.00500		mg/L	279969	1	06/04/2019 22:13	KP
Selenium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:13	KP
Silver	BRL	0.00100		mg/L	279969	1	06/04/2019 22:13	KP
Thallium	BRL	0.000500		mg/L	279969	1	06/04/2019 22:13	KP
Vanadium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:13	KP
Zinc	BRL	0.0100		mg/L	279969	1	06/04/2019 22:13	KP

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-1A
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 11:51:00 AM
Lab ID:	1905T35-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	7.53	1.00		mg/L	R399566	1	06/03/2019 21:56	SK
Total Metals by ICP/MS SW6020B				**(SW3005A)**				
Calcium	126	1.00		mg/L	279969	10	06/05/2019 21:26	KP
Iron	0.350	0.100		mg/L	279969	1	06/04/2019 22:16	KP
Magnesium	41.5	0.100		mg/L	279969	1	06/04/2019 22:16	KP
Potassium	37.8	1.00		mg/L	279969	10	06/05/2019 21:26	KP
Sodium	144	5.00		mg/L	279969	10	06/06/2019 19:28	KP
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	996	1		mg/L	279752	1	06/03/2019 10:00	NN
Nitrogen, Ammonia (as N) E350.1				**(E350.1)**				
Nitrogen, Ammonia (As N)	0.645	0.200		mg/L	279991	1	06/03/2019 12:28	MP
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	279982	1	06/04/2019 01:09	HB
1,2-Dibromoethane	BRL	0.020		ug/L	279982	1	06/04/2019 01:09	HB
Surr: 4-Bromofluorobenzene	113	72.9-137		%REC	279982	1	06/04/2019 01:09	HB
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00050		mg/L	280078	1	06/05/2019 18:07	EH
Inorganic Anions by IC EPA 300.0								
Chloride	383	10.0		mg/L	R399532	10	05/30/2019 23:29	BC
Fluoride	BRL	1.00		mg/L	R399532	1	05/30/2019 20:49	BC
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R399532	1	05/30/2019 20:49	BC
Sulfate	27.0	1.00		mg/L	R399532	1	05/30/2019 20:49	BC
Dissolved Metals by ICP/MS SW6020B				**(SW3005A)**				
Manganese	0.0122	0.0100		mg/L	279861	10	06/03/2019 19:08	JW
Cyanide SW9014				**(SW9010C)**				
Cyanide, Total	BRL	0.200		mg/L	279907	1	05/31/2019 15:40	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R399470	1	06/03/2019 12:00	BK
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,1,1-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-1A
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 11:51:00 AM
Lab ID:	1905T35-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS	**SW8260D**			**(SW5030B)**				
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,2,3-Trichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
2-Butanone	BRL	50		ug/L	279998	1	05/31/2019 10:47	JB
2-Hexanone	BRL	10		ug/L	279998	1	05/31/2019 10:47	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279998	1	05/31/2019 10:47	JB
Acetone	BRL	50		ug/L	279998	1	05/31/2019 10:47	JB
Acrylonitrile	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Benzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Bromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Bromodichloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Bromoform	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Bromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Carbon disulfide	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Carbon tetrachloride	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Chlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Chloroethane	BRL	10		ug/L	279998	1	05/31/2019 10:47	JB
Chloroform	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Chloromethane	BRL	10		ug/L	279998	1	05/31/2019 10:47	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Dibromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Dibromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Ethylbenzene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Iodomethane	BRL	10		ug/L	279998	1	05/31/2019 10:47	JB
m,p-Xylene	BRL	10		ug/L	279998	1	05/31/2019 10:47	JB
Methylene chloride	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
o-Xylene	BRL	10		ug/L	279998	1	05/31/2019 10:47	JB
Styrene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Tetrachloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Toluene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-1A
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 11:51:00 AM
Lab ID:	1905T35-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	279998	1	05/31/2019 10:47	JB
Trichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279998	1	05/31/2019 10:47	JB
Vinyl acetate	BRL	10		ug/L	279998	1	05/31/2019 10:47	JB
Vinyl chloride	BRL	2.0		ug/L	279998	1	05/31/2019 10:47	JB
Surr: 4-Bromofluorobenzene	85.7	64-125		%REC	279998	1	05/31/2019 10:47	JB
Surr: Dibromofluoromethane	96.5	76.4-125		%REC	279998	1	05/31/2019 10:47	JB
Surr: Toluene-d8	92.3	78.3-116		%REC	279998	1	05/31/2019 10:47	JB
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	0.00150		mg/L	279969	1	06/04/2019 22:16	KP
Arsenic	BRL	0.00250		mg/L	279969	1	06/04/2019 22:16	KP
Barium	0.201	0.0100		mg/L	279969	1	06/04/2019 22:16	KP
Beryllium	BRL	0.00100		mg/L	279969	1	06/04/2019 22:16	KP
Cadmium	BRL	0.000700		mg/L	279969	1	06/04/2019 22:16	KP
Chromium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:16	KP
Cobalt	BRL	0.00500		mg/L	279969	1	06/04/2019 22:16	KP
Copper	BRL	0.00200		mg/L	279969	1	06/04/2019 22:16	KP
Lead	BRL	0.00100		mg/L	279969	1	06/04/2019 22:16	KP
Nickel	BRL	0.00500		mg/L	279969	1	06/04/2019 22:16	KP
Selenium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:16	KP
Silver	BRL	0.00100		mg/L	279969	1	06/04/2019 22:16	KP
Thallium	BRL	0.000500		mg/L	279969	1	06/04/2019 22:16	KP
Vanadium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:16	KP
Zinc	0.0124	0.0100		mg/L	279969	1	06/04/2019 22:16	KP

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-02
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 12:30:00 PM
Lab ID:	1905T35-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	2.34	1.00		mg/L	R399566	1	06/03/2019 22:31	SK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	2.32	0.200		mg/L	279969	2	06/05/2019 21:34	KP
Iron	BRL	0.100		mg/L	279969	1	06/04/2019 22:20	KP
Magnesium	1.86	0.100		mg/L	279969	1	06/04/2019 22:20	KP
Potassium	2.91	0.200		mg/L	279969	2	06/05/2019 21:34	KP
Sodium	2.72	1.00		mg/L	279969	2	06/06/2019 19:32	KP
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	79	1		mg/L	279752	1	06/03/2019 10:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	279991	1	06/03/2019 12:34	MP
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)			
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	279982	1	06/04/2019 01:38	HB
1,2-Dibromoethane	BRL	0.020		ug/L	279982	1	06/04/2019 01:38	HB
Surr: 4-Bromofluorobenzene	109	72.9-137		%REC	279982	1	06/04/2019 01:38	HB
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00050		mg/L	280078	1	06/05/2019 18:15	EH
Inorganic Anions by IC EPA 300.0								
Chloride	2.75	1.00		mg/L	R399532	1	05/30/2019 21:05	BC
Fluoride	BRL	1.00		mg/L	R399532	1	05/30/2019 21:05	BC
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R399532	1	05/30/2019 21:05	BC
Sulfate	BRL	1.00		mg/L	R399532	1	05/30/2019 21:05	BC
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	0.142	0.0100		mg/L	279861	1	06/03/2019 19:15	JW
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	279907	1	05/31/2019 15:40	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R399470	1	06/03/2019 12:00	BK
APPENDIX I VOLATILE ORGANICS SW8260D					(SW5030B)			
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,1,1-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-02
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 12:30:00 PM
Lab ID:	1905T35-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,2,3-Trichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
2-Butanone	BRL	50		ug/L	279998	1	05/31/2019 11:12	JB
2-Hexanone	BRL	10		ug/L	279998	1	05/31/2019 11:12	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279998	1	05/31/2019 11:12	JB
Acetone	BRL	50		ug/L	279998	1	05/31/2019 11:12	JB
Acrylonitrile	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Benzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Bromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Bromodichloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Bromoform	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Bromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Carbon disulfide	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Carbon tetrachloride	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Chlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Chloroethane	BRL	10		ug/L	279998	1	05/31/2019 11:12	JB
Chloroform	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Chloromethane	BRL	10		ug/L	279998	1	05/31/2019 11:12	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Dibromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Dibromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Ethylbenzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Iodomethane	BRL	10		ug/L	279998	1	05/31/2019 11:12	JB
m,p-Xylene	BRL	10		ug/L	279998	1	05/31/2019 11:12	JB
Methylene chloride	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
o-Xylene	BRL	10		ug/L	279998	1	05/31/2019 11:12	JB
Styrene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Tetrachloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Toluene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-02
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 12:30:00 PM
Lab ID:	1905T35-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	279998	1	05/31/2019 11:12	JB
Trichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:12	JB
Vinyl acetate	BRL	10		ug/L	279998	1	05/31/2019 11:12	JB
Vinyl chloride	BRL	2.0		ug/L	279998	1	05/31/2019 11:12	JB
Surr: 4-Bromofluorobenzene	84.7	64-125		%REC	279998	1	05/31/2019 11:12	JB
Surr: Dibromofluoromethane	96.5	76.4-125		%REC	279998	1	05/31/2019 11:12	JB
Surr: Toluene-d8	93.4	78.3-116		%REC	279998	1	05/31/2019 11:12	JB
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	0.00150		mg/L	279969	1	06/04/2019 22:20	KP
Arsenic	BRL	0.00250		mg/L	279969	1	06/04/2019 22:20	KP
Barium	0.0571	0.0100		mg/L	279969	1	06/04/2019 22:20	KP
Beryllium	0.00133	0.00100		mg/L	279969	1	06/04/2019 22:20	KP
Cadmium	0.00167	0.000700		mg/L	279969	1	06/04/2019 22:20	KP
Chromium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:20	KP
Cobalt	BRL	0.00500		mg/L	279969	1	06/04/2019 22:20	KP
Copper	BRL	0.00200		mg/L	279969	1	06/04/2019 22:20	KP
Lead	BRL	0.00100		mg/L	279969	1	06/04/2019 22:20	KP
Nickel	0.0293	0.00500		mg/L	279969	1	06/04/2019 22:20	KP
Selenium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:20	KP
Silver	BRL	0.00100		mg/L	279969	1	06/04/2019 22:20	KP
Thallium	BRL	0.000500		mg/L	279969	1	06/04/2019 22:20	KP
Vanadium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:20	KP
Zinc	0.289	0.0100		mg/L	279969	1	06/04/2019 22:20	KP

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-03
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 2:06:00 PM
Lab ID:	1905T35-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	5.80	1.00		mg/L	R399566	1	06/03/2019 22:48	SK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	13.0	0.200		mg/L	279969	2	06/05/2019 21:30	KP
Iron	0.323	0.100		mg/L	279969	1	06/04/2019 22:23	KP
Magnesium	3.79	0.100		mg/L	279969	1	06/04/2019 22:23	KP
Potassium	5.01	0.200		mg/L	279969	2	06/05/2019 21:30	KP
Sodium	38.6	1.00		mg/L	279969	2	06/06/2019 19:35	KP
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	164	1		mg/L	279752	1	06/03/2019 10:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	1.74	0.200		mg/L	279991	1	06/03/2019 12:35	MP
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)			
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	279982	1	06/04/2019 02:07	HB
1,2-Dibromoethane	BRL	0.020		ug/L	279982	1	06/04/2019 02:07	HB
Surr: 4-Bromofluorobenzene	105	72.9-137		%REC	279982	1	06/04/2019 02:07	HB
Mercury, Total SW7470A					(SW7470A)			
Mercury	0.00091	0.00050		mg/L	280078	1	06/05/2019 18:19	EH
Inorganic Anions by IC EPA 300.0								
Chloride	43.5	1.00		mg/L	R399532	1	05/30/2019 21:21	BC
Fluoride	BRL	1.00		mg/L	R399532	1	05/30/2019 21:21	BC
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R399532	1	05/30/2019 21:21	BC
Sulfate	28.5	1.00		mg/L	R399532	1	05/30/2019 21:21	BC
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	3.36	0.0100		mg/L	279861	2	06/03/2019 19:18	JW
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	279907	1	05/31/2019 15:40	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	11.2	10.0		mg/L	R399470	1	06/03/2019 12:00	BK
APPENDIX I VOLATILE ORGANICS SW8260D					(SW5030B)			
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,1,1-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-03
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 2:06:00 PM
Lab ID:	1905T35-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,2,3-Trichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
2-Butanone	BRL	50		ug/L	279998	1	05/31/2019 11:37	JB
2-Hexanone	BRL	10		ug/L	279998	1	05/31/2019 11:37	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279998	1	05/31/2019 11:37	JB
Acetone	BRL	50		ug/L	279998	1	05/31/2019 11:37	JB
Acrylonitrile	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Benzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Bromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Bromodichloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Bromoform	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Bromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Carbon disulfide	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Carbon tetrachloride	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Chlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Chloroethane	BRL	10		ug/L	279998	1	05/31/2019 11:37	JB
Chloroform	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Chloromethane	BRL	10		ug/L	279998	1	05/31/2019 11:37	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Dibromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Dibromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Ethylbenzene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Iodomethane	BRL	10		ug/L	279998	1	05/31/2019 11:37	JB
m,p-Xylene	BRL	10		ug/L	279998	1	05/31/2019 11:37	JB
Methylene chloride	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
o-Xylene	BRL	10		ug/L	279998	1	05/31/2019 11:37	JB
Styrene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Tetrachloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Toluene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-03
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 2:06:00 PM
Lab ID:	1905T35-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	279998	1	05/31/2019 11:37	JB
Trichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279998	1	05/31/2019 11:37	JB
Vinyl acetate	BRL	10		ug/L	279998	1	05/31/2019 11:37	JB
Vinyl chloride	BRL	2.0		ug/L	279998	1	05/31/2019 11:37	JB
Surr: 4-Bromofluorobenzene	86.8	64-125		%REC	279998	1	05/31/2019 11:37	JB
Surr: Dibromofluoromethane	95.7	76.4-125		%REC	279998	1	05/31/2019 11:37	JB
Surr: Toluene-d8	93.2	78.3-116		%REC	279998	1	05/31/2019 11:37	JB
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	0.00150		mg/L	279969	1	06/04/2019 22:23	KP
Arsenic	BRL	0.00250		mg/L	279969	1	06/04/2019 22:23	KP
Barium	0.0815	0.0100		mg/L	279969	1	06/04/2019 22:23	KP
Beryllium	BRL	0.00100		mg/L	279969	1	06/04/2019 22:23	KP
Cadmium	BRL	0.000700		mg/L	279969	1	06/04/2019 22:23	KP
Chromium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:23	KP
Cobalt	0.0117	0.00500		mg/L	279969	1	06/04/2019 22:23	KP
Copper	0.00236	0.00200		mg/L	279969	1	06/04/2019 22:23	KP
Lead	0.00132	0.00100		mg/L	279969	1	06/04/2019 22:23	KP
Nickel	0.00923	0.00500		mg/L	279969	1	06/04/2019 22:23	KP
Selenium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:23	KP
Silver	BRL	0.00100		mg/L	279969	1	06/04/2019 22:23	KP
Thallium	BRL	0.000500		mg/L	279969	1	06/04/2019 22:23	KP
Vanadium	BRL	0.00500		mg/L	279969	1	06/04/2019 22:23	KP
Zinc	0.0122	0.0100		mg/L	279969	1	06/04/2019 22:23	KP

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Duplicate
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 4:00:00 PM
Lab ID:	1905T35-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	8.47	1.00		mg/L	R399566	1	06/04/2019 00:15	SK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	12.7	0.200		mg/L	279970	2	06/05/2019 22:02	KP
Iron	0.122	0.100		mg/L	279970	1	06/04/2019 23:08	KP
Magnesium	3.30	0.100		mg/L	279970	1	06/04/2019 23:08	KP
Potassium	5.10	0.200		mg/L	279970	2	06/05/2019 22:02	KP
Sodium	36.3	1.00		mg/L	279970	2	06/06/2019 19:55	KP
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	144	1		mg/L	279752	1	06/03/2019 10:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	1.76	0.200		mg/L	279991	1	06/03/2019 12:37	MP
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)			
1,2-Dibromo-3-chloropropane	BRL	0.041		ug/L	279982	1	06/04/2019 04:03	HB
1,2-Dibromoethane	BRL	0.020		ug/L	279982	1	06/04/2019 04:03	HB
Surr: 4-Bromofluorobenzene	111	72.9-137		%REC	279982	1	06/04/2019 04:03	HB
Mercury, Total SW7470A					(SW7470A)			
Mercury	0.00083	0.00050		mg/L	280078	1	06/05/2019 18:47	EH
Inorganic Anions by IC EPA 300.0								
Chloride	43.6	1.00		mg/L	R399532	1	05/30/2019 22:41	BC
Fluoride	BRL	1.00		mg/L	R399532	1	05/30/2019 22:41	BC
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R399532	1	05/30/2019 22:41	BC
Sulfate	28.8	1.00		mg/L	R399532	1	05/30/2019 22:41	BC
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	3.12	0.0100		mg/L	279861	1	06/01/2019 03:39	JW
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	279907	1	05/31/2019 15:40	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R399470	1	06/03/2019 12:00	BK
APPENDIX I VOLATILE ORGANICS SW8260D					(SW5030B)			
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,1,1-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Duplicate
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 4:00:00 PM
Lab ID:	1905T35-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS	**SW8260D**				**(SW5030B)**			
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,2,3-Trichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
2-Butanone	BRL	50		ug/L	279998	1	05/31/2019 12:52	JB
2-Hexanone	BRL	10		ug/L	279998	1	05/31/2019 12:52	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279998	1	05/31/2019 12:52	JB
Acetone	BRL	50		ug/L	279998	1	05/31/2019 12:52	JB
Acrylonitrile	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Benzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Bromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Bromodichloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Bromoform	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Bromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Carbon disulfide	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Carbon tetrachloride	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Chlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Chloroethane	BRL	10		ug/L	279998	1	05/31/2019 12:52	JB
Chloroform	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Chloromethane	BRL	10		ug/L	279998	1	05/31/2019 12:52	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Dibromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Dibromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Ethylbenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Iodomethane	BRL	10		ug/L	279998	1	05/31/2019 12:52	JB
m,p-Xylene	BRL	10		ug/L	279998	1	05/31/2019 12:52	JB
Methylene chloride	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
o-Xylene	BRL	10		ug/L	279998	1	05/31/2019 12:52	JB
Styrene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Tetrachloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Toluene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Duplicate
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 4:00:00 PM
Lab ID:	1905T35-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	279998	1	05/31/2019 12:52	JB
Trichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:52	JB
Vinyl acetate	BRL	10		ug/L	279998	1	05/31/2019 12:52	JB
Vinyl chloride	BRL	2.0		ug/L	279998	1	05/31/2019 12:52	JB
Surr: 4-Bromofluorobenzene	85.5	64-125		%REC	279998	1	05/31/2019 12:52	JB
Surr: Dibromofluoromethane	97.6	76.4-125		%REC	279998	1	05/31/2019 12:52	JB
Surr: Toluene-d8	94.2	78.3-116		%REC	279998	1	05/31/2019 12:52	JB
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	0.00150		mg/L	279970	1	06/04/2019 23:08	KP
Arsenic	BRL	0.00250		mg/L	279970	1	06/04/2019 23:08	KP
Barium	0.0613	0.0100		mg/L	279970	1	06/04/2019 23:08	KP
Beryllium	BRL	0.00100		mg/L	279970	1	06/04/2019 23:08	KP
Cadmium	BRL	0.000700		mg/L	279970	1	06/04/2019 23:08	KP
Chromium	BRL	0.00500		mg/L	279970	1	06/04/2019 23:08	KP
Cobalt	0.0101	0.00500		mg/L	279970	1	06/04/2019 23:08	KP
Copper	0.00228	0.00200		mg/L	279970	1	06/04/2019 23:08	KP
Lead	BRL	0.00100		mg/L	279970	1	06/04/2019 23:08	KP
Nickel	0.00798	0.00500		mg/L	279970	1	06/04/2019 23:08	KP
Selenium	BRL	0.00500		mg/L	279970	1	06/04/2019 23:08	KP
Silver	BRL	0.00100		mg/L	279970	1	06/04/2019 23:08	KP
Thallium	0.000820	0.000500		mg/L	279970	1	06/04/2019 23:08	KP
Vanadium	BRL	0.00500		mg/L	279970	1	06/04/2019 23:08	KP
Zinc	0.0103	0.0100		mg/L	279970	1	06/04/2019 23:08	KP

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-4R
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 3:29:00 PM
Lab ID:	1905T35-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.041		ug/L	279982	1	06/04/2019 02:36	HB
1,2-Dibromoethane	BRL	0.020		ug/L	279982	1	06/04/2019 02:36	HB
Surr: 4-Bromofluorobenzene	109	72.9-137		%REC	279982	1	06/04/2019 02:36	HB
Inorganic Anions by IC E300.0								
Fluoride	BRL	0.200		mg/L	R399798	1	05/31/2019 19:44	BC
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,1,1-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,2,3-Trichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
2-Butanone	BRL	50		ug/L	279998	1	05/31/2019 12:02	JB
2-Hexanone	BRL	10		ug/L	279998	1	05/31/2019 12:02	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279998	1	05/31/2019 12:02	JB
Acetone	BRL	50		ug/L	279998	1	05/31/2019 12:02	JB
Acrylonitrile	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Benzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Bromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Bromodichloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Bromoform	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Bromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Carbon disulfide	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Carbon tetrachloride	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Chlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Chloroethane	BRL	10		ug/L	279998	1	05/31/2019 12:02	JB
Chloroform	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Chloromethane	BRL	10		ug/L	279998	1	05/31/2019 12:02	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Dibromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Dibromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-4R
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 3:29:00 PM
Lab ID:	1905T35-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
Ethylbenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Iodomethane	BRL	10		ug/L	279998	1	05/31/2019 12:02	JB
m,p-Xylene	BRL	10		ug/L	279998	1	05/31/2019 12:02	JB
Methylene chloride	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
o-Xylene	BRL	10		ug/L	279998	1	05/31/2019 12:02	JB
Styrene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Tetrachloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Toluene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	279998	1	05/31/2019 12:02	JB
Trichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:02	JB
Vinyl acetate	BRL	10		ug/L	279998	1	05/31/2019 12:02	JB
Vinyl chloride	BRL	2.0		ug/L	279998	1	05/31/2019 12:02	JB
Surr: 4-Bromofluorobenzene	85.8	64-125		%REC	279998	1	05/31/2019 12:02	JB
Surr: Dibromofluoromethane	97.2	76.4-125		%REC	279998	1	05/31/2019 12:02	JB
Surr: Toluene-d8	93.9	78.3-116		%REC	279998	1	05/31/2019 12:02	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-4R
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/30/2019 12:20:00 PM
Lab ID:	1905T35-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00050		mg/L	280078	1	06/05/2019 18:23	EH
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00150		mg/L	279970	1	06/04/2019 23:00	KP
Arsenic	BRL	0.00250		mg/L	279970	1	06/04/2019 23:00	KP
Barium	0.0113	0.0100		mg/L	279970	1	06/04/2019 23:00	KP
Beryllium	BRL	0.00100		mg/L	279970	1	06/04/2019 23:00	KP
Cadmium	BRL	0.000700		mg/L	279970	1	06/04/2019 23:00	KP
Chromium	BRL	0.00500		mg/L	279970	1	06/04/2019 23:00	KP
Cobalt	BRL	0.00500		mg/L	279970	1	06/04/2019 23:00	KP
Copper	0.00240	0.00200		mg/L	279970	1	06/04/2019 23:00	KP
Lead	0.00111	0.00100		mg/L	279970	1	06/04/2019 23:00	KP
Nickel	0.00820	0.00500		mg/L	279970	1	06/04/2019 23:00	KP
Selenium	BRL	0.00500		mg/L	279970	1	06/04/2019 23:00	KP
Silver	BRL	0.00100		mg/L	279970	1	06/04/2019 23:00	KP
Thallium	0.00179	0.000500		mg/L	279970	1	06/04/2019 23:00	KP
Vanadium	BRL	0.00500		mg/L	279970	1	06/04/2019 23:00	KP
Zinc	0.0460	0.0100		mg/L	279970	1	06/04/2019 23:00	KP

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-05
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 1:59:00 PM
Lab ID:	1905T35-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	279982	1	06/04/2019 03:05	HB
1,2-Dibromoethane	BRL	0.020		ug/L	279982	1	06/04/2019 03:05	HB
Surr: 4-Bromofluorobenzene	113	72.9-137		%REC	279982	1	06/04/2019 03:05	HB
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00050		mg/L	280078	1	06/05/2019 18:39	EH
Inorganic Anions by IC E300.0								
Fluoride	BRL	0.200		mg/L	R399798	1	05/31/2019 20:00	BC
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,1,1-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,2,3-Trichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
2-Butanone	BRL	50		ug/L	279998	1	05/31/2019 12:27	JB
2-Hexanone	BRL	10		ug/L	279998	1	05/31/2019 12:27	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279998	1	05/31/2019 12:27	JB
Acetone	BRL	50		ug/L	279998	1	05/31/2019 12:27	JB
Acrylonitrile	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Benzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Bromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Bromodichloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Bromoform	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Bromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Carbon disulfide	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Carbon tetrachloride	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Chlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Chloroethane	BRL	10		ug/L	279998	1	05/31/2019 12:27	JB
Chloroform	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Chloromethane	BRL	10		ug/L	279998	1	05/31/2019 12:27	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	MW-05
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 1:59:00 PM
Lab ID:	1905T35-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Dibromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Dibromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Ethylbenzene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Iodomethane	BRL	10		ug/L	279998	1	05/31/2019 12:27	JB
m,p-Xylene	BRL	10		ug/L	279998	1	05/31/2019 12:27	JB
Methylene chloride	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
o-Xylene	BRL	10		ug/L	279998	1	05/31/2019 12:27	JB
Styrene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Tetrachloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Toluene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	279998	1	05/31/2019 12:27	JB
Trichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279998	1	05/31/2019 12:27	JB
Vinyl acetate	BRL	10		ug/L	279998	1	05/31/2019 12:27	JB
Vinyl chloride	BRL	2.0		ug/L	279998	1	05/31/2019 12:27	JB
Surr: 4-Bromofluorobenzene	86	64-125		%REC	279998	1	05/31/2019 12:27	JB
Surr: Dibromofluoromethane	97	76.4-125		%REC	279998	1	05/31/2019 12:27	JB
Surr: Toluene-d8	93.4	78.3-116		%REC	279998	1	05/31/2019 12:27	JB
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	0.00150		mg/L	279970	1	06/04/2019 23:03	KP
Arsenic	BRL	0.00250		mg/L	279970	1	06/04/2019 23:03	KP
Barium	0.0105	0.0100		mg/L	279970	1	06/04/2019 23:03	KP
Beryllium	BRL	0.00100		mg/L	279970	1	06/04/2019 23:03	KP
Cadmium	BRL	0.000700		mg/L	279970	1	06/04/2019 23:03	KP
Chromium	BRL	0.00500		mg/L	279970	1	06/04/2019 23:03	KP
Cobalt	BRL	0.00500		mg/L	279970	1	06/04/2019 23:03	KP
Copper	BRL	0.00200		mg/L	279970	1	06/04/2019 23:03	KP
Lead	BRL	0.00100		mg/L	279970	1	06/04/2019 23:03	KP
Nickel	BRL	0.00500		mg/L	279970	1	06/04/2019 23:03	KP
Selenium	BRL	0.00500		mg/L	279970	1	06/04/2019 23:03	KP
Silver	BRL	0.00100		mg/L	279970	1	06/04/2019 23:03	KP
Thallium	0.000934	0.000500		mg/L	279970	1	06/04/2019 23:03	KP
Vanadium	BRL	0.00500		mg/L	279970	1	06/04/2019 23:03	KP
Zinc	0.0122	0.0100		mg/L	279970	1	06/04/2019 23:03	KP

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Equipment Blank
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 4:00:00 PM
Lab ID:	1905T35-009	**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	R399566	1	06/03/2019 23:05	SK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	BRL	0.100		mg/L	279970	1	06/04/2019 22:43	KP
Iron	BRL	0.100		mg/L	279970	1	06/04/2019 22:43	KP
Magnesium	BRL	0.100		mg/L	279970	1	06/04/2019 22:43	KP
Potassium	BRL	0.100		mg/L	279970	1	06/04/2019 22:43	KP
Sodium	BRL	0.500		mg/L	279970	1	06/04/2019 22:43	KP
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	BRL	1		mg/L	279752	1	06/03/2019 10:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	279887	1	05/31/2019 10:55	TL
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)			
1,2-Dibromo-3-chloropropane	BRL	0.043		ug/L	279982	1	06/04/2019 03:34	HB
1,2-Dibromoethane	BRL	0.022		ug/L	279982	1	06/04/2019 03:34	HB
Surr: 4-Bromofluorobenzene	108	72.9-137		%REC	279982	1	06/04/2019 03:34	HB
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00050		mg/L	280078	1	06/05/2019 18:43	EH
Inorganic Anions by IC EPA 300.0								
Chloride	BRL	1.00		mg/L	R399532	1	05/30/2019 22:25	BC
Fluoride	BRL	1.00		mg/L	R399532	1	05/30/2019 22:25	BC
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R399532	1	05/30/2019 22:25	BC
Sulfate	BRL	1.00		mg/L	R399532	1	05/30/2019 22:25	BC
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	BRL	0.0100		mg/L	279861	1	06/03/2019 19:21	JW
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	279907	1	05/31/2019 15:40	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R399470	1	06/03/2019 12:00	BK
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00150		mg/L	279970	1	06/04/2019 22:43	KP
Arsenic	BRL	0.00250		mg/L	279970	1	06/04/2019 22:43	KP

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Equipment Blank
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 4:00:00 PM
Lab ID:	1905T35-009	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I METALS SW6020B				**(SW3005A)**				
Barium	BRL	0.0100		mg/L	279970	1	06/04/2019 22:43	KP
Beryllium	BRL	0.00100		mg/L	279970	1	06/04/2019 22:43	KP
Cadmium	BRL	0.000700		mg/L	279970	1	06/04/2019 22:43	KP
Chromium	BRL	0.00500		mg/L	279970	1	06/04/2019 22:43	KP
Cobalt	BRL	0.00500		mg/L	279970	1	06/04/2019 22:43	KP
Copper	BRL	0.00200		mg/L	279970	1	06/04/2019 22:43	KP
Lead	BRL	0.00100		mg/L	279970	1	06/04/2019 22:43	KP
Nickel	BRL	0.00500		mg/L	279970	1	06/04/2019 22:43	KP
Selenium	BRL	0.00500		mg/L	279970	1	06/04/2019 22:43	KP
Silver	BRL	0.00100		mg/L	279970	1	06/04/2019 22:43	KP
Thallium	BRL	0.000500		mg/L	279970	1	06/07/2019 19:33	KP
Vanadium	BRL	0.00500		mg/L	279970	1	06/04/2019 22:43	KP
Zinc	BRL	0.0100		mg/L	279970	1	06/04/2019 22:43	KP

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Trip Blank
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019
Lab ID:	1905T35-011	**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	279998	1	05/31/2019 13:17	JB
1,1,1-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,2,3-Trichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,2-Dibromoethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
2-Butanone	BRL	50		ug/L	279998	1	05/31/2019 13:17	JB
2-Hexanone	BRL	10		ug/L	279998	1	05/31/2019 13:17	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279998	1	05/31/2019 13:17	JB
Acetone	BRL	50		ug/L	279998	1	05/31/2019 13:17	JB
Acrylonitrile	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Benzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Bromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Bromodichloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Bromoform	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Bromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Carbon disulfide	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Carbon tetrachloride	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Chlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Chloroethane	BRL	10		ug/L	279998	1	05/31/2019 13:17	JB
Chloroform	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Chloromethane	BRL	10		ug/L	279998	1	05/31/2019 13:17	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Dibromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Dibromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Ethylbenzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Iodomethane	BRL	10		ug/L	279998	1	05/31/2019 13:17	JB
m,p-Xylene	BRL	10		ug/L	279998	1	05/31/2019 13:17	JB
Methylene chloride	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
o-Xylene	BRL	10		ug/L	279998	1	05/31/2019 13:17	JB
Styrene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Tetrachloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Toluene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	Trip Blank
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019
Lab ID:	1905T35-011	**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	279998	1	05/31/2019 13:17	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	279998	1	05/31/2019 13:17	JB
Trichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Trichlorofluoromethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:17	JB
Vinyl acetate	BRL	10		ug/L	279998	1	05/31/2019 13:17	JB
Vinyl chloride	BRL	2.0		ug/L	279998	1	05/31/2019 13:17	JB
Surr: 4-Bromofluorobenzene	84.4	64-125		%REC	279998	1	05/31/2019 13:17	JB
Surr: Dibromofluoromethane	97.4	76.4-125		%REC	279998	1	05/31/2019 13:17	JB
Surr: Toluene-d8	93.4	78.3-116		%REC	279998	1	05/31/2019 13:17	JB

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

Clear Save as

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Santek Waste Services, LLC** AES Work Order Number: **1905T35**

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 3.2 °C Cooler 2 Temperature 2.9 °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). MH 5/30/19

		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). MH 5/30/19

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). MH 5/30/19

Locked

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Lab Order: 1905T35

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1905T35-001A	MW-01	5/29/2019 1:16:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		5/31/2019 8:20:00AM	05/31/2019
1905T35-001B	MW-01	5/29/2019 1:16:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		6/3/2019 10:22:02AM	06/04/2019
1905T35-001D	MW-01	5/29/2019 1:16:00PM	Groundwater	Nitrogen, Ammonia (as N)		6/3/2019 10:30:00AM	06/03/2019
1905T35-001D	MW-01	5/29/2019 1:16:00PM	Groundwater	Chemical Oxygen Demand (COD)			06/03/2019
1905T35-001E	MW-01	5/29/2019 1:16:00PM	Groundwater	Dissolved Metals by ICP/MS		5/31/2019 1:28:00PM	06/03/2019
1905T35-001E	MW-01	5/29/2019 1:16:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		6/3/2019 8:30:00AM	06/03/2019
1905T35-001F	MW-01	5/29/2019 1:16:00PM	Groundwater	Inorganic Anions by IC			05/30/2019
1905T35-001G	MW-01	5/29/2019 1:16:00PM	Groundwater	Cyanide		5/31/2019 11:20:00AM	05/31/2019
1905T35-001H	MW-01	5/29/2019 1:16:00PM	Groundwater	Total Organic Carbon by SM5310B			06/03/2019
1905T35-002A	MW-01	5/30/2019 12:00:00PM	Groundwater	APPENDIX I METALS		6/3/2019 1:36:00PM	06/04/2019
1905T35-002A	MW-01	5/30/2019 12:00:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/04/2019
1905T35-002A	MW-01	5/30/2019 12:00:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/05/2019
1905T35-002A	MW-01	5/30/2019 12:00:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/06/2019
1905T35-002A	MW-01	5/30/2019 12:00:00PM	Groundwater	TOTAL MERCURY		6/4/2019 6:00:00PM	06/04/2019
1905T35-002B	MW-01	5/30/2019 12:00:00PM	Groundwater	Dissolved Metals by ICP/MS		6/5/2019 12:39:00PM	06/05/2019
1905T35-002B	MW-01	5/30/2019 12:00:00PM	Groundwater	Dissolved Metals by ICP/MS		6/5/2019 12:39:00PM	06/06/2019
1905T35-003A	MW-1A	5/29/2019 11:51:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		5/31/2019 8:20:00AM	05/31/2019
1905T35-003B	MW-1A	5/29/2019 11:51:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		6/3/2019 10:22:02AM	06/04/2019
1905T35-003C	MW-1A	5/29/2019 11:51:00AM	Groundwater	APPENDIX I METALS		6/3/2019 1:36:00PM	06/04/2019
1905T35-003C	MW-1A	5/29/2019 11:51:00AM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/04/2019
1905T35-003C	MW-1A	5/29/2019 11:51:00AM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/05/2019
1905T35-003C	MW-1A	5/29/2019 11:51:00AM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/06/2019
1905T35-003C	MW-1A	5/29/2019 11:51:00AM	Groundwater	TOTAL MERCURY		6/5/2019 2:00:00PM	06/05/2019
1905T35-003D	MW-1A	5/29/2019 11:51:00AM	Groundwater	Dissolved Metals by ICP/MS		5/31/2019 1:28:00PM	06/03/2019
1905T35-003E	MW-1A	5/29/2019 11:51:00AM	Groundwater	Nitrogen, Ammonia (as N)		6/3/2019 10:30:00AM	06/03/2019
1905T35-003E	MW-1A	5/29/2019 11:51:00AM	Groundwater	Chemical Oxygen Demand (COD)			06/03/2019
1905T35-003F	MW-1A	5/29/2019 11:51:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		6/3/2019 8:30:00AM	06/03/2019
1905T35-003G	MW-1A	5/29/2019 11:51:00AM	Groundwater	Inorganic Anions by IC			05/30/2019
1905T35-003H	MW-1A	5/29/2019 11:51:00AM	Groundwater	Cyanide		5/31/2019 11:20:00AM	05/31/2019

Analytical Environmental Services, Inc

Date: 10-Jun-19

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Lab Order: 1905T35

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1905T35-003I	MW-1A	5/29/2019 11:51:00AM	Groundwater	Total Organic Carbon by SM5310B			06/03/2019
1905T35-004A	MW-02	5/29/2019 12:30:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		5/31/2019 8:20:00AM	05/31/2019
1905T35-004B	MW-02	5/29/2019 12:30:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		6/3/2019 10:22:02AM	06/04/2019
1905T35-004C	MW-02	5/29/2019 12:30:00PM	Groundwater	APPENDIX I METALS		6/3/2019 1:36:00PM	06/04/2019
1905T35-004C	MW-02	5/29/2019 12:30:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/04/2019
1905T35-004C	MW-02	5/29/2019 12:30:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/05/2019
1905T35-004C	MW-02	5/29/2019 12:30:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/06/2019
1905T35-004C	MW-02	5/29/2019 12:30:00PM	Groundwater	TOTAL MERCURY		6/5/2019 2:00:00PM	06/05/2019
1905T35-004D	MW-02	5/29/2019 12:30:00PM	Groundwater	Dissolved Metals by ICP/MS		5/31/2019 1:28:00PM	06/03/2019
1905T35-004E	MW-02	5/29/2019 12:30:00PM	Groundwater	Nitrogen, Ammonia (as N)		6/3/2019 10:30:00AM	06/03/2019
1905T35-004E	MW-02	5/29/2019 12:30:00PM	Groundwater	Chemical Oxygen Demand (COD)			06/03/2019
1905T35-004F	MW-02	5/29/2019 12:30:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		6/3/2019 8:30:00AM	06/03/2019
1905T35-004G	MW-02	5/29/2019 12:30:00PM	Groundwater	Inorganic Anions by IC			05/30/2019
1905T35-004H	MW-02	5/29/2019 12:30:00PM	Groundwater	Cyanide		5/31/2019 11:20:00AM	05/31/2019
1905T35-004I	MW-02	5/29/2019 12:30:00PM	Groundwater	Total Organic Carbon by SM5310B			06/03/2019
1905T35-005A	MW-03	5/29/2019 2:06:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		5/31/2019 8:20:00AM	05/31/2019
1905T35-005B	MW-03	5/29/2019 2:06:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		6/3/2019 10:22:02AM	06/04/2019
1905T35-005C	MW-03	5/29/2019 2:06:00PM	Groundwater	APPENDIX I METALS		6/3/2019 1:36:00PM	06/04/2019
1905T35-005C	MW-03	5/29/2019 2:06:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/04/2019
1905T35-005C	MW-03	5/29/2019 2:06:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/05/2019
1905T35-005C	MW-03	5/29/2019 2:06:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/06/2019
1905T35-005C	MW-03	5/29/2019 2:06:00PM	Groundwater	TOTAL MERCURY		6/5/2019 2:00:00PM	06/05/2019
1905T35-005D	MW-03	5/29/2019 2:06:00PM	Groundwater	Dissolved Metals by ICP/MS		5/31/2019 1:28:00PM	06/03/2019
1905T35-005E	MW-03	5/29/2019 2:06:00PM	Groundwater	Nitrogen, Ammonia (as N)		6/3/2019 10:30:00AM	06/03/2019
1905T35-005E	MW-03	5/29/2019 2:06:00PM	Groundwater	Chemical Oxygen Demand (COD)			06/03/2019
1905T35-005F	MW-03	5/29/2019 2:06:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		6/3/2019 8:30:00AM	06/03/2019
1905T35-005G	MW-03	5/29/2019 2:06:00PM	Groundwater	Inorganic Anions by IC			05/30/2019
1905T35-005H	MW-03	5/29/2019 2:06:00PM	Groundwater	Cyanide		5/31/2019 11:20:00AM	05/31/2019
1905T35-005I	MW-03	5/29/2019 2:06:00PM	Groundwater	Total Organic Carbon by SM5310B			06/03/2019

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Lab Order: 1905T35

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1905T35-006A	MW-4R	5/29/2019 3:29:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		5/31/2019 8:20:00AM	05/31/2019
1905T35-006B	MW-4R	5/29/2019 3:29:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		6/3/2019 10:22:02AM	06/04/2019
1905T35-006C	MW-4R	5/29/2019 3:29:00PM	Groundwater	Inorganic Anions by IC			05/31/2019
1905T35-007A	MW-4R	5/30/2019 12:20:00PM	Groundwater	APPENDIX I METALS		6/3/2019 1:36:00PM	06/04/2019
1905T35-007A	MW-4R	5/30/2019 12:20:00PM	Groundwater	TOTAL MERCURY		6/5/2019 2:00:00PM	06/05/2019
1905T35-008A	MW-05	5/29/2019 1:59:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		5/31/2019 8:20:00AM	05/31/2019
1905T35-008B	MW-05	5/29/2019 1:59:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		6/3/2019 10:22:02AM	06/04/2019
1905T35-008C	MW-05	5/29/2019 1:59:00PM	Groundwater	APPENDIX I METALS		6/3/2019 1:36:00PM	06/04/2019
1905T35-008C	MW-05	5/29/2019 1:59:00PM	Groundwater	TOTAL MERCURY		6/5/2019 2:00:00PM	06/05/2019
1905T35-008D	MW-05	5/29/2019 1:59:00PM	Groundwater	Inorganic Anions by IC			05/31/2019
1905T35-009B	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		6/3/2019 10:22:02AM	06/04/2019
1905T35-009C	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	APPENDIX I METALS		6/3/2019 1:36:00PM	06/04/2019
1905T35-009C	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	APPENDIX I METALS		6/3/2019 1:36:00PM	06/07/2019
1905T35-009C	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/04/2019
1905T35-009C	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	TOTAL MERCURY		6/5/2019 2:00:00PM	06/05/2019
1905T35-009D	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	Dissolved Metals by ICP/MS		5/31/2019 1:28:00PM	06/03/2019
1905T35-009E	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	Nitrogen, Ammonia (as N)		5/31/2019 9:05:58AM	05/31/2019
1905T35-009E	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	Chemical Oxygen Demand (COD)			06/03/2019
1905T35-009F	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		6/3/2019 8:30:00AM	06/03/2019
1905T35-009G	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	Inorganic Anions by IC			05/30/2019
1905T35-009H	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	Cyanide		5/31/2019 11:20:00AM	05/31/2019
1905T35-009I	Equipment Blank	5/29/2019 4:00:00PM	Aqueous	Total Organic Carbon by SM5310B			06/03/2019
1905T35-010A	Duplicate	5/29/2019 4:00:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		5/31/2019 8:20:00AM	05/31/2019
1905T35-010B	Duplicate	5/29/2019 4:00:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		6/3/2019 10:22:02AM	06/04/2019
1905T35-010C	Duplicate	5/29/2019 4:00:00PM	Groundwater	APPENDIX I METALS		6/3/2019 1:36:00PM	06/04/2019
1905T35-010C	Duplicate	5/29/2019 4:00:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/04/2019
1905T35-010C	Duplicate	5/29/2019 4:00:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/05/2019
1905T35-010C	Duplicate	5/29/2019 4:00:00PM	Groundwater	Total Metals by ICP/MS		6/3/2019 1:36:00PM	06/06/2019
1905T35-010C	Duplicate	5/29/2019 4:00:00PM	Groundwater	TOTAL MERCURY		6/5/2019 2:00:00PM	06/05/2019

Analytical Environmental Services, Inc

Date: 10-Jun-19

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Lab Order: 1905T35

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1905T35-010D	Duplicate	5/29/2019 4:00:00PM	Groundwater	Dissolved Metals by ICP/MS		5/31/2019 1:28:00PM	06/01/2019
1905T35-010E	Duplicate	5/29/2019 4:00:00PM	Groundwater	Nitrogen, Ammonia (as N)		6/3/2019 10:30:00AM	06/03/2019
1905T35-010E	Duplicate	5/29/2019 4:00:00PM	Groundwater	Chemical Oxygen Demand (COD)			06/03/2019
1905T35-010F	Duplicate	5/29/2019 4:00:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		6/3/2019 8:30:00AM	06/03/2019
1905T35-010G	Duplicate	5/29/2019 4:00:00PM	Groundwater	Inorganic Anions by IC			05/30/2019
1905T35-010H	Duplicate	5/29/2019 4:00:00PM	Groundwater	Cyanide		5/31/2019 11:20:00AM	05/31/2019
1905T35-010I	Duplicate	5/29/2019 4:00:00PM	Groundwater	Total Organic Carbon by SM5310B			06/04/2019
1905T35-011A	Trip Blank	5/29/2019 12:00:00AM	Aqueous	APPENDIX I VOLATILE ORGANICS		5/31/2019 8:20:00AM	05/31/2019

Client: Santek Waste Services, LLC
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279752

Sample ID: **MB-279752**	Client ID:					Units: **mg/L**		Prep Date: **06/03/2019**		Run No: **399479**	
SampleType: **MBLK**	TestCode: **Residue, Dissolved (TDS) by SM2540C**					BatchID: **279752**		Analysis Date: **06/03/2019**		Seq No: **8958289**	
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: **1905T50-003BDUP**	Client ID:					Units: **mg/L**		Prep Date: **06/03/2019**		Run No: **399479**	
SampleType: **DUP**	TestCode: **Residue, Dissolved (TDS) by SM2540C**					BatchID: **279752**		Analysis Date: **06/03/2019**		Seq No: **8958300**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Residue, Dissolved (TDS)	20.00	10						0	0	5	

Sample ID: **1905U93-001BDUP**	Client ID:					Units: **mg/L**		Prep Date: **06/03/2019**		Run No: **399479**	
SampleType: **DUP**	TestCode: **Residue, Dissolved (TDS) by SM2540C**					BatchID: **279752**		Analysis Date: **06/03/2019**		Seq No: **8958089**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Residue, Dissolved (TDS)	44.00	10						45.00	2.25	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279861

Sample ID: **MB-279861**	Client ID:				Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399493**
SampleType: **MBLK**	TestCode: **Dissolved Metals by ICP/MS SW6020B**				BatchID: **279861**	Analysis Date: **06/01/2019**	Seq No: **8956377**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	BRL	0.00500									

Sample ID: **LCS-279861**	Client ID:				Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399493**
SampleType: **LCS**	TestCode: **Dissolved Metals by ICP/MS SW6020B**				BatchID: **279861**	Analysis Date: **06/01/2019**	Seq No: **8956378**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	0.09139	0.00500	0.1000		91.4	80	120				

Sample ID: **1905R75-001DMS**	Client ID:				Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399493**
SampleType: **MS**	TestCode: **Dissolved Metals by ICP/MS SW6020B**				BatchID: **279861**	Analysis Date: **06/01/2019**	Seq No: **8956380**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	0.1094	0.00500	0.1000	0.009865	99.5	75	125				

Sample ID: **1905R75-001DMSD**	Client ID:				Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399493**
SampleType: **MSD**	TestCode: **Dissolved Metals by ICP/MS SW6020B**				BatchID: **279861**	Analysis Date: **06/01/2019**	Seq No: **8956381**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	0.1035	0.00500	0.1000	0.009865	93.7	75	125	0.1094	5.49	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279887

Sample ID: **MB-279887**	Client ID:				Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399356**
SampleType: **MBLK**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**				BatchID: **279887**	Analysis Date: **05/31/2019**	Seq No: **8953543**

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-279887**	Client ID:				Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399356**
SampleType: **LCS**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**				BatchID: **279887**	Analysis Date: **05/31/2019**	Seq No: **8953544**

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: **1905S97-001CMS**	Client ID:				Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399356**
SampleType: **MS**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**				BatchID: **279887**	Analysis Date: **05/31/2019**	Seq No: **8953546**

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)	5.310	0.200	5.000		106	90	110				

Sample ID: **1905S97-002CMS**	Client ID:				Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399356**
SampleType: **MS**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**				BatchID: **279887**	Analysis Date: **05/31/2019**	Seq No: **8953549**

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)	5.260	0.200	5.000		105	90	110				

Sample ID: **1905S97-001CMSD**	Client ID:				Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399356**
SampleType: **MSD**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**				BatchID: **279887**	Analysis Date: **05/31/2019**	Seq No: **8953547**

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)	5.240	0.200	5.000		105	90	110	5.310	1.33	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279907

Sample ID: **MB-279907**	Client ID:					Units: **mg/L**		Prep Date: **05/31/2019**		Run No: **399444**	
SampleType: **MBLK**	TestCode: **Cyanide** **SW9014**					BatchID: **279907**		Analysis Date: **05/31/2019**		Seq No: **8955062**	
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-279907**	Client ID:					Units: **mg/L**		Prep Date: **05/31/2019**		Run No: **399444**	
SampleType: **LCS**	TestCode: **Cyanide** **SW9014**					BatchID: **279907**		Analysis Date: **05/31/2019**		Seq No: **8955063**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.2730	0.010	0.2500		109	85	115				

Sample ID: **1905N04-002DMS**	Client ID:					Units: **mg/L**		Prep Date: **05/31/2019**		Run No: **399444**	
SampleType: **MS**	TestCode: **Cyanide** **SW9014**					BatchID: **279907**		Analysis Date: **05/31/2019**		Seq No: **8955067**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.2710	0.010	0.2500		108	70	130				

Sample ID: **1905N04-002DMSD**	Client ID:					Units: **mg/L**		Prep Date: **05/31/2019**		Run No: **399444**	
SampleType: **MSD**	TestCode: **Cyanide** **SW9014**					BatchID: **279907**		Analysis Date: **05/31/2019**		Seq No: **8955068**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.2530	0.010	0.2500		101	70	130	0.2710	6.87	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **MB-279969**	Client ID:		Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399717**
SampleType: **MBLK**	TestCode: **Total Metals by ICP/MS** **SW6020B**		BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961923**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	BRL	0.100									
Iron	BRL	0.100									
Magnesium	BRL	0.100									
Potassium	BRL	0.100									

Sample ID: **MB-279969**	Client ID:		Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399718**
SampleType: **MBLK**	TestCode: **APPENDIX I METALS** **SW6020B**		BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961972**

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	0.0200									
Beryllium	BRL	0.00100									
Cadmium	BRL	0.00125									
Chromium	BRL	0.0200									
Cobalt	BRL	0.00500									
Copper	BRL	0.00500									
Lead	BRL	0.00375									
Nickel	BRL	0.0250									
Selenium	BRL	0.0125									
Silver	BRL	0.00250									
Thallium	BRL	0.000500									
Vanadium	BRL	0.00500									
Zinc	BRL	0.0100									

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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **MB-279969**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399717**
SampleType: **MBLK**	TestCode: **Total Metals by ICP/MS** **SW6020B**			BatchID: **279969**	Analysis Date: **06/05/2019**	Seq No: **8965525**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sodium	BRL	0.500									

Sample ID: **LCS-279969**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399717**
SampleType: **LCS**	TestCode: **Total Metals by ICP/MS** **SW6020B**			BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961924**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	1.068	0.100	1.000	0.03250	104	80	120				
Iron	1.084	0.100	1.000		108	80	120				
Magnesium	1.077	0.100	1.000		108	80	120				
Potassium	1.116	0.100	1.000		112	80	120				

Sample ID: **LCS-279969**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399718**
SampleType: **LCS**	TestCode: **APPENDIX I METALS** **SW6020B**			BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961973**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1070	0.00600	0.1000		107	80	120				
Arsenic	0.1041	0.0100	0.1000		104	80	120				
Barium	0.1064	0.0200	0.1000		106	80	120				
Beryllium	0.09929	0.00400	0.1000		99.3	80	120				
Cadmium	0.1013	0.00500	0.1000		101	80	120				
Chromium	0.1079	0.0200	0.1000		108	80	120				
Cobalt	0.1086	0.0500	0.1000		109	80	120				
Copper	0.1094	0.0200	0.1000		109	80	120				
Lead	0.1051	0.0100	0.1000		105	80	120				
Nickel	0.1071	0.0400	0.1000		107	80	120				
Selenium	0.1061	0.0500	0.1000		106	80	120				
Silver	0.009844	0.00500	0.0100		98.4	80	120				
Thallium	0.09114	0.00200	0.1000		91.1	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **LCS-279969**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399718**
SampleType: **LCS**	TestCode: **APPENDIX I METALS**	**SW6020B**		BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961973**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Vanadium	0.1078	0.0500	0.1000		108	80	120				
Zinc	0.1064	0.0200	0.1000	0.002244	104	80	120				

Sample ID: **LCS-279969**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399717**
SampleType: **LCS**	TestCode: **Total Metals by ICP/MS**	**SW6020B**		BatchID: **279969**	Analysis Date: **06/06/2019**	Seq No: **8966563**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sodium	1.176	0.500	1.000	0.1799	99.6	80	120				

Sample ID: **1905T03-004DMS**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399717**
SampleType: **MS**	TestCode: **Total Metals by ICP/MS**	**SW6020B**		BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961926**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	2.096	0.100	1.000	0.9785	112	75	125				
Iron	1.058	0.100	1.000		106	75	125				
Magnesium	1.604	0.100	1.000	0.5108	109	75	125				
Potassium	1.671	0.100	1.000	0.6011	107	75	125				
Sodium	2.426	0.500	1.000	1.427	99.8	75	125				

Sample ID: **1905T03-004DMS**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399718**
SampleType: **MS**	TestCode: **APPENDIX I METALS**	**SW6020B**		BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961975**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1006	0.00600	0.1000		101	75	125				
Arsenic	0.1020	0.0100	0.1000		102	75	125				
Barium	0.1137	0.0200	0.1000	0.007333	106	75	125				
Beryllium	0.09988	0.00400	0.1000		99.9	75	125				
Cadmium	0.09935	0.00500	0.1000		99.3	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **1905T03-004DMS**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399718**
SampleType: **MS**	TestCode: **APPENDIX I METALS** **SW6020B**			BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961975**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chromium	0.1071	0.0200	0.1000		107	75	125				
Cobalt	0.1068	0.0500	0.1000		107	75	125				
Copper	0.1070	0.0200	0.1000		107	75	125				
Lead	0.1028	0.0100	0.1000		103	75	125				
Nickel	0.1062	0.0400	0.1000	0.0003598	106	75	125				
Selenium	0.09970	0.0500	0.1000		99.7	75	125				
Silver	0.009765	0.00500	0.0100		97.7	75	125				
Thallium	0.09614	0.00200	0.1000	0.003623	92.5	75	125				
Vanadium	0.1068	0.0500	0.1000		107	75	125				
Zinc	0.1069	0.0200	0.1000	0.004479	102	75	125				

Sample ID: **1905T03-004DMSD**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399717**
SampleType: **MSD**	TestCode: **Total Metals by ICP/MS** **SW6020B**			BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961927**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	1.971	0.100	1.000	0.9785	99.2	75	125	2.096	6.15	20	
Iron	1.086	0.100	1.000		109	75	125	1.058	2.57	20	
Magnesium	1.575	0.100	1.000	0.5108	106	75	125	1.604	1.83	20	
Potassium	1.644	0.100	1.000	0.6011	104	75	125	1.671	1.59	20	
Sodium	2.340	0.500	1.000	1.427	91.3	75	125	2.426	3.60	20	

Sample ID: **1905T03-004DMSD**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399718**
SampleType: **MSD**	TestCode: **APPENDIX I METALS** **SW6020B**			BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961977**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1023	0.00600	0.1000		102	75	125	0.1006	1.66	20	
Arsenic	0.09998	0.0100	0.1000		100.0	75	125	0.1020	2.00	20	
Barium	0.1134	0.0200	0.1000	0.007333	106	75	125	0.1137	0.197	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **1905T03-004DMSD** Client ID:
SampleType: **MSD** TestCode: **APPENDIX I METALS** **SW6020B**
Units: **mg/L** Prep Date: **06/03/2019** Run No: **399718**
BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961977**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Beryllium	0.09899	0.00400	0.1000		99.0	75	125	0.09988	0.896	20	
Cadmium	0.09973	0.00500	0.1000		99.7	75	125	0.09935	0.389	20	
Chromium	0.1070	0.0200	0.1000		107	75	125	0.1071	0.151	20	
Cobalt	0.1080	0.0500	0.1000		108	75	125	0.1068	1.10	20	
Copper	0.1089	0.0200	0.1000		109	75	125	0.1070	1.75	20	
Lead	0.1032	0.0100	0.1000		103	75	125	0.1028	0.349	20	
Nickel	0.1077	0.0400	0.1000	0.0003598	107	75	125	0.1062	1.42	20	
Selenium	0.1019	0.0500	0.1000		102	75	125	0.09970	2.15	20	
Silver	0.01014	0.00500	0.0100		101	75	125	0.009765	3.72	20	
Thallium	0.09851	0.00200	0.1000	0.003623	94.9	75	125	0.09614	2.44	20	
Vanadium	0.1074	0.0500	0.1000		107	75	125	0.1068	0.549	20	
Zinc	0.1074	0.0200	0.1000	0.004479	103	75	125	0.1069	0.434	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279970

Sample ID: **MB-279970** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399719**
SampleType: **MBLK** TestCode: **Total Metals by ICP/MS SW6020B** BatchID: **279970** Analysis Date: **06/04/2019** Seq No: **8962090**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	BRL	0.100									
Iron	BRL	0.100									
Magnesium	BRL	0.100									
Potassium	BRL	0.100									
Sodium	BRL	0.500									

Sample ID: **MB-279970** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399720**
SampleType: **MBLK** TestCode: **APPENDIX I METALS SW6020B** BatchID: **279970** Analysis Date: **06/04/2019** Seq No: **8962523**

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	0.0200									
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									

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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279970

Sample ID: **LCS-279970** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399719**
SampleType: **LCS** TestCode: **Total Metals by ICP/MS SW6020B** BatchID: **279970** Analysis Date: **06/04/2019** Seq No: **8962093**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	1.074	0.100	1.000	0.04382	103	80	120				
Iron	1.098	0.100	1.000		110	80	120				
Magnesium	1.070	0.100	1.000		107	80	120				
Potassium	1.132	0.100	1.000		113	80	120				

Sample ID: **LCS-279970** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399720**
SampleType: **LCS** TestCode: **APPENDIX I METALS SW6020B** BatchID: **279970** Analysis Date: **06/04/2019** Seq No: **8962524**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1011	0.00600	0.1000		101	80	120				
Arsenic	0.1036	0.0100	0.1000		104	80	120				
Barium	0.1072	0.0200	0.1000		107	80	120				
Beryllium	0.1014	0.00400	0.1000		101	80	120				
Cadmium	0.09915	0.00500	0.1000		99.1	80	120				
Chromium	0.1085	0.0200	0.1000		108	80	120				
Cobalt	0.1082	0.0500	0.1000		108	80	120				
Copper	0.1084	0.0200	0.1000		108	80	120				
Lead	0.1002	0.0100	0.1000		100	80	120				
Nickel	0.1091	0.0400	0.1000		109	80	120				
Selenium	0.1051	0.0500	0.1000		105	80	120				
Silver	0.009915	0.00500	0.0100		99.2	80	120				
Thallium	0.09561	0.00200	0.1000		95.6	80	120				
Vanadium	0.1100	0.0500	0.1000		110	80	120				
Zinc	0.1070	0.0200	0.1000	0.001695	105	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279970

Sample ID: **LCS-279970**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399719**
SampleType: **LCS**	TestCode: **Total Metals by ICP/MS** **SW6020B**			BatchID: **279970**	Analysis Date: **06/06/2019**	Seq No: **8966581**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sodium	1.173	0.500	1.000		117	80	120				

Sample ID: **1905T35-009CMS**	Client ID: **Equipment Blank**			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399719**
SampleType: **MS**	TestCode: **Total Metals by ICP/MS** **SW6020B**			BatchID: **279970**	Analysis Date: **06/04/2019**	Seq No: **8962103**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	1.106	0.100	1.000	0.05039	106	75	125				
Iron	1.079	0.100	1.000		108	75	125				
Magnesium	1.042	0.100	1.000		104	75	125				
Potassium	1.152	0.100	1.000	0.06961	108	75	125				
Sodium	1.238	0.500	1.000	0.1942	104	75	125				

Sample ID: **1905T35-009CMS**	Client ID: **Equipment Blank**			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399720**
SampleType: **MS**	TestCode: **APPENDIX I METALS** **SW6020B**			BatchID: **279970**	Analysis Date: **06/04/2019**	Seq No: **8962526**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1028	0.00600	0.1000		103	75	125				
Arsenic	0.1031	0.0100	0.1000		103	75	125				
Barium	0.1084	0.0200	0.1000	0.0002405	108	75	125				
Beryllium	0.1020	0.00400	0.1000		102	75	125				
Cadmium	0.1000	0.00500	0.1000	0.0001821	99.8	75	125				
Chromium	0.1077	0.0200	0.1000		108	75	125				
Cobalt	0.1087	0.0500	0.1000		109	75	125				
Copper	0.1078	0.0200	0.1000		108	75	125				
Lead	0.1019	0.0100	0.1000		102	75	125				
Nickel	0.1073	0.0400	0.1000		107	75	125				
Selenium	0.1024	0.0500	0.1000		102	75	125				
Silver	0.01009	0.00500	0.0100		101	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279970

Sample ID: **1905T35-009CMS** Client ID: **Equipment Blank** Units: **mg/L** Prep Date: **06/03/2019** Run No: **399720**
SampleType: **MS** TestCode: **APPENDIX I METALS** **SW6020B** BatchID: **279970** Analysis Date: **06/04/2019** Seq No: **8962526**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Thallium	0.09878	0.00200	0.1000	0.001912	96.9	75	125				
Vanadium	0.1090	0.0500	0.1000		109	75	125				
Zinc	0.1126	0.0200	0.1000	0.002257	110	75	125				

Sample ID: **1905T35-009CMSD** Client ID: **Equipment Blank** Units: **mg/L** Prep Date: **06/03/2019** Run No: **399719**
SampleType: **MSD** TestCode: **Total Metals by ICP/MS** **SW6020B** BatchID: **279970** Analysis Date: **06/04/2019** Seq No: **8962109**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	1.015	0.100	1.000	0.05039	96.5	75	125	1.106	8.57	20	
Iron	1.115	0.100	1.000		112	75	125	1.079	3.33	20	
Magnesium	1.056	0.100	1.000		106	75	125	1.042	1.33	20	
Potassium	1.114	0.100	1.000	0.06961	104	75	125	1.152	3.38	20	
Sodium	1.204	0.500	1.000	0.1942	101	75	125	1.238	2.75	20	

Sample ID: **1905T35-009CMSD** Client ID: **Equipment Blank** Units: **mg/L** Prep Date: **06/03/2019** Run No: **399720**
SampleType: **MSD** TestCode: **APPENDIX I METALS** **SW6020B** BatchID: **279970** Analysis Date: **06/04/2019** Seq No: **8962527**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1064	0.00600	0.1000		106	75	125	0.1028	3.41	20	
Arsenic	0.1083	0.0100	0.1000		108	75	125	0.1031	4.88	20	
Barium	0.1122	0.0200	0.1000	0.0002405	112	75	125	0.1084	3.43	20	
Beryllium	0.1019	0.00400	0.1000		102	75	125	0.1020	0.127	20	
Cadmium	0.1021	0.00500	0.1000	0.0001821	102	75	125	0.1000	2.02	20	
Chromium	0.1126	0.0200	0.1000		113	75	125	0.1077	4.39	20	
Cobalt	0.1117	0.0500	0.1000		112	75	125	0.1087	2.65	20	
Copper	0.1123	0.0200	0.1000		112	75	125	0.1078	4.08	20	
Lead	0.1048	0.0100	0.1000		105	75	125	0.1019	2.88	20	
Nickel	0.1085	0.0400	0.1000		108	75	125	0.1073	1.11	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
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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279970

Sample ID: **1905T35-009CMSD** Client ID: **Equipment Blank** Units: **mg/L** Prep Date: **06/03/2019** Run No: **399720**
SampleType: **MSD** TestCode: **APPENDIX I METALS** **SW6020B** BatchID: **279970** Analysis Date: **06/04/2019** Seq No: **8962527**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Selenium	0.1068	0.0500	0.1000		107	75	125	0.1024	4.22	20	
Silver	0.009967	0.00500	0.0100		99.7	75	125	0.01009	1.20	20	
Thallium	0.1007	0.00200	0.1000	0.001912	98.8	75	125	0.09878	1.96	20	
Vanadium	0.1117	0.0500	0.1000		112	75	125	0.1090	2.45	20	
Zinc	0.1053	0.0200	0.1000	0.002257	103	75	125	0.1126	6.71	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279982

Sample ID: **MB-279982**	Client ID:				Units: **ug/L**		Prep Date: **06/03/2019**		Run No: **399638**	
SampleType: **MBLK**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**				BatchID: **279982**		Analysis Date: **06/03/2019**		Seq No: **8960279**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
1,2-Dibromo-3-chloropropane	BRL	0.040								
1,2-Dibromoethane	BRL	0.020								
Surr: 4-Bromofluorobenzene	5.677	0	5.000		114	72.9	137			

Sample ID: **LCS-279982**	Client ID:				Units: **ug/L**		Prep Date: **06/03/2019**		Run No: **399638**	
SampleType: **LCS**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**				BatchID: **279982**		Analysis Date: **06/03/2019**		Seq No: **8960280**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
1,2-Dibromo-3-chloropropane	0.1290	0.040	0.1000		129	60	140			
1,2-Dibromoethane	0.1240	0.020	0.1000		124	60	140			
Surr: 4-Bromofluorobenzene	5.503	0	5.000		110	72.9	137			

Sample ID: **LCSD-279982**	Client ID:				Units: **ug/L**		Prep Date: **06/03/2019**		Run No: **399638**	
SampleType: **LCSD**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**				BatchID: **279982**		Analysis Date: **06/03/2019**		Seq No: **8960281**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
1,2-Dibromo-3-chloropropane	0.1320	0.040	0.1000		132	60	140	0.1290	2.30	14.6
1,2-Dibromoethane	0.1290	0.020	0.1000		129	60	140	0.1240	3.95	15.6
Surr: 4-Bromofluorobenzene	5.537	0	5.000		111	72.9	137	5.503	0	0

Sample ID: **1905T27-003AMS**	Client ID:				Units: **ug/L**		Prep Date: **06/03/2019**		Run No: **399638**	
SampleType: **MS**	TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011**				BatchID: **279982**		Analysis Date: **06/03/2019**		Seq No: **8960284**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
1,2-Dibromo-3-chloropropane	0.1364	0.040	0.1010		135	60.8	136			
1,2-Dibromoethane	0.1273	0.020	0.1010		126	70	131			
Surr: 4-Bromofluorobenzene	6.196	0	5.050		123	72.9	137			

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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279982

Sample ID: **1905T34-001BDUP** Client ID: Units: **ug/L** Prep Date: **06/03/2019** Run No: **399638**
SampleType: **DUP** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **279982** Analysis Date: **06/03/2019** Seq No: **8960291**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	BRL	0.040						0	0	30	
1,2-Dibromoethane	BRL	0.020						0	0	30	
Surr: 4-Bromofluorobenzene	5.490	0						9.320	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279991

Sample ID: **MB-279991**	Client ID:				Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **MBLK**	TestCode: **Nitrogen, Ammonia (as N)**	**E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957305**

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-279991**	Client ID:				Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **LCS**	TestCode: **Nitrogen, Ammonia (as N)**	**E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957306**

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)	5.180	0.200	5.000		104	90	110				

Sample ID: **1905S97-006CMS**	Client ID:				Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **MS**	TestCode: **Nitrogen, Ammonia (as N)**	**E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957334**

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)	5.830	0.200	5.000		117	90	110				S

Sample ID: **1905S97-007CMS**	Client ID:				Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **MS**	TestCode: **Nitrogen, Ammonia (as N)**	**E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957337**

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)	5.760	0.200	5.000		115	90	110				S

Sample ID: **1905S97-006CMSD**	Client ID:				Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **MSD**	TestCode: **Nitrogen, Ammonia (as N)**	**E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957336**

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)	5.750	0.200	5.000		115	90	110	5.830	1.38	30	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **MB-279998** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399371**
SampleType: **MBLK** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **05/31/2019** Seq No: **8957025**

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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **MB-279998** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399371**
SampleType: **MBLK** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **05/31/2019** Seq No: **8957025**

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	42.42	0	50.00		84.8	64	125				
Surr: Dibromofluoromethane	47.27	0	50.00		94.5	76.4	125				
Surr: Toluene-d8	46.27	0	50.00		92.5	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **LCS-279998** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399371**
SampleType: **LCS** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **05/31/2019** Seq No: **8957027**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	42.56	5.0	50.00		85.1	69.2	141				
Benzene	47.81	5.0	50.00		95.6	72.3	126				
Chlorobenzene	43.45	5.0	50.00		86.9	73.3	135				
Toluene	46.96	5.0	50.00		93.9	70.5	128				
Trichloroethene	43.86	5.0	50.00		87.7	70.3	133				
Surr: 4-Bromofluorobenzene	47.00	0	50.00		94.0	64	125				
Surr: Dibromofluoromethane	47.75	0	50.00		95.5	76.4	125				
Surr: Toluene-d8	48.70	0	50.00		97.4	78.3	116				

Sample ID: **1905T35-003AMS** Client ID: **MW-1A** Units: **ug/L** Prep Date: **05/31/2019** Run No: **399675**
SampleType: **MS** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **06/04/2019** Seq No: **8961194**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	48.25	5.0	50.00		96.5	63.8	146				
Benzene	50.28	5.0	50.00		101	70.2	137				
Chlorobenzene	49.78	5.0	50.00		99.6	72.7	141				
Toluene	48.51	5.0	50.00		97.0	67	141				
Trichloroethene	51.43	5.0	50.00		103	69.3	141				
Surr: 4-Bromofluorobenzene	42.22	0	50.00		84.4	64	125				
Surr: Dibromofluoromethane	46.40	0	50.00		92.8	76.4	125				
Surr: Toluene-d8	44.74	0	50.00		89.5	78.3	116				

Sample ID: **1905T35-001ADUP** Client ID: **MW-01** Units: **ug/L** Prep Date: **05/31/2019** Run No: **399675**
SampleType: **DUP** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **06/04/2019** Seq No: **8961193**

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						0	0	20	
1,1,1-Trichloroethane	BRL	5.0						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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **1905T35-001ADUP** Client ID: **MW-01** Units: **ug/L** Prep Date: **05/31/2019** Run No: **399675**
SampleType: **DUP** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **06/04/2019** Seq No: **8961193**

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	5.0						0	0	20	
1,1,2-Trichloroethane	BRL	5.0						0	0	20	
1,1-Dichloroethane	BRL	5.0						0	0	20	
1,1-Dichloroethene	BRL	5.0						0	0	20	
1,2,3-Trichloropropane	BRL	5.0						0	0	20	
1,2-Dibromo-3-chloropropane	BRL	5.0						0	0	20	
1,2-Dibromoethane	BRL	5.0						0	0	20	
1,2-Dichlorobenzene	BRL	5.0						0	0	20	
1,2-Dichloroethane	BRL	5.0						0	0	20	
1,2-Dichloropropane	BRL	5.0						0	0	20	
1,4-Dichlorobenzene	BRL	5.0						0	0	20	
2-Butanone	BRL	50						0	0	20	
2-Hexanone	BRL	10						0	0	20	
4-Methyl-2-pentanone	BRL	10						0	0	20	
Acetone	BRL	50						5.070	0	20	
Acrylonitrile	BRL	5.0						0	0	20	
Benzene	BRL	5.0						0	0	20	
Bromochloromethane	BRL	5.0						0	0	20	
Bromodichloromethane	BRL	5.0						0	0	20	
Bromoform	BRL	5.0						0	0	20	
Bromomethane	BRL	5.0						0	0	20	
Carbon disulfide	BRL	5.0						0	0	20	
Carbon tetrachloride	BRL	5.0						0	0	20	
Chlorobenzene	BRL	5.0						0	0	20	
Chloroethane	BRL	10						0	0	20	
Chloroform	BRL	5.0						0	0	20	
Chloromethane	BRL	10						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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **1905T35-001ADUP** Client ID: **MW-01** Units: **ug/L** Prep Date: **05/31/2019** Run No: **399675**
SampleType: **DUP** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **06/04/2019** Seq No: **8961193**

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	BRL	5.0						0	0	20	
cis-1,3-Dichloropropene	BRL	5.0						0	0	20	
Dibromochloromethane	BRL	5.0						0	0	20	
Dibromomethane	BRL	5.0						0	0	20	
Ethylbenzene	BRL	5.0						0	0	20	
Iodomethane	BRL	10						0	0	20	
m,p-Xylene	BRL	10						0	0	20	
Methylene chloride	BRL	5.0						0	0	20	
o-Xylene	BRL	10						0	0	20	
Styrene	BRL	5.0						0	0	20	
Tetrachloroethene	BRL	5.0						0	0	20	
Toluene	BRL	5.0						0	0	20	
trans-1,2-Dichloroethene	BRL	5.0						0	0	20	
trans-1,3-Dichloropropene	BRL	5.0						0	0	20	
trans-1,4-Dichloro-2-butene	BRL	10						0	0	20	
Trichloroethene	BRL	5.0						0	0	20	
Trichlorofluoromethane	BRL	5.0						0	0	20	
Vinyl acetate	BRL	10						0	0	20	
Vinyl chloride	BRL	2.0						0	0	20	
Surr: 4-Bromofluorobenzene	39.04	0				64	125	42.19	0	0	
Surr: Dibromofluoromethane	45.75	0				76.4	125	48.57	0	0	
Surr: Toluene-d8	43.68	0				78.3	116	45.86	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 280038

Sample ID: **MB-280038**	Client ID:				Units: **mg/L**		Prep Date: **06/04/2019**		Run No: **399678**	
SampleType: **MBLK**	TestCode: **Mercury, Total SW7470A**				BatchID: **280038**		Analysis Date: **06/04/2019**		Seq No: **8961208**	
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-280038**	Client ID:				Units: **mg/L**		Prep Date: **06/04/2019**		Run No: **399678**	
SampleType: **LCS**	TestCode: **Mercury, Total SW7470A**				BatchID: **280038**		Analysis Date: **06/04/2019**		Seq No: **8961210**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	0.003849	0.00020	0.0040		96.2	80	120			

Sample ID: **1905T34-010CMS**	Client ID:				Units: **mg/L**		Prep Date: **06/04/2019**		Run No: **399678**	
SampleType: **MS**	TestCode: **Mercury, Total SW7470A**				BatchID: **280038**		Analysis Date: **06/04/2019**		Seq No: **8961221**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	0.004113	0.00020	0.0040		103	75	125			

Sample ID: **1905T34-010CMSD**	Client ID:				Units: **mg/L**		Prep Date: **06/04/2019**		Run No: **399678**	
SampleType: **MSD**	TestCode: **Mercury, Total SW7470A**				BatchID: **280038**		Analysis Date: **06/04/2019**		Seq No: **8961224**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	0.004090	0.00020	0.0040		102	75	125	0.004113	0.561	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 280078

Sample ID: **MB-280078**	Client ID:					Units: **mg/L**		Prep Date: **06/05/2019**	Run No: **399764**
SampleType: **MBLK**	TestCode: **Mercury, Total SW7470A**					BatchID: **280078**		Analysis Date: **06/05/2019**	Seq No: **8963840**
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-280078**	Client ID:					Units: **mg/L**		Prep Date: **06/05/2019**	Run No: **399764**
SampleType: **LCS**	TestCode: **Mercury, Total SW7470A**					BatchID: **280078**		Analysis Date: **06/05/2019**	Seq No: **8963841**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.003502	0.00020	0.0040	0.00007680	85.6	80	120				

Sample ID: **1905U15-001DMS**	Client ID:					Units: **mg/L**		Prep Date: **06/05/2019**	Run No: **399764**
SampleType: **MS**	TestCode: **Mercury, Total SW7470A**					BatchID: **280078**		Analysis Date: **06/05/2019**	Seq No: **8963844**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004315	0.00020	0.0040	0.00009370	106	75	125				

Sample ID: **1905U15-001DMSD**	Client ID:					Units: **mg/L**		Prep Date: **06/05/2019**	Run No: **399764**
SampleType: **MSD**	TestCode: **Mercury, Total SW7470A**					BatchID: **280078**		Analysis Date: **06/05/2019**	Seq No: **8963845**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004457	0.00020	0.0040	0.00009370	109	75	125	0.004315	3.24	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: 280102

Sample ID: **MB-280102**	Client ID:			Units: **mg/L**	Prep Date: **06/05/2019**	Run No: **399833**
SampleType: **MBLK**	TestCode: **Dissolved Metals by ICP/MS SW6020B**			BatchID: **280102**	Analysis Date: **06/05/2019**	Seq No: **8966255**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	BRL	0.00500									

Sample ID: **LCS-280102**	Client ID:			Units: **mg/L**	Prep Date: **06/05/2019**	Run No: **399833**
SampleType: **LCS**	TestCode: **Dissolved Metals by ICP/MS SW6020B**			BatchID: **280102**	Analysis Date: **06/05/2019**	Seq No: **8966256**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	0.1176	0.00500	0.1000		118	80	120				

Sample ID: **1905T35-002BMS**	Client ID: **MW-01**			Units: **mg/L**	Prep Date: **06/05/2019**	Run No: **399833**
SampleType: **MS**	TestCode: **Dissolved Metals by ICP/MS SW6020B**			BatchID: **280102**	Analysis Date: **06/05/2019**	Seq No: **8966258**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	0.1036	0.00500	0.1000		104	75	125				

Sample ID: **1905T35-002BMSD**	Client ID: **MW-01**			Units: **mg/L**	Prep Date: **06/05/2019**	Run No: **399833**
SampleType: **MSD**	TestCode: **Dissolved Metals by ICP/MS SW6020B**			BatchID: **280102**	Analysis Date: **06/05/2019**	Seq No: **8966259**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	0.1011	0.00500	0.1000		101	75	125	0.1036	2.45	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: R399470

Sample ID: **MB-399470**	Client ID:				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **MBLK**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957050**	
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-399470**	Client ID:				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **LCS**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957052**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	495.8	10.0	500.0		99.2	90	110				

Sample ID: **1905S97-014CMS**	Client ID:				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **MS**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957057**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	376.9	12.5	375.0		101	90	110				

Sample ID: **1905T35-005EMS2**	Client ID: **MW-03**				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **MS**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957075**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	363.0	12.5	375.0	11.20	93.8	90	110				

Sample ID: **1905S97-014CMSD**	Client ID:				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **MSD**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957060**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	376.9	12.5	375.0		101	90	110	376.9	0	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: R399532

Sample ID: **MB-R399532**	Client ID:			Units: **mg/L**	Prep Date:	Run No: **399532**
SampleType: **MBLK**	TestCode: **Inorganic Anions by IC** **EPA 300.0**			BatchID: **R399532**	Analysis Date: **05/30/2019**	Seq No: **8957405**

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-R399532**	Client ID:			Units: **mg/L**	Prep Date:	Run No: **399532**
SampleType: **LCS**	TestCode: **Inorganic Anions by IC** **EPA 300.0**			BatchID: **R399532**	Analysis Date: **05/30/2019**	Seq No: **8957403**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	9.868	1.00	10.00		98.7	90	110				
Fluoride	5.150	0.200	5.000		103	90	110				
Nitrogen, Nitrate (As N)	5.127	0.250	5.000	0.05432	101	90	110				
Sulfate	24.24	1.00	25.00		97.0	90	110				

Sample ID: **1905R58-001AMS**	Client ID:			Units: **mg/L**	Prep Date:	Run No: **399532**
SampleType: **MS**	TestCode: **Inorganic Anions by IC** **EPA 300.0**			BatchID: **R399532**	Analysis Date: **05/30/2019**	Seq No: **8957410**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	933.7	50.0	500.0	480.0	90.7	90	110				
Fluoride	229.1	10.0	250.0	5.241	89.6	90	110				S
Nitrogen, Nitrate (As N)	261.5	12.5	250.0		105	90	110				
Sulfate	1245	50.0	1250		99.6	90	110				

Sample ID: **1905T01-002BMS**	Client ID:			Units: **mg/L**	Prep Date:	Run No: **399532**
SampleType: **MS**	TestCode: **Inorganic Anions by IC** **EPA 300.0**			BatchID: **R399532**	Analysis Date: **05/30/2019**	Seq No: **8957424**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	129.4	10.0	100.0	38.49	90.9	90	110				

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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: R399532

Sample ID: **1905T01-002BMS** Client ID: Units: **mg/L** Prep Date: Run No: **399532**
SampleType: **MS** TestCode: **Inorganic Anions by IC** **EPA 300.0** BatchID: **R399532** Analysis Date: **05/30/2019** Seq No: **8957424**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	46.40	2.00	50.00		92.8	90	110				
Nitrogen, Nitrate (As N)	56.35	2.50	50.00	5.257	102	90	110				
Sulfate	275.7	10.0	250.0	27.83	99.2	90	110				

Sample ID: **1905R58-001AMSD** Client ID: Units: **mg/L** Prep Date: Run No: **399532**
SampleType: **MSD** TestCode: **Inorganic Anions by IC** **EPA 300.0** BatchID: **R399532** Analysis Date: **05/30/2019** Seq No: **8957411**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	941.4	50.0	500.0	480.0	92.3	90	110	933.7	0.815	20	
Fluoride	227.8	10.0	250.0	5.241	89.0	90	110	229.1	0.571	20	S
Nitrogen, Nitrate (As N)	263.0	12.5	250.0		105	90	110	261.5	0.583	20	
Sulfate	1216	50.0	1250		97.3	90	110	1245	2.31	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: R399566

Sample ID: **MB-R399566**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **399566**	
SampleType: **MBLK**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R399566**		Analysis Date: **06/03/2019**		Seq No: **8958396**	
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-R399566**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **399566**	
SampleType: **LCS**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R399566**		Analysis Date: **06/03/2019**		Seq No: **8958393**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	26.00	1.00	25.00		104	90	110				

Sample ID: **1905R20-001AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **399566**	
SampleType: **MS**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R399566**		Analysis Date: **06/03/2019**		Seq No: **8958401**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	24.92	1.00	25.00		99.7	80	120				

Sample ID: **1905R20-001AMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **399566**	
SampleType: **MSD**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R399566**		Analysis Date: **06/03/2019**		Seq No: **8958402**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	25.53	1.00	25.00		102	80	120	24.92	2.42	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: 1905T35

ANALYTICAL QC SUMMARY REPORT

BatchID: R399798

Sample ID: **MB-R399798**	Client ID:				Units: **mg/L**	Prep Date:	Run No: **399798**
SampleType: **MBLK**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R399798**	Analysis Date: **05/31/2019**	Seq No: **8964431**

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-R399798**	Client ID:				Units: **mg/L**	Prep Date:	Run No: **399798**
SampleType: **LCS**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R399798**	Analysis Date: **05/31/2019**	Seq No: **8964430**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.881	0.200	5.000		97.6	90	110				

Sample ID: **1905T50-001CMS**	Client ID:				Units: **mg/L**	Prep Date:	Run No: **399798**
SampleType: **MS**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R399798**	Analysis Date: **05/31/2019**	Seq No: **8964434**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.827	0.200	5.000	0.1596	93.3	90	110				

Sample ID: **1905T50-002CMS**	Client ID:				Units: **mg/L**	Prep Date:	Run No: **399798**
SampleType: **MS**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R399798**	Analysis Date: **05/31/2019**	Seq No: **8964436**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.862	0.200	5.000	0.1060	95.1	90	110				

Sample ID: **1905T50-001CMSD**	Client ID:				Units: **mg/L**	Prep Date:	Run No: **399798**
SampleType: **MSD**	TestCode: **Inorganic Anions by IC** **E300.0**				BatchID: **R399798**	Analysis Date: **05/31/2019**	Seq No: **8964435**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.869	0.200	5.000	0.1596	94.2	90	110	4.827	0.868	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	MW-01 Avg.	MW-4R Avg.
Antimony	6	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	2.50	2.50
Barium	2000	33	30.6	29.8	29.4	50.4	33.4	34.43	13.70
Beryllium	4	1	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5	5.00	6.74
Copper	800**	2	2	2	2	2	2	2.00	2.07
Fluoride*	4	1	1	1	1	1	1	1.00	1.00
Lead	15	1	1	1	1	1	1	1.00	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Nickel	100	5	5	5	5	5	5	5.00	9.53
Selenium	50	5	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.72
Vanadium	86**	5	5	5	5	5	5	5.00	5.09
Zinc	6000**	10	10	10	10	10	10	10.00	27.08

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

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

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #1A

INORGANIC	TN REGULATORY LIMITS	11-16-17	3-7-18	5-3-18	5-23-18	11-14-18	5-29-19	MW-1A Avg.	MW-4R Avg.
Antimony	6	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	2.50	2.50
Barium	2000	87.1	67.2	104	69.3	99.5	201	104.68	13.70
Beryllium	4	1	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5	5.00	6.74
Copper	800**	2	2	2.2	2	2	2	2.03	2.07
Fluoride*	4	1	1	1	1	1	1	1.00	1.00
Lead	15	1	1	1.39	1	1	1	1.07	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Nickel	100	5	5	5	5	5	5	5.00	9.53
Selenium	50	5	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.72
Vanadium	86**	5	5	5	5	5	5	5.00	5.09
Zinc	6000**	10	14.3	14.9	12.5	14	12.4	13.02	27.08

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18	5-29-19
Acetone	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlori	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND
Xylenes	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	MW-02 Avg.	MW-4R Avg.
Antimony	6	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	2.50	2.50
Barium	2000	68.8	38.5	54.3	52.3	86.4	57.1	59.57	13.70
Beryllium	4	1.87	1.38	2.45	1.78	2.31	1.33	1.85	1.00
Cadmium	5	2.27	1.34	1.92	1.62	2.28	1.67	1.85	0.70
Chromium	100	5	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5	5.00	6.74
Copper	800**	2	2	2	2	2.52	2	2.09	2.07
Fluoride*	4	1	1	1	1	1	1	1.00	1.00
Lead	15	1	1	1	1	1	1	1.00	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Nickel	100	33.7	21.8	28.4	26.9	37	29.3	29.52	9.53
Selenium	50	5	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.72
Vanadium	86**	5	5	5	5	5	5	5.00	5.09
Zinc	6000**	350	219	296	278	404	289	306.00	27.08

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-7-18	5-7-18	5-23-18	11-13-18	5-29-19
Acetone	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlori	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND
Xylenes	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	MW-03 Avg.	MW-4R Avg.
Antimony	6	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	2.50	2.50
Barium	2000	62.7	53.7	79.8	102	142	81.5	86.95	13.70
Beryllium	4	1	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5	5.00	5.00
Cobalt	6**	9.74	5	10.3	13.3	18.9	11.7	11.49	6.74
Copper	800**	5.2	3.91	3.21	3.35	2.09	2.36	3.35	2.07
Fluoride*	4	1	1	1	1	1	1	1.00	1.00
Lead	15	1.39	1	1	2.14	1	1.32	1.31	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.91	0.57	0.50
Nickel	100	7.5	7.51	8.75	10.5	11.3	9.23	9.13	9.53
Selenium	50	5	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.72
Vanadium	86**	5	5	5	5	5	5	5.00	5.09
Zinc	6000**	11.9	28.2	10	15.5	13.2	12.2	15.17	27.08

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-26-18	5-7-18	5-23-18	11-13-18	5-29-19
Acetone	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlori	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND
Xylenes	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	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.5	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.5	2.50
Barium	2000	11.3	21.3	10.1	11.8	16.4	11.3	13.70
Beryllium	4	1	1	1	1	1	1	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	0.70
Chromium	100	5	5	5	5	5	5	5.00
Cobalt	6**	5	13.6	5	5	6.86	5	6.74
Copper	800**	2	2	2	2	2	2.4	2.07
Fluoride*	4	1	1	1	1	1	1	1.00
Lead	15	1	1	1	1	1.1	1.11	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	0.50
Nickel	100	7.69	14.3	5	8.3	13.7	8.2	9.53
Selenium	50	5	5	5	5	5	5	5.00
Silver	100	1	1	1	1	1	1	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	1.79	0.72
Vanadium	86**	5	5	5.53	5	5	5	5.09
Zinc	6000**	21.2	32.9	12.6	16.6	33.2	46	27.08

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18	5-29-19
Acetone	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlor	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND
Xylenes	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	MW-05 Avg.	MW-4R Avg.
Antimony	6	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	2.50	2.50
Barium	2000	10	10	11.9	10.2	10.6	10.5	10.53	13.70
Beryllium	4	1	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5	5.00	6.74
Copper	800**	2	2	2	2	2	2	2.00	2.07
Fluoride*	4	1	1	1	1	1	1	1.00	1.00
Lead	15	1	1	1	1	1	1	1.00	1.04
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Nickel	100	5	5	5	5	5	5	5.00	9.53
Selenium	50	5	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.934	0.57	0.72
Vanadium	86**	5	5	5	5	5	5	5.00	5.09
Zinc	6000**	10.0	10.3	10.0	11.7	11.8	12.2	11.00	27.08

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

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

APPENDIX D

GROUNDWATER DATA

Matlock Bend Landfill

May 29, 2019

	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	4.08	826.79	825	30	4.70E-06	0.18	5.97E-02	1.56E-06	2.24E-03	SW
MW-1A*	805.13	10.66	794.47	800	75	3.93E-06	0.18	7.37E-02	1.61E-06	2.32E-03	S
MW-02	825.20	11.24	813.96	815	45	5.90E-06	0.18	2.31E-02	7.58E-07	1.09E-03	SW
MW-03	867.86	13.18	854.68	855	10	1.20E-05	0.18	3.20E-02	2.13E-06	3.07E-03	SW
MW-4R**	992.32	95.72	896.60	895	50	1.90E-05	0.18	3.20E-02	3.38E-06	4.86E-03	SW
MW-05	936.84	68.92	867.92	870	80	2.20E-05	0.18	2.60E-02	3.18E-06	4.58E-03	W

*-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)
- 950 — 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 MAY 29, 2019.
2. TOPOGRAPHIC CONTOURS SHOWN WERE PROVIDED BY SOUTHERN RESOURCES MAPPING CORP., NORTHPORT, ALABAMA, PHOTOS DATED AUGUST 25, 2015 AND MAY 6, 2019.

G.W. WELL NO.	WATER ELEV.
MW-01	826.79
MW-1A	794.47
MW-02	813.96
MW-03	854.68
MW-4R	896.60
MW-05	867.92

0' 150 300 450

MONITORING WELL
MW-4R
TOP OF WELL CASING EL.= 992.32
WELL TOTAL DEPTH: 104.20'
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-5
TOP OF WELL CASING EL.= 936.84
WELL TOTAL DEPTH: 172.71
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-3
TOP OF WELL CASING EL.= 867.86
WELL TOTAL DEPTH: 41.60
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-1
TOP OF WELL CASING EL.= 830.87
WELL TOTAL DEPTH: 45.00
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-1A
TOP OF WELL CASING EL.= 805.13
WELL TOTAL DEPTH: 38.00
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-2
TOP OF WELL CASING EL.= 825.20
WELL TOTAL DEPTH: 43.10
WELL CASING INSIDE DIA.: 2"

PROPERTY LINE

PHASE II/IV

PHASE I

REV.	DATE	DRWN	CHKD	REVISION

PHASE I/II/IV 1ST SEMI-ANNUAL 2019
POTENTIOMETRIC CONTOUR MAP

MATLOCK BEND LANDFILL
LOUDON COUNTY, TENNESSEE

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

SCALE:	1"=300'
DATE:	7/12/19
DRAWN BY:	WM
CHECKED BY:	RH
APPROVED BY:	
FILE:	1910-S1
JOB NO:	200-1910

S-1
sheet number

APPENDIX F

LEACHATE FIELD LOG

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Waste Services
Site	Loudon County (Matlock Bend) Landfills
Sample ID	Leachate
Date	5/29/2019
Sample Method	Direct Grab
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)
1540	-	-	7.61	13928	30.9	60

Comments
Light brown, strong odor

Field Tech: N. Walker

LEACHATE RESULTS

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

June 19, 2019

Robert Hudson
Santek Waste Services, LLC.
650 25th Street NW
Cleveland TN 37311

RE: Loudon Co (Matlock Bend) Landfill

Dear Robert Hudson: Order No: 1905T33

Analytical Environmental Services, Inc. received 1 samples on 5/30/2019 4:17:00 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 07/01/18-06/30/19.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/18-06/30/19 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 11/01/19.
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

Revision 6/19/2019

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: 1905733

Date: 5/29/19 Page 1 of 1

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

#	SAMPLE ID	SAMPLED: DATE	SAMPLED: TIME	GRAB	COMPOSITE	MATRIX (see codes)	TN App I VOC (8260)	TN App I VOC (8021)	TN App I Metals (incl. Hg) + Fe, Mg, K, Na	Diss. Mn	COD, NH_3	TDS	F, Cl, NO_3, SO_4	CN	TOC	TN App I NO_2				Number of Containers
							PRESERVATION (see codes)													
							H+I	I	N	I	S+I	I	I	NaOH	S+I					
1	Leachate	5/29/19	1540	X		WW	2	2	1	1	1	1	1	1	2					12
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				

Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.

REMARKS

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1.	5/30 1617	1.	5-30-19 1617
2.		2.	
3.		3.	

SPECIAL INSTRUCTIONS/COMMENTS:

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

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

RECEIPT
Total # of Containers: 12

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

Client: Santek Waste Services, LLC.
Project: Loudon Co (Matlock Bend) Landfill
Lab ID: 1905T33

Case Narrative

Sample Receiving Nonconformance:

1905T33-001C, -001E and -001H as received did not meet specified pH range for the requested test methods of <2 for 6020//7470 and >12 for 9014. The laboratory attempted to adjust pH at receipt using the maximum allowable amount of preservative however, the correct pH was not obtained. The laboratory proceeded with analysis per client project history.

Ion Scan Analysis by Method EPA 300.0:

Due to sample matrix, sample 1905T33-001 required dilution during analysis resulting in elevated reporting limits.

Mercury Analysis by Method 7470A:

Due to sample matrix, sample 1905T33-001C required dilution during preparation resulting in elevated reporting limits.

Analytical Environmental Services, Inc **Date:** 19-Jun-19

Client:	Santek Waste Services, LLC	**Client Sample ID:**	LEACHATE
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 3:40:00 PM
Lab ID:	1905T33-001	**Matrix:**	Waste Water

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	1030	25.0		mg/L	R399566	25	06/04/2019 10:25	SK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	125	1.00		mg/L	279969	10	06/05/2019 21:19	KP
Iron	6.16	0.100		mg/L	279969	1	06/04/2019 21:29	KP
Magnesium	93.8	1.00		mg/L	279969	10	06/05/2019 21:19	KP
Potassium	590	10.0		mg/L	279969	100	06/05/2019 21:41	KP
Sodium	1390	50.0		mg/L	279969	100	06/06/2019 19:38	KP
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	5200	100		mg/L	279752	1	06/03/2019 10:00	NN
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	1250	20.0		mg/L	279991	100	06/03/2019 13:07	MP
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)			
1,2-Dibromo-3-chloropropane	BRL	0.041		ug/L	279982	1	06/03/2019 18:22	HB
1,2-Dibromoethane	BRL	0.020		ug/L	279982	1	06/03/2019 18:22	HB
Surr: 4-Bromofluorobenzene	110	72.9-137		%REC	279982	1	06/03/2019 18:22	HB
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.0160		mg/L	280038	1	06/04/2019 23:02	EH
Inorganic Anions by IC EPA 300.0								
Chloride	1360	50.0		mg/L	R399532	50	05/30/2019 20:17	BC
Fluoride	BRL	2.00		mg/L	R399532	10	05/30/2019 22:57	BC
Nitrogen, Nitrate (As N)	BRL	2.50		mg/L	R399532	10	05/30/2019 22:57	BC
Sulfate	BRL	10.0		mg/L	R399532	10	05/30/2019 22:57	BC
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	1.04	0.0100		mg/L	279861	10	06/03/2019 19:05	JW
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	279907	1	05/31/2019 15:40	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	2140	100		mg/L	R399470	10	06/03/2019 12:00	BK
APPENDIX I VOLATILE ORGANICS SW8260D					(SW5030B)			
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
1,1,1-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC.	**Client Sample ID:**	LEACHATE
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 3:40:00 PM
Lab ID:	1905T33-001	**Matrix:**	Waste Water

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS	**SW8260D**			**(SW5030B)**				
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
1,1,2-Trichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
1,1-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
1,1-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
1,2,3-Trichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
1,2-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
1,2-Dichloroethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
1,2-Dichloropropane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
1,4-Dichlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
2-Butanone	BRL	50		ug/L	279998	1	05/31/2019 13:42	JB
2-Hexanone	BRL	10		ug/L	279998	1	05/31/2019 13:42	JB
4-Methyl-2-pentanone	BRL	10		ug/L	279998	1	05/31/2019 13:42	JB
Acetone	BRL	50		ug/L	279998	1	05/31/2019 13:42	JB
Acrylonitrile	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Benzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Bromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Bromodichloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Bromoform	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Bromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Carbon disulfide	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Carbon tetrachloride	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Chlorobenzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Chloroethane	BRL	10		ug/L	279998	1	05/31/2019 13:42	JB
Chloroform	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Chloromethane	BRL	10		ug/L	279998	1	05/31/2019 13:42	JB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Dibromochloromethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Dibromomethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Ethylbenzene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Iodomethane	BRL	10		ug/L	279998	1	05/31/2019 13:42	JB
m,p-Xylene	16	10		ug/L	279998	1	05/31/2019 13:42	JB
Methylene chloride	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
o-Xylene	BRL	10		ug/L	279998	1	05/31/2019 13:42	JB
Styrene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Tetrachloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Toluene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	279998	1	05/31/2019 13:42	JB
Trichloroethene	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB

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:** 19-Jun-19

Client:	Santek Waste Services, LLC.	**Client Sample ID:**	LEACHATE
Project Name:	Loudon Co (Matlock Bend) Landfill	**Collection Date:**	5/29/2019 3:40:00 PM
Lab ID:	1905T33-001	**Matrix:**	Waste Water

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260D				**(SW5030B)**				
Trichlorofluoromethane	BRL	5.0		ug/L	279998	1	05/31/2019 13:42	JB
Vinyl acetate	BRL	10		ug/L	279998	1	05/31/2019 13:42	JB
Vinyl chloride	BRL	2.0		ug/L	279998	1	05/31/2019 13:42	JB
Surr: 4-Bromofluorobenzene	88.5	64-125		%REC	279998	1	05/31/2019 13:42	JB
Surr: Dibromofluoromethane	99.3	76.4-125		%REC	279998	1	05/31/2019 13:42	JB
Surr: Toluene-d8	93.9	78.3-116		%REC	279998	1	05/31/2019 13:42	JB
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	0.00856	0.00600		mg/L	279969	1	06/04/2019 21:29	KP
Arsenic	0.105	0.0100		mg/L	279969	1	06/04/2019 21:29	KP
Barium	0.711	0.0200		mg/L	279969	1	06/04/2019 21:29	KP
Beryllium	BRL	0.00400		mg/L	279969	1	06/04/2019 21:29	KP
Cadmium	BRL	0.00500		mg/L	279969	1	06/04/2019 21:29	KP
Chromium	0.321	0.0200		mg/L	279969	1	06/04/2019 21:29	KP
Cobalt	0.0997	0.0500		mg/L	279969	1	06/04/2019 21:29	KP
Copper	0.0249	0.0200		mg/L	279969	1	06/04/2019 21:29	KP
Lead	0.0182	0.0100		mg/L	279969	1	06/04/2019 21:29	KP
Nickel	0.293	0.0400		mg/L	279969	1	06/04/2019 21:29	KP
Selenium	BRL	0.0500		mg/L	279969	1	06/04/2019 21:29	KP
Silver	BRL	0.00500		mg/L	279969	1	06/04/2019 21:29	KP
Thallium	BRL	0.00200		mg/L	279969	1	06/04/2019 21:29	KP
Vanadium	0.0919	0.0500		mg/L	279969	1	06/04/2019 21:29	KP
Zinc	0.301	0.0200		mg/L	279969	1	06/04/2019 21:29	KP

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

Clear Save as

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Santek Waste Services, LLC.** AES Work Order Number: **1905T33**

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 3.3 °C Cooler 2 Temperature _____ °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). MJ 5/30/19

		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). HB 5/30/19

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). HB 5/30/19

Locked

Analytical Environmental Services, Inc

Date: 7-Jun-19

Client: Santek Waste Services, LLC.
Project Name: Loudon Co (Matlock Bend) Landfill
Lab Order: 1905T33

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1905T33-001A	LEACHATE	5/29/2019 3:40:00PM	Waste Water	APPENDIX I VOLATILE ORGANICS		5/31/2019 8:20:00 AM	05/31/2019
1905T33-001B	LEACHATE	5/29/2019 3:40:00PM	Waste Water	MICRO-EXTRACTABLE VOCs		6/3/2019 10:22:02 AM	06/03/2019
1905T33-001C	LEACHATE	5/29/2019 3:40:00PM	Waste Water	APPENDIX I METALS		6/3/2019 1:36:00 PM	06/04/2019
1905T33-001C	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Total Metals by ICP/MS		6/3/2019 1:36:00 PM	06/04/2019
1905T33-001C	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Total Metals by ICP/MS		6/3/2019 1:36:00 PM	06/05/2019
1905T33-001C	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Total Metals by ICP/MS		6/3/2019 1:36:00 PM	06/06/2019
1905T33-001C	LEACHATE	5/29/2019 3:40:00PM	Waste Water	TOTAL MERCURY		6/4/2019 6:00:00 PM	06/04/2019
1905T33-001D	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Dissolved Metals by ICP/MS		5/31/2019 1:28:00 PM	06/03/2019
1905T33-001E	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Nitrogen, Ammonia (as N)		6/3/2019 10:30:00 AM	06/03/2019
1905T33-001E	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Chemical Oxygen Demand (COD)			06/03/2019
1905T33-001F	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Residue, Dissolved (TDS) by SM2540C		6/3/2019 8:30:00 AM	06/03/2019
1905T33-001G	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Inorganic Anions by IC			05/30/2019
1905T33-001H	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Cyanide		5/31/2019 11:20:00 AM	05/31/2019
1905T33-001I	LEACHATE	5/29/2019 3:40:00PM	Waste Water	Total Organic Carbon by SM5310B			06/04/2019

AES, Inc.
3080 Presidential Drive
Atlanta GA 30340

pH Adjustment Sheet

AES Sample ID number	Test Requested	pH as Received	Required pH	Preservative Required	Lot # of Preservative	Amount Added mL or Pellets*	Final pH	Tech's Initials	Date	Time
1905T33-001C	6020; 7470	7	1	HNO_3	MET 838 90	0.5 mL Pellets	6	HB	5/30/19	1941
1905T33-001C	6020; 7470	6	1	HNO_3	MET 838 90	0.5 mL Pellets	6	HB	5/30/19	1941
1905T33-001C	6020; 7470	6	1	HNO_3	MET 838 90	0.5 mL Pellets	6	HB	5/30/19	1941
1905T33-001E	410.4; 350.1	7	1	H_2SO_4	MET 838 80	1.0 mL Pellets	6	HB	5/30/19	1941
1905T33-001E	410.4; 350.1	6	1	H_2SO_4	MET 838 80	1.0 mL Pellets	6	HB	5/30/19	1941
1905T33-001E	410.4; 350.1	6	1	H_2SO_4	MET 838 80	1.0 mL Pellets	5	HB	5/30/19	1941
1905T33-001H	9014	10	12	NaOH	26394	mL 10 Pellets	10	HB	5/30/19	1941
1905T33-001H	9014	10	12	NaOH	26394	mL 10 Pellets	11	HB	5/30/19	1941
1905T33-001H	9014	11	12	NaOH	26394	mL 10 Pellets	11	HB	5/30/19	1941
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				

*** Number of Pellets when adding NAOII**

DWM 8/22/2014 10:01 AM

Client: Santek Waste Services, LLC.
Project Name: Loudon Co (Matlock Bend) Landfill
Workorder: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279752

Sample ID: **MB-279752**	Client ID:				Units: **mg/L**		Prep Date: **06/03/2019**		Run No: **399479**
SampleType: **MBLK**	TestCode: **Residue, Dissolved (TDS) by SM2540C**				BatchID: **279752**		Analysis Date: **06/03/2019**		Seq No: **8958289**
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: **1905T50-003BDUP**	Client ID:				Units: **mg/L**		Prep Date: **06/03/2019**		Run No: **399479**
SampleType: **DUP**	TestCode: **Residue, Dissolved (TDS) by SM2540C**				BatchID: **279752**		Analysis Date: **06/03/2019**		Seq No: **8958300**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Residue, Dissolved (TDS)	20.00	10						0	0	5	

Sample ID: **1905U93-001BDUP**	Client ID:				Units: **mg/L**		Prep Date: **06/03/2019**		Run No: **399479**
SampleType: **DUP**	TestCode: **Residue, Dissolved (TDS) by SM2540C**				BatchID: **279752**		Analysis Date: **06/03/2019**		Seq No: **8958089**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Residue, Dissolved (TDS)	44.00	10						45.00	2.25	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279861

Sample ID: **MB-279861**	Client ID:			Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399493**
SampleType: **MBLK**	TestCode: **Dissolved Metals by ICP/MS SW6020B**			BatchID: **279861**	Analysis Date: **06/01/2019**	Seq No: **8956377**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	BRL	0.00500									

Sample ID: **LCS-279861**	Client ID:			Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399493**
SampleType: **LCS**	TestCode: **Dissolved Metals by ICP/MS SW6020B**			BatchID: **279861**	Analysis Date: **06/01/2019**	Seq No: **8956378**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	0.09139	0.00500	0.1000		91.4	80	120				

Sample ID: **1905R75-001DMS**	Client ID:			Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399493**
SampleType: **MS**	TestCode: **Dissolved Metals by ICP/MS SW6020B**			BatchID: **279861**	Analysis Date: **06/01/2019**	Seq No: **8956380**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	0.1094	0.00500	0.1000	0.009865	99.5	75	125				

Sample ID: **1905R75-001DMSD**	Client ID:			Units: **mg/L**	Prep Date: **05/31/2019**	Run No: **399493**
SampleType: **MSD**	TestCode: **Dissolved Metals by ICP/MS SW6020B**			BatchID: **279861**	Analysis Date: **06/01/2019**	Seq No: **8956381**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	0.1035	0.00500	0.1000	0.009865	93.7	75	125	0.1094	5.49	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279907

Sample ID: **MB-279907**	Client ID:				Units: **mg/L**		Prep Date: **05/31/2019**		Run No: **399444**
SampleType: **MBLK**	TestCode: **Cyanide SW9014**				BatchID: **279907**		Analysis Date: **05/31/2019**		Seq No: **8955062**
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-279907**	Client ID:				Units: **mg/L**		Prep Date: **05/31/2019**		Run No: **399444**
SampleType: **LCS**	TestCode: **Cyanide SW9014**				BatchID: **279907**		Analysis Date: **05/31/2019**		Seq No: **8955063**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.2730	0.010	0.2500		109	85	115				

Sample ID: **1905N04-002DMS**	Client ID:				Units: **mg/L**		Prep Date: **05/31/2019**		Run No: **399444**
SampleType: **MS**	TestCode: **Cyanide SW9014**				BatchID: **279907**		Analysis Date: **05/31/2019**		Seq No: **8955067**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.2710	0.010	0.2500		108	70	130				

Sample ID: **1905N04-002DMSD**	Client ID:				Units: **mg/L**		Prep Date: **05/31/2019**		Run No: **399444**
SampleType: **MSD**	TestCode: **Cyanide SW9014**				BatchID: **279907**		Analysis Date: **05/31/2019**		Seq No: **8955068**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.2530	0.010	0.2500		101	70	130	0.2710	6.87	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **MB-279969** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399717**
SampleType: **MBLK** TestCode: **Total Metals by ICP/MS SW6020B** BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961923**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	BRL	0.100									
Iron	BRL	0.100									
Magnesium	BRL	0.100									
Potassium	BRL	0.100									

Sample ID: **MB-279969** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399718**
SampleType: **MBLK** TestCode: **APPENDIX I METALS SW6020B** BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961972**

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	0.0200									
Beryllium	BRL	0.00100									
Cadmium	BRL	0.00125									
Chromium	BRL	0.0200									
Cobalt	BRL	0.00500									
Copper	BRL	0.00500									
Lead	BRL	0.00375									
Nickel	BRL	0.0250									
Selenium	BRL	0.0125									
Silver	BRL	0.00250									
Thallium	BRL	0.000500									
Vanadium	BRL	0.00500									
Zinc	BRL	0.0100									

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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **MB-279969**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399717**
SampleType: **MBLK**	TestCode: **Total Metals by ICP/MS** **SW6020B**			BatchID: **279969**	Analysis Date: **06/05/2019**	Seq No: **8965525**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sodium	BRL	0.500									

Sample ID: **LCS-279969**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399717**
SampleType: **LCS**	TestCode: **Total Metals by ICP/MS** **SW6020B**			BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961924**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	1.068	0.100	1.000	0.03250	104	80	120				
Iron	1.084	0.100	1.000		108	80	120				
Magnesium	1.077	0.100	1.000		108	80	120				
Potassium	1.116	0.100	1.000		112	80	120				

Sample ID: **LCS-279969**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399718**
SampleType: **LCS**	TestCode: **APPENDIX I METALS** **SW6020B**			BatchID: **279969**	Analysis Date: **06/04/2019**	Seq No: **8961973**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1070	0.00600	0.1000		107	80	120				
Arsenic	0.1041	0.0100	0.1000		104	80	120				
Barium	0.1064	0.0200	0.1000		106	80	120				
Beryllium	0.09929	0.00400	0.1000		99.3	80	120				
Cadmium	0.1013	0.00500	0.1000		101	80	120				
Chromium	0.1079	0.0200	0.1000		108	80	120				
Cobalt	0.1086	0.0500	0.1000		109	80	120				
Copper	0.1094	0.0200	0.1000		109	80	120				
Lead	0.1051	0.0100	0.1000		105	80	120				
Nickel	0.1071	0.0400	0.1000		107	80	120				
Selenium	0.1061	0.0500	0.1000		106	80	120				
Silver	0.009844	0.00500	0.0100		98.4	80	120				
Thallium	0.09114	0.00200	0.1000		91.1	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **LCS-279969** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399718**
SampleType: **LCS** TestCode: **APPENDIX I METALS** **SW6020B** BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961973**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Vanadium	0.1078	0.0500	0.1000		108	80	120				
Zinc	0.1064	0.0200	0.1000	0.002244	104	80	120				

Sample ID: **LCS-279969** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399717**
SampleType: **LCS** TestCode: **Total Metals by ICP/MS** **SW6020B** BatchID: **279969** Analysis Date: **06/06/2019** Seq No: **8966563**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sodium	1.176	0.500	1.000	0.1799	99.6	80	120				

Sample ID: **1905T03-004DMS** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399717**
SampleType: **MS** TestCode: **Total Metals by ICP/MS** **SW6020B** BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961926**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	2.096	0.100	1.000	0.9785	112	75	125				
Iron	1.058	0.100	1.000		106	75	125				
Magnesium	1.604	0.100	1.000	0.5108	109	75	125				
Potassium	1.671	0.100	1.000	0.6011	107	75	125				
Sodium	2.426	0.500	1.000	1.427	99.8	75	125				

Sample ID: **1905T03-004DMS** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399718**
SampleType: **MS** TestCode: **APPENDIX I METALS** **SW6020B** BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961975**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1006	0.00600	0.1000		101	75	125				
Arsenic	0.1020	0.0100	0.1000		102	75	125				
Barium	0.1137	0.0200	0.1000	0.007333	106	75	125				
Beryllium	0.09988	0.00400	0.1000		99.9	75	125				
Cadmium	0.09935	0.00500	0.1000		99.3	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **1905T03-004DMS** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399718**
SampleType: **MS** TestCode: **APPENDIX I METALS** **SW6020B** BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961975**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chromium	0.1071	0.0200	0.1000		107	75	125				
Cobalt	0.1068	0.0500	0.1000		107	75	125				
Copper	0.1070	0.0200	0.1000		107	75	125				
Lead	0.1028	0.0100	0.1000		103	75	125				
Nickel	0.1062	0.0400	0.1000	0.0003598	106	75	125				
Selenium	0.09970	0.0500	0.1000		99.7	75	125				
Silver	0.009765	0.00500	0.0100		97.7	75	125				
Thallium	0.09614	0.00200	0.1000	0.003623	92.5	75	125				
Vanadium	0.1068	0.0500	0.1000		107	75	125				
Zinc	0.1069	0.0200	0.1000	0.004479	102	75	125				

Sample ID: **1905T03-004DMSD** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399717**
SampleType: **MSD** TestCode: **Total Metals by ICP/MS** **SW6020B** BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961927**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Calcium	1.971	0.100	1.000	0.9785	99.2	75	125	2.096	6.15	20	
Iron	1.086	0.100	1.000		109	75	125	1.058	2.57	20	
Magnesium	1.575	0.100	1.000	0.5108	106	75	125	1.604	1.83	20	
Potassium	1.644	0.100	1.000	0.6011	104	75	125	1.671	1.59	20	
Sodium	2.340	0.500	1.000	1.427	91.3	75	125	2.426	3.60	20	

Sample ID: **1905T03-004DMSD** Client ID: Units: **mg/L** Prep Date: **06/03/2019** Run No: **399718**
SampleType: **MSD** TestCode: **APPENDIX I METALS** **SW6020B** BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961977**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1023	0.00600	0.1000		102	75	125	0.1006	1.66	20	
Arsenic	0.09998	0.0100	0.1000		100.0	75	125	0.1020	2.00	20	
Barium	0.1134	0.0200	0.1000	0.007333	106	75	125	0.1137	0.197	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279969

Sample ID: **1905T03-004DMSD** Client ID:
SampleType: **MSD** TestCode: **APPENDIX I METALS** **SW6020B**
Units: **mg/L** Prep Date: **06/03/2019** Run No: **399718**
BatchID: **279969** Analysis Date: **06/04/2019** Seq No: **8961977**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Beryllium	0.09899	0.00400	0.1000		99.0	75	125	0.09988	0.896	20	
Cadmium	0.09973	0.00500	0.1000		99.7	75	125	0.09935	0.389	20	
Chromium	0.1070	0.0200	0.1000		107	75	125	0.1071	0.151	20	
Cobalt	0.1080	0.0500	0.1000		108	75	125	0.1068	1.10	20	
Copper	0.1089	0.0200	0.1000		109	75	125	0.1070	1.75	20	
Lead	0.1032	0.0100	0.1000		103	75	125	0.1028	0.349	20	
Nickel	0.1077	0.0400	0.1000	0.0003598	107	75	125	0.1062	1.42	20	
Selenium	0.1019	0.0500	0.1000		102	75	125	0.09970	2.15	20	
Silver	0.01014	0.00500	0.0100		101	75	125	0.009765	3.72	20	
Thallium	0.09851	0.00200	0.1000	0.003623	94.9	75	125	0.09614	2.44	20	
Vanadium	0.1074	0.0500	0.1000		107	75	125	0.1068	0.549	20	
Zinc	0.1074	0.0200	0.1000	0.004479	103	75	125	0.1069	0.434	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279982

Sample ID: **MB-279982** Client ID: Units: **ug/L** Prep Date: **06/03/2019** Run No: **399638**
SampleType: **MBLK** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **279982** Analysis Date: **06/03/2019** Seq No: **8960279**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	BRL	0.040									
1,2-Dibromoethane	BRL	0.020									
Surr: 4-Bromofluorobenzene	5.677	0	5.000		114	72.9	137				

Sample ID: **LCS-279982** Client ID: Units: **ug/L** Prep Date: **06/03/2019** Run No: **399638**
SampleType: **LCS** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **279982** Analysis Date: **06/03/2019** Seq No: **8960280**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	0.1290	0.040	0.1000		129	60	140				
1,2-Dibromoethane	0.1240	0.020	0.1000		124	60	140				
Surr: 4-Bromofluorobenzene	5.503	0	5.000		110	72.9	137				

Sample ID: **LCSD-279982** Client ID: Units: **ug/L** Prep Date: **06/03/2019** Run No: **399638**
SampleType: **LCSD** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **279982** Analysis Date: **06/03/2019** Seq No: **8960281**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	0.1320	0.040	0.1000		132	60	140	0.1290	2.30	14.6	
1,2-Dibromoethane	0.1290	0.020	0.1000		129	60	140	0.1240	3.95	15.6	
Surr: 4-Bromofluorobenzene	5.537	0	5.000		111	72.9	137	5.503	0	0	

Sample ID: **1905T27-003AMS** Client ID: Units: **ug/L** Prep Date: **06/03/2019** Run No: **399638**
SampleType: **MS** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **279982** Analysis Date: **06/03/2019** Seq No: **8960284**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	0.1364	0.040	0.1010		135	60.8	136				
1,2-Dibromoethane	0.1273	0.020	0.1010		126	70	131				
Surr: 4-Bromofluorobenzene	6.196	0	5.050		123	72.9	137				

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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279982

Sample ID: **1905T34-001BDUP** Client ID: Units: **ug/L** Prep Date: **06/03/2019** Run No: **399638**
SampleType: **DUP** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **279982** Analysis Date: **06/03/2019** Seq No: **8960291**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	BRL	0.040						0	0	30	
1,2-Dibromoethane	BRL	0.020						0	0	30	
Surr: 4-Bromofluorobenzene	5.490	0						9.320	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279991

Sample ID: **MB-279991**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **MBLK**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957305**

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-279991**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **LCS**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957306**

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)	5.180	0.200	5.000		104	90	110				

Sample ID: **1905S97-006CMS**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **MS**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957334**

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)	5.830	0.200	5.000		117	90	110				S

Sample ID: **1905S97-007CMS**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **MS**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957337**

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)	5.760	0.200	5.000		115	90	110				S

Sample ID: **1905S97-006CMSD**	Client ID:			Units: **mg/L**	Prep Date: **06/03/2019**	Run No: **399526**
SampleType: **MSD**	TestCode: **Nitrogen, Ammonia (as N)** **E350.1**			BatchID: **279991**	Analysis Date: **06/03/2019**	Seq No: **8957336**

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)	5.750	0.200	5.000		115	90	110	5.830	1.38	30	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **MB-279998** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399371**
SampleType: **MBLK** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **05/31/2019** Seq No: **8957025**

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-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									
Chloroform	BRL	5.0									
Chloromethane	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **MB-279998** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399371**
SampleType: **MBLK** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **05/31/2019** Seq No: **8957025**

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	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	42.42	0	50.00		84.8	64	125				
Surr: Dibromofluoromethane	47.27	0	50.00		94.5	76.4	125				
Surr: Toluene-d8	46.27	0	50.00		92.5	78.3	116				

Sample ID: **LCS-279998** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399371**
SampleType: **LCS** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **05/31/2019** Seq No: **8957027**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	42.56	5.0	50.00		85.1	69.2	141				

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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **LCS-279998** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399371**
SampleType: **LCS** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **05/31/2019** Seq No: **8957027**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	47.81	5.0	50.00		95.6	72.3	126				
Chlorobenzene	43.45	5.0	50.00		86.9	73.3	135				
Toluene	46.96	5.0	50.00		93.9	70.5	128				
Trichloroethene	43.86	5.0	50.00		87.7	70.3	133				
Surr: 4-Bromofluorobenzene	47.00	0	50.00		94.0	64	125				
Surr: Dibromofluoromethane	47.75	0	50.00		95.5	76.4	125				
Surr: Toluene-d8	48.70	0	50.00		97.4	78.3	116				

Sample ID: **1905T35-003AMS** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399675**
SampleType: **MS** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **06/04/2019** Seq No: **8961194**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	48.25	5.0	50.00		96.5	63.8	146				
Benzene	50.28	5.0	50.00		101	70.2	137				
Chlorobenzene	49.78	5.0	50.00		99.6	72.7	141				
Toluene	48.51	5.0	50.00		97.0	67	141				
Trichloroethene	51.43	5.0	50.00		103	69.3	141				
Surr: 4-Bromofluorobenzene	42.22	0	50.00		84.4	64	125				
Surr: Dibromofluoromethane	46.40	0	50.00		92.8	76.4	125				
Surr: Toluene-d8	44.74	0	50.00		89.5	78.3	116				

Sample ID: **1905T35-001ADUP** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399675**
SampleType: **DUP** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **06/04/2019** Seq No: **8961193**

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						0	0	20	
1,1,1-Trichloroethane	BRL	5.0						0	0	20	
1,1,2,2-Tetrachloroethane	BRL	5.0						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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **1905T35-001ADUP** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399675**
SampleType: **DUP** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **06/04/2019** Seq No: **8961193**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	BRL	5.0						0	0	20	
1,1-Dichloroethane	BRL	5.0						0	0	20	
1,1-Dichloroethene	BRL	5.0						0	0	20	
1,2,3-Trichloropropane	BRL	5.0						0	0	20	
1,2-Dichlorobenzene	BRL	5.0						0	0	20	
1,2-Dichloroethane	BRL	5.0						0	0	20	
1,2-Dichloropropane	BRL	5.0						0	0	20	
1,4-Dichlorobenzene	BRL	5.0						0	0	20	
2-Butanone	BRL	50						0	0	20	
2-Hexanone	BRL	10						0	0	20	
4-Methyl-2-pentanone	BRL	10						0	0	20	
Acetone	BRL	50						5.070	0	20	
Acrylonitrile	BRL	5.0						0	0	20	
Benzene	BRL	5.0						0	0	20	
Bromochloromethane	BRL	5.0						0	0	20	
Bromodichloromethane	BRL	5.0						0	0	20	
Bromoform	BRL	5.0						0	0	20	
Bromomethane	BRL	5.0						0	0	20	
Carbon disulfide	BRL	5.0						0	0	20	
Carbon tetrachloride	BRL	5.0						0	0	20	
Chlorobenzene	BRL	5.0						0	0	20	
Chloroethane	BRL	10						0	0	20	
Chloroform	BRL	5.0						0	0	20	
Chloromethane	BRL	10						0	0	20	
cis-1,2-Dichloroethene	BRL	5.0						0	0	20	
cis-1,3-Dichloropropene	BRL	5.0						0	0	20	
Dibromochloromethane	BRL	5.0						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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 279998

Sample ID: **1905T35-001ADUP** Client ID: Units: **ug/L** Prep Date: **05/31/2019** Run No: **399675**
SampleType: **DUP** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260D** BatchID: **279998** Analysis Date: **06/04/2019** Seq No: **8961193**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Dibromomethane	BRL	5.0						0	0	20	
Ethylbenzene	BRL	5.0						0	0	20	
Iodomethane	BRL	10						0	0	20	
m,p-Xylene	BRL	10						0	0	20	
Methylene chloride	BRL	5.0						0	0	20	
o-Xylene	BRL	10						0	0	20	
Styrene	BRL	5.0						0	0	20	
Tetrachloroethene	BRL	5.0						0	0	20	
Toluene	BRL	5.0						0	0	20	
trans-1,2-Dichloroethene	BRL	5.0						0	0	20	
trans-1,3-Dichloropropene	BRL	5.0						0	0	20	
trans-1,4-Dichloro-2-butene	BRL	10						0	0	20	
Trichloroethene	BRL	5.0						0	0	20	
Trichlorofluoromethane	BRL	5.0						0	0	20	
Vinyl acetate	BRL	10						0	0	20	
Vinyl chloride	BRL	2.0						0	0	20	
Surr: 4-Bromofluorobenzene	39.04	0				64	125	42.19	0	0	
Surr: Dibromofluoromethane	45.75	0				76.4	125	48.57	0	0	
Surr: Toluene-d8	43.68	0				78.3	116	45.86	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: 280038

Sample ID: **MB-280038**	Client ID:				Units: **mg/L**		Prep Date: **06/04/2019**		Run No: **399678**	
SampleType: **MBLK**	TestCode: **Mercury, Total SW7470A**				BatchID: **280038**		Analysis Date: **06/04/2019**		Seq No: **8961208**	
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-280038**	Client ID:				Units: **mg/L**		Prep Date: **06/04/2019**		Run No: **399678**	
SampleType: **LCS**	TestCode: **Mercury, Total SW7470A**				BatchID: **280038**		Analysis Date: **06/04/2019**		Seq No: **8961210**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	0.003849	0.00020	0.0040		96.2	80	120			

Sample ID: **1905T34-010CMS**	Client ID:				Units: **mg/L**		Prep Date: **06/04/2019**		Run No: **399678**	
SampleType: **MS**	TestCode: **Mercury, Total SW7470A**				BatchID: **280038**		Analysis Date: **06/04/2019**		Seq No: **8961221**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	0.004113	0.00020	0.0040		103	75	125			

Sample ID: **1905T34-010CMSD**	Client ID:				Units: **mg/L**		Prep Date: **06/04/2019**		Run No: **399678**	
SampleType: **MSD**	TestCode: **Mercury, Total SW7470A**				BatchID: **280038**		Analysis Date: **06/04/2019**		Seq No: **8961224**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Mercury	0.004090	0.00020	0.0040		102	75	125	0.004113	0.561	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: R399470

Sample ID: **MB-399470**	Client ID:				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **MBLK**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957050**	
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-399470**	Client ID:				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **LCS**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957052**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	495.8	10.0	500.0		99.2	90	110				

Sample ID: **1905S97-014CMS**	Client ID:				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **MS**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957057**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	376.9	12.5	375.0		101	90	110				

Sample ID: **1905T35-005EMS2**	Client ID:				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **MS**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957075**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	363.0	12.5	375.0	11.20	93.8	90	110				

Sample ID: **1905S97-014CMSD**	Client ID:				Units: **mg/L**	Prep Date:		Run No: **399470**	
SampleType: **MSD**	TestCode: **Chemical Oxygen Demand (COD) E410.4**				BatchID: **R399470**	Analysis Date: **06/03/2019**		Seq No: **8957060**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	376.9	12.5	375.0		101	90	110	376.9	0	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: R399532

Sample ID: **MB-R399532** Client ID: Units: **mg/L** Prep Date: Run No: **399532**
SampleType: **MBLK** TestCode: **Inorganic Anions by IC EPA 300.0** BatchID: **R399532** Analysis Date: **05/30/2019** Seq No: **8957405**

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-R399532** Client ID: Units: **mg/L** Prep Date: Run No: **399532**
SampleType: **LCS** TestCode: **Inorganic Anions by IC EPA 300.0** BatchID: **R399532** Analysis Date: **05/30/2019** Seq No: **8957403**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	9.868	1.00	10.00		98.7	90	110				
Fluoride	5.150	0.200	5.000		103	90	110				
Nitrogen, Nitrate (As N)	5.127	0.250	5.000	0.05432	101	90	110				
Sulfate	24.24	1.00	25.00		97.0	90	110				

Sample ID: **1905R58-001AMS** Client ID: Units: **mg/L** Prep Date: Run No: **399532**
SampleType: **MS** TestCode: **Inorganic Anions by IC EPA 300.0** BatchID: **R399532** Analysis Date: **05/30/2019** Seq No: **8957410**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	933.7	50.0	500.0	480.0	90.7	90	110				
Fluoride	229.1	10.0	250.0	5.241	89.6	90	110				S
Nitrogen, Nitrate (As N)	261.5	12.5	250.0		105	90	110				
Sulfate	1245	50.0	1250		99.6	90	110				

Sample ID: **1905T01-002BMS** Client ID: Units: **mg/L** Prep Date: Run No: **399532**
SampleType: **MS** TestCode: **Inorganic Anions by IC EPA 300.0** BatchID: **R399532** Analysis Date: **05/30/2019** Seq No: **8957424**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	129.4	10.0	100.0	38.49	90.9	90	110				

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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: R399532

Sample ID: **1905T01-002BMS**	Client ID:			Units: **mg/L**	Prep Date:	Run No: **399532**
SampleType: **MS**	TestCode: **Inorganic Anions by IC** **EPA 300.0**			BatchID: **R399532**	Analysis Date: **05/30/2019**	Seq No: **8957424**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	46.40	2.00	50.00		92.8	90	110				
Nitrogen, Nitrate (As N)	56.35	2.50	50.00	5.257	102	90	110				
Sulfate	275.7	10.0	250.0	27.83	99.2	90	110				

Sample ID: **1905R58-001AMSD**	Client ID:			Units: **mg/L**	Prep Date:	Run No: **399532**
SampleType: **MSD**	TestCode: **Inorganic Anions by IC** **EPA 300.0**			BatchID: **R399532**	Analysis Date: **05/30/2019**	Seq No: **8957411**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	941.4	50.0	500.0	480.0	92.3	90	110	933.7	0.815	20	
Fluoride	227.8	10.0	250.0	5.241	89.0	90	110	229.1	0.571	20	S
Nitrogen, Nitrate (As N)	263.0	12.5	250.0		105	90	110	261.5	0.583	20	
Sulfate	1216	50.0	1250		97.3	90	110	1245	2.31	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: 1905T33

ANALYTICAL QC SUMMARY REPORT

BatchID: R399566

Sample ID: **MB-R399566**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **399566**	
SampleType: **MBLK**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R399566**		Analysis Date: **06/03/2019**		Seq No: **8958396**	
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-R399566**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **399566**	
SampleType: **LCS**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R399566**		Analysis Date: **06/03/2019**		Seq No: **8958393**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	26.00	1.00	25.00		104	90	110			

Sample ID: **1905R20-001AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **399566**	
SampleType: **MS**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R399566**		Analysis Date: **06/03/2019**		Seq No: **8958401**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	24.92	1.00	25.00		99.7	80	120			

Sample ID: **1905R20-001AMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **399566**	
SampleType: **MSD**	TestCode: **Total Organic Carbon (TOC) by SM5310B**				BatchID: **R399566**		Analysis Date: **06/03/2019**		Seq No: **8958402**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	25.53	1.00	25.00		102	80	120	24.92	2.42	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		

LEACHATE CONTROL CHART

LOUDON COUNTY
LEACHATE

INORGANIC	APPENDIX I LIMITS	4-17-02	4-29-04	4-11-05	3-27-06	3-22-07	3-27-08	4-2-09	4-7-10	1-5-11	3-15-12	3-28-13	3-25-14	4-1-15	5-24-16	5-25-17	5-23-18	5-29-19	Leachate AVG
Antimony	6	6	6	6	6	6	6	6	60	6	6	8.75	60.00	6	8.23	30.60	10.70	8.56	14.52
Arsenic	50	50	224	168	79.3	50.7	50.0	50.0	500.0	50.0	50.0	69.7	500.0	69.6	116.0	61.3	109.0	105.0	135.45
Barium	2000	2000	2610	2790	2000	2000	2000	2000	20000	2000	2000	2000	2000	2000	687	523	556	711	2816.29
Beryllium	4	4	4	4	4	4	4	4	40	4	4	4	4	4	4	1	1	4	5.76
Cadmium	5	5	5	5	5	5	5	5	50	5	5	5	5	5	5	1.25	1.32	5.00	7.21
Chromium	100	100	106	145	100	100	100	100	1000	100	100	136	1000	230	584	163	296	321	275.35
Cobalt	6**	19.5	36.5	53.0	40.1	30.6	25.5	14.4	1000.0	37.2	10.0	87.1	100.0	82.6	151.0	74.3	97.5	99.7	115.24
Copper	800**	10	31.9	14.6	10	10	10	10	1000	10	10	15.9	100.0	25.3	88.3	39.6	33.0	24.9	84.91
Flouride*	4	4	4	4	4	4	80	80	40	400	40	40	400	200	200	80	10	2	93.65
Lead	†15	50	57.1	50	50	50	15	15	150	15	15	15	150	30.4	116.0	20.1	27.4	18.2	49.66
Mercury	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0.5	0.5	1.82
Nickel	100	100	100	144	114	100	100	100	1000	100	100	258	1000	240	618	255	327	293	291.12
Selenium	10	10	10	10.5	20.2	12.2	21.3	10.0	100.0	12.8	10.0	14.1	100.0	13.1	69.7	10.0	5.0	50.0	28.17
Silver	50	50	50	50	50	50	50	50	500	50	50	50	500	50	5	2.5	1.0	5.0	91.97
Thallium	2	2	3.5	2	2	10.5	2.0	2.0	20.0	2.0	2.0	2.0	20.0	2.0	2.0	0.5	0.5	2.0	4.53
Vanadium	86**	10	55.4	34.3	14.2	14.2	11.4	10.0	100.0	25.5	10.0	48.5	108.0	101.0	158.0	53.8	5.0	91.9	50.07
Zinc	6000**	44.4	918	209	66.5	32.5	66.8	67.5	420	176	191	1640	922	512	770	206	301	301	402.57

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
† = TREATMENT TECHNIQUE ACTION LEVEL
**EPA REGION 4 SCREENING LEVEL
4/7/10 reporting limits for some constituents are elevated due to a high dilution factor

ORGANIC	4-17-02	4-29-04	4-11-05	3-27-06	3-22-07	3-27-08	4-2-09	4-7-10	1-5-11	3-15-12	3-28-13	3-25-14	4-1-15	5-24-16	5-25-17	5-23-18	5-29-19
Acetone	ND	360	140	25	130	160	230	1300	230	1500	2000	2000	ND	ND	47	49	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	26	10	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	200	1900	420	3200	3500	3800	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	180	110	ND	37	11	ND	20	ND	ND	ND	ND	22	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX G

Cobalt Alternate Source Demonstration

Presented in Table 1 below are the cobalt levels for MW-03 on 5/29/19, the leachate collected on 5/29/19, and the soil samples from Borrow Areas at the Landfill. The results indicate cobalt is naturally occurring in the soils approximately 399 times higher than the groundwater. Furthermore, cobalt is present in the leachate as well. However, the presence of this constituent in the leachate is attributable to the use of soils as daily and intermediate cover. Santek believes this report adequately identifies the source of cobalt being the site's natural soil. Therefore, no additional sampling and analysis is recommended for cobalt in MW-03.

Table 1 – Cobalt Alternate Source Demonstration

Location	Cobalt (ppm)
MW-03 (5/29/19)	0.0117
Leachate (5/29/19)	0.0997
Borrow Area A Sample	6.61
Borrow Area B Sample	1.98
Borrow Area C Sample	5.42
Borrow Area Average	**4.67**

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

December 21, 2016

Robert Hudson
Santek Environmental Inc.
650 25th Street NW
Cleveland TN 37311

TEL: (423) 303-7101
FAX: (423) 479-1952

RE: Loudon (Matlock Bend) LF Borrow Pit

Dear Robert Hudson: Order No: 1612642

Analytical Environmental Services, Inc. received 3 samples on 12/7/2016 10:30:00 AM 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:
-NELAC/Florida State Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, and Drinking Water Microbiology, effective 07/01/16-06/30/17.
-NELAC/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/16-06/30/17.
-NELAC/Texas Certificate No. T104704509-16-6 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 03/01/16-02/28/17.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

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

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1612642

Date: 12/6/16 Page 1 of 1

COMPANY: Santek Waste Services, Inc.	ADDRESS: 650 25th Street NW, Suite 100, Cleveland, TN 37311
PHONE: (423) 303-7101	FAX: (423) 479-1952
SAMPLED BY: R. Hudson	SIGNATURE: Robert Hudson

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Metals by ICP/MS	REMARKS	No # of Containers
1	A-Sample	11/29/16	3:31	X		SO	X		1
2	B-Sample	11/29/16	3:29	X		SO	X		1
3	C-Sample	11/29/16	3:27	X		SO	X		1
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									

ANALYSIS REQUESTED

PRESERVATION (See codes)

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Robert Hudson	12/6/16 11 am	1: Marsha	12/7/16 10:30
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Loudon (Matlock Bend) LF Borrow Pit

PROJECT #: Soil Samples

SITE ADDRESS:

SEND REPORT TO: Robert Hudson

INVOICE TO: (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#:

RECEIPT

Total # of Containers: 3

Turnaround Time Request

- [x] Standard 5 Business Days
- [ ] 2 Business Day Rush
- [ ] Next Business Day Rush
- [ ] Same Day Rush (auth req.)

Other

STATE PROGRAM (if any):

E-mail? [ ] Fax? [ ]

DATA PACKAGE: I [ ] II [ ] III [ ] IV [ ]

SPECIAL INSTRUCTIONS/COMMENTS: See Chris Pafford

SHIPMENT METHOD

OUT / / VIA:

IN / / VIA:

CLIENT (FedEx) UPS MAIL COURIER

GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS 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 W = Water (Blanks) O = Other (specify)

PRESERVATIVE CODES: HCl = Hydrochloric acid + ice I = Ice only N = Nitric acid SUL = Sulfuric acid + ice SMBS = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 21-Dec-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	A-SAMPLE
Project Name:	Loudon (Matlock Bend) LF Borrow Pit	**Collection Date:**	11/29/2016 3:31:00 AM
Lab ID:	1612642-001	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TOTAL MERCURY SW7471B					(SW7471B)			
Mercury	BRL	0.0919		mg/Kg-dry	234606	1	12/12/2016 11:46	JR
Metals by ICP/MS SW6020B					(SW3050B)			
Antimony	241	232		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Arsenic	8490	6970		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Barium	32600	4650		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Beryllium	186	46.5		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Cadmium	BRL	46.5		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Chromium	21700	9300		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Cobalt	6610	2320		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Copper	4760	930		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Lead	14300	465		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Nickel	3260	2320		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Selenium	BRL	2320		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Silver	BRL	46.5		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Thallium	178	46.5		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Vanadium	599	269		ug/Kg-dry	R332264	10	12/15/2016 02:56	JS
Zinc	33100	4650		ug/Kg-dry	234549	10	12/18/2016 04:38	JS
PERCENT MOISTURE D2216								
Percent Moisture	7.01	0		wt%	R332013	1	12/13/2016 10:00	BD

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:** 21-Dec-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	B-SAMPLE
Project Name:	Loudon (Matlock Bend) LF Borrow Pit	**Collection Date:**	11/29/2016 3:29:00 AM
Lab ID:	1612642-002	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TOTAL MERCURY SW7471B					(SW7471B)			
Mercury	BRL	0.0997		mg/Kg-dry	234606	1	12/12/2016 11:48	JR
Metals by ICP/MS SW6020B					(SW3050B)			
Antimony	375	199		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Arsenic	16200	5960		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Barium	18300	3970		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Beryllium	143	39.7		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Cadmium	BRL	39.7		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Chromium	19800	7950		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Cobalt	1980	199		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Copper	8930	795		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Lead	14400	397		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Nickel	4740	1990		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Selenium	BRL	1990		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Silver	BRL	39.7		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Thallium	183	39.7		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Vanadium	1140	266		ug/Kg-dry	R332264	10	12/15/2016 03:02	JS
Zinc	24900	3970		ug/Kg-dry	234549	10	12/18/2016 04:44	JS
PERCENT MOISTURE D2216								
Percent Moisture	6.08	0		wt%	R332013	1	12/13/2016 10:00	BD

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:** 21-Dec-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	C-SAMPLE
Project Name:	Loudon (Matlock Bend) LF Borrow Pit	**Collection Date:**	11/29/2016 3:27:00 AM
Lab ID:	1612642-003	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TOTAL MERCURY SW7471B				(SW7471B)				
Mercury	BRL	0.110		mg/Kg-dry	234606	1	12/12/2016 11:34	JR
Metals by ICP/MS SW6020B				(SW3050B)				
Antimony	420	241		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Arsenic	24000	7230		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Barium	20200	4820		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Beryllium	251	48.2		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Cadmium	BRL	48.2		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Chromium	24800	9650		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Cobalt	5420	2410		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Copper	11500	965		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Lead	17500	482		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Nickel	4820	241		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Selenium	BRL	2410		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Silver	BRL	48.2		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Thallium	175	48.2		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Vanadium	1160	6.02		ug/Kg-dry	R332264	10	12/15/2016 03:08	JS
Zinc	44700	4820		ug/Kg-dry	234549	10	12/18/2016 04:51	JS
PERCENT MOISTURE D2216								
Percent Moisture	16.9	0		wt%	R332013	1	12/13/2016 10:00	BD

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.

Sample/Cooler Receipt Checklist

Client Santek Work Order Number 1612642

Checklist completed by Jessica Mettmann 12/17/16
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°<~~6~~ 10°C)* Yes __ No __ JM 12/16/16

Cooler #1 Ambient Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes ✓ No __ Not Applicable __

Water - VOA vials have zero headspace? No VOA vials submitted ✓ Yes __ No __

Water - pH acceptable upon receipt? Yes __ No __ Not Applicable ✓

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\I\Sample Receipt\My Documents\COCs and pH Adjustment Sheet\Sample_Cooler_Recipt_Checklist_Rev1.rtf