

**MATLOCK BEND LANDFILL – PHASE I & PHASE II/IV UPGRADE
GROUNDWATER MONITORING REPORT
1st SEMI-ANNUAL EVENT - 2015**

SANTEK PROJECT NO. 200-1510.1 & 200-1510.2



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

MAY 2015

May 26, 2015



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

Email: mail@santekenviro.com
Internet: www.santekenviro.com

Mr. Ryan Miller
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 – Phase I
SNL #53-103-0203

Dear Mr. Miller:

Please find enclosed a copy of the groundwater monitoring report generated from the first semi-annual groundwater event of 2015 at the Matlock Bend Landfill – Phase I. 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,

A handwritten signature in blue ink that reads "Will Martin".

Will Martin
Environmental Compliance Coordinator

A handwritten signature in blue ink that reads "Ron E. Vail".

Ron E. Vail, P.E.
V.P. of Engineering
TN. Registration No. 109716

Enclosures

cc: Steve Field, Loudon County Solid Waste Department Chairman
Matt Dillard, Executive V.P. of Operations, Santek
Raymond Givens, Landfill Manager, Santek

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Leachate

- Leachate Field Log
- Leachate Analytical Data
- Leachate Control Chart

MATLOCK BEND LANDFILL
PHASE I

**MATLOCK BEND LANDFILL – PHASE I
GROUNDWATER MONITORING REPORT
1st SEMI-ANNUAL EVENT - 2015**

SANTEK PROJECT NO. 200-1510.1



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

MAY 2015

1.0 INTRODUCTION

In accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rule 1200-1-7-.04(7), Santek Waste Services, Inc. (Santek) is submitting the groundwater monitoring report for the first semi-annual event for 2015 at the Matlock Bend Landfill - Phase I. 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 MW-01, MW-1A, MW-02 and MW-03. Sampling and statistical analyses were performed by Santek. Santek contracted with Analytical Environmental Services, Inc. (AES) to perform all analytical testing.

1.1 SITE INFORMATION

Phase I of 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 23 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 on March 31 and April 1, 2015. Samples were analyzed for Appendix I constituents, as well as the required additional 14 parameters. All samples were submitted to AES for analysis. A duplicate was obtained from MW-1A. Field sampling logs are provided in Appendix A. Analytical results are provided in Appendix B. Data pertaining to leachate monitoring is provided in the appendix labeled Leachate.

3.0 STATISTICAL ANALYSIS

3.1 Statistical Analysis Method

Santek is submitting a control chart approach to satisfy the statistical analysis requirement. Well #03 is the upgradient (background) well. Wells #01, #1A and #02 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 Appendix I limits from pages .01-17, 18 of the regulations are used for additional comparison to indicate potentially elevated concentrations. Control charts are provided in Appendix C.

3.2 Statistical Analysis Summary

MW-01

There were no inorganic or organic constituents detected above the report limits during this event.

MW-1A

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 zinc* is above the report limit and the background wells average. However, it is felt that the result of this constituent is not indicative of a release from the landfill, but rather attributable to local soil constituents.

MW-03

MW-03 is the upgradient (background) well.

4.0 FLOW DIRECTION AND RATES

Geological Summary:

Geologic information of Phase I is based on a Hydrogeologic Evaluation dated January 18, 1984, by G.N. Pruitt (TND SWM). 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.

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 2.07×10^{-3} ft/day at MW-03 to 4.19×10^{-3} ft/day at MW-02. Groundwater flow rate and direction have been determined for each well and are included in Appendix D. A groundwater potentiometric contour map 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.

**Indicates Appendix I limit is not available.*

DATE: 3/31/15

FIELD SAMPLING LOG		WELL NO: MW-01
Location: Loudon County		Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.		Project No:
Purge Start: (Date) 3/31/15 (Time) 2:40 Purge End: (Date) 3/31/15 (Time) 3:05		
Purged by: Robert Hudson		
Depth Measurement Ref. Point* 830.87 ft Well Csg. ID: 2"		

Equipment Used to Measure (Make, Model, etc)

DTW Solinst _____ pH Horiba _____ Cond. Horiba _____ T° Horiba _____.

Measure Well TD: 45.00 (-) Orig. DTW: 5.83 (=) Wtr. Col. Thick: 39.17 .

2"=0.16
 (x) 4"=0.65 Gals./ft. (=) 6.3 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 18.9 Total Purge Gals.
 6"=1.47

GW elev. Ref. 830.87 ft. (-) DTW 5.83 ft. = 825.04 ft.

Purge/Sample Method: Pump (indicate type) _____
 Bailer (indicate type) Poly/Disposable _____

Decon. Method: Distilled Rinse _____

Purge Wtr. Containerized ? (N) Avg Purge Rate: _____ gpm

Weather: Sunny (70's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
2:41		-			16.95	6.05	0.380	1.5		Clear
2:47		6.5			17.67	6.04	0.369	702		Muddy
2:56		12.5			17.71	6.07	0.379	512		Murky
3:05		19.0			17.48	6.05	0.371	648		Murky

Average Linear velocity $v = \frac{Ki}{n}$ Where

K= Hydraulic Conductivity (ft/min)

i = Gradient (ft/ft)

n = effective porosity

$v = [K \text{ _____ ft/min. (x) GW elev. _____ ft. (-) GW elev. _____ ft}] -$ _____ .18 Clay/Silt
 distance _____ ft _____ .20 Silt w/sand

$v = \text{_____ ft./min.} = \text{_____ ft day}$ _____ .25 sand
 _____ .3 sand and gravel

Comments: Metals Sample Turbidity = 24.1 NTU's. VOC's taken on 3/31/15 @ 3:06 p.m. Metals taken on 4/1/15 @ 11:30 a.m. Allowed well to settle overnight.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

DATE: 3/31/15

FIELD SAMPLING LOG		WELL NO: MW-1A	
Location: Loudon County		Site: Matlock Bend	
Client/Operator: Santek Waste Services, Inc.		Project No:	
Purge Start: (Date) 3/31/15 (Time) 3:33 Purge End: (Date) 3/31/15 (Time) 3:50			
Purged by: Robert Hudson			
Depth Measurement Ref. Point* 805.13 ft		Well Csg. ID: 2"	

Equipment Used to Measure (Make, Model, etc)

DTW Solinst _____ pH Horiba _____ Cond. Horiba _____ T° Horiba _____.

Measure Well TD: 38.00 (-) Orig. DTW: 13.03 (=) Wtr. Col. Thick: 24.97 .

2"=0.16
 (x) 4"=0.65 Gals./ft. (=) 4.0 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 12.0 Total Purge Gals.
 6"=1.47

GW elev. Ref. 805.13 ft. (-) DTW 13.03 ft. = 792.10 ft.

Purge/Sample Method: Pump (indicate type) _____
 Bailer (indicate type) Poly/Disposable _____.

Decon. Method: Distilled Rinse _____

Purge Wtr. Containerized ? (N) Avg Purge Rate: _____ gpm

Weather: Partly Cloudy (70's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
3:34		-			17.77	6.05	0.489	3.3		Clear
3:39		4			17.29	6.08	0.542	258		Cloudy
3:44		8			16.99	6.16	0.553	414		Cloudy
3:50		12			16.88	6.15	0.548	369		Cloudy

Average Linear velocity $v = \frac{Ki}{n}$ Where

K= Hydraulic Conductivity (ft/min)
 i = Gradient (ft/ft)
 n = effective porosity

$v = \left[\frac{K \text{ ft/min. (x) GW elev. _____ ft. (-) GW elev. _____ ft} - \text{_____}}{\text{distance _____ ft}} \right]$.18 Clay/Silt
 .20 Silt w/sand
 .25 sand
 .3 sand and gravel

Comments: Metals Sample Turbidity = 47.2 NTU's. VOC's taken on 3/31/15 @ 3:51 p.m. Metals taken on 4/1/15 @ 11:45 a.m. Allowed well to settle overnight. *Duplicate taken here.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

DATE: 3/31/15

FIELD SAMPLING LOG		WELL NO: MW-02	
Location: Loudon County		Site: Matlock Bend	
Client/Operator: Santek Waste Services, Inc.		Project No:	
Purge Start: (Date) 3/31/15 (Time) 1:50		Purge End: (Date) 3/31/15 (Time) 2:05	
Purged by: Robert Hudson			
Depth Measurement Ref. Point* 825.20 ft		Well Csg. ID: 2"	

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba

Measure Well TD: 43.10 (-) Orig. DTW: 11.65 (=) Wtr. Col. Thick: 31.45

(x) 2"=0.16
 4"=0.65 Gals./ft. (=) 5.0 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 15.0 Total Purge Gals.
 6"=1.47

GW elev. Ref. 825.20 ft. (-) DTW 11.65 ft. = 813.55 ft.

Purge/Sample Method: Pump (indicate type) _____
 Bailer (indicate type) Poly/Disposable

Decon. Method: Distilled Rinse

Purge Wtr. Containerized ? (N) Avg Purge Rate: _____ gpm

Weather: Sunny (70's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos mS/cm)	Turbidity (NTU)	Other	Comments
1:50		-			20.52	4.60	0.094	4.3		Clear
1:54		5.0			19.11	4.65	0.059	41.6		Clear
1:59		10.0			18.89	4.66	0.057	831		Muddy
2:04		12.5			18.68	4.71	0.056	940		Muddy, *purged dry

Average Linear velocity $v = \frac{Ki}{n}$ Where

*Purged dry at 12.5 gallons.

K= Hydraulic Conductivity (ft/min)
 i = Gradient (ft/ft)
 n = effective porosity

$v = \left[\frac{K}{\text{distance}} \right] \text{ ft./min.}$ (x) GW elev. _____ ft. (-) GW elev. _____ ft] - _____
 v = _____ ft./min. = _____ ft day

- .18 Clay/Silt
- .20 Silt w/sand
- .25 sand
- .3 sand and gravel

Comments: Metals Sample Turbidity = 17.4 NTU's. VOC's taken on 3/31/15 @ 2:06 p.m. Metals taken on 4/1/15 @ 9:40 a.m. Allowed well to settle overnight.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

DATE: 4/1/15

FIELD SAMPLING LOG		WELL NO: MW-03	
Location: Loudon County		Site: Matlock Bend	
Client/Operator: Santek Waste Services, Inc.		Project No:	
Purge Start: (Date) 4/1/15 (Time) 10:21		Purge End: (Date) 4/1/15 (Time) 10:32	
Purged by: Robert Hudson			
Depth Measurement Ref. Point* 867.86 ft		Well Csg. ID: 2"	

Equipment Used to Measure (Make, Model, etc)

DTW Solinst _____ pH Horiba _____ Cond. Horiba _____ T° Horiba _____

Measure Well TD: 41.60 (-) Orig. DTW: 12.92 (=) Wtr. Col. Thick: 28.68
12.80 (water level on 3/31/15)

2"=0.16
(x) 4"=0.65 Gals./ft. (=) 4.6 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 13.8 Total Purge Gals.
6"=1.47

GW elev. Ref. 867.86 ft. (-) DTW 12.80 ft. = 855.06 ft.

Purge/Sample Method: Pump (indicate type) _____
 Bailer (indicate type) Poly/Disposable _____

Decon. Method: Distilled Rinse _____

Purge Wtr. Containerized ? (N) Avg Purge Rate: _____ gpm

Weather: Sunny (60's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos mS/cm)	Turbidity (NTU)	Other	Comments
10:22		-			14.81	4.99	0.074	4.9		Clear
10:29		5.0			15.51	4.92	0.069	66.4		Clear
10:32		6.0			15.55	4.93	0.065	107		Cloudy, *purged dry

Average Linear velocity $v = \frac{Ki}{n}$ Where

*Purged dry at 6.0 gallons.

K= Hydraulic Conductivity (ft/min)
i = Gradient (ft/ft)
n = effective porosity

$v = \left[\frac{K}{\text{distance}} \right] \text{ ft/min. (x) GW elev. } \text{ ft. (-) GW elev. } \text{ ft}] -$.18 Clay/Silt

$v = \text{ ft./min. } = \text{ ft day}$.20 Silt w/sand
.25 sand
.3 sand and gravel

Comments: Metals Sample Turbidity = 21.4 NTU's. VOC's taken on 4/1/15 @ 10:38 a.m. Metals taken on 4/1/15 @ 12:45 p.m. Water level taken on 3/31/15.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

APPENDIX B



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

May 05, 2015

Will Martin
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW

Dear Will Martin:

Order No: 1504164

Analytical Environmental Services, Inc. received 5 samples on 4/2/2015 10:50:00 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' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

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

Chantelle Kanhai
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC
 3080 Presidential Drive, Atlanta GA 30340-3704
 TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4589 / FAX: (770) 457-8188

CHAIN OF CUSTODY
 by IC
 by IC
 by IC

Work Order: 1504164
 Date: 4/11/15 Page 1 of 1

COMPANY: <u>Santek Waste Services, Inc.</u>		ADDRESS: <u>650 25th Street NW, Suite 100, Cleveland, TN 37311</u>		ANALYSIS REQUESTED										Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.	No. of Containers								
PHONE: <u>(423) 303-7101</u>		FAX: <u>(423) 479-4952</u>		TDS Inorganic Anions App. T. Metals Total Metals Total Mercury Dissolved Metals App. F. VOCs Nitrogen, Ammonia Col TOC Cyanide Micro-Ext. VOC																			
SAMPLED BY: <u>R. Hudson</u>		SIGNATURE: <u>Robert Hudson</u>		PRESERVATION (See codes)										REMARKS									
#	SAMPLE ID	SAMPLED		Cmb	Composite	Matrix (See codes)											REMARKS						
		DATE	TIME																				
1	Leachate	4/11/15	12:15	X		O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Leachate	9
2	Trip Blank	4/11/15	2:30	X		W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		9
3	Equip. Blank	4/11/15	2:45	X		W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		9
4	MW-LR	3/31/15	12:01	X		GW	X				X												1
5	↳	4/11/15	11:15	X		GW	X	X	X	X	X												1
6	MW-05	3/31/15	11:29	X		GW	X				X												1
7	↳	4/11/15	10:59	X		GW	X	X	X	X	X												1
8	Duplicate	3/31/15		X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1
9	↳	4/11/15		X		GW	X	X	X	X	X												2
10																							
11																							
12																							
13																							
14																							
RELINQUISHED BY: <u>Robert Hudson</u> DATE/TIME: <u>4/11/15 4pm</u>		RECEIVED BY: <u>Torina Pacurar</u> DATE/TIME: <u>4/2/15 1050</u>		PROJECT INFORMATION										RECEIPT									
1: <u>Robert Hudson</u>		2: <u>Torina Pacurar</u>		PROJECT NAME: <u>Loudon Co (Matlock Bend) LF 1st Semi</u>										Total # of Containers: <u>48</u>									
3: <u>Robert Hudson</u>		4: <u>Torina Pacurar</u>		PROJECT #: <u>Annual GW Event 2015</u>										Turnaround Time Request: <u>48</u>									
5: <u>Robert Hudson</u>		6: <u>Torina Pacurar</u>		SITE ADDRESS:										Standard 5 Business Days									
7: <u>Robert Hudson</u>		8: <u>Torina Pacurar</u>		SEND REPORT TO: <u>Will Martin</u>										2 Business Day Rush									
9: <u>Robert Hudson</u>		10: <u>Torina Pacurar</u>		INVOICE TO: (IF DIFFERENT FROM ABOVE)										Next Business Day Rush									
11: <u>Robert Hudson</u>		12: <u>Torina Pacurar</u>		SHIPMENT METHOD										Same Day Rush (with req.)									
13: <u>Robert Hudson</u>		14: <u>Torina Pacurar</u>		VIA: <u>UPS</u>										Other									
15: <u>Robert Hudson</u>		16: <u>Torina Pacurar</u>		CLIENT: <u>UPS MAIL COURIER</u>										STATE PROGRAM (if any):									
17: <u>Robert Hudson</u>		18: <u>Torina Pacurar</u>		GREYHOUND OTHER										E-mail? Y/N: Fax? Y/N									
19: <u>Robert Hudson</u>		20: <u>Torina Pacurar</u>		SPECIAL INSTRUCTIONS/COMMENTS: <u>See Chantelle K. and Project History</u>										DATA PACKAGE: I II III IV									

SAMPLES RECEIVED AFTER 4PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
 SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.
 MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blacks) DW = Drinking Water (Blacks) O = Other (specify) WW = Waste Water
 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

Client: Santek Environmental Inc.
Project: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW
Lab ID: 1504164

Case Narrative

Samples "MW-4R" and "MW-05" were analyzed under work order 1504188.

Sample Receiving Nonconformance:

The containers submitted for Total Metals, Cyanide, Nitrogen, Ammonia (as N), Chemical Oxygen Demand and Total Organic Carbon for sample "LEACHATE" as received did not meet method specified pH range for the requested test methods. No attempt to further adjust the pH was made due to sample matrix.

Volatile Organic Compounds Analysis by Method 8260B:

Sample 1504164-001 as received did not meet method specified preservation requirements of pH <2.

Ion Chromatography Analysis by Method 300:

Due to sample matrix, sample 1504164-001 required dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Santek Waste Services

Work Order Number 1504164

Checklist completed by Joana Pacurar 4/2/15
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? ($0^{\circ} \leq 6^{\circ}C$)* Yes No

Cooler #1 3.1°C 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 JP

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.

Analytical Environmental Services, Inc

Date: 5-May-15

Client:	Santek Environmental Inc.	Dates Report
Project Name:	Loudon Co. (Matlock Bend) LF 1st Semi-Annual GV	
Lab Order:	1504164	

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504164-001A	LEACHATE	4/1/2015 12:15:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-001B	LEACHATE	4/1/2015 12:15:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-001C	LEACHATE	4/1/2015 12:15:00PM	Aqueous	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-001C	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-001C	LEACHATE	4/1/2015 12:15:00PM	Aqueous	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/08/2015
1504164-001D	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-001E	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-001E	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Chemical Oxygen Demand (COD)			04/06/2015
1504164-001E	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Total Organic Carbon by SM5310B			04/06/2015
1504164-001F	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-001G	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Inorganic Anions by IC			04/03/2015
1504164-001G	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504164-002A	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-002B	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-002C	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-002C	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-002C	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504164-002D	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-002E	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-002E	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Chemical Oxygen Demand (COD)			04/06/2015
1504164-002E	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Total Organic Carbon by SM5310B			04/06/2015
1504164-002F	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-002G	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Inorganic Anions by IC			04/02/2015
1504164-002G	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504164-003A	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-003B	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-003C	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-003C	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-003C	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015

Client: Santek Environmental Inc.
 Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GV
 Lab Order: 1504164

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504164-003D	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-003E	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-003E	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Chemical Oxygen Demand (COD)			04/06/2015
1504164-003E	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Total Organic Carbon by SM5310B			04/06/2015
1504164-003F	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-003G	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Inorganic Anions by IC			04/02/2015
1504164-003G	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504164-004A	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-004B	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-004C	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-004D	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-004D	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015
1504164-004D	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Total Organic Carbon by SM5310B			04/06/2015
1504164-004E	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-005A	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-005A	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-005A	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504164-005B	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Inorganic Anions by IC			04/02/2015
1504164-005B	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Inorganic Anions by IC			04/03/2015
1504164-005B	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

April 10, 2015

Will Martin
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW

Dear Will Martin:

Order No: 1504147

Analytical Environmental Services, Inc. received 8 samples on 4/2/2015 10:50:00 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' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

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

Chantelle Kanhai
Project Manager

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Santek Waste Services

Work Order Number 1504147

Checklist completed by Jason B 4/2/15
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°C)* Yes No

Cooler #1 3-2 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 JB

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.

Analytical Environmental Services, Inc

Date: 17-Apr-15

Client:	Santek Environmental Inc.	Dates Report
Project Name:	Loudon Co. (Matlock Bend) LF 1st Semi-Annual GV	
Lab Order:	1504147	

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504147-001A	MW-03	4/1/2015 10:38:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/2/2015 4:15:00 PM	04/04/2015
1504147-001B	MW-03	4/1/2015 10:38:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504147-001C	MW-03	4/1/2015 10:38:00AM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504147-001D	MW-03	4/1/2015 10:38:00AM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:00:00 PM	04/09/2015
1504147-001D	MW-03	4/1/2015 10:38:00AM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015
1504147-001D	MW-03	4/1/2015 10:38:00AM	Groundwater	Total Organic Carbon by SM5310B			04/03/2015
1504147-001E	MW-03	4/1/2015 10:38:00AM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504147-002A	MW-03	4/1/2015 12:45:00PM	Groundwater	Inorganic Anions by IC			04/02/2015
1504147-002A	MW-03	4/1/2015 12:45:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504147-002B	MW-03	4/1/2015 12:45:00PM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504147-002B	MW-03	4/1/2015 12:45:00PM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504147-002B	MW-03	4/1/2015 12:45:00PM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504147-003A	MW-02	3/31/2015 2:06:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/2/2015 4:15:00 PM	04/04/2015
1504147-003B	MW-02	3/31/2015 2:06:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504147-003C	MW-02	3/31/2015 2:06:00PM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504147-003D	MW-02	3/31/2015 2:06:00PM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:00:00 PM	04/09/2015
1504147-003D	MW-02	3/31/2015 2:06:00PM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015
1504147-003D	MW-02	3/31/2015 2:06:00PM	Groundwater	Total Organic Carbon by SM5310B			04/03/2015
1504147-003E	MW-02	3/31/2015 2:06:00PM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504147-004A	MW-02	4/1/2015 9:40:00AM	Groundwater	Inorganic Anions by IC			04/02/2015
1504147-004A	MW-02	4/1/2015 9:40:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504147-004B	MW-02	4/1/2015 9:40:00AM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504147-004B	MW-02	4/1/2015 9:40:00AM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504147-004B	MW-02	4/1/2015 9:40:00AM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504147-005A	MW-01	3/31/2015 3:06:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/2/2015 4:15:00 PM	04/04/2015
1504147-005B	MW-01	3/31/2015 3:06:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504147-005C	MW-01	3/31/2015 3:06:00PM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504147-005D	MW-01	3/31/2015 3:06:00PM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:00:00 PM	04/09/2015
1504147-005D	MW-01	3/31/2015 3:06:00PM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015

Client:	Santek Environmental Inc.	Dates Report
Project Name:	Loudon Co. (Matlock Bend) LF 1st Semi-Annual GV	
Lab Order:	1504147	

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504147-005D	MW-01	3/31/2015 8:06:00PM	Groundwater	Total Organic Carbon by SM5310B			04/03/2015
1504147-005E	MW-01	3/31/2015 3:06:00PM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504147-006A	MW-01	4/1/2015 11:30:00AM	Groundwater	Inorganic Anions by IC			04/02/2015
1504147-006A	MW-01	4/1/2015 11:30:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504147-006B	MW-01	4/1/2015 11:30:00AM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504147-006B	MW-01	4/1/2015 11:30:00AM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504147-006B	MW-01	4/1/2015 11:30:00AM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504147-007A	MW-1A	3/31/2015 3:51:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/2/2015 4:15:00 PM	04/04/2015
1504147-007B	MW-1A	3/31/2015 3:51:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504147-007C	MW-1A	3/31/2015 3:51:00PM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504147-007D	MW-1A	3/31/2015 3:51:00PM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:00:00 PM	04/09/2015
1504147-007D	MW-1A	3/31/2015 3:51:00PM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015
1504147-007D	MW-1A	3/31/2015 3:51:00PM	Groundwater	Total Organic Carbon by SM5310B			04/03/2015
1504147-007E	MW-1A	3/31/2015 3:51:00PM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504147-008A	MW-1A	4/1/2015 11:45:00AM	Groundwater	Inorganic Anions by IC			04/02/2015
1504147-008A	MW-1A	4/1/2015 11:45:00AM	Groundwater	Inorganic Anions by IC			04/03/2015
1504147-008A	MW-1A	4/1/2015 11:45:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504147-008B	MW-1A	4/1/2015 11:45:00AM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504147-008B	MW-1A	4/1/2015 11:45:00AM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504147-008B	MW-1A	4/1/2015 11:45:00AM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015

Analytical Environmental Services, Inc

Date: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-01
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 3:06:00 PM
Lab ID: 1504147-005	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R289269	1	04/03/2015 18:54	YS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205606	1	04/09/2015 16:12	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.202		ug/L	205555	1	04/06/2015 20:13	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 20:13	SH
Surr: 4-Bromofluorobenzene	99.8	64.7-140		%REC	205555	1	04/06/2015 20:13	SH
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	BRL	10.0		ug/L	205685	1	04/08/2015 19:26	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205488	1	04/04/2015 17:54	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 17:54	CH
1,1-Dichloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205488	1	04/04/2015 17:54	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205488	1	04/04/2015 17:54	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 17:54	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205488	1	04/04/2015 17:54	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205488	1	04/04/2015 17:54	CH
2-Butanone	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
2-Hexanone	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Acetone	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Acrylonitrile	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Benzene	BRL	5.0		ug/L	205488	1	04/04/2015 17:54	CH
Bromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Bromodichloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Bromoform	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Bromomethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH

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

Client: Santek Environmental Inc.	Client Sample ID: MW-01
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 3:06:00 PM
Lab ID: 1504147-005	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
Carbon disulfide	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Carbon tetrachloride	BRL	5.0		ug/L	205488	1	04/04/2015 17:54	CH
Chlorobenzene	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Chloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Chloroform	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Chloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205488	1	04/04/2015 17:54	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Dibromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Dibromomethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Ethylbenzene	BRL	700		ug/L	205488	1	04/04/2015 17:54	CH
Iodomethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Methylene chloride	BRL	5.0		ug/L	205488	1	04/04/2015 17:54	CH
Styrene	BRL	100		ug/L	205488	1	04/04/2015 17:54	CH
Tetrachloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 17:54	CH
Toluene	BRL	1000		ug/L	205488	1	04/04/2015 17:54	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205488	1	04/04/2015 17:54	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Trichloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 17:54	CH
Trichlorofluoromethane	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Vinyl acetate	BRL	10		ug/L	205488	1	04/04/2015 17:54	CH
Vinyl chloride	BRL	2.0		ug/L	205488	1	04/04/2015 17:54	CH
Xylenes, Total	BRL	10000		ug/L	205488	1	04/04/2015 17:54	CH
Surr: 4-Bromofluorobenzene	82.2	70.6-123		%REC	205488	1	04/04/2015 17:54	CH
Surr: Dibromofluoromethane	118	78.7-124		%REC	205488	1	04/04/2015 17:54	CH
Surr: Toluene-d8	102	81.3-120		%REC	205488	1	04/04/2015 17:54	CH

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: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-01
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 11:30:00 AM
Lab ID: 1504147-006	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					(SW3005A)			
Calcium	48200	100		ug/L	205476	1	04/08/2015 14:37	JS
Iron	221	100		ug/L	205476	1	04/08/2015 14:37	JS
Magnesium	27900	100		ug/L	205476	1	04/08/2015 14:37	JS
Potassium	2530	500		ug/L	205476	1	04/08/2015 14:37	JS
Sodium	9930	500		ug/L	205476	1	04/08/2015 14:37	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	228	1		mg/L	205629	1	04/07/2015 10:00	JS
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 13:27	TA
Inorganic Anions by IC E300.0								
Chloride	21.7	1.00		mg/L	R289400	1	04/02/2015 14:26	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 14:26	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 14:26	JW
Sulfate	3.52	1.00		mg/L	R289400	1	04/02/2015 14:26	JW
APPENDIX I METALS SW6020A					(SW3005A)			
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 14:37	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 14:37	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 14:37	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 14:37	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 14:37	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 14:37	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 14:37	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 14:37	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 14:37	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 14:37	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 14:37	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 14:37	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 14:37	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 14:37	JS
Zinc	BRL	0.0200		mg/L	205476	1	04/08/2015 14:37	JS

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

Client: Santek Environmental Inc.	Client Sample ID: MW-1A
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 3:51:00 PM
Lab ID: 1504147-007	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R289269	1	04/03/2015 19:12	YS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205606	1	04/09/2015 16:13	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.200		ug/L	205555	1	04/06/2015 20:42	SH
1,2-Dibromoethane	BRL	0.050		ug/L	205555	1	04/06/2015 20:42	SH
Surr: 4-Bromofluorobenzene	102	64.7-140		%REC	205555	1	04/06/2015 20:42	SH
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	BRL	10.0		ug/L	205685	1	04/08/2015 19:32	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205488	1	04/04/2015 18:18	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 18:18	CH
1,1-Dichloroethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205488	1	04/04/2015 18:18	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205488	1	04/04/2015 18:18	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 18:18	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205488	1	04/04/2015 18:18	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205488	1	04/04/2015 18:18	CH
2-Butanone	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
2-Hexanone	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Acetone	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Acrylonitrile	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Benzene	BRL	5.0		ug/L	205488	1	04/04/2015 18:18	CH
Bromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Bromodichloromethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Bromoform	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Bromomethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH

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

Client: Santek Environmental Inc.	Client Sample ID: MW-1A
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 3:51:00 PM
Lab ID: 1504147-007	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
Carbon disulfide	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Carbon tetrachloride	BRL	5.0		ug/L	205488	1	04/04/2015 18:18	CH
Chlorobenzene	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Chloroethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Chloroform	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Chloromethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205488	1	04/04/2015 18:18	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Dibromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Dibromomethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Ethylbenzene	BRL	700		ug/L	205488	1	04/04/2015 18:18	CH
Iodomethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Methylene chloride	BRL	5.0		ug/L	205488	1	04/04/2015 18:18	CH
Styrene	BRL	100		ug/L	205488	1	04/04/2015 18:18	CH
Tetrachloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 18:18	CH
Toluene	BRL	1000		ug/L	205488	1	04/04/2015 18:18	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205488	1	04/04/2015 18:18	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Trichloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 18:18	CH
Trichlorofluoromethane	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Vinyl acetate	BRL	10		ug/L	205488	1	04/04/2015 18:18	CH
Vinyl chloride	BRL	2.0		ug/L	205488	1	04/04/2015 18:18	CH
Xylenes, Total	BRL	10000		ug/L	205488	1	04/04/2015 18:18	CH
Surr: 4-Bromofluorobenzene	79.2	70.6-123		%REC	205488	1	04/04/2015 18:18	CH
Surr: Dibromofluoromethane	114	78.7-124		%REC	205488	1	04/04/2015 18:18	CH
Surr: Toluene-d8	101	81.3-120		%REC	205488	1	04/04/2015 18:18	CH

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: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-1A
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 11:45:00 AM
Lab ID: 1504147-008	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					(SW3005A)			
Calcium	67900	100		ug/L	205476	1	04/08/2015 14:43	JS
Iron	734	100		ug/L	205476	1	04/08/2015 14:43	JS
Magnesium	28800	100		ug/L	205476	1	04/08/2015 14:43	JS
Potassium	9510	500		ug/L	205476	1	04/08/2015 14:43	JS
Sodium	25100	500		ug/L	205476	1	04/08/2015 14:43	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	386	1		mg/L	205629	1	04/07/2015 10:00	JS
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 13:56	TA
Inorganic Anions by IC E300.0								
Chloride	52.4	5.00		mg/L	R289400	5	04/03/2015 09:48	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 14:41	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 14:41	JW
Sulfate	25.0	1.00		mg/L	R289400	1	04/02/2015 14:41	JW
APPENDIX I METALS SW6020A					(SW3005A)			
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 14:43	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 14:43	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 14:43	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 14:43	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 14:43	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 14:43	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 14:43	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 14:43	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 14:43	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 14:43	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 14:43	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 14:43	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 14:43	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 14:43	JS
Zinc	0.0273	0.0200		mg/L	205476	1	04/08/2015 14:43	JS

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: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: DUPLICATE
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015
Lab ID: 1504164-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R289374	1	04/06/2015 18:20	YS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205608	1	04/09/2015 16:41	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.202		ug/L	205555	1	04/06/2015 23:05	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 23:05	SH
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	BRL	10.0		ug/L	205685	1	04/08/2015 19:07	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205572	1	04/04/2015 18:42	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 18:42	CH
1,1-Dichloroethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205572	1	04/04/2015 18:42	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205572	1	04/04/2015 18:42	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 18:42	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205572	1	04/04/2015 18:42	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205572	1	04/04/2015 18:42	CH
2-Butanone	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
2-Hexanone	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Acetone	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Acrylonitrile	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Benzene	BRL	5.0		ug/L	205572	1	04/04/2015 18:42	CH
Bromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Bromodichloromethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Bromoform	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Bromomethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Carbon disulfide	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH

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

Client: Santek Environmental Inc.	Client Sample ID: DUPLICATE
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015
Lab ID: 1504164-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS		SW8260B			(SW5030B)			
Carbon tetrachloride	BRL	5.0		ug/L	205572	1	04/04/2015 18:42	CH
Chlorobenzene	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Chloroethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Chloroform	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Chloromethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205572	1	04/04/2015 18:42	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Dibromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Dibromomethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Ethylbenzene	BRL	700		ug/L	205572	1	04/04/2015 18:42	CH
Iodomethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Methylene chloride	BRL	5.0		ug/L	205572	1	04/04/2015 18:42	CH
Styrene	BRL	100		ug/L	205572	1	04/04/2015 18:42	CH
Tetrachloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 18:42	CH
Toluene	BRL	1000		ug/L	205572	1	04/04/2015 18:42	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205572	1	04/04/2015 18:42	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Trichloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 18:42	CH
Trichlorofluoromethane	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Vinyl acetate	BRL	10		ug/L	205572	1	04/04/2015 18:42	CH
Vinyl chloride	BRL	2.0		ug/L	205572	1	04/04/2015 18:42	CH
Xylenes, Total	BRL	10000		ug/L	205572	1	04/04/2015 18:42	CH
Surr: 4-Bromofluorobenzene	80.2	70.6-123		%REC	205572	1	04/04/2015 18:42	CH
Surr: Dibromofluoromethane	117	78.7-124		%REC	205572	1	04/04/2015 18:42	CH
Surr: Toluene-d8	101	81.3-120		%REC	205572	1	04/04/2015 18:42	CH

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: 5-May-15

Client:	Santek Environmental Inc.	Client Sample ID:	DUPLICATE
Project Name:	Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date:	4/1/2015
Lab ID:	1504164-005	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					(SW3005A)			
Calcium	65300	100		ug/L	205476	1	04/08/2015 17:09	JS
Iron	1540	100		ug/L	205476	1	04/08/2015 17:09	JS
Magnesium	28600	100		ug/L	205476	1	04/08/2015 17:09	JS
Potassium	9270	500		ug/L	205476	1	04/08/2015 17:09	JS
Sodium	24100	500		ug/L	205476	1	04/08/2015 17:09	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	390	1		mg/L	205629	1	04/07/2015 10:00	JS
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 14:08	TA
Inorganic Anions by IC E300.0								
Chloride	52.1	5.00		mg/L	R289400	5	04/03/2015 10:18	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 18:51	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 18:51	JW
Sulfate	24.9	1.00		mg/L	R289400	1	04/02/2015 18:51	JW
APPENDIX I METALS SW6020A					(SW3005A)			
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 17:09	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 17:09	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 17:09	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 17:09	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 17:09	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 17:09	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 17:09	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 17:09	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 17:09	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 17:09	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:09	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 17:09	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 17:09	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:09	JS
Zinc	0.0281	0.0200		mg/L	205476	1	04/08/2015 17:09	JS

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: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-02
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 2:06:00 PM
Lab ID: 1504147-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R289269	1	04/03/2015 18:36	YS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205606	1	04/09/2015 16:09	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.202		ug/L	205555	1	04/06/2015 19:45	SH
1,2-Dibromoethane	BRL	0.050		ug/L	205555	1	04/06/2015 19:45	SH
Surr: 4-Bromofluorobenzene	86.8	64.7-140		%REC	205555	1	04/06/2015 19:45	SH
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	87.0	10.0		ug/L	205685	1	04/08/2015 19:20	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205488	1	04/04/2015 17:31	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 17:31	CH
1,1-Dichloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205488	1	04/04/2015 17:31	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205488	1	04/04/2015 17:31	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 17:31	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205488	1	04/04/2015 17:31	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205488	1	04/04/2015 17:31	CH
2-Butanone	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
2-Hexanone	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Acetone	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Acrylonitrile	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Benzene	BRL	5.0		ug/L	205488	1	04/04/2015 17:31	CH
Bromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Bromodichloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Bromoforn	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Bromomethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH

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: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-02
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 2:06:00 PM
Lab ID: 1504147-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Carbon disulfide	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Carbon tetrachloride	BRL	5.0		ug/L	205488	1	04/04/2015 17:31	CH
Chlorobenzene	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Chloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Chloroform	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Chloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205488	1	04/04/2015 17:31	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Dibromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Dibromomethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Ethylbenzene	BRL	700		ug/L	205488	1	04/04/2015 17:31	CH
Iodomethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Methylene chloride	BRL	5.0		ug/L	205488	1	04/04/2015 17:31	CH
Styrene	BRL	100		ug/L	205488	1	04/04/2015 17:31	CH
Tetrachloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 17:31	CH
Toluene	BRL	1000		ug/L	205488	1	04/04/2015 17:31	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205488	1	04/04/2015 17:31	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Trichloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 17:31	CH
Trichlorofluoromethane	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Vinyl acetate	BRL	10		ug/L	205488	1	04/04/2015 17:31	CH
Vinyl chloride	BRL	2.0		ug/L	205488	1	04/04/2015 17:31	CH
Xylenes, Total	BRL	10000		ug/L	205488	1	04/04/2015 17:31	CH
Surr: 4-Bromofluorobenzene	81.3	70.6-123		%REC	205488	1	04/04/2015 17:31	CH
Surr: Dibromofluoromethane	119	78.7-124		%REC	205488	1	04/04/2015 17:31	CH
Surr: Toluene-d8	99.9	81.3-120		%REC	205488	1	04/04/2015 17:31	CH

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: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-02
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 9:40:00 AM
Lab ID: 1504147-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					(SW3005A)			
Calcium	1990	100		ug/L	205476	1	04/08/2015 14:31	JS
Iron	BRL	100		ug/L	205476	1	04/08/2015 14:31	JS
Magnesium	1610	100		ug/L	205476	1	04/08/2015 14:31	JS
Potassium	2440	500		ug/L	205476	1	04/08/2015 14:31	JS
Sodium	2410	500		ug/L	205476	1	04/08/2015 14:31	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	9	1		mg/L	205629	1	04/07/2015 10:00	JS
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 13:54	TA
Inorganic Anions by IC E300.0								
Chloride	3.06	1.00		mg/L	R289400	1	04/02/2015 14:11	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 14:11	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 14:11	JW
Sulfate	BRL	1.00		mg/L	R289400	1	04/02/2015 14:11	JW
APPENDIX I METALS SW6020A					(SW3005A)			
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 14:31	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 14:31	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 14:31	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 14:31	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 14:31	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 14:31	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 14:31	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 14:31	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 14:31	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 14:31	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 14:31	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 14:31	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 14:31	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 14:31	JS
Zinc	0.273	0.0200		mg/L	205476	1	04/08/2015 14:31	JS

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: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-03
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 10:38:00 AM
Lab ID: 1504147-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R289269	1	04/03/2015 18:19	YS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205606	1	04/09/2015 16:08	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.203		ug/L	205555	1	04/06/2015 18:47	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 18:47	SH
Surr: 4-Bromofluorobenzene	94.3	64.7-140		%REC	205555	1	04/06/2015 18:47	SH
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	139	10.0		ug/L	205685	1	04/08/2015 19:13	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205488	1	04/04/2015 17:07	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
1,1-Dichloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205488	1	04/04/2015 17:07	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205488	1	04/04/2015 17:07	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205488	1	04/04/2015 17:07	CH
2-Butanone	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
2-Hexanone	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Acetone	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Acrylonitrile	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Benzene	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Bromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Bromodichloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Bromoform	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Bromomethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH

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: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-03
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 10:38:00 AM
Lab ID: 1504147-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
Carbon disulfide	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Carbon tetrachloride	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Chlorobenzene	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Chloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Chloroform	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Chloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205488	1	04/04/2015 17:07	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Dibromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Dibromomethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Ethylbenzene	BRL	700		ug/L	205488	1	04/04/2015 17:07	CH
Iodomethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Methylene chloride	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Styrene	BRL	100		ug/L	205488	1	04/04/2015 17:07	CH
Tetrachloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Toluene	BRL	1000		ug/L	205488	1	04/04/2015 17:07	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205488	1	04/04/2015 17:07	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Trichloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Trichlorofluoromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Vinyl acetate	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Vinyl chloride	BRL	2.0		ug/L	205488	1	04/04/2015 17:07	CH
Xylenes, Total	BRL	10000		ug/L	205488	1	04/04/2015 17:07	CH
Surr: 4-Bromofluorobenzene	76	70.6-123		%REC	205488	1	04/04/2015 17:07	CH
Surr: Dibromofluoromethane	114	78.7-124		%REC	205488	1	04/04/2015 17:07	CH
Surr: Toluene-d8	98.2	81.3-120		%REC	205488	1	04/04/2015 17:07	CH

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: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-03
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 12:45:00 PM
Lab ID: 1504147-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					(SW3005A)			
Calcium	1410	100		ug/L	205476	1	04/08/2015 13:59	JS
Iron	113	100		ug/L	205476	1	04/08/2015 13:59	JS
Magnesium	828	100		ug/L	205476	1	04/08/2015 13:59	JS
Potassium	784	500		ug/L	205476	1	04/08/2015 13:59	JS
Sodium	11800	500		ug/L	205476	1	04/08/2015 13:59	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	3	1		mg/L	205629	1	04/07/2015 10:00	JS
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 13:52	TA
Inorganic Anions by IC E300.0								
Chloride	18.2	1.00		mg/L	R289400	1	04/02/2015 13:56	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 13:56	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 13:56	JW
Sulfate	2.69	1.00		mg/L	R289400	1	04/02/2015 13:56	JW
APPENDIX I METALS SW6020A					(SW3005A)			
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 13:59	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 13:59	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 13:59	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 13:59	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 13:59	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 13:59	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 13:59	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 13:59	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 13:59	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 13:59	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 13:59	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 13:59	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 13:59	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 13:59	JS
Zinc	BRL	0.0200		mg/L	205476	1	04/08/2015 13:59	JS

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: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: TRIP BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:30:00 PM
Lab ID: 1504164-002	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	R289374	1	04/06/2015 17:52	YS
Total Metals by ICP/MS SW6020A (SW3005A)								
Calcium	BRL	100		ug/L	205476	1	04/08/2015 16:56	JS
Iron	BRL	100		ug/L	205476	1	04/08/2015 16:56	JS
Magnesium	BRL	100		ug/L	205476	1	04/08/2015 16:56	JS
Potassium	BRL	500		ug/L	205476	1	04/08/2015 16:56	JS
Sodium	BRL	500		ug/L	205476	1	04/08/2015 16:56	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	BRL	1		mg/L	205629	1	04/07/2015 10:00	JS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205608	1	04/09/2015 16:30	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.205		ug/L	205555	1	04/06/2015 22:08	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 22:08	SH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 14:00	TA
Inorganic Anions by IC E300.0								
Chloride	BRL	1.00		mg/L	R289400	1	04/02/2015 17:37	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 17:37	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 17:37	JW
Sulfate	BRL	1.00		mg/L	R289400	1	04/02/2015 17:37	JW
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	BRL	10.0		ug/L	205685	1	04/08/2015 17:44	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205572	1	04/04/2015 15:55	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
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 > 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

Client: Santek Environmental Inc.	Client Sample ID: TRIP BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:30:00 PM
Lab ID: 1504164-002	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,2-Trichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
1,1-Dichloroethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205572	1	04/04/2015 15:55	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205572	1	04/04/2015 15:55	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205572	1	04/04/2015 15:55	CH
2-Butanone	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
2-Hexanone	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Acetone	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Acrylonitrile	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Benzene	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Bromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Bromodichloromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Bromoform	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Bromomethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Carbon disulfide	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Carbon tetrachloride	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Chlorobenzene	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Chloroethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Chloroform	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Chloromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205572	1	04/04/2015 15:55	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Dibromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Dibromomethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Ethylbenzene	BRL	700		ug/L	205572	1	04/04/2015 15:55	CH
Iodomethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Methylene chloride	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Styrene	BRL	100		ug/L	205572	1	04/04/2015 15:55	CH
Tetrachloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Toluene	BRL	1000		ug/L	205572	1	04/04/2015 15:55	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205572	1	04/04/2015 15:55	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Trichloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Trichlorofluoromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Vinyl acetate	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Vinyl chloride	BRL	2.0		ug/L	205572	1	04/04/2015 15:55	CH

Qualifiers:

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Analytical Environmental Services, Inc

Date: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: TRIP BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:30:00 PM
Lab ID: 1504164-002	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B		(SW5030B)						
Xylenes, Total	BRL	10000		ug/L	205572	1	04/04/2015 15:55	CH
Surr: 4-Bromofluorobenzene	82.4	70.6-123		%REC	205572	1	04/04/2015 15:55	CH
Surr: Dibromofluoromethane	110	78.7-124		%REC	205572	1	04/04/2015 15:55	CH
Surr: Toluene-d8	98.8	81.3-120		%REC	205572	1	04/04/2015 15:55	CH
APPENDIX I METALS SW6020A		(SW3005A)						
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 16:56	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 16:56	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 16:56	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 16:56	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 16:56	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 16:56	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 16:56	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 16:56	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 16:56	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 16:56	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 16:56	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 16:56	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 16:56	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 16:56	JS
Zinc	BRL	0.0200		mg/L	205476	1	04/08/2015 16:56	JS

Qualifiers:

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- E Estimated (value above quantitation range)
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- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: EQUIP. BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:45:00 PM
Lab ID: 1504164-003	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	R289374	1	04/06/2015 18:05	YS
Total Metals by ICP/MS SW6020A (SW3005A)								
Calcium	BRL	100		ug/L	205476	1	04/08/2015 17:02	JS
Iron	BRL	100		ug/L	205476	1	04/08/2015 17:02	JS
Magnesium	BRL	100		ug/L	205476	1	04/08/2015 17:02	JS
Potassium	BRL	500		ug/L	205476	1	04/08/2015 17:02	JS
Sodium	BRL	500		ug/L	205476	1	04/08/2015 17:02	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	1	1		mg/L	205629	1	04/07/2015 10:00	JS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205608	1	04/09/2015 16:25	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.204		ug/L	205555	1	04/06/2015 22:36	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 22:36	SH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 14:06	TA
Inorganic Anions by IC E300.0								
Chloride	BRL	1.00		mg/L	R289400	1	04/02/2015 17:52	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 17:52	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 17:52	JW
Sulfate	BRL	1.00		mg/L	R289400	1	04/02/2015 17:52	JW
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	BRL	10.0		ug/L	205685	1	04/08/2015 19:01	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205572	1	04/04/2015 16:19	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH

Qualifiers:

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- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Client: Santek Environmental Inc.	Client Sample ID: EQUIP. BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:45:00 PM
Lab ID: 1504164-003	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,2-Trichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
1,1-Dichloroethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205572	1	04/04/2015 16:19	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205572	1	04/04/2015 16:19	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205572	1	04/04/2015 16:19	CH
2-Butanone	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
2-Hexanone	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Acetone	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Acrylonitrile	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Benzene	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Bromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Bromodichloromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Bromoform	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Bromomethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Carbon disulfide	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Carbon tetrachloride	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Chlorobenzene	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Chloroethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Chloroform	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Chloromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205572	1	04/04/2015 16:19	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Dibromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Dibromomethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Ethylbenzene	BRL	700		ug/L	205572	1	04/04/2015 16:19	CH
Iodomethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Methylene chloride	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Styrene	BRL	100		ug/L	205572	1	04/04/2015 16:19	CH
Tetrachloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Toluene	BRL	1000		ug/L	205572	1	04/04/2015 16:19	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205572	1	04/04/2015 16:19	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Trichloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Trichlorofluoromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Vinyl acetate	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Vinyl chloride	BRL	2.0		ug/L	205572	1	04/04/2015 16:19	CH

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: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: EQUIP. BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:45:00 PM
Lab ID: 1504164-003	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Xylenes, Total	BRL	10000		ug/L	205572	1	04/04/2015 16:19	CH
Surr: 4-Bromofluorobenzene	79.8	70.6-123		%REC	205572	1	04/04/2015 16:19	CH
Surr: Dibromofluoromethane	116	78.7-124		%REC	205572	1	04/04/2015 16:19	CH
Surr: Toluene-d8	102	81.3-120		%REC	205572	1	04/04/2015 16:19	CH
APPENDIX I METALS SW6020A				(SW3005A)				
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 17:02	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 17:02	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 17:02	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 17:02	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 17:02	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 17:02	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 17:02	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 17:02	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 17:02	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 17:02	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:02	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 17:02	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 17:02	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:02	JS
Zinc	BRL	0.0200		mg/L	205476	1	04/08/2015 17:02	JS

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

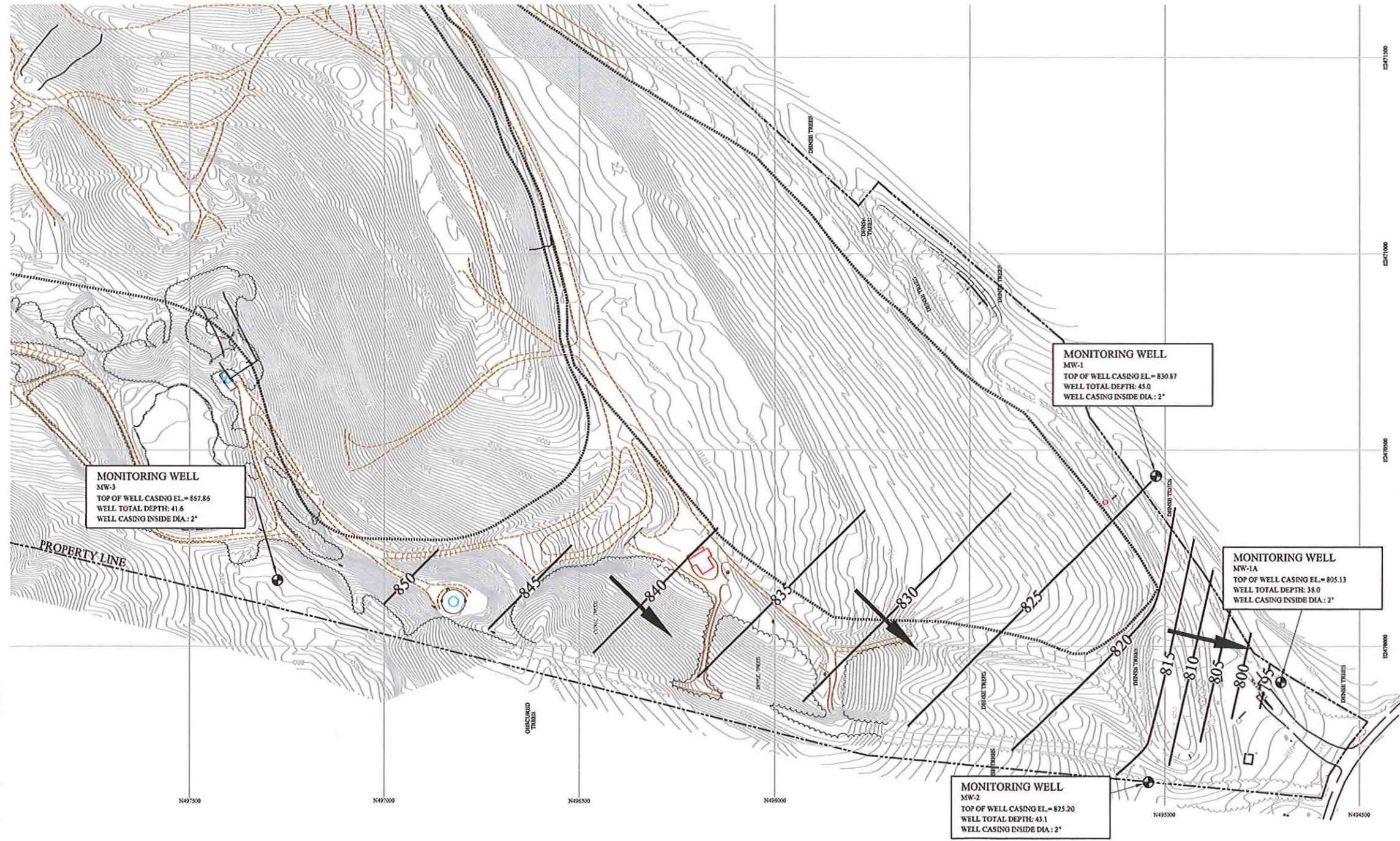
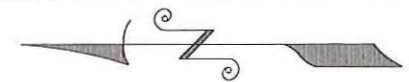
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

APPENDIX C

GROUNDWATER DATA
Matlock Bend Landfill (Phase I)
March 31, 2015

Well No.	Elev. Of TOC	Depth to GW (ft below TOC)	Water Elevation	Contour Elevation	Distance	Hydraulic Conductivity	Effective Porosity (n)	Hydraulic Gradient	Average Linear Velocity		Directions
									ft/min	ft/day	
MW-01	830.87	5.83	825.04	825	5	4.70E-06	0.18	8.00E-03	2.09E-07	3.01E-04	SW
MW-1A*	805.13	13.03	792.10	795	35	3.93E-06	0.18	8.29E-02	1.81E-06	2.61E-03	SW
MW-02	825.20	11.65	813.55	810	40	5.90E-06	0.18	8.88E-02	2.91E-06	4.19E-03	SW
MW-03	867.86	12.80	855.06	850	235	1.20E-05	0.18	2.15E-02	1.44E-06	2.07E-03	SW

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



LEGEND:

- PROPERTY BOUNDARY
- WATER TABLE CONTOURS (INFERRED)
- AERIAL CONTOUR
- ROAD
- WASTE MANAGEMENT UNIT BOUNDARY
- GROUNDWATER MONITORING WELL
- GROUNDWATER FLOW DIRECTION

NOTES:

1. POTENTIOMETRIC CONTOURS DEVELOPED FROM WATER ELEVATIONS TAKEN MARCH 31, 2015.
2. TOPOGRAPHIC CONTOURS SHOWN WERE PROVIDED BY SOUTHERN RESOURCES MAPPING CORP., NORTHPORT, ALABAMA. PHOTO DATED SEPTEMBER 18, 2014.

GW.WELL NO.	WATER ELEV.
MW-1	825.04
MW-1A	792.10
MW-2	813.55
MW-3	855.06



DATE	DRWN	CHKD	REVISION

2015 SEMI-ANNUAL (SPRING) GROUNDWATER
 POTENTIOMETRIC CONTOUR MAP
 MATLOCK BEND LANDFILL-PHASE I
 LOUDON COUNTY, TENNESSEE



SANTEK ENVIRONMENTAL
 650 25TH STREET NW
 SUITE 100
 CLEVELAND, TENNESSEE

SCALE: 1"=300'
 DATE: 5/2/15
 DRAWN BY: RH
 CHECKED BY: WM
 APPROVED BY: RV
 FILE: 1510-51
 JOB NO: 200-1510

G:\WORK\LOU\B\B\N\Fot_Maps\1510-51.dwg, 5/26/2015 3:25:45 PM, 11W000WBELL-PC\HP-Desjard-9880-Printer (Copy 2)

MATLOCK BEND LANDFILL
PHASE II/IV

May 26, 2015



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

Email: mail@santekenviro.com
Internet: www.santekenviro.com

Mr. Ryan Miller
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 – Phase II/IV Upgrade
SNL #53-103-0203

Dear Mr. Miller:

Please find enclosed a copy of the groundwater monitoring report generated from the first semi-annual groundwater event of 2015 at the Matlock Bend Landfill – Phase II/IV. 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,

A handwritten signature in blue ink that reads "Will Martin".

Will Martin
Environmental Compliance Coordinator

A handwritten signature in blue ink that reads "Ron E. Vail".

Ron E. Vail, P.E.
V.P. of Engineering
TN. Registration No. 109716

Enclosures

cc: Steve Field, Loudon County Solid Waste Department Chairman
Matt Dillard, Executive V.P. of Operations, Santek
Raymond Givens, Landfill Manager, Santek

**MATLOCK BEND LANDFILL – PHASE II/IV UPGRADE
GROUNDWATER MONITORING REPORT
1st SEMI-ANNUAL EVENT 2015**

SANTEK PROJECT NO. 200-1510.2



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

MAY 2015

1.0 INTRODUCTION

In accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rule 1200-1-7-.04(7), Santek Waste Services, Inc. (Santek) is submitting the groundwater monitoring report for the first semi-annual event for 2015 at the Matlock Bend Landfill - Phase II/IV Upgrade. 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 MW-03, MW-4R and MW-05. According to the letter from TDEC dated December 11, 2008, Santek replaced MW-04 with MW-4R in the groundwater detection monitoring network. MW-04 is no longer being monitored. Historic results for MW-04 were taken between 11/2/96 through 3/27/08 and are included in the MW-4R control chart. Santek performed sampling and statistical analyses. Santek contracted with Analytical Environmental Services, Inc. (AES) to perform all analytical testing.

1.1 SITE INFORMATION

Phase II/IV Upgrade is located along the northwest border of Phase I as a portion of the Matlock Bend Landfill. The area is approximately five miles west of Loudon, TN, on Tennessee Highway 72, at latitude N 35° 44' 48" and longitude W 84° 24' 43".

2.0 SAMPLING AND ANALYTICAL

The groundwater sampling event was performed on March 31 and April 1, 2015. Samples were analyzed for Appendix I constituents. All samples were submitted to AES for analysis. 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 #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 wells, then no significant increase is indicated. If the average background concentration is less than the results for the compliance well, then the Appendix I limits from pages .01-17,18 of the

additional comparison to indicate potentially elevated concentrations. Control charts are provided in Appendix C.

3.2 Statistical Analysis Summary

MW-03

There were no inorganic or organic constituents detected above the report limits during this event.

MW-4R

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

MW-05

There were no inorganic or organic constituents detected above the report limits during this event.

4.0 FLOW DIRECTION AND RATES

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 direction of Phase II/IV locally flows towards the northwest and will ultimately flow to the Tennessee River. The groundwater flow rate ranges from 1.15×10^{-3} ft/day at MW-03 to 6.62×10^{-3} ft/day at MW-05. Groundwater flow rate and direction have been determined for each well and are included in Appendix D. A groundwater potentiometric contour map 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.

**Indicates Appendix I limit is not available.*

.....

DATE: 4/1/15

FIELD SAMPLING LOG		WELL NO: MW-03	
Location: Loudon County		Site: Matlock Bend	
Client/Operator: Santek Waste Services, Inc.		Project No:	
Purge Start: (Date) 4/1/15 (Time) 10:21		Purge End: (Date) 4/1/15 (Time) 10:32	
Purged by: Robert Hudson			
Depth Measurement Ref. Point* 867.86 ft		Well Csg. ID: 2"	

Equipment Used to Measure (Make, Model, etc)

DTW Solinst _____ pH Horiba _____ Cond. Horiba _____ T° Horiba _____

Measure Well TD: 41.60 (-) Orig. DTW: 12.92 (=) Wtr. Col. Thick: 28.68
12.80 (water level on 3/31/15)

(x) 2"=0.16
4"=0.65 Gals./ft. (=) 4.6 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 13.8 Total Purge Gals.
6"=1.47

GW elev. Ref. 867.86 ft. (-) DTW 12.80 ft. = 855.06 ft.

Purge/Sample Method: Pump (indicate type) _____
 Bailer (indicate type) Poly/Disposable _____

Decon. Method: Distilled Rinse _____

Purge Wtr. Containerized ? (N) Avg Purge Rate: _____ gpm

Weather: Sunny (60's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
10:22		-			14.81	4.99	0.074	4.9		Clear
10:29		5.0			15.51	4.92	0.069	66.4		Clear
10:32		6.0			15.55	4.93	0.065	107		Cloudy, *purged dry

Average Linear velocity $v = \frac{Ki}{n}$ Where

*Purged dry at 6.0 gallons.

K= Hydraulic Conductivity (ft/min)

i = Gradient (ft/ft)

n = effective porosity

$v = \left[\frac{K}{\text{distance}} \right] \text{ ft./min. (x) GW elev. } \text{ ft. (-) GW elev. } \text{ ft}] -$.18 Clay/Silt

$v = \text{ ft./min. } = \text{ ft day}$.20 Silt w/sand
.25 sand
.3 sand and gravel

Comments: Metals Sample Turbidity = 21.4 NTU's. VOC's taken on 4/1/15 @ 10:38 a.m. Metals taken on 4/1/15 @ 12:45 p.m. Water level taken on 3/31/15.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

DATE: 3/31/15

FIELD SAMPLING LOG	WELL NO: MW-4R
Location: Loudon County	Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 3/31/15 (Time) 11:46	Purge End: (Date) 3/31/15 (Time) 12:00
Purged by: Robert Hudson	
Depth Measurement Ref. Point* 992.32 ft	Well Csg. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Solinst _____ pH Horiba _____ Cond. Horiba _____ T° Horiba _____

Measure Well TD: 106.50 (-) Orig. DTW: 95.97 (=) Wtr. Col. Thick: 10.53

2"=0.16
 (x) 4"=0.65 Gals./ft. (=) 1.7 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 5.1 Total Purge Gals.
 6"=1.47

GW elev. Ref. 992.32 ft. (-) DTW 95.97 ft. = 896.35 ft.

Purge/Sample Method: Pump (indicate type) _____
 Bailer (indicate type) Poly/Disposable _____

Decon. Method: Distilled Rinse

Purge Wtr. Containerized ? (N) Avg Purge Rate: _____ gpm

Weather: Sunny (60's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
11:47		-			19.49	6.41	0.291	60.6		Clear
11:51		2.0			17.11	6.44	0.264	928		Muddy
11:55		3.5			17.02	6.48	0.259	>1000		Muddy
12:00		4.8			16.96	6.52	0.254	>1000		Muddy, *purged dry

Average Linear velocity $v = \frac{Ki}{n}$ Where

Purged dry at 4.8 gallons

K= Hydraulic Conductivity (ft/min)

i = Gradient (ft/ft)

n = effective porosity

$$v = \left[\frac{K}{\text{distance}} \right] \text{ ft./min. (x) GW elev. } \text{ ft. (-) GW elev. } \text{ ft}] -$$

$$v = \text{ ft./min. } = \text{ ft day}$$

.18 Clay/Silt
 .20 Silt w/sand
 .25 sand
 .3 sand and gravel

Comments: Metals Sample Turbidity = 35.2 NTU's. VOC's taken on 3/31/15 @ 12:01 p.m. Metals taken on 4/1/15 @ 11:15 a.m. Allowed well to settle overnight.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

DATE: 3/31/15

FIELD SAMPLING LOG		WELL NO: MW-05	
Location: Loudon County		Site: Matlock Bend	
Client/Operator: Santek Waste Services, Inc.		Project No:	
Purge Start: (Date) 3/31/15 (Time) 10:08		Purge End: (Date) 3/31/15 (Time) 11:28	
Purged by: Robert Hudson			
Depth Measurement Ref. Point* 936.84 ft		Well Csg. ID: 2"	

Equipment Used to Measure (Make, Model, etc)

DTW Solinst _____ pH Horiba _____ Cond. Horiba _____ T° Horiba _____

Measure Well TD: 172.71 (-) Orig. DTW: 88.72 (=) Wtr. Col. Thick: 83.99

(x) 2"=0.16
 4"=0.65 Gals./ft. (=) 13.4 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 40.2 Total Purge Gals.
 6"=1.47

GW elev. Ref. 936.84 ft. (-) DTW 88.72 ft. = 848.12 ft.

 Purge/Sample Method: Pump (indicate type) _____
 Bailer (indicate type) Poly/Disposable _____

Decon. Method: Distilled Rinse

Purge Wtr. Containerized ? (N) Avg Purge Rate: _____ gpm

Weather: Sunny (50's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
10:09		-			19.52	7.50	0.232	0.8		Clear
10:33		13.5			18.41	7.64	0.228	30.4		Clear
11:01		27.0			18.29	7.61	0.219	235		Cloudy
11:28		40.5			18.21	7.62	0.216	449		Murky

Average Linear velocity $v = \frac{Ki}{n}$ Where

K= Hydraulic Conductivity (ft/min)

i = Gradient (ft/ft)

n = effective porosity

 $v = [K \frac{\text{ft/min. (x) GW elev. ft. (-) GW elev. ft.} - \text{distance ft}}{\text{ft}}]$
 $v = \text{ft./min.} = \text{ft day}$

Comments: Metals Sample Turbidity = 25.1 NTU's. VOC's taken on 3/31/15 @ 11:29 a.m. Metals taken on 4/1/15 @ 10:59 a.m. Allowed well to settle overnight.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

APPENDIX B



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

May 05, 2015

Will Martin
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW

Dear Will Martin:

Order No: 1504164

Analytical Environmental Services, Inc. received 5 samples on 4/2/2015 10:50:00 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' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

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

Chantelle Kanhai
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC
 3080 Presidential Drive, Atlanta GA 30340-3704
 TEL.: (770) 457-3177 / TOLL-FREE (800) 972-4989 / FAX: (770) 457-8188

CHAIN OF CUSTODY
 by IC
 by IC
 by IC

Work Order: 1504164
 Date: 4/11/15 Page: 1 of 1

COMPANY: Santek Waste Services, Inc.		ADDRESS: 650 25th Street NW, Suite 100, Cleveland, TN 37311		ANALYSIS REQUESTED		Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.	No. of Containers
PHONE: (423) 303-7101		FAX: (423) 479-1952		TDS Inorganic Anions App. I Metals Total Metals Total Mercury Dissolved Metals App. F VOCs Nitrogen, Ammonia COD TOC Cyanide Micro-Ext. VOC			
SAMPLED BY: R. Hudson		SIGNATURE: Robert Hudson		PRESERVATION (See codes)		REMARKS	
#	SAMPLE ID	DATE	TIME	Grab	Composite		
1	Leachate	4/1/15	12:15	X		O	Leachate 9
2	Trip Blank	4/1/15	2:30	X		W	9
3	Equip. Blank	4/1/15	2:45	X		W	9
4	MW-L4R	3/31/15	12:01	X		GW	1585
5	L	4/1/15	11:15	X		GW	1585
6	MW-05	3/31/15	11:29	X		GW	1585
7	L	4/1/15	10:59	X		GW	1
8	Duplicate	3/31/15		X		GW	1587
9	L	4/1/15		X		GW	2
10							
11							
12							
13							
14							
RELINQUISHED BY: Robert Hudson		DATE/TIME: 4/1/15	RECEIVED BY: Thomas Pacurar		DATE/TIME: 4/2/15 1050	PROJECT INFORMATION	
SPECIAL INSTRUCTIONS/COMMENTS: See Chantelle K. and Project History		SHIPMENT METHOD: <input checked="" type="radio"/> UPS <input type="radio"/> MAIL <input type="radio"/> COURIER		PROJECT NAME: Loudon Co (Mottick Bend) LE 1st Semi		RECEIPT	
		CLIENT: <input checked="" type="radio"/> UPS <input type="radio"/> MAIL <input type="radio"/> COURIER		PROJECT #: Annual GW Event 2015		Total # of Containers: 48 RH	
		GREYHOUND OTHER		SITE ADDRESS:		Turnaround Time Request: <input checked="" type="radio"/> Standard 5 Business Days <input type="radio"/> 2 Business Day Rush <input type="radio"/> Next Business Day Rush <input type="radio"/> Same Day Rush (with req.) <input type="radio"/> Other	
				SEND REPORT TO: Will Martia		STATE PROGRAM (if any):	
				INVOICE TO: (IF DIFFERENT FROM ABOVE)		E-mail? Y/N: Fax? Y/N	
				QUOTE #: PO#:		DATA PACKAGE: I II III IV	

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
 SAMPLES ARE DISPOSED 31 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.
 MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blacks) DW = Drinking Water (Blacks) O = Other (specify) WW = Waste Water
 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

Client: Santek Environmental Inc.
Project: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW
Lab ID: 1504164

Case Narrative

Samples "MW-4R" and "MW-05" were analyzed under work order 1504188.

Sample Receiving Nonconformance:

The containers submitted for Total Metals, Cyanide, Nitrogen, Ammonia (as N), Chemical Oxygen Demand and Total Organic Carbon for sample "LEACHATE" as received did not meet method specified pH range for the requested test methods. No attempt to further adjust the pH was made due to sample matrix.

Volatile Organic Compounds Analysis by Method 8260B:

Sample 1504164-001 as received did not meet method specified preservation requirements of pH <2.

Ion Chromatography Analysis by Method 300:

Due to sample matrix, sample 1504164-001 required dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Santek Waste Services

Work Order Number 1504164

Checklist completed by Joanna Pacurar Signature Date 4/2/15

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°C)* Yes No

Cooler #1 3.1°C 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 JP

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.

Analytical Environmental Services, Inc

Date: 5-May-15

Client: Santek Environmental Inc.	Dates Report
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GV	
Lab Order: 1504164	

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504164-001A	LEACHATE	4/1/2015 12:15:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-001B	LEACHATE	4/1/2015 12:15:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-001C	LEACHATE	4/1/2015 12:15:00PM	Aqueous	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-001C	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-001C	LEACHATE	4/1/2015 12:15:00PM	Aqueous	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504164-001D	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-001E	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-001E	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Chemical Oxygen Demand (COD)			04/06/2015
1504164-001E	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Total Organic Carbon by SM5310B			04/06/2015
1504164-001F	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-001G	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Inorganic Anions by IC			04/03/2015
1504164-001G	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504164-002A	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-002B	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-002C	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-002C	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-002C	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504164-002D	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-002E	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-002E	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Chemical Oxygen Demand (COD)			04/06/2015
1504164-002E	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Total Organic Carbon by SM5310B			04/06/2015
1504164-002F	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-002G	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Inorganic Anions by IC			04/02/2015
1504164-002G	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504164-003A	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-003B	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-003C	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-003C	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-003C	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015

Analytical Environmental Services, Inc

Date: 5-May-15

Client:	Santek Environmental Inc.	Dates Report
Project Name:	Loudon Co. (Matlock Bend) LF 1st Semi-Annual GV	
Lab Order:	1504164	

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504164-003D	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-003E	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-003E	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Chemical Oxygen Demand (COD)			04/06/2015
1504164-003E	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Total Organic Carbon by SM5310B			04/06/2015
1504164-003F	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-003G	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Inorganic Anions by IC			04/02/2015
1504164-003G	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504164-004A	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-004B	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-004C	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-004D	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-004D	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015
1504164-004D	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Total Organic Carbon by SM5310B			04/06/2015
1504164-004E	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-005A	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-005A	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-005A	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504164-005B	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Inorganic Anions by IC			04/02/2015
1504164-005B	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Inorganic Anions by IC			04/03/2015
1504164-005B	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015



AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

April 20, 2015

Will Martin
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW

Dear Will Martin:

Order No: 1504188

Analytical Environmental Services, Inc. received 4 samples on 4/2/2015 10:50:00 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' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

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

Chantelle Kanhai
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704

TEL: (770) 457-8187 TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY
by IC
by IC (M)
by IC (M)

Work Order 1504188

Date 4/1/15

#	SAMPLE ID	SAMPLED			Grab	Composite	Matrix (See codes)	ANALYSIS REQUESTED										Visit to www.aes.com to check on the status of your results, place bottle order, etc.	No. of Containers				
		DATE	TIME					Inorganic Anions	App. I Metals	Total Metals	Total Mercury	Dissolved Metals	App. I VOCs	Nitrogen / Ammonia	CO _D	TOC	Cyanide			Micro-Ext. VOCs			
1	Leachate	4/1/15	12:15	X		O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Leachate	9
2	Tr.p Blank	4/1/15	2:30	X		W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		9
3	Eq. Blank	4/1/15	2:45	X		W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		9
4	MW 4 R	3/31/15	12:01	X		GW	X					X									X		1
5	↳	4/1/15	11:15	X		GW	X	X	X			X									X		1
6	MW 5	3/31/15	11:29	X		GW	X					X									X		1
7	↳	4/1/15	10:59	X		GW		X	X														1
8	Duplicate	3/31/15		X		GW						X	X	X	X	X	X	X	X	X	X		1
9	↳	4/1/15		X		GW	X	X	X	X	X												2

PREPARED BY: Robert Haden DATE/TIME: 4pm 4/1/15	RECEIVED BY: Joana Pacwar DATE/TIME: 4/2/15 1050	PROJECT INFORMATION PROJECT NAME: Loudon Co (Matlock Bend) LF 1st Semi- PROJECT #: Annual GW Event 2015 SITE ADDRESS: SEND REPORT TO: Will Martin	RECEIPT Total Containers: 79 Turnaround Time Request: 48 hr <input checked="" type="radio"/> Standard Business Days <input type="radio"/> 2 Day Rush <input type="radio"/> Next Business Day Rush <input type="radio"/> Same Day Rush (auth req.) <input type="radio"/> Other:
SPECIAL INSTRUCTIONS: See Chantelle K. and Project History		SHIPMENT METHOD: <input checked="" type="radio"/> UPS VIA CLIENT <input type="radio"/> UPS MAIL COURIER <input type="radio"/> GREYHOUND OTHER	INVOICE TO: (IF DIFFERENT FROM ABOVE) QUOTE #: PO#:

SAMPLES RECEIVED AFTER 5PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD 15 BUSINESS DAY TURNAROUND TIME. SAMPLES ARE DISPATCHED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODE: A = Air, G = Groundwater, SE = Sediment, SO = Soil, SW = Surface Water, W = Water (Blanks), DW = Drinking Water (Blanks), O = Other (specify), WW = Waste Water
PRESERVATIVE: HCl = 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

Client: Santek Environmental Inc.
Project: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW
Lab ID: 1504188

Case Narrative

All of the other samples were analyzed under work order 1504164.

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Santek Waste Service Work Order Number 1504188

Checklist completed by Thomas Pacurar 4/2/15
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? ($0^{\circ} \leq 6^{\circ}C$)* Yes No

Cooler #1 3.1°C 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 JP

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.



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

April 10, 2015

Will Martin
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW

Dear Will Martin:

Order No: 1504147

Analytical Environmental Services, Inc. received 8 samples on 4/2/2015 10:50:00 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' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

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

Chantelle Kanhai
Project Manager



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: 1504147

Date: 4/1/15 Page 1 of 1

IC
 Ions
 App. I Metals
 Total Metals by ICP/MS
 Total Mercury
 Dissolved Metals
 App. T. Volcs
 Micro-Ext. VCLs
 Nitrogen Ammonia
 COD
 TOC
 Cyanide

COMPANY: <u>Santek Waste Services, Inc.</u>		ADDRESS: <u>650 25th Street NW, Suite 100, Cleveland, TN 37311</u>		ANALYSIS REQUESTED		Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.	No. of Containers											
PHONE: <u>(423) 303-7101</u>		FAX: <u>(423) 479-1952</u>		PRESERVATION (See codes)														
SAMPLED BY: <u>R. Hudson</u>		SIGNATURE: <u>Robert Hudson</u>		REMARKS														
#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)												
		DATE	TIME															
1	MW-03	4/1/15	10:38	X		GW				X	X	X	X	X	X	X	X	7
2	L	4/1/15	12:45	X		GW	X	X	X	X								2
3	MW-02	3/31/15	2:06	X		GW				X	X	X	X	X	X			7
4	L	4/1/15	9:40	X		GW	X	X	X	X								2
5	MW-01	3/31/15	3:06	X		GW				X	X	X	X	X	X			7
6	L	4/1/15	11:30	X		GW	X	X	X	X								2
7	MW-1A	3/31/15	3:51	X		GW				X	X	X	X	X	X			7
8	L	4/1/15	11:45	X		GW	X	X	X	X								2
9																		
10																		
11																		
12																		
13																		
14																		

RELINQUISHED BY: <u>Robert Hudson</u>	DATE/TIME: <u>4/1/15</u>	RECEIVED BY: <u>John B</u>	DATE/TIME: <u>4/1/15 10:50</u>	PROJECT NAME: <u>Loudon Co (Matlock Bend) LF 1st Semi-</u>	RECEIPT
SPECIAL INSTRUCTIONS/COMMENTS: <u>See Chantelle K. and Project History</u>				PROJECT #: <u>Annual GW Event 2015</u>	Total # of Containers: <u>36</u>
SHIPMENT METHOD: <u>OUT IN</u> VIA: <u>UPS MAIL COURIER</u>				SITE ADDRESS:	
SEND REPORT TO: <u>Will Martin</u>				INVOICE TO: (IF DIFFERENT FROM ABOVE)	<input checked="" type="radio"/> Expedited Time Request <input type="radio"/> Standard 5 Business Days <input type="radio"/> 2 Business Day Rush <input type="radio"/> Next Business Day Rush <input type="radio"/> Same Day Rush (with req.) <input type="radio"/> Other
STATE PROGRAM (if any):				QUOTE #:	
SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.				PO#:	E-mail? Y/N: Fax? Y/N DATA PACKAGE: I II III IV

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
 PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice SM+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

Page 2 of 17
 White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Santek Waste Services

Work Order Number 1504147

Checklist completed by Jason B 4/2/15
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°C)* Yes No

Cooler #1 3-2 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 JB

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.

Analytical Environmental Services, Inc

Date: 17-Apr-15

Client:	Santek Environmental Inc.	Dates Report
Project Name:	Loudon Co. (Mallock Bend) LF 1st Semi-Annual GV	
Lab Order:	1504147	

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504147-001A	MW-03	4/1/2015 10:38:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/2/2015 4:15:00 PM	04/04/2015
1504147-001B	MW-03	4/1/2015 10:38:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504147-001C	MW-03	4/1/2015 10:38:00AM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504147-001D	MW-03	4/1/2015 10:38:00AM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:00:00 PM	04/09/2015
1504147-001D	MW-03	4/1/2015 10:38:00AM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015
1504147-001D	MW-03	4/1/2015 10:38:00AM	Groundwater	Total Organic Carbon by SM5310B			04/03/2015
1504147-001E	MW-03	4/1/2015 10:38:00AM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504147-002A	MW-03	4/1/2015 12:45:00PM	Groundwater	Inorganic Anions by IC			04/02/2015
1504147-002A	MW-03	4/1/2015 12:45:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504147-002B	MW-03	4/1/2015 12:45:00PM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504147-002B	MW-03	4/1/2015 12:45:00PM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504147-002B	MW-03	4/1/2015 12:45:00PM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504147-003A	MW-02	3/31/2015 2:06:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/2/2015 4:15:00 PM	04/04/2015
1504147-003B	MW-02	3/31/2015 2:06:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504147-003C	MW-02	3/31/2015 2:06:00PM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504147-003D	MW-02	3/31/2015 2:06:00PM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:00:00 PM	04/09/2015
1504147-003D	MW-02	3/31/2015 2:06:00PM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015
1504147-003D	MW-02	3/31/2015 2:06:00PM	Groundwater	Total Organic Carbon by SM5310B			04/03/2015
1504147-003E	MW-02	3/31/2015 2:06:00PM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504147-004A	MW-02	4/1/2015 9:40:00AM	Groundwater	Inorganic Anions by IC			04/02/2015
1504147-004A	MW-02	4/1/2015 9:40:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504147-004B	MW-02	4/1/2015 9:40:00AM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504147-004B	MW-02	4/1/2015 9:40:00AM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504147-004B	MW-02	4/1/2015 9:40:00AM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504147-005A	MW-01	3/31/2015 3:06:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/2/2015 4:15:00 PM	04/04/2015
1504147-005B	MW-01	3/31/2015 3:06:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504147-005C	MW-01	3/31/2015 3:06:00PM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504147-005D	MW-01	3/31/2015 3:06:00PM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:00:00 PM	04/09/2015
1504147-005D	MW-01	3/31/2015 3:06:00PM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015

Client: Santek Environmental Inc.
 Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GV
 Lab Order: 1504147

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504147-005D	MW-01	3/31/2015 3:06:00PM	Groundwater	Total Organic Carbon by SM5310B			04/03/2015
1504147-005E	MW-01	3/31/2015 3:06:00PM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504147-006A	MW-01	4/1/2015 11:30:00AM	Groundwater	Inorganic Anions by IC			04/02/2015
1504147-006A	MW-01	4/1/2015 11:30:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504147-006B	MW-01	4/1/2015 11:30:00AM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504147-006B	MW-01	4/1/2015 11:30:00AM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504147-006B	MW-01	4/1/2015 11:30:00AM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504147-007A	MW-1A	3/31/2015 3:51:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/2/2015 4:15:00 PM	04/04/2015
1504147-007B	MW-1A	3/31/2015 3:51:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504147-007C	MW-1A	3/31/2015 3:51:00PM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504147-007D	MW-1A	3/31/2015 3:51:00PM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:00:00 PM	04/09/2015
1504147-007D	MW-1A	3/31/2015 3:51:00PM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015
1504147-007D	MW-1A	3/31/2015 3:51:00PM	Groundwater	Total Organic Carbon by SM5310B			04/03/2015
1504147-007E	MW-1A	3/31/2015 3:51:00PM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504147-008A	MW-1A	4/1/2015 11:45:00AM	Groundwater	Inorganic Anions by IC			04/02/2015
1504147-008A	MW-1A	4/1/2015 11:45:00AM	Groundwater	Inorganic Anions by IC			04/03/2015
1504147-008A	MW-1A	4/1/2015 11:45:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504147-008B	MW-1A	4/1/2015 11:45:00AM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504147-008B	MW-1A	4/1/2015 11:45:00AM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504147-008B	MW-1A	4/1/2015 11:45:00AM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015

Analytical Environmental Services, Inc

Date: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-03
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 10:38:00 AM
Lab ID: 1504147-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R289269	1	04/03/2015 18:19	YS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205606	1	04/09/2015 16:08	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.203		ug/L	205555	1	04/06/2015 18:47	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 18:47	SH
Surr: 4-Bromofluorobenzene	94.3	64.7-140		%REC	205555	1	04/06/2015 18:47	SH
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	139	10.0		ug/L	205685	1	04/08/2015 19:13	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205488	1	04/04/2015 17:07	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
1,1-Dichloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205488	1	04/04/2015 17:07	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205488	1	04/04/2015 17:07	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205488	1	04/04/2015 17:07	CH
2-Butanone	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
2-Hexanone	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Acetone	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Acrylonitrile	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Benzene	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Bromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Bromodichloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Bromoform	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Bromomethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH

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

Client:	Santek Environmental Inc.	Client Sample ID:	MW-03
Project Name:	Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date:	4/1/2015 10:38:00 AM
Lab ID:	1504147-001	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Carbon disulfide	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Carbon tetrachloride	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Chlorobenzene	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Chloroethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Chloroform	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Chloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205488	1	04/04/2015 17:07	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Dibromochloromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Dibromomethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Ethylbenzene	BRL	700		ug/L	205488	1	04/04/2015 17:07	CH
Iodomethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Methylene chloride	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Styrene	BRL	100		ug/L	205488	1	04/04/2015 17:07	CH
Tetrachloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Toluene	BRL	1000		ug/L	205488	1	04/04/2015 17:07	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205488	1	04/04/2015 17:07	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Trichloroethene	BRL	5.0		ug/L	205488	1	04/04/2015 17:07	CH
Trichlorofluoromethane	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Vinyl acetate	BRL	10		ug/L	205488	1	04/04/2015 17:07	CH
Vinyl chloride	BRL	2.0		ug/L	205488	1	04/04/2015 17:07	CH
Xylenes, Total	BRL	10000		ug/L	205488	1	04/04/2015 17:07	CH
Surr: 4-Bromofluorobenzene	76	70.6-123		%REC	205488	1	04/04/2015 17:07	CH
Surr: Dibromofluoromethane	114	78.7-124		%REC	205488	1	04/04/2015 17:07	CH
Surr: Toluene-d8	98.2	81.3-120		%REC	205488	1	04/04/2015 17:07	CH

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: 10-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-03
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 12:45:00 PM
Lab ID: 1504147-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					(SW3005A)			
Calcium	1410	100		ug/L	205476	1	04/08/2015 13:59	JS
Iron	113	100		ug/L	205476	1	04/08/2015 13:59	JS
Magnesium	828	100		ug/L	205476	1	04/08/2015 13:59	JS
Potassium	784	500		ug/L	205476	1	04/08/2015 13:59	JS
Sodium	11800	500		ug/L	205476	1	04/08/2015 13:59	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	3	1		mg/L	205629	1	04/07/2015 10:00	JS
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 13:52	TA
Inorganic Anions by IC E300.0								
Chloride	18.2	1.00		mg/L	R289400	1	04/02/2015 13:56	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 13:56	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 13:56	JW
Sulfate	2.69	1.00		mg/L	R289400	1	04/02/2015 13:56	JW
APPENDIX I METALS SW6020A					(SW3005A)			
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 13:59	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 13:59	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 13:59	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 13:59	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 13:59	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 13:59	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 13:59	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 13:59	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 13:59	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 13:59	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 13:59	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 13:59	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 13:59	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 13:59	JS
Zinc	BRL	0.0200		mg/L	205476	1	04/08/2015 13:59	JS

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: 20-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-4R
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 12:01:00 PM
Lab ID: 1504188-001	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	0.203		ug/L	205555	1	04/06/2015 23:34	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 23:34	SH
Surr: 4-Bromofluorobenzene	96.7	64.7-140		%REC	205555	1	04/06/2015 23:34	SH
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R289307	1	04/06/2015 18:47	JW
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205572	1	04/04/2015 19:30	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 19:30	CH
1,1-Dichloroethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205572	1	04/04/2015 19:30	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205572	1	04/04/2015 19:30	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 19:30	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205572	1	04/04/2015 19:30	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205572	1	04/04/2015 19:30	CH
2-Butanone	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
2-Hexanone	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Acetone	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Acrylonitrile	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Benzene	BRL	5.0		ug/L	205572	1	04/04/2015 19:30	CH
Bromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Bromodichloromethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Bromoform	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Bromomethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Carbon disulfide	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Carbon tetrachloride	BRL	5.0		ug/L	205572	1	04/04/2015 19:30	CH
Chlorobenzene	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Chloroethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Chloroform	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Chloromethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205572	1	04/04/2015 19:30	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Dibromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Dibromomethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Ethylbenzene	BRL	700		ug/L	205572	1	04/04/2015 19:30	CH
Iodomethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH

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: 20-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-4R
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 12:01:00 PM
Lab ID: 1504188-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Methylene chloride	BRL	5.0		ug/L	205572	1	04/04/2015 19:30	CH
Styrene	BRL	100		ug/L	205572	1	04/04/2015 19:30	CH
Tetrachloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 19:30	CH
Toluene	BRL	1000		ug/L	205572	1	04/04/2015 19:30	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205572	1	04/04/2015 19:30	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Trichloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 19:30	CH
Trichlorofluoromethane	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Vinyl acetate	BRL	10		ug/L	205572	1	04/04/2015 19:30	CH
Vinyl chloride	BRL	2.0		ug/L	205572	1	04/04/2015 19:30	CH
Xylenes, Total	BRL	10000		ug/L	205572	1	04/04/2015 19:30	CH
Surr: 4-Bromofluorobenzene	78.1	70.6-123		%REC	205572	1	04/04/2015 19:30	CH
Surr: Dibromofluoromethane	117	78.7-124		%REC	205572	1	04/04/2015 19:30	CH
Surr: Toluene-d8	101	81.3-120		%REC	205572	1	04/04/2015 19:30	CH

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: 20-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-4R
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 11:15:00 AM
Lab ID: 1504188-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 14:14	TA
APPENDIX I METALS SW6020A					(SW3005A)			
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 17:21	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 17:21	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 17:21	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 17:21	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 17:21	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 17:21	JS
Cobalt	0.0266	0.0100		mg/L	205476	1	04/08/2015 17:21	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 17:21	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 17:21	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 17:21	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:21	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 17:21	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 17:21	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:21	JS
Zinc	0.0633	0.0200		mg/L	205476	1	04/08/2015 17:21	JS

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: 20-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-05
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 11:29:00 AM
Lab ID: 1504188-003	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	0.203		ug/L	205555	1	04/07/2015 00:02	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/07/2015 00:02	SH
Surr: 4-Bromofluorobenzene	102	64.7-140		%REC	205555	1	04/07/2015 00:02	SH
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R289307	1	04/06/2015 19:01	JW
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205572	1	04/04/2015 19:54	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 19:54	CH
1,1-Dichloroethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205572	1	04/04/2015 19:54	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205572	1	04/04/2015 19:54	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 19:54	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205572	1	04/04/2015 19:54	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205572	1	04/04/2015 19:54	CH
2-Butanone	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
2-Hexanone	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Acetone	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Acrylonitrile	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Benzene	BRL	5.0		ug/L	205572	1	04/04/2015 19:54	CH
Bromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Bromodichloromethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Bromoform	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Bromomethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Carbon disulfide	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Carbon tetrachloride	BRL	5.0		ug/L	205572	1	04/04/2015 19:54	CH
Chlorobenzene	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Chloroethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Chloroform	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Chloromethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205572	1	04/04/2015 19:54	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Dibromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Dibromomethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Ethylbenzene	BRL	700		ug/L	205572	1	04/04/2015 19:54	CH
Iodomethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH

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: 20-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-05
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 3/31/2015 11:29:00 AM
Lab ID: 1504188-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B					(SW5030B)			
Methylene chloride	BRL	5.0		ug/L	205572	1	04/04/2015 19:54	CH
Styrene	BRL	100		ug/L	205572	1	04/04/2015 19:54	CH
Tetrachloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 19:54	CH
Toluene	BRL	1000		ug/L	205572	1	04/04/2015 19:54	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205572	1	04/04/2015 19:54	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Trichloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 19:54	CH
Trichlorofluoromethane	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Vinyl acetate	BRL	10		ug/L	205572	1	04/04/2015 19:54	CH
Vinyl chloride	BRL	2.0		ug/L	205572	1	04/04/2015 19:54	CH
Xylenes, Total	BRL	10000		ug/L	205572	1	04/04/2015 19:54	CH
Surr: 4-Bromofluorobenzene	81	70.6-123		%REC	205572	1	04/04/2015 19:54	CH
Surr: Dibromofluoromethane	119	78.7-124		%REC	205572	1	04/04/2015 19:54	CH
Surr: Toluene-d8	103	81.3-120		%REC	205572	1	04/04/2015 19:54	CH

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: 20-Apr-15

Client: Santek Environmental Inc.	Client Sample ID: MW-05
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 10:59:00 AM
Lab ID: 1504188-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A								
					(SW7470A)			
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 14:16	TA
APPENDIX I METALS SW6020A								
					(SW3005A)			
Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 17:27	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 17:27	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 17:27	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 17:27	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 17:27	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 17:27	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 17:27	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 17:27	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 17:27	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 17:27	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:27	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 17:27	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 17:27	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:27	JS
Zinc	BRL	0.0200		mg/L	205476	1	04/08/2015 17:27	JS

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: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: TRIP BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:30:00 PM
Lab ID: 1504164-002	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	R289374	1	04/06/2015 17:52	YS
Total Metals by ICP/MS SW6020A (SW3005A)								
Calcium	BRL	100		ug/L	205476	1	04/08/2015 16:56	JS
Iron	BRL	100		ug/L	205476	1	04/08/2015 16:56	JS
Magnesium	BRL	100		ug/L	205476	1	04/08/2015 16:56	JS
Potassium	BRL	500		ug/L	205476	1	04/08/2015 16:56	JS
Sodium	BRL	500		ug/L	205476	1	04/08/2015 16:56	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	BRL	1		mg/L	205629	1	04/07/2015 10:00	JS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205608	1	04/09/2015 16:30	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.205		ug/L	205555	1	04/06/2015 22:08	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 22:08	SH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 14:00	TA
Inorganic Anions by IC E300.0								
Chloride	BRL	1.00		mg/L	R289400	1	04/02/2015 17:37	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 17:37	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 17:37	JW
Sulfate	BRL	1.00		mg/L	R289400	1	04/02/2015 17:37	JW
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	BRL	10.0		ug/L	205685	1	04/08/2015 17:44	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205572	1	04/04/2015 15:55	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH

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

Client:	Santek Environmental Inc.	Client Sample ID:	TRIP BLANK
Project Name:	Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date:	4/1/2015 2:30:00 PM
Lab ID:	1504164-002	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS		SW8260B			(SW5030B)			
1,1,2-Trichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
1,1-Dichloroethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205572	1	04/04/2015 15:55	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205572	1	04/04/2015 15:55	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205572	1	04/04/2015 15:55	CH
2-Butanone	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
2-Hexanone	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Acetone	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Acrylonitrile	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Benzene	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Bromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Bromodichloromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Bromoform	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Bromomethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Carbon disulfide	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Carbon tetrachloride	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Chlorobenzene	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Chloroethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Chloroform	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Chloromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205572	1	04/04/2015 15:55	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Dibromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Dibromomethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Ethylbenzene	BRL	700		ug/L	205572	1	04/04/2015 15:55	CH
Iodomethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Methylene chloride	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Styrene	BRL	100		ug/L	205572	1	04/04/2015 15:55	CH
Tetrachloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Toluene	BRL	1000		ug/L	205572	1	04/04/2015 15:55	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205572	1	04/04/2015 15:55	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Trichloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 15:55	CH
Trichlorofluoromethane	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Vinyl acetate	BRL	10		ug/L	205572	1	04/04/2015 15:55	CH
Vinyl chloride	BRL	2.0		ug/L	205572	1	04/04/2015 15:55	CH

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

Client: Santek Environmental Inc.	Client Sample ID: TRIP BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:30:00 PM
Lab ID: 1504164-002	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
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APPENDIX I VOLATILE ORGANICS SW8260B

(SW5030B)

Xylenes, Total	BRL	10000		ug/L	205572	1	04/04/2015 15:55	CH
Surr: 4-Bromofluorobenzene	82.4	70.6-123		%REC	205572	1	04/04/2015 15:55	CH
Surr: Dibromofluoromethane	110	78.7-124		%REC	205572	1	04/04/2015 15:55	CH
Surr: Toluene-d8	98.8	81.3-120		%REC	205572	1	04/04/2015 15:55	CH

APPENDIX I METALS SW6020A

(SW3005A)

Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 16:56	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 16:56	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 16:56	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 16:56	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 16:56	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 16:56	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 16:56	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 16:56	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 16:56	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 16:56	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 16:56	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 16:56	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 16:56	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 16:56	JS
Zinc	BRL	0.0200		mg/L	205476	1	04/08/2015 16:56	JS

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: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: EQUIP. BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:45:00 PM
Lab ID: 1504164-003	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	R289374	1	04/06/2015 18:05	YS
Total Metals by ICP/MS SW6020A (SW3005A)								
Calcium	BRL	100		ug/L	205476	1	04/08/2015 17:02	JS
Iron	BRL	100		ug/L	205476	1	04/08/2015 17:02	JS
Magnesium	BRL	100		ug/L	205476	1	04/08/2015 17:02	JS
Potassium	BRL	500		ug/L	205476	1	04/08/2015 17:02	JS
Sodium	BRL	500		ug/L	205476	1	04/08/2015 17:02	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	1	1		mg/L	205629	1	04/07/2015 10:00	JS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	205608	1	04/09/2015 16:25	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.204		ug/L	205555	1	04/06/2015 22:36	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 22:36	SH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 14:06	TA
Inorganic Anions by IC E300.0								
Chloride	BRL	1.00		mg/L	R289400	1	04/02/2015 17:52	JW
Fluoride	BRL	4.00		mg/L	R289400	1	04/02/2015 17:52	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R289400	1	04/02/2015 17:52	JW
Sulfate	BRL	1.00		mg/L	R289400	1	04/02/2015 17:52	JW
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	BRL	10.0		ug/L	205685	1	04/08/2015 19:01	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R289240	1	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205572	1	04/04/2015 16:19	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH

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: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: EQUIP. BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:45:00 PM
Lab ID: 1504164-003	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS		SW8260B			(SW5030B)			
1,1,2-Trichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
1,1-Dichloroethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205572	1	04/04/2015 16:19	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205572	1	04/04/2015 16:19	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205572	1	04/04/2015 16:19	CH
2-Butanone	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
2-Hexanone	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
4-Methyl-2-pentanone	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Acetone	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Acrylonitrile	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Benzene	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Bromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Bromodichloromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Bromoform	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Bromomethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Carbon disulfide	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Carbon tetrachloride	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Chlorobenzene	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Chloroethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Chloroform	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Chloromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205572	1	04/04/2015 16:19	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Dibromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Dibromomethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Ethylbenzene	BRL	700		ug/L	205572	1	04/04/2015 16:19	CH
Iodomethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Methylene chloride	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Styrene	BRL	100		ug/L	205572	1	04/04/2015 16:19	CH
Tetrachloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Toluene	BRL	1000		ug/L	205572	1	04/04/2015 16:19	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205572	1	04/04/2015 16:19	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Trichloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 16:19	CH
Trichlorofluoromethane	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Vinyl acetate	BRL	10		ug/L	205572	1	04/04/2015 16:19	CH
Vinyl chloride	BRL	2.0		ug/L	205572	1	04/04/2015 16:19	CH

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

Client: Santek Environmental Inc.	Client Sample ID: EQUIP. BLANK
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 2:45:00 PM
Lab ID: 1504164-003	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
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APPENDIX I VOLATILE ORGANICS SW8260B

(SW5030B)

Xylenes, Total	BRL	10000		ug/L	205572	1	04/04/2015 16:19	CH
Surr: 4-Bromofluorobenzene	79.8	70.6-123		%REC	205572	1	04/04/2015 16:19	CH
Surr: Dibromofluoromethane	116	78.7-124		%REC	205572	1	04/04/2015 16:19	CH
Surr: Toluene-d8	102	81.3-120		%REC	205572	1	04/04/2015 16:19	CH

APPENDIX I METALS SW6020A

(SW3005A)

Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 17:02	JS
Arsenic	BRL	0.0500		mg/L	205476	1	04/08/2015 17:02	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 17:02	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 17:02	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 17:02	JS
Chromium	BRL	0.100		mg/L	205476	1	04/08/2015 17:02	JS
Cobalt	BRL	0.0100		mg/L	205476	1	04/08/2015 17:02	JS
Copper	BRL	0.0100		mg/L	205476	1	04/08/2015 17:02	JS
Lead	BRL	0.0150		mg/L	205476	1	04/08/2015 17:02	JS
Nickel	BRL	0.100		mg/L	205476	1	04/08/2015 17:02	JS
Selenium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:02	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 17:02	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 17:02	JS
Vanadium	BRL	0.0100		mg/L	205476	1	04/08/2015 17:02	JS
Zinc	BRL	0.0200		mg/L	205476	1	04/08/2015 17:02	JS

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

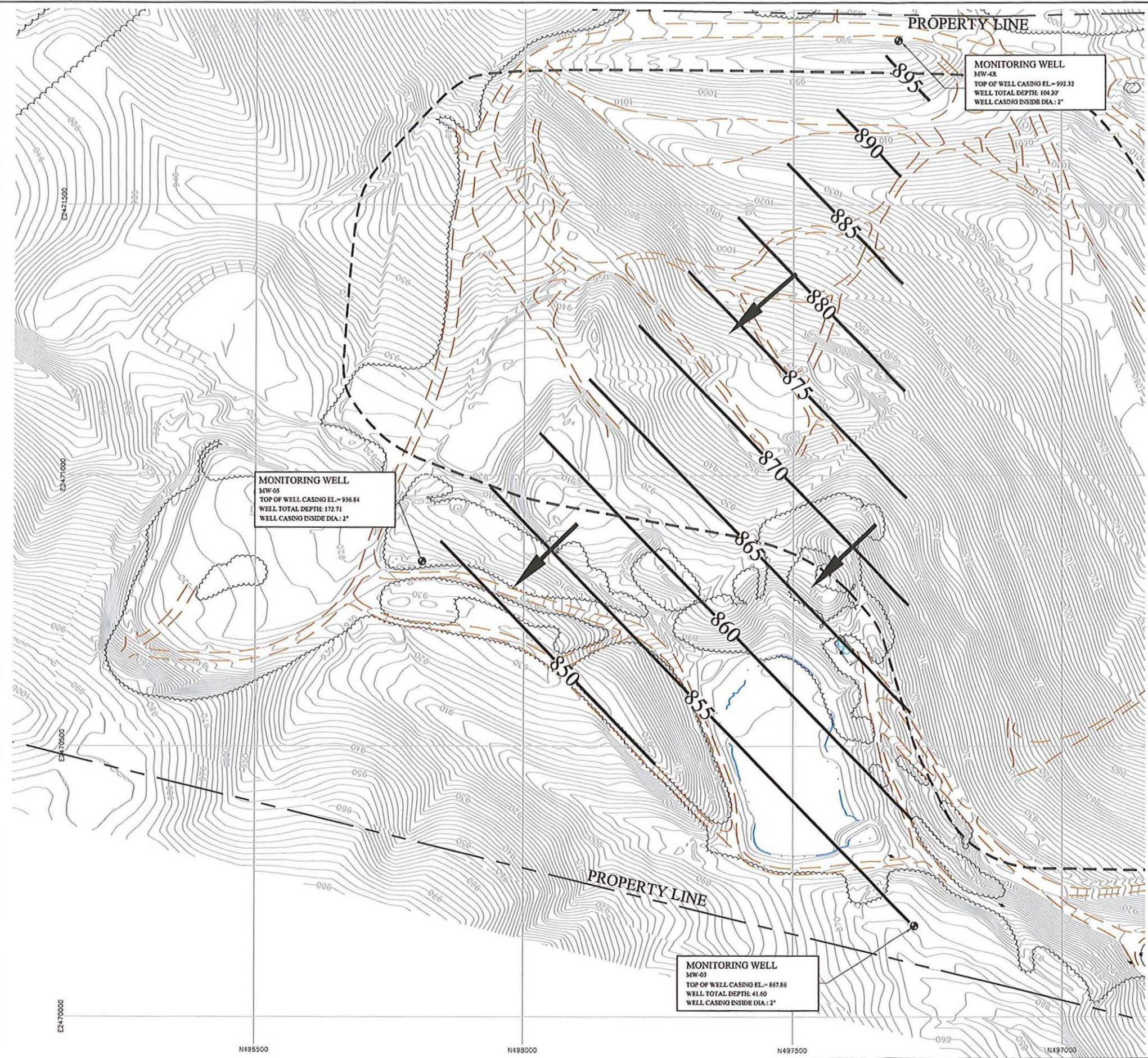
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

APPENDIX C

GROUNDWATER DATA
Matlock Bend Landfill (Phase II/IV)
March 31, 2015

Well No.	Elev. Of TOC	Depth to GW (ft below TOC)	Water Elevation	Contour Elevation	Distance	Hydraulic Conductivity	Effective Porosity (n)	Hydraulic Gradient	Average Linear Velocity		Directions
									ft/min	ft/day	
MW-03	867.86	12.80	855.06	855	5	1.20E-05	0.18	1.20E-02	8.00E-07	1.15E-03	NW
MW-4R*	992.32	95.97	896.35	895	35	1.90E-05	0.18	3.86E-02	4.07E-06	5.86E-03	NW
MW-05	936.84	88.72	848.12	850	50	2.20E-05	0.18	3.76E-02	4.60E-06	6.62E-03	NW

*-Hydraulic conductivity for MW-4R is from MW-04



MONITORING WELL
 MW-4R
 TOP OF WELL CASING EL. = 992.32
 WELL TOTAL DEPTH: 104.27'
 WELL CASING INSIDE DIA.: 2"

MONITORING WELL
 MW-05
 TOP OF WELL CASING EL. = 936.84
 WELL TOTAL DEPTH: 172.71'
 WELL CASING INSIDE DIA.: 2"

MONITORING WELL
 MW-03
 TOP OF WELL CASING EL. = 867.86
 WELL TOTAL DEPTH: 41.60'
 WELL CASING INSIDE DIA.: 2"

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 MARCH 31, 2015.
 2. TOPOGRAPHIC CONTOURS SHOWN WERE PROVIDED BY SOUTHERN RESOURCES MAPPING CORP., NORTHPORT, ALABAMA, DATED SEPTEMBER 18, 2014.

G.W. WELL NO.	WATER ELEV.
MW-03	855.06
MW-4R	896.35
MW-05	848.12



DATE	DRWN	CHKD	REVISION

2015 SEMI-ANNUAL (SPRING) GROUNDWATER
 POTENTIOMETRIC CONTOUR MAP
 MATLOCK BEND LANDFILL-PHASE II / IV
 LOUDON COUNTY, TENNESSEE

SANTEK ENVIRONMENTAL
 650 25TH STREET NW
 SUITE 100
 CLEVELAND, TENNESSEE

SCALE: 1"=200'
 DATE: 5/2/15
 DRAWN BY: RH
 CHECKED BY: WM
 APPROVED BY: RV
 FILE: 151052
 JOB NO. 200-1510

C:\WORK\104808\104808.dwg - 5/26/2015 3:23:53 PM - 14W0000\FBELL-PC\HP-Designer-9888 Printer (Copy 2)

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LEACHATE FIELD LOG

DATE: 4/1/15

FIELD SAMPLING LOG		WELL NO: Leachate	
Location: Loudon County		Site: Matlock Bend	
Client/Operator: Santek Waste Services, Inc.		Project No:	
Purge Start: (Date) 4/1/15 (Time) 12:15		Purge End: (Date) (Time)	
Purged by: Robert Hudson			
Depth Measurement Ref. Point* N/A ft		Well Csg. ID: 2"	

Equipment Used to Measure (Make, Model, etc)

DTW Solinst _____ pH Horiba _____ Cond. Horiba _____ T° Horiba _____

Measure Well TD: _____ N/A _____ (-) Orig. DTW: _____ (=) Wtr. Col. Thick: _____

2"=0.16
 (x) 4"=0.65 Gals./ft. (=) _____ Gals./Csg. Vol. (x) _____ Csg. Vol. (=) _____ Total Purge Gals.
 6"=1.47

GW elev. Ref. _____ N/A _____ ft. (-) DTW _____ ft. = _____ ft.

Purge/Sample Method: Directly into bottles

Decon. Method: Distilled Rinse

Purge Wtr. Containerized ? (N) Avg Purge Rate: _____ gpm

Weather: Sunny (60's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
12:15		-	-	-	22.48	7.38	13.9	225		Black/dark brown, strong odor

Average Linear velocity $v = \frac{Ki}{n}$ Where

K= Hydraulic Conductivity (ft/min)
 i = Gradient (ft/ft)
 n = effective porosity

$v = [K \text{ _____ ft/min. (x) GW elev. _____ ft. (-) GW elev. _____ ft}] -$ _____
 distance _____ ft

$v = \text{_____ ft./min.} = \text{_____ ft day}$ _____
 .18 Clay/Silt
 .20 S&I w/sand
 .25 sand
 .3 sand and gravel

Comments: Metals Sample Turbidity = 225 NTU's.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

LEACHATE ANALYTICAL DATA



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

May 05, 2015

Will Martin
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW

Dear Will Martin:

Order No: 1504164

Analytical Environmental Services, Inc. received 5 samples on 4/2/2015 10:50:00 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' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

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

Chantelle Kanhai
Project Manager



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
 by IC
 by IC
 by IC

Work Order: 1504164
 Date: 4/11/15 Page 1 of 1

COMPANY:		ADDRESS:		ANALYSIS REQUESTED										REMARKS	No. of Containers							
Santek Waste Services, Inc.		650 25th Street NW, Suite 100, Cleveland, TN 37311		TDS	Inorganic Anions	App. I Metals	Total Metals	Total Mercury	Dissolved Ammonia	App. II VOCs	Nitrogen, Ammonia	CO2	TOL			Cyanide	Milco-Ext. VOC					
PHONE:	FAX:	SAMPLED BY:	SIGNATURE:	DATE/TIME		DATE/TIME		DATE/TIME		DATE/TIME		DATE/TIME		DATE/TIME								
(423) 303-7101	(423) 479-1952	R. Hudson	Robert Hudson	4/11/15 12:15		4/11/15 2:30		4/11/15 2:45		3/31/15 12:01		4/11/15 11:15		3/31/15 11:29								
SAMPLE ID		DATE	TIME	Crnb	Composite	Matrix (Sec codes)	PRESERVATION (See codes)										REMARKS	No. of Containers				
1	Leachate	4/11/15	12:15	X		0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Leachate	9
2	Trip Blank	4/11/15	2:30	X		W	X	X	X	X	X	X	X	X	X	X	X	X	X	X		9
3	Equip. Blank	4/11/15	2:45	X		W	X	X	X	X	X	X	X	X	X	X	X	X	X	X		9
4	MW L4R	3/31/15	12:01	X		GW	X															1
5	L	4/11/15	11:15	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1
6	MW-05	3/31/15	11:29	X		GW	X															1
7	L	4/11/15	10:59	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1
8	Duplicate	3/31/15		X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1
9	L	4/11/15		X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X		2
10																						
11																						
12																						
13																						
14																						
RELINQUISHED BY:		DATE/TIME	RECEIVED BY:	DATE/TIME	PROJECT INFORMATION										RECEIPT							
Robert Hudson		4/11/15	Josmar Pacurar	4/2/15 1050	PROJECT NAME: Loudon Co (Matlock Bend) LF 1st Semi- PROJECT #: Annual GW Event 2015 SITE ADDRESS: SEND REPORT TO: Will Martin (INVOICE TO: (IF DIFFERENT FROM ABOVE) QUOTE #: PO#:										Total # of Containers	48						
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD				STATE PROGRAM (if any):				E-mail? Y/N: Fax? Y/N										
See Chantelle K. and Project History				SHIPMENT METHOD: <input checked="" type="radio"/> UPS MAIL COURIER				STATE PROGRAM (if any):				E-mail? Y/N: Fax? Y/N										

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY, IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
 SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.
 MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
 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

Client: Santek Environmental Inc.
Project: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW
Lab ID: 1504164

Case Narrative

Samples "MW-4R" and "MW-05" were analyzed under work order 1504188.

Sample Receiving Nonconformance:

The containers submitted for Total Metals, Cyanide, Nitrogen, Ammonia (as N), Chemical Oxygen Demand and Total Organic Carbon for sample "LEACHATE" as received did not meet method specified pH range for the requested test methods. No attempt to further adjust the pH was made due to sample matrix.

Volatile Organic Compounds Analysis by Method 8260B:

Sample 1504164-001 as received did not meet method specified preservation requirements of pH <2.

Ion Chromatography Analysis by Method 300:

Due to sample matrix, sample 1504164-001 required dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Santek Waste Services

Work Order Number 1504164

Checklist completed by Joanna Pacurar 4/2/15
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°C)* Yes No

Cooler #1 3.1c 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 JP

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.

Analytical Environmental Services, Inc

Date: 5-May-15

Client:	Santek Environmental Inc.	Dates Report
Project Name:	Loudon Co. (Matlock Bend) LF 1st Semi-Annual GV	
Lab Order:	1504164	

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504164-001A	LEACHATE	4/1/2015 12:15:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-001B	LEACHATE	4/1/2015 12:15:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-001C	LEACHATE	4/1/2015 12:15:00PM	Aqueous	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-001C	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-001C	LEACHATE	4/1/2015 12:15:00PM	Aqueous	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504164-001D	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-001E	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-001E	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Chemical Oxygen Demand (COD)			04/06/2015
1504164-001E	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Total Organic Carbon by SM5310B			04/06/2015
1504164-001F	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-001G	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Inorganic Anions by IC			04/03/2015
1504164-001G	LEACHATE	4/1/2015 12:15:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504164-002A	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-002B	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-002C	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-002C	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-002C	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504164-002D	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-002E	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-002E	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Chemical Oxygen Demand (COD)			04/06/2015
1504164-002E	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Total Organic Carbon by SM5310B			04/06/2015
1504164-002F	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-002G	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Inorganic Anions by IC			04/02/2015
1504164-002G	TRIP BLANK	4/1/2015 2:30:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504164-003A	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-003B	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-003C	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-003C	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-003C	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015

Analytical Environmental Services, Inc

Date: 5-May-15

Client:	Santek Environmental Inc.	Dates Report
Project Name:	Loudon Co. (Matlock Bend) LF 1st Semi-Annual GV	
Lab Order:	1504164	

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1504164-003D	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-003E	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-003E	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Chemical Oxygen Demand (COD)			04/06/2015
1504164-003E	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Total Organic Carbon by SM5310B			04/06/2015
1504164-003F	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-003G	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Inorganic Anions by IC			04/02/2015
1504164-003G	EQUIP. BLANK	4/1/2015 2:45:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015
1504164-004A	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		4/4/2015 1:01:00 PM	04/04/2015
1504164-004B	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		4/6/2015 9:17:02 AM	04/06/2015
1504164-004C	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Dissolved Metals by ICP/MS		4/8/2015 2:19:00 PM	04/08/2015
1504164-004D	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Nitrogen, Ammonia (as N)		4/7/2015 7:40:00 PM	04/09/2015
1504164-004D	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Chemical Oxygen Demand (COD)			04/06/2015
1504164-004D	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Total Organic Carbon by SM5310B			04/06/2015
1504164-004E	DUPLICATE	3/31/2015 12:00:00AM	Groundwater	Cyanide		4/8/2015 12:00:00 PM	04/08/2015
1504164-005A	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	APPENDIX I METALS		4/3/2015 10:54:00 AM	04/08/2015
1504164-005A	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Total Metals by ICP/MS		4/3/2015 10:54:00 AM	04/08/2015
1504164-005A	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	TOTAL MERCURY		4/6/2015 9:20:00 AM	04/06/2015
1504164-005B	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Inorganic Anions by IC			04/02/2015
1504164-005B	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Inorganic Anions by IC			04/03/2015
1504164-005B	DUPLICATE	4/1/2015 12:00:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		4/7/2015 10:00:00 AM	04/07/2015

Analytical Environmental Services, Inc

Date: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: LEACHATE
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 12:15:00 PM
Lab ID: 1504164-001	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	758	100		mg/L	R289374	100	04/06/2015 17:40	YS
Total Metals by ICP/MS SW6020A (SW3005A)								
Calcium	97800	100		ug/L	205476	1	04/08/2015 15:15	JS
Iron	11700	100		ug/L	205476	1	04/08/2015 15:15	JS
Magnesium	117000	100		ug/L	205476	1	04/08/2015 15:15	JS
Potassium	577000	50000		ug/L	205476	100	04/08/2015 15:27	JS
Sodium	1170000	50000		ug/L	205476	100	04/08/2015 15:27	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	5450	1		mg/L	205629	1	04/07/2015 10:00	JS
Nitrogen, Ammonia (as N) E350.1 (E350.1)								
Nitrogen, Ammonia (As N)	1460	20.0		mg/L	205608	100	04/09/2015 16:29	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011 (SW8011)								
1,2-Dibromo-3-chloropropane	BRL	0.203		ug/L	205555	1	04/06/2015 21:39	SH
1,2-Dibromoethane	BRL	0.051		ug/L	205555	1	04/06/2015 21:39	SH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00200		mg/L	205536	1	04/06/2015 13:58	TA
Inorganic Anions by IC E300.0								
Chloride	1270	50.0		mg/L	R289400	50	04/03/2015 10:03	JW
Fluoride	BRL	200		mg/L	R289400	50	04/03/2015 10:03	JW
Nitrogen, Nitrate (As N)	BRL	500		mg/L	R289400	50	04/03/2015 10:03	JW
Sulfate	BRL	50.0		mg/L	R289400	50	04/03/2015 10:03	JW
Dissolved Metals by ICP/MS SW6020A (SW3005A)								
Manganese	1050	10.0		ug/L	205685	1	04/08/2015 18:34	JS
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.200		mg/L	205704	1	04/08/2015 12:00	PF
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	2520	50.0		mg/L	R289240	5	04/06/2015 09:30	CH
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
1,1,1-Trichloroethane	BRL	200		ug/L	205572	1	04/04/2015 22:40	CH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH

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

Client: Santek Environmental Inc.	Client Sample ID: LEACHATE
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 12:15:00 PM
Lab ID: 1504164-001	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,2-Trichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 22:40	CH
1,1-Dichloroethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
1,1-Dichloroethene	BRL	7.0		ug/L	205572	1	04/04/2015 22:40	CH
1,2,3-Trichloropropane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
1,2-Dichlorobenzene	BRL	600		ug/L	205572	1	04/04/2015 22:40	CH
1,2-Dichloroethane	BRL	5.0		ug/L	205572	1	04/04/2015 22:40	CH
1,2-Dichloropropane	BRL	5.0		ug/L	205572	1	04/04/2015 22:40	CH
1,4-Dichlorobenzene	BRL	75		ug/L	205572	1	04/04/2015 22:40	CH
2-Butanone	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
2-Hexanone	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
4-Methyl-2-pentanone	22	10		ug/L	205572	1	04/04/2015 22:40	CH
Acetone	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Acrylonitrile	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Benzene	BRL	5.0		ug/L	205572	1	04/04/2015 22:40	CH
Bromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Bromodichloromethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Bromoform	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Bromomethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Carbon disulfide	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Carbon tetrachloride	BRL	5.0		ug/L	205572	1	04/04/2015 22:40	CH
Chlorobenzene	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Chloroethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Chloroform	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Chloromethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
cis-1,2-Dichloroethene	BRL	70		ug/L	205572	1	04/04/2015 22:40	CH
cis-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Dibromochloromethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Dibromomethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Ethylbenzene	BRL	700		ug/L	205572	1	04/04/2015 22:40	CH
Iodomethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Methylene chloride	BRL	5.0		ug/L	205572	1	04/04/2015 22:40	CH
Styrene	BRL	100		ug/L	205572	1	04/04/2015 22:40	CH
Tetrachloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 22:40	CH
Toluene	BRL	1000		ug/L	205572	1	04/04/2015 22:40	CH
trans-1,2-Dichloroethene	BRL	100		ug/L	205572	1	04/04/2015 22:40	CH
trans-1,3-Dichloropropene	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Trichloroethene	BRL	5.0		ug/L	205572	1	04/04/2015 22:40	CH
Trichlorofluoromethane	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Vinyl acetate	BRL	10		ug/L	205572	1	04/04/2015 22:40	CH
Vinyl chloride	BRL	2.0		ug/L	205572	1	04/04/2015 22:40	CH

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Analytical Environmental Services, Inc

Date: 5-May-15

Client: Santek Environmental Inc.	Client Sample ID: LEACHATE
Project Name: Loudon Co. (Matlock Bend) LF 1st Semi-Annual GW	Collection Date: 4/1/2015 12:15:00 PM
Lab ID: 1504164-001	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
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APPENDIX I VOLATILE ORGANICS SW8260B

(SW5030B)

Xylenes, Total	BRL	10000		ug/L	205572	1	04/04/2015 22:40	CH
Surr: 4-Bromofluorobenzene	103	70.6-123		%REC	205572	1	04/04/2015 22:40	CH
Surr: Dibromofluoromethane	109	78.7-124		%REC	205572	1	04/04/2015 22:40	CH
Surr: Toluene-d8	101	81.3-120		%REC	205572	1	04/04/2015 22:40	CH

APPENDIX I METALS SW6020A

(SW3005A)

Antimony	BRL	0.00600		mg/L	205476	1	04/08/2015 15:15	JS
Arsenic	0.0696	0.0500		mg/L	205476	1	04/08/2015 15:15	JS
Barium	BRL	2.00		mg/L	205476	1	04/08/2015 15:15	JS
Beryllium	BRL	0.00400		mg/L	205476	1	04/08/2015 15:15	JS
Cadmium	BRL	0.00500		mg/L	205476	1	04/08/2015 15:15	JS
Chromium	0.230	0.100		mg/L	205476	1	04/08/2015 15:15	JS
Cobalt	0.0826	0.0100		mg/L	205476	1	04/08/2015 15:15	JS
Copper	0.0253	0.0100		mg/L	205476	1	04/08/2015 15:15	JS
Lead	0.0304	0.0150		mg/L	205476	1	04/08/2015 15:15	JS
Nickel	0.240	0.100		mg/L	205476	1	04/08/2015 15:15	JS
Selenium	0.0131	0.0100		mg/L	205476	1	04/08/2015 15:15	JS
Silver	BRL	0.0500		mg/L	205476	1	04/08/2015 15:15	JS
Thallium	BRL	0.00200		mg/L	205476	1	04/08/2015 15:15	JS
Vanadium	0.101	0.0100		mg/L	205476	1	04/08/2015 15:15	JS
Zinc	0.512	0.0200		mg/L	205476	1	04/08/2015 15:15	JS

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LEACHATE CONTROL CHART

