

January 30, 2020

Mr. Tim Ferrick
Act Enviro, Inc.
13600 SE Ambler Road
Clackamas, OR 97015

Re: NW Natural Source Control Groundwater Treatment Facility – Siltronic Pretreatment Vapor Phase Carbon Tank (T-125) Spent Residuals

Dear Mr. Ferrick:

On behalf of NW Natural, Sevenson Environmental Services, Inc. (SES) has prepared the attached waste disposal package for Act Enviro, Inc. review and acceptance. This profile package, inclusive of analytical testing results, is for the disposal of spent carbon media generated during carbon exchange in Vapor Carbon tank (T-125) at the NW Natural Gasco Siltronic Pretreatment Site.

The Siltronic Pre-Treatment Facility is designed to remove spent trichloroethene (TCE) and its degradation products from the contaminated groundwater before it is plumbed to the Main Groundwater Treatment Plant for processing. Spent TCE and its degradation products are considered by the Oregon DEQ to be RCRA F002 listed hazardous waste constituents. Other contamination within the water discharged to this tank includes Manufactured Gas Plant (MGP)-derived constituents (e.g., petroleum constituents).

Based on the treatment of the spent TCE and its degradation products, the solids (spent carbon) within this Vapor Carbon tank (T-125) are considered to be residues from the treatment of an F002 RCRA listed waste and are therefore considered to be F002 RCRA hazardous waste upon generation at time of tank cleanout.

NW Natural is presumptively managing the spent carbon media as RCRA F002-listed hazardous waste. NW Natural understands the “derived-from” rule to require presumptive management of these residuals as RCRA F002-listed hazardous waste.

Sample data are attached to the profile from testing of the solid material accumulated within the Vapor Phase Carbon Tank (T-125) located at Siltronic pretreatment plant. The sample of material within this Tank was submitted to Apex Laboratories, LLC on November 1, 2019 for analysis of: dry weight, total metals, leachable metals (toxicity characteristic leaching procedure-TCLP), total cyanide, total volatile organic compounds (VOCs) and TCLP VOCs, total semi volatile organic compounds (SVOCs), and TCLP SVOCs.

Attached please find the profile for the incineration of this spent carbon waste stream at Tradebe Treatment and Recycling, LLC (TTR). Also attached please find the January 14, 2020 Apex Laboratory analytical report documenting the chemistry of the residual treatment materials, and Table 1, a summary of those testing results.

As indicated on the laboratory testing and as described in the attached TTR profile, it is requested that Act Enviro, Inc. provide this package to TTR to have the contaminated treatment residuals incinerated as F002 hazardous waste at their RCRA Subtitle C hazardous waste-permitted facility in Missouri. NW Natural anticipates the generation of similar quantities of material on a frequency of approximately once per year and that the quality of the accumulated residuals will be similar over time.

Please contact me if you have any questions.

Thank You,



William Byrd
Sevenson Environmental Services

Cc: Robert Wyatt (NW Natural), Mike Hayward (NW Natural), Patty Dost (Pearl Legal Group), Rachel Melissa (Pearl Legal Group), Ryan Barth (Anchor QEA), Rob Ede (Hahn and Associates), Tim Stone (Anchor QEA), Jen Mott (Anchor QEA), Mike Crystal (Sevenson Environmental Services), Joe Burke (Sevenson Environmental Services), Dana Bayuk (ODEQ), Terence Driscoll (Aponowich, Driscoll & Associates, Inc.)

Enclosures:

Table 1— Vapor Phase Carbon Tank (T-125) #1

TTR Carbon profile 221015ACT

Apex Laboratory Report #A9K0048



TRADEBE
Environmental Services, LLC™

TRADEBE TREATMENT AND RECYCLING, LLC

Profile # 221015ACT

GENERATOR WASTE STREAM PROFILE SHEET

Process Code

Fax or email completed profile sheet to:

TTR Fax: 219-397-6411

UIS Fax: 203-238-6744

usa.approvals@tradebe.com

A. GENERATOR INFORMATION:

MAILING OR SITE ADDRESS

USE CONTINUATION IF SITE & MAILING ADDRESSES ARE DIFFERENT

Generator #: _____
Generator Name: **NW Natural**
Generator Address: **7900 NW St Helens**
City: **Portland** State: **OR** Zip: **97210**
Contact Name: **William Byrd**
Generator Phone: **5032861785**
Generator Fax: _____
Generator Email: **wbyrd@sevenson.com**
Generator USEPA/Federal ID #: **OR0000204701**

CUSTOMER INFORMATION:

Customer #: _____
Customer Name: **ACTenviro**
Customer Address: **13600 SE Ambler Rd**
City: **Clackamas** State: **OR** Zip: _____
Contact Name: **Tim**
Customer Phone: **5035041733**
Customer Fax: _____
Customer Email: _____
Customer Service/Sales Rep: _____

If no ID number is the Generator a "Conditionally Exempt Small Quantity Generator?" ☐ Yes ☒ No

Generator SIC (or NAIC) Code: **4923** Generator State ID # (If applicable): _____

Please check if generator has "No Canada Disposal" policy ☒ Yes ☐ No

Please check if generator has "No Landfill" policy ☐ Yes ☒ No

B. WASTE STREAM INFORMATION:

Generator's Waste Name: **Spent Vapor Phase carbon**

Original Process Generating Waste: **Extraction wells on site produce groundwater contaminated by TCE & Petroleum.**

Vapor extracted from air strippers is discharged through vapor-phase carbon. Spent carbon generated during replacement.

Is this waste exempt from RCRA regulation? ☐ Yes ☒ No

If "yes" explain or cite regulation on continuation (Example HHW, CESQG): _____

Current method of disposal: _____

Is this waste from a CERCLA cleanup site? ☒ Yes ☐ No

Waste determination was made by: ☒ Testing ☒ Generator Knowledge ☐ MSDS ☐ Sample ☐ Other

(Attach analytical, MSDS, or other supporting documentation used for waste determination)

Does the Waste have any of the following characteristics? ☐ Yes (if yes check all that apply) ☒ No

☐ Oxidizer ☐ Dioxin or Suspect ☐ Water Reactive ☐ Air Reactive ☐ Organic Peroxide
☐ Hexachrome ☐ Infectious Waste ☐ Radioactive ☐ Chelating Agent ☐ Lachrymator
☐ Explosive ☐ Shock Sensitive ☐ Polymerizer ☐ Pyrophoric ☐ Inhalation Hazard, Zone _____

C. GENERAL CHARACTERISTICS:

Color: **black** **Physical state @ 70 F** **Phases** **BTU/lb** **pH**
Odor: **mild** ☐ % liquid ☐ aerosol ☒ single layer ☐ <3000 (Ex: water) ☐ <2 (Acid) ☐ 10.0-12.5
☐ None ☐ 100 % solid ☐ powder ☐ double layer ☐ 3,000-5,000 ☐ 2.0-4.0 ☐ >12.5 (Base)
☐ Mild ☐ % sludge ☐ other ☐ >2 layers ☒ 5,000-10,000 ☒ 4.0-10.0
☐ Strong ☐ % debris ☐ how many? ☐ >10,000 (Ex: oil)

Liquid Flashpoint: ☐ <73 F ☐ 73 to 99 F ☐ 100 to 139 F ☒ 140 to 200 F ☐ >200 F ☐ None

Boiling Point **NA** Specific Gravity: **2** Total Halogens: **<1** % Total Organic Carbon (TOC): **98** % Viscosity: **NA**

D. CHEMICAL COMPOSITION: Total of Maximum concentration must be > or = to 100%.

Constituents	Min%	Max%	ppm	Constituents	Min%	Max%	ppm
Spent Carbon	100	100					
Trichloroethylene		<200	ppm				
Naphthalene	1	2	ppm				
Benzene		<200	ppm				

Does the Waste contain any of the following?

Metal Pieces: ☐ Yes ☒ No **If yes, Describe Metal:** _____
Nitrocellulose: ☐ Yes ☒ No **Metal Powder or Flake:** ☐ Yes ☒ No **Sharps:** ☐ Yes ☒ No
Isocyanates: ☐ Yes ☒ No **Asbestos: (If yes, must be double bagged and wetted)** ☐ Yes ☒ No
Reactive cyanide: (If yes, indicate level in ppm) ☐ Yes ☒ No **Range of reactive cyanide** _____
Reactive sulfide: (If yes, indicate level in ppm) ☐ Yes ☒ No **Range of reactive sulfide** _____
PCBs: ☒ None ☐ 0-49 ppm ☐ 50-499 ppm ☐ 500+ ppm **(If waste contains PCBs, certification form is required)**

Does the waste contain Benzene? ☒ Yes ☐ No

If yes, check all SIC codes that cover operations at your facility

☐ 2812 ☐ 2813 ☐ 2816 ☐ 2819 ☐ 2821 ☐ 2822 ☐ 2823 ☐ 2824 ☐ 2833 ☐ 2834 ☐ 2835 ☐ 2836 ☐ 2841 ☐ 2842 ☐ 2843 ☐ 2844 ☐ 2851 ☐ 2861
☐ 2865 ☐ 2869 ☐ 2873 ☐ 2874 ☐ 2875 ☐ 2879 ☐ 2891 ☐ 2892 ☐ 2893 ☐ 2896 ☐ 2899 ☐ 2911 ☐ 2999 ☐ 3312 ☐ 4953 ☐ 4959 ☐ 9511

If waste contains benzene and falls under one of the above SIC codes, Tradebe's benzene NESHA form is required for each shipment

WASTE WATER ANALYSIS						Profile #	221015ACT
For waste streams being managed through United's wastewater treatment operations only:							
Phases: Oil _____ % Water _____ % Interface _____ % Sediments _____ % DNAPL _____ %							
Petroleum Phase	Suspected Level	Actual Level	Aqueous Phase	Suspected Level	Actual Level	Aqueous Phase	Suspected Level
PCB			Copper			Cobalt	
Halogens			Cadmium			Mercury	
Solvents			Chromium			Arsenic	
Arsenic			Lead			Barium	
Cadmium			Nickel			Sulfides	
Chromium			Silver			Cyanides	
Lead			Zinc			Phenols	
			COD			Glycols	
			Iron			Selenium	
List Specific Solvents: _____							

E. OTHER WASTE STREAM INFORMATION:
 Is this waste a USED OIL per 40CFR PART 279? Yes ☒ No
 If Yes, does the total halogen content exceed 1,000 ppm? Yes _____ No
 If Yes, can you identify the Chlorinated Constituent present in the oil? Yes _____ No
 If Yes, can you rebut the presumption that this material is a Hazardous Waste? Yes _____ No
 Is the Waste subject to RCRA 40 CFR Subpart CC controls (Are Volatile Organic Compounds >500ppmw)? ☒ Yes _____ No
 Does the Waste contain any Class I or Class II ozone-depleting substances? Yes ☒ No
 Does waste contain EPCRA 313 chemicals identified in 40 CFR 372.65? ☒ Yes _____ No
 If yes list in Additional Information on Continuation Page.
 Does this waste contain any Chemicals of Interest listed in 6 CFR Part 27 Appendix A (Department of Homeland Security)? If yes please list in Additional Information on Continuation Page. Yes _____ No ☒

F. RCRA CHARACTERIZATION:
 Is this a USEPA Hazardous Waste as defined in 40 CFR 261.3? ☒ Yes _____ No
 Is this a Universal Waste per 40 CFR part 273? Yes _____ No ☒
 Please list any characteristic codes (D001-D043): _____
 Does the waste contain UHCs above treatment standards levels? (40 CFR 268.48, 268.7) ☒ Yes _____ No
 If yes identify those chemicals in Appendix I - Underlying Hazardous Constituents
 Please list any applicable "F" or "K" codes: F002 - See attached analytical summary table for UHC
 Please list any applicable "U" or "P" codes: _____
 Please list any state regulated codes: _____

G. SHIPPING VOLUME & FREQUENCY:
 _____ Bulk Liquid (tanker) _____ Approximately how many gallons? _____ Bulk Solids(roll-off box, vacuum box, etc)
☒ Cubic Yard Boxes _____ Totes _____ size in gallons _____ Metal _____ Plastic
 _____ Skid _____ Other If other, please describe: _____
 _____ Drums (Specify size) _____ 85 _____ 55 _____ 30 _____ 15 _____ 5 _____ Metal _____ Plastic ☒ Fiberboard
 Is waste a combination package (e.g. Drum with inner containers or skid with cases of consumer products) Yes _____ No ☒
 Shipping Frequency: Number of Units 18 Per _____ Month _____ Quarter ☒ Year _____ Other _____

H. DOT SHIPPING INFORMATION
 Is this a U.S. Department of Transportation (USDOT) Hazardous Material? ☒ Yes _____ No
 Shipping Name per 49 CFR 172.101 Hazardous Materials Table: NA3077, Hazardous waste solid, nos, (trichloroethylene)
 Hazard Class or Division: 9 UN/NA #: 3077 Packing Group: I II ☒ III ERG #: _____ 171
 Technical descriptors if required: _____ RQ if required: _____
 DOT Special Permit that may apply (Include copy of permit): _____ Inhalation Hazard: Zone _____

I. GENERATOR CERTIFICATION:
 I agree by affixing my authorized signature that I hereby certify that the above and attached description is complete and accurate and that no omissions of characteristics, composition or properties exist and that all known or suspected hazards have been disclosed. I also certify that each sample provided to Tradebe is representative of the waste material described above and give Tradebe permission and consent to use the information for its records and corrections and that I am an authorized agent of the Generator.
 Name(print): Robert J. Wyatt Title: Director, Legacy Environmental Program
 Signature: _____ Date: 31-Jan-20

INTERNAL USE ONLY: Please indicate which Tradebe Facility(s) are being utilized for this Profile

☐ TTR, LLC, East Chicago, IN	☐ TTR of TN, LLC, Millington, TN	☐ United Oil Recovery, Inc Meriden, CT
☐ Bridgeport United Recycling Bridgeport, CT	☐ Zecco Northboro, MA	☐ United Oil Recovery, Inc Newington, NH
☐ ECC Stoughton, MA	☐ Norlite Corp Cohoes, NY	



Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Tuesday, January 14, 2020

Chip Byrd

Sevenson Environmental Services, Inc.

2749 Lockport Road

Niagara Falls, NY 14305

RE: A9K0048 - Gasco -- Carbon - 111317

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A9K0048, which was received by the laboratory on 11/4/2019 at 9:30:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1

0.9 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darrell Auvil For Darwin Thomas, Business Development Director

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NWN-PCI0777652



Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.

2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: **111317**

Project Manager: **Chip Byrd**

Report ID:

A9K0048 - 01 14 20 1658

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Vapor Carbon-T125-110119	A9K0048-01	Solid	11/01/19 11:00	11/04/19 09:30

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EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.

2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: **111317**

Project Manager: **Chip Byrd**

Report ID:

A9K0048 - 01 14 20 1658

ANALYTICAL CASE NARRATIVE

Work Order: A9K0048

Amended Report Revision 3:

Additional Analyses-

This report supersedes all previous reports.

The final report has been amended to report additional 8260 VOC and 8270 SVOC data.

Darrell Auvil
Project Manager
1/14/2020

Amended Report Revision 2:

Additional Analyses-

This report supersedes all previous reports.

The final report has been amended to report additional data, including; Total Cyanide, Dry weight correction, NW Dx and NW Gx.

Darrell Auvil
Project Manager
12/13/2019

Amended Report Revision 1:

This report supersedes all previous reports.

The final report has been amended to report all data to the method detection limits (MDLs).

Darwin Thomas
Business Development Director
11/12/2019

Apex Laboratories

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Darrell Auvil For Darwin Thomas, Business Development Director



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AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110843		
Diesel	95200000	551000	1100000	ug/kg dry	50	11/15/19 20:55	NWTPH-Dx	B, F-18
Oil	ND	1100000	2200000	ug/kg dry	50	11/15/19 20:55	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recovery: %		Limits: 50-150 %	50	11/15/19 20:55	NWTPH-Dx	S-01

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AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110716		V-16
Gasoline Range Organics	101000000	982000	1960000	ug/kg dry	10000	11/15/19 01:21	NWTPH-Gx (MS)	F-12
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 108 %	Limits: 50-150 %	1	11/15/19 01:21	NWTPH-Gx (MS)		
1,4-Difluorobenzene (Sur)		93 %	50-150 %	1	11/15/19 01:21	NWTPH-Gx (MS)		

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**Apex Laboratories, LLC**

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EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**Project Number: **111317**Project Manager: **Chip Byrd****Report ID:****A9K0048 - 01 14 20 1658****ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 5035A/8260C**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110716		V-16
Acetone	ND	196000	393000	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Benzene	21100	1960	3930	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Bromobenzene	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Bromochloromethane	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Bromodichloromethane	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Bromoform	ND	19600	39300	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Bromomethane	ND	196000	196000	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
2-Butanone (MEK)	ND	98200	196000	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
n-Butylbenzene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
sec-Butylbenzene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
tert-Butylbenzene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Carbon tetrachloride	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Chlorobenzene	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Chloroethane	ND	98200	196000	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Chloroform	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Chloromethane	ND	49100	98200	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
2-Chlorotoluene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
4-Chlorotoluene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Dibromochloromethane	ND	19600	39300	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,2-Dibromo-3-chloropropane	ND	49100	98200	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,2-Dibromoethane (EDB)	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Dibromomethane	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,2-Dichlorobenzene	13400	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,3-Dichlorobenzene	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,4-Dichlorobenzene	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Dichlorodifluoromethane	ND	19600	39300	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,1-Dichloroethane	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,2-Dichloroethane (EDC)	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,1-Dichloroethene	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
cis-1,2-Dichloroethene	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
trans-1,2-Dichloroethene	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,2-Dichloropropane	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,3-Dichloropropane	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	

Apex Laboratories

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Darrell Auvil For Darwin Thomas, Business Development Director

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NWN-PCI0777657

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**Project Number: **111317**Project Manager: **Chip Byrd****Report ID:****A9K0048 - 01 14 20 1658****ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 5035A/8260C**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110716		V-16
2,2-Dichloropropane	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,1-Dichloropropene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
cis-1,3-Dichloropropene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
trans-1,3-Dichloropropene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Ethylbenzene	159000	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Hexachlorobutadiene	ND	19600	39300	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
2-Hexanone	ND	98200	196000	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Isopropylbenzene	14900	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	J
4-Isopropyltoluene	16600	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	J
Methylene chloride	ND	49100	98200	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
4-Methyl-2-pentanone (MiBK)	ND	98200	196000	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Methyl tert-butyl ether (MTBE)	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Naphthalene	16400000	19600	39300	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	E
n-Propylbenzene	8230	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	J
Styrene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,1,1,2-Tetrachloroethane	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,1,2,2-Tetrachloroethane	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Tetrachloroethene (PCE)	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Toluene	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,2,3-Trichlorobenzene	ND	49100	98200	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,2,4-Trichlorobenzene	ND	49100	98200	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,1,1-Trichloroethane	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,1,2-Trichloroethane	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Trichloroethene (TCE)	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Trichlorofluoromethane	ND	19600	39300	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,2,3-Trichloropropane	ND	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,2,4-Trimethylbenzene	217000	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
1,3,5-Trimethylbenzene	49800	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
Vinyl chloride	ND	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
m,p-Xylene	111000	9820	19600	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
o-Xylene	83600	4910	9820	ug/kg dry	10000	11/15/19 01:21	5035A/8260C	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery:</i>	<i>101 %</i>	<i>Limits:</i>	<i>80-120 %</i>	<i>1</i>	<i>11/15/19 01:21</i>	<i>5035A/8260C</i>
<i>Toluene-d8 (Surr)</i>			<i>100 %</i>		<i>80-120 %</i>	<i>1</i>	<i>11/15/19 01:21</i>	<i>5035A/8260C</i>

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Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110716		V-16
<i>Surrogate: 4-Bromofluorobenzene (Surr)</i>		<i>Recovery: 100 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>11/15/19 01:21</i>	<i>5035A/8260C</i>		

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NWN-PCI0777659



AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

Sevenson Environmental Services, Inc.

2749 Lockport Road

Niagara Falls, NY 14305

Project: Gasco -- Carbon

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110460		
Acetone	ND	0.500	1.00	mg/L	50	11/05/19 14:11	1311/8260C	
Benzene	0.0590	0.00625	0.0125	mg/L	50	11/05/19 14:11	1311/8260C	
Bromobenzene	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Bromochloromethane	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
Bromodichloromethane	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
Bromoform	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
Bromomethane	ND	0.250	0.250	mg/L	50	11/05/19 14:11	1311/8260C	
2-Butanone (MEK)	ND	0.250	0.500	mg/L	50	11/05/19 14:11	1311/8260C	
n-Butylbenzene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
sec-Butylbenzene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
tert-Butylbenzene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
Carbon tetrachloride	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
Chlorobenzene	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Chloroethane	ND	0.250	0.250	mg/L	50	11/05/19 14:11	1311/8260C	
Chloroform	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
Chloromethane	ND	0.125	0.250	mg/L	50	11/05/19 14:11	1311/8260C	
2-Chlorotoluene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
4-Chlorotoluene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,2-Dibromo-3-chloropropane	ND	0.125	0.250	mg/L	50	11/05/19 14:11	1311/8260C	
Dibromochloromethane	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,2-Dibromoethane (EDB)	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Dibromomethane	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,2-Dichlorobenzene	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
1,3-Dichlorobenzene	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
1,4-Dichlorobenzene	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Dichlorodifluoromethane	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,1-Dichloroethane	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
1,1-Dichloroethene	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
1,2-Dichloroethane (EDC)	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
cis-1,2-Dichloroethene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
trans-1,2-Dichloroethene	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
1,2-Dichloropropane	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
1,3-Dichloropropane	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	

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NWN-PCI0777660

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**Project Number: **111317**Project Manager: **Chip Byrd****Report ID:****A9K0048 - 01 14 20 1658****ANALYTICAL SAMPLE RESULTS****TCLP Volatile Organic Compounds by EPA 1311/8260C**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110460		
2,2-Dichloropropane	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,1-Dichloropropene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
cis-1,3-Dichloropropene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
trans-1,3-Dichloropropene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
Ethylbenzene	0.0280	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Hexachlorobutadiene	ND	0.125	0.250	mg/L	50	11/05/19 14:11	1311/8260C	
2-Hexanone	ND	0.250	0.500	mg/L	50	11/05/19 14:11	1311/8260C	
Isopropylbenzene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
4-Isopropyltoluene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
4-Methyl-2-pentanone (MiBK)	ND	0.250	0.500	mg/L	50	11/05/19 14:11	1311/8260C	
Methyl tert-butyl ether (MTBE)	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
Methylene chloride	ND	0.125	0.250	mg/L	50	11/05/19 14:11	1311/8260C	
Naphthalene	3.13	0.0500	0.100	mg/L	50	11/05/19 14:11	1311/8260C	
n-Propylbenzene	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Styrene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,1,1,2-Tetrachloroethane	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
1,1,2,2-Tetrachloroethane	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Tetrachloroethene (PCE)	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Toluene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,2,3-Trichlorobenzene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,2,4-Trichlorobenzene	ND	0.0500	0.100	mg/L	50	11/05/19 14:11	1311/8260C	
1,1,1-Trichloroethane	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
1,1,2-Trichloroethane	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Trichloroethene (TCE)	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
Trichlorofluoromethane	ND	0.0500	0.100	mg/L	50	11/05/19 14:11	1311/8260C	
1,2,3-Trichloropropane	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,2,4-Trimethylbenzene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
1,3,5-Trimethylbenzene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
Vinyl chloride	ND	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	
m,p-Xylene	ND	0.0250	0.0500	mg/L	50	11/05/19 14:11	1311/8260C	
o-Xylene	0.0190	0.0125	0.0250	mg/L	50	11/05/19 14:11	1311/8260C	J
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery:</i>	102 %	<i>Limits:</i>	80-120 %	1	11/05/19 14:11	1311/8260C
<i>Toluene-d8 (Surr)</i>			99 %		80-120 %	1	11/05/19 14:11	1311/8260C

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Darrell Auvil For Darwin Thomas, Business Development Director



Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110460		
<i>Surrogate: 4-Bromofluorobenzene (Surr)</i>		<i>Recovery: 100 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>11/05/19 14:11</i>	<i>1311/8260C</i>		

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NWN-PCI0777662

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS**Semivolatile Organic Compounds by EPA 8270D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 0010350		H-02
Di-n-butylphthalate	ND	10500	21000	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Di-n-octyl phthalate	ND	10500	21000	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
N-Nitrosodimethylamine	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
N-Nitroso-di-n-propylamine	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
N-Nitrosodiphenylamine	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Bis(2-Chloroethyl) ether	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
2,2'-Oxybis(1-Chloropropane)	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Hexachlorobenzene	ND	1050	2100	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Hexachlorocyclopentadiene	ND	5250	10500	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Hexachloroethane	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
2-Chloronaphthalene	ND	3540	3540	ug/kg dry	100	01/13/20 19:27	EPA 8270D	R-02
1,2-Dichlorobenzene	21800	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
1,3-Dichlorobenzene	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
1,4-Dichlorobenzene	4710	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	J
4-Bromophenyl phenyl ether	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
4-Chlorophenyl phenyl ether	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Aniline	ND	5250	10500	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
2-Nitroaniline	ND	21000	41900	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
3-Nitroaniline	ND	21000	41900	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
4-Nitroaniline	ND	21000	41900	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Nitrobenzene	ND	21000	21000	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
2,4-Dinitrotoluene	ND	10500	21000	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
2,6-Dinitrotoluene	ND	10500	21000	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Benzyl alcohol	ND	10500	10500	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Azobenzene (1,2-DPH)	ND	2620	5250	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Bis(2-Ethylhexyl) adipate	ND	26200	52500	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
3,3'-Dichlorobenzidine	ND	21000	41900	ug/kg dry	100	01/13/20 19:27	EPA 8270D	Q-52
1,2-Dinitrobenzene	ND	26200	52500	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
1,3-Dinitrobenzene	ND	26200	52500	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
1,4-Dinitrobenzene	ND	26200	52500	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Pyridine	ND	5250	10500	ug/kg dry	100	01/13/20 19:27	EPA 8270D	
Surrogate: Nitrobenzene-d5 (Surr)		Recovery:	141 %	Limits:	37-122 %	100	01/13/20 19:27	EPA 8270D S-05
2-Fluorobiphenyl (Surr)			74 %		44-115 %	100	01/13/20 19:27	EPA 8270D S-05

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NWN-PCI0777664

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**Project Number: **111317**Project Manager: **Chip Byrd****Report ID:****A9K0048 - 01 14 20 1658****ANALYTICAL SAMPLE RESULTS****Semivolatile Organic Compounds by EPA 8270D**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 0010350		H-02
Surrogate: Phenol-d6 (Surr)		Recovery:	55 %	Limits:	33-122 %	100	01/13/20 19:27	EPA 8270D S-05
p-Terphenyl-d14 (Surr)			29 %		54-127 %	100	01/13/20 19:27	EPA 8270D S-05
2-Fluorophenol (Surr)			145 %		35-115 %	100	01/13/20 19:27	EPA 8270D S-05
2,4,6-Tribromophenol (Surr)			181 %		39-132 %	100	01/13/20 19:27	EPA 8270D S-05
Vapor Carbon-T125-110119 (A9K0048-01RE1)				Matrix: Solid		Batch: 0010350		H-02
1-Methylnaphthalene	6140000	21000	41900	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	Q-42
4-Chloro-3-methylphenol	ND	105000	210000	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	
2,4-Dichlorophenol	ND	52500	105000	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	
2,4-Dimethylphenol	ND	52500	105000	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	
2-Nitrophenol	ND	105000	210000	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	
Bis(2-Chloroethoxy) methane	ND	52500	52500	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	
Hexachlorobutadiene	ND	26200	52500	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	
1,2,4-Trichlorobenzene	ND	26200	52500	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	
Benzoic acid	ND	2620000	2620000	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	
Isophorone	ND	26200	52500	ug/kg dry	1000	01/14/20 09:55	EPA 8270D	
Vapor Carbon-T125-110119 (A9K0048-01RE2)				Matrix: Solid		Batch: 0010350		H-02
2-Methylnaphthalene	10600000	420000	838000	ug/kg dry	20000	01/14/20 11:06	EPA 8270D	Q-42
Naphthalene	87600000	420000	838000	ug/kg dry	20000	01/14/20 11:06	EPA 8270D	B
4-Chloroaniline	ND	524000	1050000	ug/kg dry	20000	01/14/20 11:06	EPA 8270D	

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NWN-PCI0777665



Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110535			
Pentachlorophenol (PCP)	ND	50.0	100	ug/L	50	11/07/19 13:12	1311/8270D		
Phenanthrene	ND	5.00	10.0	ug/L	50	11/07/19 13:12	1311/8270D		
Phenol	ND	100	200	ug/L	50	11/07/19 13:12	1311/8270D		
Pyrene	ND	5.00	10.0	ug/L	50	11/07/19 13:12	1311/8270D		
Pyridine	ND	50.0	100	ug/L	50	11/07/19 13:12	1311/8270D		
2,3,4,6-Tetrachlorophenol	ND	25.0	50.0	ug/L	50	11/07/19 13:12	1311/8270D		
2,3,5,6-Tetrachlorophenol	ND	25.0	50.0	ug/L	50	11/07/19 13:12	1311/8270D		
1,2,4-Trichlorobenzene	ND	2.50	25.0	ug/L	50	11/07/19 13:12	1311/8270D		
2,4,5-Trichlorophenol	ND	25.0	50.0	ug/L	50	11/07/19 13:12	1311/8270D		
2,4,6-Trichlorophenol	ND	25.0	50.0	ug/L	50	11/07/19 13:12	1311/8270D		
Surrogate: Nitrobenzene-d5 (Surr)		Recovery:	60 %	Limits:	44-120 %	50	11/07/19 13:12	1311/8270D	S-05
2-Fluorobiphenyl (Surr)			79 %		44-120 %	50	11/07/19 13:12	1311/8270D	S-05
Phenol-d6 (Surr)			11 %		10-120 %	50	11/07/19 13:12	1311/8270D	S-05
p-Terphenyl-d14 (Surr)			97 %		50-133 %	50	11/07/19 13:12	1311/8270D	S-05
2-Fluorophenol (Surr)			23 %		19-120 %	50	11/07/19 13:12	1311/8270D	S-05
2,4,6-Tribromophenol (Surr)			108 %		43-140 %	50	11/07/19 13:12	1311/8270D	S-05

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NWN-PCI0777668



Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid				
Batch: 9110517								
Arsenic	ND	50.0	100	ug/L	10	11/06/19 14:44	1311/6020A	
Barium	ND	2500	5000	ug/L	10	11/06/19 14:44	1311/6020A	
Cadmium	ND	50.0	100	ug/L	10	11/06/19 14:44	1311/6020A	
Chromium	ND	50.0	100	ug/L	10	11/06/19 14:44	1311/6020A	
Lead	ND	25.0	50.0	ug/L	10	11/06/19 14:44	1311/6020A	
Mercury	ND	3.50	7.00	ug/L	10	11/06/19 14:44	1311/6020A	
Selenium	ND	50.0	100	ug/L	10	11/06/19 14:44	1311/6020A	
Silver	ND	50.0	100	ug/L	10	11/06/19 14:44	1311/6020A	

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NWN-PCI0777670



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AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01RE2)				Matrix: Solid		Batch: 9110823		
Total Cyanide	216	55.7	111	ug/kg dry	1	11/15/19 18:25	D7511-12	

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EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid				
Batch: 9110441								
Solid pH (measured in H2O)	7.95	---		pH Units	1	11/04/19 17:22	EPA 9045D	pH_S
pH Temperature (deg C)	21.7	---		pH Units	1	11/04/19 17:22	EPA 9045D	pH_S

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AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: 9110798		
% Solids	88.7	---	1.00	%	1	11/15/19 08:37	EPA 8000C	

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EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

Weck Laboratories, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Vapor Carbon-T125-110119 (A9K0048-01)				Matrix: Solid		Batch: W9L0326		
Batch: W9L0326								
Iodine Number	379	---		mg I2/g GAC	1	12/09/19 11:58	ASTM D4607-Correction	

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NWN-PCI0777675

**Apex Laboratories, LLC**

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110843 - EPA 3546 (Fuels)						Solid						
Blank (9110843-BLK1)			Prepared: 11/15/19 10:15 Analyzed: 11/15/19 20:10									
NWTPH-Dx												
Diesel	20600	8330	16700	ug/kg wet	1	---	---	---	---	---	---	B
Oil	ND	16700	33300	ug/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 88 %		Limits: 50-150 %		Dilution: 1x						
LCS (9110843-BS1)			Prepared: 11/15/19 10:15 Analyzed: 11/15/19 20:32									
NWTPH-Dx												
Diesel	126000	10000	20000	ug/kg wet	1	125000	---	101	76-115%	---	---	B
Surr: o-Terphenyl (Surr)		Recovery: 94 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (9110843-DUP1)			Prepared: 11/15/19 10:15 Analyzed: 11/15/19 21:18									
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01)												
NWTPH-Dx												
Diesel	10000000 0	553000	1110000	ug/kg dry	50	---	95200000	---	---	5	30%	B, F-18
Oil	ND	1110000	2210000	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		Recovery: %		Limits: 50-150 %		Dilution: 50x						

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NWN-PCI0777676

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110716 - EPA 5035A						Soil						
Blank (9110716-BLK1)			Prepared: 11/14/19 16:00 Analyzed: 11/14/19 19:29									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	1670	3330	ug/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 105 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		94 %		50-150 %		"						
LCS (9110716-BS2)			Prepared: 11/14/19 16:00 Analyzed: 11/14/19 19:02									
NWTPH-Gx (MS)												
Gasoline Range Organics	27000	2500	5000	ug/kg wet	50	25000	---	108	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		96 %		50-150 %		"						
Duplicate (9110716-DUP1)			Prepared: 11/14/19 13:35 Analyzed: 11/14/19 20:50									V-15
QC Source Sample: Non-SDG (A9K0383-02)												
Gasoline Range Organics	ND	3250	6510	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 104 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		94 %		50-150 %		"						

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EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110716 - EPA 5035A						Soil						
Blank (9110716-BLK1)			Prepared: 11/14/19 16:00 Analyzed: 11/14/19 19:29									
5035A/8260C												
Acetone	ND	333	667	ug/kg wet	50	---	---	---	---	---	---	
Acrylonitrile	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	3.33	6.67	ug/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	333	333	ug/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
n-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	

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**Apex Laboratories, LLC**

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EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**Volatile Organic Compounds by EPA 5035A/8260C**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110716 - EPA 5035A						Soil						
Blank (9110716-BLK1)						Prepared: 11/14/19 16:00 Analyzed: 11/14/19 19:29						
1,2-Dichloropropane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr) Recovery: 104 % Limits: 80-120 % Dilution: 1x												

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AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

Sevenson Environmental Services, Inc.

2749 Lockport Road

Niagara Falls, NY 14305

Project: Gasco -- Carbon

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110716 - EPA 5035A						Soil						
Blank (9110716-BLK1)						Prepared: 11/14/19 16:00 Analyzed: 11/14/19 19:29						
Surr: Toluene-d8 (Surr)		Recovery: 100 %		Limits: 80-120 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		100 %		80-120 %		"						

LCS (9110716-BS1)

Prepared: 11/14/19 16:00 Analyzed: 11/14/19 18:35

5035A/8260C

Acetone	1920	500	1000	ug/kg wet	50	2000	---	96	80-120%	---	---
Acrylonitrile	1110	50.0	100	ug/kg wet	50	1000	---	111	80-120%	---	---
Benzene	1050	5.00	10.0	ug/kg wet	50	1000	---	105	80-120%	---	---
Bromobenzene	1050	12.5	25.0	ug/kg wet	50	1000	---	105	80-120%	---	---
Bromochloromethane	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---
Bromodichloromethane	1130	25.0	50.0	ug/kg wet	50	1000	---	113	80-120%	---	---
Bromoform	1110	50.0	100	ug/kg wet	50	1000	---	111	80-120%	---	---
Bromomethane	1120	500	500	ug/kg wet	50	1000	---	112	80-120%	---	---
2-Butanone (MEK)	2010	250	500	ug/kg wet	50	2000	---	101	80-120%	---	---
n-Butylbenzene	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---
sec-Butylbenzene	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---
tert-Butylbenzene	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---
Carbon disulfide	1040	250	500	ug/kg wet	50	1000	---	104	80-120%	---	---
Carbon tetrachloride	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---
Chlorobenzene	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---
Chloroethane	1030	250	500	ug/kg wet	50	1000	---	103	80-120%	---	---
Chloroform	1130	25.0	50.0	ug/kg wet	50	1000	---	113	80-120%	---	---
Chloromethane	884	125	250	ug/kg wet	50	1000	---	88	80-120%	---	---
2-Chlorotoluene	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---
4-Chlorotoluene	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---
Dibromochloromethane	1070	50.0	100	ug/kg wet	50	1000	---	107	80-120%	---	---
1,2-Dibromo-3-chloropropane	974	125	250	ug/kg wet	50	1000	---	97	80-120%	---	---
1,2-Dibromoethane (EDB)	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---
Dibromomethane	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---
1,2-Dichlorobenzene	1100	12.5	25.0	ug/kg wet	50	1000	---	110	80-120%	---	---
1,3-Dichlorobenzene	1080	12.5	25.0	ug/kg wet	50	1000	---	108	80-120%	---	---
1,4-Dichlorobenzene	1020	12.5	25.0	ug/kg wet	50	1000	---	102	80-120%	---	---
Dichlorodifluoromethane	946	50.0	100	ug/kg wet	50	1000	---	95	80-120%	---	---
1,1-Dichloroethane	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---

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NWN-PCI0777680



AMENDED REPORT

Sevenson Environmental Services, Inc.

2749 Lockport Road

Niagara Falls, NY 14305

Project: Gasco -- Carbon

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110716 - EPA 5035A						Soil						
LCS (9110716-BS1)						Prepared: 11/14/19 16:00 Analyzed: 11/14/19 18:35						
1,2-Dichloroethane (EDC)	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,1-Dichloroethene	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
cis-1,2-Dichloroethene	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
trans-1,2-Dichloroethene	1050	12.5	25.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
1,2-Dichloropropane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,3-Dichloropropane	998	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
2,2-Dichloropropane	1190	25.0	50.0	ug/kg wet	50	1000	---	119	80-120%	---	---	
1,1-Dichloropropene	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
cis-1,3-Dichloropropene	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
trans-1,3-Dichloropropene	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
Ethylbenzene	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Hexachlorobutadiene	1070	50.0	100	ug/kg wet	50	1000	---	107	80-120%	---	---	
2-Hexanone	1900	250	500	ug/kg wet	50	2000	---	95	80-120%	---	---	
Isopropylbenzene	1050	25.0	50.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
4-Isopropyltoluene	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
Methylene chloride	973	125	250	ug/kg wet	50	1000	---	97	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	2120	250	500	ug/kg wet	50	2000	---	106	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Naphthalene	971	50.0	100	ug/kg wet	50	1000	---	97	80-120%	---	---	
n-Propylbenzene	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Styrene	960	25.0	50.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1070	12.5	25.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1050	25.0	50.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
Tetrachloroethene (PCE)	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Toluene	998	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,2,3-Trichlorobenzene	1000	125	250	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,2,4-Trichlorobenzene	986	125	250	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,1,1-Trichloroethane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,1,2-Trichloroethane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Trichloroethene (TCE)	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Trichlorofluoromethane	1020	50.0	100	ug/kg wet	50	1000	---	102	80-120%	---	---	
1,2,3-Trichloropropane	1080	25.0	50.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
1,2,4-Trimethylbenzene	973	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,3,5-Trimethylbenzene	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	

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Darrell Auvil For Darwin Thomas, Business Development Director

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**Volatile Organic Compounds by EPA 5035A/8260C**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110716 - EPA 5035A						Soil						
Duplicate (9110716-DUP1)			Prepared: 11/14/19 13:35 Analyzed: 11/14/19 20:50						V-15			
QC Source Sample: Non-SDG (A9K0383-02)												
1,3-Dichlorobenzene	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	65.1	130	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	65.1	130	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	325	651	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	163	325	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	325	651	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	166	65.1	130	ug/kg dry	50	---	155	---	---	7	30%	
n-Propylbenzene	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	32.5	65.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	163	325	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	163	325	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	16.3	32.5	ug/kg dry	50	---	ND	---	---	---	30%	

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NWN-PCI0777683



Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110716 - EPA 5035A						Soil						
Matrix Spike (9110716-MS1)			Prepared: 11/14/19 10:00		Analyzed: 11/15/19 00:27							
QC Source Sample: Non-SDG (A9K0417-03)												
1,1,2,2-Tetrachloroethane	1250	30.8	61.7	ug/kg dry	50	1230	ND	101	70-124%	---	---	Q-01
Tetrachloroethene (PCE)	1240	15.4	30.8	ug/kg dry	50	1230	ND	101	73-128%	---	---	
Toluene	1210	30.8	61.7	ug/kg dry	50	1230	ND	99	77-121%	---	---	
1,2,3-Trichlorobenzene	1190	154	308	ug/kg dry	50	1230	ND	97	66-130%	---	---	
1,2,4-Trichlorobenzene	1200	154	308	ug/kg dry	50	1230	ND	97	67-129%	---	---	
1,1,1-Trichloroethane	1250	15.4	30.8	ug/kg dry	50	1230	ND	101	73-130%	---	---	
1,1,2-Trichloroethane	1300	15.4	30.8	ug/kg dry	50	1230	ND	106	78-121%	---	---	
Trichloroethene (TCE)	1230	15.4	30.8	ug/kg dry	50	1230	ND	100	77-123%	---	---	
Trichlorofluoromethane	2140	61.7	123	ug/kg dry	50	1230	ND	174	62-140%	---	---	
1,2,3-Trichloropropane	1240	30.8	61.7	ug/kg dry	50	1230	ND	101	73-125%	---	---	
1,2,4-Trimethylbenzene	1200	30.8	61.7	ug/kg dry	50	1230	ND	98	75-123%	---	---	
1,3,5-Trimethylbenzene	1290	30.8	61.7	ug/kg dry	50	1230	ND	105	73-124%	---	---	
Vinyl chloride	1130	15.4	30.8	ug/kg dry	50	1230	ND	92	56-135%	---	---	
m,p-Xylene	2570	30.8	61.7	ug/kg dry	50	2460	ND	104	77-124%	---	---	
o-Xylene	1330	15.4	30.8	ug/kg dry	50	1230	ND	108	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 100 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		99 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		102 %		80-120 %		"						

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**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**TCLP Volatile Organic Compounds by EPA 1311/8260C**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110460 - EPA 1311/5030B TCLP Volatiles						Water						
Blank (9110460-BLK1)			Prepared: 11/05/19 09:41		Analyzed: 11/05/19 10:35		TCLP					
1311/8260C												
Acetone	ND	0.500	1.00	mg/L	50	---	---	---	---	---	---	
Benzene	ND	0.00625	0.0125	mg/L	50	---	---	---	---	---	---	
Bromobenzene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Bromochloromethane	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
Bromodichloromethane	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
Bromoform	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
Bromomethane	ND	0.250	0.250	mg/L	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	0.250	0.500	mg/L	50	---	---	---	---	---	---	
n-Butylbenzene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
Chlorobenzene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Chloroethane	ND	0.250	0.250	mg/L	50	---	---	---	---	---	---	
Chloroform	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
Chloromethane	ND	0.125	0.250	mg/L	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	0.125	0.250	mg/L	50	---	---	---	---	---	---	
Dibromochloromethane	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Dibromomethane	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
1,2-Dichloropropane	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	

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NWN-PCI0777687

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**TCLP Volatile Organic Compounds by EPA 1311/8260C**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110460 - EPA 1311/5030B TCLP Volatiles						Water						
LCS (9110460-BS1)				Prepared: 11/05/19 09:41 Analyzed: 11/05/19 10:08				TCLP				
2,2-Dichloropropane	1.31	0.0250	0.0500	mg/L	50	1.00	---	131	80-120%	---	---	Q-56
1,1-Dichloropropene	1.20	0.0250	0.0500	mg/L	50	1.00	---	120	80-120%	---	---	
cis-1,3-Dichloropropene	1.07	0.0250	0.0500	mg/L	50	1.00	---	107	80-120%	---	---	
trans-1,3-Dichloropropene	1.17	0.0250	0.0500	mg/L	50	1.00	---	117	80-120%	---	---	
Ethylbenzene	1.09	0.0125	0.0250	mg/L	50	1.00	---	109	80-120%	---	---	
Hexachlorobutadiene	1.19	0.125	0.250	mg/L	50	1.00	---	119	80-120%	---	---	
2-Hexanone	2.15	0.250	0.500	mg/L	50	2.00	---	108	80-120%	---	---	
Isopropylbenzene	1.16	0.0250	0.0500	mg/L	50	1.00	---	116	80-120%	---	---	
4-Isopropyltoluene	1.14	0.0250	0.0500	mg/L	50	1.00	---	114	80-120%	---	---	
4-Methyl-2-pentanone (MIBK)	2.12	0.250	0.500	mg/L	50	2.00	---	106	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1.13	0.0250	0.0500	mg/L	50	1.00	---	113	80-120%	---	---	
Methylene chloride	1.07	0.125	0.250	mg/L	50	1.00	---	107	80-120%	---	---	
Naphthalene	1.07	0.0500	0.100	mg/L	50	1.00	---	107	80-120%	---	---	
n-Propylbenzene	1.10	0.0125	0.0250	mg/L	50	1.00	---	110	80-120%	---	---	
Styrene	1.09	0.0250	0.0500	mg/L	50	1.00	---	109	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1.12	0.0125	0.0250	mg/L	50	1.00	---	112	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1.03	0.0125	0.0250	mg/L	50	1.00	---	103	80-120%	---	---	
Tetrachloroethene (PCE)	1.12	0.0125	0.0250	mg/L	50	1.00	---	112	80-120%	---	---	
Toluene	1.02	0.0250	0.0500	mg/L	50	1.00	---	102	80-120%	---	---	
1,2,3-Trichlorobenzene	1.21	0.0250	0.0500	mg/L	50	1.00	---	121	80-120%	---	---	Q-56
1,2,4-Trichlorobenzene	1.20	0.0500	0.100	mg/L	50	1.00	---	120	80-120%	---	---	
1,1,1-Trichloroethane	1.14	0.0125	0.0250	mg/L	50	1.00	---	114	80-120%	---	---	
1,1,2-Trichloroethane	1.07	0.0125	0.0250	mg/L	50	1.00	---	107	80-120%	---	---	
Trichloroethene (TCE)	1.04	0.0125	0.0250	mg/L	50	1.00	---	104	80-120%	---	---	
Trichlorofluoromethane	1.12	0.0500	0.100	mg/L	50	1.00	---	112	80-120%	---	---	
1,2,3-Trichloropropane	1.04	0.0250	0.0500	mg/L	50	1.00	---	104	80-120%	---	---	
1,2,4-Trimethylbenzene	1.15	0.0250	0.0500	mg/L	50	1.00	---	115	80-120%	---	---	
1,3,5-Trimethylbenzene	1.17	0.0250	0.0500	mg/L	50	1.00	---	117	80-120%	---	---	
Vinyl chloride	1.03	0.0125	0.0250	mg/L	50	1.00	---	103	80-120%	---	---	
m,p-Xylene	2.32	0.0250	0.0500	mg/L	50	2.00	---	116	80-120%	---	---	
o-Xylene	1.19	0.0125	0.0250	mg/L	50	1.00	---	119	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 97 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		99 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		101 %		80-120 %		"						

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NWN-PCI0777690

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**TCLP Volatile Organic Compounds by EPA 1311/8260C**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110460 - EPA 1311/5030B TCLP Volatiles						Water						
Duplicate (9110460-DUP1)			Prepared: 11/05/19 10:08 Analyzed: 11/05/19 11:29									
QC Source Sample: Non-SDG (A9K0045-01)												
1,3-Dichloropropane	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	0.125	0.250	mg/L	50	---	ND	---	---	---	30%	
2-Hexanone	ND	0.250	0.500	mg/L	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	0.250	0.500	mg/L	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
Methylene chloride	ND	0.125	0.250	mg/L	50	---	ND	---	---	---	30%	
Naphthalene	0.140	0.0500	0.100	mg/L	50	---	0.140	---	---	0.7	30%	
n-Propylbenzene	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
Styrene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
Toluene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	0.0500	0.100	mg/L	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	0.0500	0.100	mg/L	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	0.0250	0.0500	mg/L	50	---	ND	---	---	---	30%	
o-Xylene	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 103 %		Limits: 80-120 %		Dilution: 1x						

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NWN-PCI0777692

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**TCLP Volatile Organic Compounds by EPA 1311/8260C**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110460 - EPA 1311/5030B TCLP Volatiles						Water						

Duplicate (9110460-DUP1)

Prepared: 11/05/19 10:08 Analyzed: 11/05/19 11:29

QC Source Sample: Non-SDG (A9K0045-01)

Surr: Toluene-d8 (Surr)	Recovery: 98 %	Limits: 80-120 %	Dilution: 1x
4-Bromofluorobenzene (Surr)	101 %	80-120 %	"

Matrix Spike (9110460-MS1)

Prepared: 11/05/19 10:08 Analyzed: 11/05/19 14:38

QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01)**1311/8260C**

Acetone	1.94	0.500	1.00	mg/L	50	2.00	ND	97	70-130%	---	---
Benzene	1.08	0.00625	0.0125	mg/L	50	1.00	0.0590	102	70-130%	---	---
Bromobenzene	1.01	0.0125	0.0250	mg/L	50	1.00	ND	101	70-130%	---	---
Bromochloromethane	0.998	0.0250	0.0500	mg/L	50	1.00	ND	100	70-130%	---	---
Bromodichloromethane	1.04	0.0250	0.0500	mg/L	50	1.00	ND	104	70-130%	---	---
Bromoform	0.940	0.0250	0.0500	mg/L	50	1.00	ND	94	70-130%	---	---
Bromomethane	0.952	0.250	0.250	mg/L	50	1.00	ND	95	70-130%	---	---
2-Butanone (MEK)	2.11	0.250	0.500	mg/L	50	2.00	ND	106	70-130%	---	---
n-Butylbenzene	1.12	0.0250	0.0500	mg/L	50	1.00	ND	112	70-130%	---	---
sec-Butylbenzene	1.05	0.0250	0.0500	mg/L	50	1.00	ND	105	70-130%	---	---
tert-Butylbenzene	1.07	0.0250	0.0500	mg/L	50	1.00	ND	107	70-130%	---	---
Carbon tetrachloride	1.10	0.0250	0.0500	mg/L	50	1.00	ND	110	70-130%	---	---
Chlorobenzene	0.984	0.0125	0.0250	mg/L	50	1.00	ND	98	70-130%	---	---
Chloroethane	1.09	0.250	0.250	mg/L	50	1.00	ND	109	70-130%	---	---
Chloroform	1.02	0.0250	0.0500	mg/L	50	1.00	ND	102	70-130%	---	---
Chloromethane	0.845	0.125	0.250	mg/L	50	1.00	ND	84	70-130%	---	---
2-Chlorotoluene	1.06	0.0250	0.0500	mg/L	50	1.00	ND	106	70-130%	---	---
4-Chlorotoluene	1.08	0.0250	0.0500	mg/L	50	1.00	ND	108	70-130%	---	---
1,2-Dibromo-3-chloropropane	1.04	0.125	0.250	mg/L	50	1.00	ND	104	70-130%	---	---
Dibromochloromethane	1.01	0.0250	0.0500	mg/L	50	1.00	ND	101	70-130%	---	---
1,2-Dibromoethane (EDB)	1.07	0.0125	0.0250	mg/L	50	1.00	ND	107	70-130%	---	---
Dibromomethane	1.03	0.0250	0.0500	mg/L	50	1.00	ND	103	70-130%	---	---
1,2-Dichlorobenzene	1.05	0.0125	0.0250	mg/L	50	1.00	ND	105	70-130%	---	---
1,3-Dichlorobenzene	1.04	0.0125	0.0250	mg/L	50	1.00	ND	104	70-130%	---	---
1,4-Dichlorobenzene	0.944	0.0125	0.0250	mg/L	50	1.00	ND	94	70-130%	---	---
Dichlorodifluoromethane	0.906	0.0250	0.0500	mg/L	50	1.00	ND	91	70-130%	---	---
1,1-Dichloroethane	0.984	0.0125	0.0250	mg/L	50	1.00	ND	98	70-130%	---	---

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Darrell Auvil For Darwin Thomas, Business Development Director

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**TCLP Volatile Organic Compounds by EPA 1311/8260C**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110460 - EPA 1311/5030B TCLP Volatiles							Water					
Matrix Spike (9110460-MS1)				Prepared: 11/05/19 10:08 Analyzed: 11/05/19 14:38								
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01)												
1,3,5-Trimethylbenzene	1.08	0.0250	0.0500	mg/L	50	1.00	ND	108	70-130%	---	---	
Vinyl chloride	0.976	0.0125	0.0250	mg/L	50	1.00	ND	98	70-130%	---	---	
m,p-Xylene	2.22	0.0250	0.0500	mg/L	50	2.00	ND	111	70-130%	---	---	
o-Xylene	1.16	0.0125	0.0250	mg/L	50	1.00	0.0190	114	70-130%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 97 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		100 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		100 %		80-120 %		"						

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NWN-PCI0777695



Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	Limits	RPD	RPD Limit	Notes
Batch 0010350 - EPA 3546						Solid						
Blank (0010350-BLK1)			Prepared: 01/13/20 12:45 Analyzed: 01/13/20 18:13									
EPA 8270D												
Acenaphthene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	2.00	4.00	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	2.00	4.00	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	2.00	4.00	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.67	5.33	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.67	5.33	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	8.06	2.67	5.33	ug/kg wet	1	---	---	---	---	---	---	B
Phenanthrene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
Carbazole	ND	2.00	4.00	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	1.33	2.67	ug/kg wet	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	13.3	26.7	ug/kg wet	1	---	---	---	---	---	---	
2-Chlorophenol	ND	6.67	13.3	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.67	13.3	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.67	13.3	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	33.3	66.7	ug/kg wet	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	33.3	66.7	ug/kg wet	1	---	---	---	---	---	---	
2-Methylphenol	ND	3.33	6.67	ug/kg wet	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.33	6.67	ug/kg wet	1	---	---	---	---	---	---	
2-Nitrophenol	ND	13.3	26.7	ug/kg wet	1	---	---	---	---	---	---	
4-Nitrophenol	ND	13.3	26.7	ug/kg wet	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	13.3	26.7	ug/kg wet	1	---	---	---	---	---	---	
Phenol	ND	2.67	5.33	ug/kg wet	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.67	13.3	ug/kg wet	1	---	---	---	---	---	---	

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Darrell Auvil For Darwin Thomas, Business Development Director



AMENDED REPORT

Sevenson Environmental Services, Inc.

2749 Lockport Road

Niagara Falls, NY 14305

Project: Gasco -- Carbon

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0010350 - EPA 3546						Solid						
Blank (0010350-BLK1)			Prepared: 01/13/20 12:45		Analyzed: 01/13/20 18:13							
Benzoic acid	ND	167	333	ug/kg wet	1	---	---	---	---	---	---	Q-52
Benzyl alcohol	ND	6.67	13.3	ug/kg wet	1	---	---	---	---	---	---	
Isophorone	ND	3.33	6.67	ug/kg wet	1	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.33	6.67	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	33.3	66.7	ug/kg wet	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	26.7	53.3	ug/kg wet	1	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	33.3	66.7	ug/kg wet	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	33.3	66.7	ug/kg wet	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	33.3	66.7	ug/kg wet	1	---	---	---	---	---	---	
Pyridine	ND	6.67	13.3	ug/kg wet	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)		Recovery: 81 %		Limits: 37-122 %		Dilution: 1x						
2-Fluorobiphenyl (Surr)		64 %		44-115 %		"						
Phenol-d6 (Surr)		79 %		33-122 %		"						
p-Terphenyl-d14 (Surr)		97 %		54-127 %		"						
2-Fluorophenol (Surr)		66 %		35-115 %		"						
2,4,6-Tribromophenol (Surr)		78 %		39-132 %		"						

LCS (0010350-BS1) Prepared: 01/13/20 12:45 Analyzed: 01/13/20 18:50 Q-18

EPA 8270D

Acenaphthene	437	1.33	2.67	ug/kg wet	1	533	---	82	40-122%	---	---
Acenaphthylene	474	1.33	2.67	ug/kg wet	1	533	---	89	32-132%	---	---
Anthracene	501	1.33	2.67	ug/kg wet	1	533	---	94	47-123%	---	---
Benz(a)anthracene	511	1.33	2.67	ug/kg wet	1	533	---	96	49-126%	---	---
Benzo(a)pyrene	505	2.00	4.00	ug/kg wet	1	533	---	95	45-129%	---	---
Benzo(b)fluoranthene	499	2.00	4.00	ug/kg wet	1	533	---	94	45-132%	---	---
Benzo(k)fluoranthene	502	2.00	4.00	ug/kg wet	1	533	---	94	47-132%	---	---
Benzo(g,h,i)perylene	514	1.33	2.67	ug/kg wet	1	533	---	96	43-134%	---	---
Chrysene	486	1.33	2.67	ug/kg wet	1	533	---	91	50-124%	---	---
Dibenz(a,h)anthracene	503	1.33	2.67	ug/kg wet	1	533	---	94	45-134%	---	---
Fluoranthene	539	1.33	2.67	ug/kg wet	1	533	---	101	50-127%	---	---
Fluorene	493	1.33	2.67	ug/kg wet	1	533	---	92	43-125%	---	---
Indeno(1,2,3-cd)pyrene	503	1.33	2.67	ug/kg wet	1	533	---	94	45-133%	---	---
1-Methylnaphthalene	466	2.67	5.33	ug/kg wet	1	533	---	87	40-120%	---	---
2-Methylnaphthalene	464	2.67	5.33	ug/kg wet	1	533	---	87	38-122%	---	---

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Darrell Auvil For Darwin Thomas, Business Development Director

**Apex Laboratories, LLC**

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EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**Semivolatile Organic Compounds by EPA 8270D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0010350 - EPA 3546						Solid						
LCS (0010350-BS1)						Prepared: 01/13/20 12:45 Analyzed: 01/13/20 18:50						Q-18
Naphthalene	413	2.67	5.33	ug/kg wet	1	533	---	77	35-123%	---	---	B
Phenanthrene	456	1.33	2.67	ug/kg wet	1	533	---	86	50-121%	---	---	
Pyrene	523	1.33	2.67	ug/kg wet	1	533	---	98	47-127%	---	---	
Carbazole	512	2.00	4.00	ug/kg wet	1	533	---	96	50-122%	---	---	
Dibenzofuran	466	1.33	2.67	ug/kg wet	1	533	---	87	44-120%	---	---	
4-Chloro-3-methylphenol	568	13.3	26.7	ug/kg wet	1	533	---	107	45-122%	---	---	
2-Chlorophenol	493	6.67	13.3	ug/kg wet	1	533	---	92	34-121%	---	---	
2,4-Dichlorophenol	490	6.67	13.3	ug/kg wet	1	533	---	92	40-122%	---	---	
2,4-Dimethylphenol	510	6.67	13.3	ug/kg wet	1	533	---	96	30-127%	---	---	
2,4-Dinitrophenol	575	33.3	66.7	ug/kg wet	1	533	---	108	5-137%	---	---	Q-41
4,6-Dinitro-2-methylphenol	527	33.3	66.7	ug/kg wet	1	533	---	99	29-132%	---	---	
2-Methylphenol	565	3.33	6.67	ug/kg wet	1	533	---	106	32-122%	---	---	
3+4-Methylphenol(s)	556	3.33	6.67	ug/kg wet	1	533	---	104	34-120%	---	---	
2-Nitrophenol	451	13.3	26.7	ug/kg wet	1	533	---	85	36-123%	---	---	
4-Nitrophenol	632	13.3	26.7	ug/kg wet	1	533	---	118	30-132%	---	---	Q-41
Pentachlorophenol (PCP)	561	13.3	26.7	ug/kg wet	1	533	---	105	25-133%	---	---	
Phenol	516	2.67	5.33	ug/kg wet	1	533	---	97	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	565	6.67	13.3	ug/kg wet	1	533	---	106	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	554	6.67	13.3	ug/kg wet	1	533	---	104	40-120%	---	---	
2,4,5-Trichlorophenol	544	6.67	13.3	ug/kg wet	1	533	---	102	41-124%	---	---	
2,4,6-Trichlorophenol	497	6.67	13.3	ug/kg wet	1	533	---	93	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	512	20.0	40.0	ug/kg wet	1	533	---	96	51-133%	---	---	
Butyl benzyl phthalate	521	13.3	26.7	ug/kg wet	1	533	---	98	48-132%	---	---	
Diethylphthalate	545	13.3	26.7	ug/kg wet	1	533	---	102	50-124%	---	---	
Dimethylphthalate	518	13.3	26.7	ug/kg wet	1	533	---	97	48-124%	---	---	
Di-n-butylphthalate	521	13.3	26.7	ug/kg wet	1	533	---	98	51-128%	---	---	
Di-n-octyl phthalate	550	13.3	26.7	ug/kg wet	1	533	---	103	44-140%	---	---	
N-Nitrosodimethylamine	435	3.33	6.67	ug/kg wet	1	533	---	82	23-120%	---	---	
N-Nitroso-di-n-propylamine	591	3.33	6.67	ug/kg wet	1	533	---	111	36-120%	---	---	Q-41
N-Nitrosodiphenylamine	473	3.33	6.67	ug/kg wet	1	533	---	89	38-127%	---	---	
Bis(2-Chloroethoxy) methane	448	3.33	6.67	ug/kg wet	1	533	---	84	36-121%	---	---	
Bis(2-Chloroethyl) ether	453	3.33	6.67	ug/kg wet	1	533	---	85	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	469	3.33	6.67	ug/kg wet	1	533	---	88	33-131%	---	---	
Hexachlorobenzene	461	1.33	2.67	ug/kg wet	1	533	---	86	44-122%	---	---	

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NWN-PCI0777699



AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0010350 - EPA 3546						Solid						
LCS (0010350-BS1)						Prepared: 01/13/20 12:45 Analyzed: 01/13/20 18:50						Q-18
Hexachlorobutadiene	388	3.33	6.67	ug/kg wet	1	533	---	73	32-123%	---	---	
Hexachlorocyclopentadiene	433	6.67	13.3	ug/kg wet	1	533	---	81	5-140%	---	---	
Hexachloroethane	423	3.33	6.67	ug/kg wet	1	533	---	79	28-120%	---	---	
2-Chloronaphthalene	420	1.33	2.67	ug/kg wet	1	533	---	79	41-120%	---	---	
1,2-Dichlorobenzene	419	3.33	6.67	ug/kg wet	1	533	---	79	33-120%	---	---	
1,3-Dichlorobenzene	405	3.33	6.67	ug/kg wet	1	533	---	76	30-120%	---	---	
1,4-Dichlorobenzene	408	3.33	6.67	ug/kg wet	1	533	---	77	31-120%	---	---	
1,2,4-Trichlorobenzene	400	3.33	6.67	ug/kg wet	1	533	---	75	34-120%	---	---	
4-Bromophenyl phenyl ether	498	3.33	6.67	ug/kg wet	1	533	---	93	46-124%	---	---	
4-Chlorophenyl phenyl ether	495	3.33	6.67	ug/kg wet	1	533	---	93	45-121%	---	---	
Aniline	529	6.67	13.3	ug/kg wet	1	533	---	99	7-120%	---	---	
4-Chloroaniline	379	3.33	6.67	ug/kg wet	1	533	---	71	16-120%	---	---	
2-Nitroaniline	520	26.7	53.3	ug/kg wet	1	533	---	97	44-127%	---	---	
3-Nitroaniline	395	26.7	53.3	ug/kg wet	1	533	---	74	33-120%	---	---	
4-Nitroaniline	604	26.7	53.3	ug/kg wet	1	533	---	113	35-120%	---	---	
Nitrobenzene	515	13.3	26.7	ug/kg wet	1	533	---	97	34-122%	---	---	
2,4-Dinitrotoluene	546	13.3	26.7	ug/kg wet	1	533	---	102	48-126%	---	---	
2,6-Dinitrotoluene	505	13.3	26.7	ug/kg wet	1	533	---	95	46-124%	---	---	
Benzoic acid	174	167	167	ug/kg wet	1	1070	---	16	5-140%	---	---	
Benzyl alcohol	547	6.67	13.3	ug/kg wet	1	533	---	102	29-122%	---	---	
Isophorone	483	3.33	6.67	ug/kg wet	1	533	---	91	30-122%	---	---	
Azobenzene (1,2-DPH)	462	3.33	6.67	ug/kg wet	1	533	---	87	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	519	33.3	66.7	ug/kg wet	1	533	---	97	60-121%	---	---	
3,3'-Dichlorobenzidine	1080	26.7	53.3	ug/kg wet	1	1070	---	101	22-121%	---	---	
1,2-Dinitrobenzene	529	33.3	66.7	ug/kg wet	1	533	---	99	44-120%	---	---	
1,3-Dinitrobenzene	535	33.3	66.7	ug/kg wet	1	533	---	100	42-127%	---	---	
1,4-Dinitrobenzene	535	33.3	66.7	ug/kg wet	1	533	---	100	37-132%	---	---	
Pyridine	386	6.67	13.3	ug/kg wet	1	533	---	72	5-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>												
		<i>Recovery:</i>		<i>Limits:</i>		<i>Dilution:</i> 1x						
<i>2-Fluorobiphenyl (Surr)</i>		78 %		44-115 %		"						
<i>Phenol-d6 (Surr)</i>		98 %		33-122 %		"						
<i>p-Terphenyl-d14 (Surr)</i>		96 %		54-127 %		"						
<i>2-Fluorophenol (Surr)</i>		85 %		35-115 %		"						
<i>2,4,6-Tribromophenol (Surr)</i>		100 %		39-132 %		"						

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NWN-PCI0777700

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**Project Number: **111317**Project Manager: **Chip Byrd****Report ID:****A9K0048 - 01 14 20 1658****QUALITY CONTROL (QC) SAMPLE RESULTS****Semivolatile Organic Compounds by EPA 8270D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0010350 - EPA 3546						Solid						
Duplicate (0010350-DUP1)												
Prepared: 01/13/20 12:45						Analyzed: 01/13/20 20:04						H-02
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01)												
EPA 8270D												
Acenaphthene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	Q-17
Acenaphthylene	ND	1050	2110	ug/kg dry	100	---	1120	---	---	***	30%	
Anthracene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	1580	3160	ug/kg dry	100	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	1580	3160	ug/kg dry	100	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	1580	3160	ug/kg dry	100	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Chrysene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Fluoranthene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Fluorene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Phenanthrene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Pyrene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Carbazole	ND	1580	3160	ug/kg dry	100	---	ND	---	---	---	30%	
Dibenzofuran	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
2-Chlorophenol	ND	5270	10500	ug/kg dry	100	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	26300	52700	ug/kg dry	100	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	26300	52700	ug/kg dry	100	---	ND	---	---	---	30%	
2-Methylphenol	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
4-Nitrophenol	ND	10500	21100	ug/kg dry	100	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	10500	21100	ug/kg dry	100	---	ND	---	---	---	30%	
Phenol	ND	2110	4210	ug/kg dry	100	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	5270	10500	ug/kg dry	100	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	5270	10500	ug/kg dry	100	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	5270	10500	ug/kg dry	100	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	5270	10500	ug/kg dry	100	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	15800	31600	ug/kg dry	100	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	10500	21100	ug/kg dry	100	---	ND	---	---	---	30%	

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NWN-PCI0777701

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**Semivolatile Organic Compounds by EPA 8270D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0010350 - EPA 3546						Solid						
Duplicate (0010350-DUP1)			Prepared: 01/13/20 12:45 Analyzed: 01/13/20 20:04						H-02			
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01)												
Diethylphthalate	ND	10500	21100	ug/kg dry	100	---	ND	---	---	---	30%	
Dimethylphthalate	ND	10500	21100	ug/kg dry	100	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	10500	21100	ug/kg dry	100	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	10500	21100	ug/kg dry	100	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
2,2'-Oxybis(1-Chloropropane)	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	1050	2110	ug/kg dry	100	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	5270	10500	ug/kg dry	100	---	ND	---	---	---	30%	
Hexachloroethane	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	3560	3560	ug/kg dry	100	---	ND	---	---	---	30%	R-02
1,2-Dichlorobenzene	21300	2630	5270	ug/kg dry	100	---	21800	---	---	2	30%	
1,3-Dichlorobenzene	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	4810	2630	5270	ug/kg dry	100	---	4710	---	---	2	30%	J
4-Bromophenyl phenyl ether	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
Aniline	ND	5270	10500	ug/kg dry	100	---	ND	---	---	---	30%	
2-Nitroaniline	ND	21100	42100	ug/kg dry	100	---	ND	---	---	---	30%	
3-Nitroaniline	ND	21100	42100	ug/kg dry	100	---	ND	---	---	---	30%	
4-Nitroaniline	ND	21100	42100	ug/kg dry	100	---	ND	---	---	---	30%	
Nitrobenzene	ND	21100	21100	ug/kg dry	100	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	10500	21100	ug/kg dry	100	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	10500	21100	ug/kg dry	100	---	ND	---	---	---	30%	
Benzyl alcohol	ND	10500	10500	ug/kg dry	100	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	2630	5270	ug/kg dry	100	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	26300	52700	ug/kg dry	100	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	21100	42100	ug/kg dry	100	---	ND	---	---	---	30%	Q-52
1,2-Dinitrobenzene	ND	26300	52700	ug/kg dry	100	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	26300	52700	ug/kg dry	100	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	26300	52700	ug/kg dry	100	---	ND	---	---	---	30%	
Pyridine	ND	5270	10500	ug/kg dry	100	---	ND	---	---	---	30%	

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NWN-PCI0777702

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**Semivolatile Organic Compounds by EPA 8270D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0010350 - EPA 3546						Solid						
Duplicate (0010350-DUP1)			Prepared: 01/13/20 12:45 Analyzed: 01/13/20 20:04								H-02	
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01)												
Surr: Nitrobenzene-d5 (Surr)			Recovery: 131 %	Limits: 37-122 %		Dilution: 100x						S-05
2-Fluorobiphenyl (Surr)			74 %	44-115 %			"					S-05
Phenol-d6 (Surr)			52 %	33-122 %			"					S-05
p-Terphenyl-d14 (Surr)			28 %	54-127 %			"					S-05
2-Fluorophenol (Surr)			138 %	35-115 %			"					S-05
2,4,6-Tribromophenol (Surr)			176 %	39-132 %			"					S-05
Duplicate (0010350-DUP2)			Prepared: 01/13/20 12:45 Analyzed: 01/14/20 10:31								H-02	
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01RE1)												
EPA 8270D												
1-Methylnaphthalene	4370000	21100	42100	ug/kg dry	1000	---	6140000	---	---	34	30%	Q-17
4-Chloro-3-methylphenol	ND	105000	211000	ug/kg dry	1000	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	52700	105000	ug/kg dry	1000	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	52700	105000	ug/kg dry	1000	---	ND	---	---	---	30%	
2-Nitrophenol	ND	105000	211000	ug/kg dry	1000	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	52700	52700	ug/kg dry	1000	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	26300	52700	ug/kg dry	1000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	26300	52700	ug/kg dry	1000	---	ND	---	---	---	30%	
Benzoic acid	ND	1320000	2630000	ug/kg dry	1000	---	ND	---	---	---	30%	
Isophorone	ND	26300	52700	ug/kg dry	1000	---	ND	---	---	---	30%	
Duplicate (0010350-DUP3)			Prepared: 01/13/20 12:45 Analyzed: 01/14/20 11:42								H-02	
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01RE2)												
EPA 8270D												
2-Methylnaphthalene	7650000	422000	842000	ug/kg dry	20000	---	10600000	---	---	32	30%	Q-17
Naphthalene	77900000	422000	842000	ug/kg dry	20000	---	87600000	---	---	12	30%	B
4-Chloroaniline	ND	526000	1050000	ug/kg dry	20000	---	ND	---	---	---	30%	

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NWN-PCI0777703

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**TCLP Semivolatile Organic Compounds by EPA 1311/8270D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110535 - EPA 1311/3510C (BNA Extraction)						Soil						
Blank (9110535-BLK1)			Prepared: 11/06/19 13:54		Analyzed: 11/07/19 10:10							
Diethylphthalate	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Dimethylphthalate	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Fluoranthene	0.148	0.100	0.200	ug/L	1	---	---	---	---	---	---	J, B-02
Fluorene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Hexachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Isophorone	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	0.318	0.200	0.400	ug/L	1	---	---	---	---	---	---	J, B-02
2-Methylphenol	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Naphthalene	2.82	0.200	0.400	ug/L	1	---	---	---	---	---	---	B
2-Nitroaniline	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
3-Nitroaniline	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
4-Nitroaniline	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Nitrobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
2-Nitrophenol	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
4-Nitrophenol	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	1.45	1.00	2.00	ug/L	1	---	---	---	---	---	---	J, B-02

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NWN-PCI0777705

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**TCLP Semivolatile Organic Compounds by EPA 1311/8270D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110535 - EPA 1311/3510C (BNA Extraction)						Soil						
LCS (9110535-BS1)						Prepared: 11/06/19 13:54 Analyzed: 11/07/19 10:46						
Bis(2-ethylhexyl)phthalate	38.8	8.00	16.0	ug/L	4	40.0	---	97	55-135%	---	---	
4-Bromophenyl phenyl ether	38.3	1.00	2.00	ug/L	4	40.0	---	96	54-124%	---	---	
Butyl benzyl phthalate	38.5	8.00	16.0	ug/L	4	40.0	---	96	53-134%	---	---	
Carbazole	38.6	0.600	1.20	ug/L	4	40.0	---	97	60-122%	---	---	
4-Chloroaniline	18.1	1.00	2.00	ug/L	4	40.0	---	45	33-120%	---	---	Q-31
4-Chloro-3-methylphenol	34.1	4.00	8.00	ug/L	4	40.0	---	85	52-120%	---	---	
2-Chloronaphthalene	34.7	0.400	0.800	ug/L	4	40.0	---	87	40-120%	---	---	
2-Chlorophenol	29.2	2.00	4.00	ug/L	4	40.0	---	73	38-120%	---	---	
4-Chlorophenyl phenyl ether	37.1	1.00	2.00	ug/L	4	40.0	---	93	53-121%	---	---	
Chrysene	38.8	0.400	0.800	ug/L	4	40.0	---	97	59-123%	---	---	
Dibenz(a,h)anthracene	39.9	0.400	0.800	ug/L	4	40.0	---	100	51-134%	---	---	
Dibenzofuran	36.8	0.400	0.800	ug/L	4	40.0	---	92	53-120%	---	---	
1,2-Dichlorobenzene	24.9	1.00	2.00	ug/L	4	40.0	---	62	32-120%	---	---	
1,3-Dichlorobenzene	23.5	1.00	2.00	ug/L	4	40.0	---	59	28-120%	---	---	
1,4-Dichlorobenzene	23.4	1.00	2.00	ug/L	4	40.0	---	58	29-120%	---	---	
2,4-Dichlorophenol	34.2	2.00	4.00	ug/L	4	40.0	---	85	47-121%	---	---	
Di-n-butylphthalate	37.0	8.00	16.0	ug/L	4	40.0	---	93	59-127%	---	---	
Diethylphthalate	39.3	8.00	16.0	ug/L	4	40.0	---	98	55-125%	---	---	
Dimethylphthalate	39.1	8.00	16.0	ug/L	4	40.0	---	98	45-127%	---	---	
2,4-Dimethylphenol	33.8	2.00	4.00	ug/L	4	40.0	---	85	31-124%	---	---	
1,2-Dinitrobenzene	37.2	10.0	20.0	ug/L	4	40.0	---	93	59-120%	---	---	
1,3-Dinitrobenzene	37.3	10.0	20.0	ug/L	4	40.0	---	93	49-128%	---	---	
1,4-Dinitrobenzene	41.1	10.0	20.0	ug/L	4	40.0	---	103	40-120%	---	---	Q-41
4,6-Dinitro-2-methylphenol	42.4	10.0	20.0	ug/L	4	40.0	---	106	44-137%	---	---	Q-41
2,4-Dinitrophenol	36.5	10.0	20.0	ug/L	4	40.0	---	91	23-143%	---	---	
2,4-Dinitrotoluene	37.8	4.00	8.00	ug/L	4	40.0	---	95	57-128%	---	---	
2,6-Dinitrotoluene	38.9	4.00	8.00	ug/L	4	40.0	---	97	57-124%	---	---	
Di-n-octyl phthalate	38.0	8.00	16.0	ug/L	4	40.0	---	95	51-140%	---	---	
Fluoranthene	38.0	0.400	0.800	ug/L	4	40.0	---	95	57-128%	---	---	B-02
Fluorene	36.8	0.400	0.800	ug/L	4	40.0	---	92	52-124%	---	---	
Hexachlorobenzene	38.3	0.400	0.800	ug/L	4	40.0	---	96	52-125%	---	---	
Hexachlorobutadiene	28.1	1.00	2.00	ug/L	4	40.0	---	70	22-124%	---	---	
Hexachlorocyclopentadiene	25.3	2.00	4.00	ug/L	4	40.0	---	63	5-127%	---	---	Q-41
Hexachloroethane	23.5	1.00	2.00	ug/L	4	40.0	---	59	21-120%	---	---	

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NWN-PCI0777707

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

AMENDED REPORT**Sevenson Environmental Services, Inc.**

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**TCLP Semivolatile Organic Compounds by EPA 1311/8270D**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110535 - EPA 1311/3510C (BNA Extraction)						Soil						
LCS (9110535-BS1)						Prepared: 11/06/19 13:54 Analyzed: 11/07/19 10:46						
Indeno(1,2,3-cd)pyrene	37.7	0.400	0.800	ug/L	4	40.0	---	94	52-133%	---	---	
Isophorone	32.8	1.00	2.00	ug/L	4	40.0	---	82	42-124%	---	---	
1-Methylnaphthalene	32.7	0.800	1.60	ug/L	4	40.0	---	82	41-120%	---	---	
2-Methylnaphthalene	32.9	0.800	1.60	ug/L	4	40.0	---	82	40-121%	---	---	B-02
2-Methylphenol	25.8	1.00	2.00	ug/L	4	40.0	---	65	30-120%	---	---	
3+4-Methylphenol(s)	23.6	1.00	2.00	ug/L	4	40.0	---	59	29-120%	---	---	
Naphthalene	31.4	0.800	1.60	ug/L	4	40.0	---	78	40-121%	---	---	B
2-Nitroaniline	38.0	8.00	16.0	ug/L	4	40.0	---	95	54-127%	---	---	
3-Nitroaniline	32.7	8.00	16.0	ug/L	4	40.0	---	82	41-128%	---	---	
4-Nitroaniline	39.5	8.00	16.0	ug/L	4	40.0	---	99	35-120%	---	---	Q-41
Nitrobenzene	28.3	4.00	8.00	ug/L	4	40.0	---	71	45-121%	---	---	
2-Nitrophenol	46.4	4.00	8.00	ug/L	4	40.0	---	116	47-123%	---	---	Q-41
4-Nitrophenol	12.7	4.00	8.00	ug/L	4	40.0	---	32	5-120%	---	---	
N-Nitrosodimethylamine	13.3	1.00	2.00	ug/L	4	40.0	---	33	6-120%	---	---	
N-Nitroso-di-n-propylamine	28.4	1.00	2.00	ug/L	4	40.0	---	71	49-120%	---	---	
N-Nitrosodiphenylamine	37.0	1.00	2.00	ug/L	4	40.0	---	93	51-123%	---	---	
Pentachlorophenol (PCP)	30.7	4.00	8.00	ug/L	4	40.0	---	77	35-138%	---	---	B-02
Phenanthrene	35.8	0.400	0.800	ug/L	4	40.0	---	90	59-120%	---	---	B
Phenol	10.8	8.00	8.00	ug/L	4	40.0	---	27	5-120%	---	---	
Pyrene	38.6	0.400	0.800	ug/L	4	40.0	---	96	57-126%	---	---	B-02
Pyridine	9.43	4.00	8.00	ug/L	4	40.0	---	24	5-120%	---	---	
2,3,4,6-Tetrachlorophenol	34.6	2.00	4.00	ug/L	4	40.0	---	87	50-128%	---	---	
2,3,5,6-Tetrachlorophenol	36.8	2.00	4.00	ug/L	4	40.0	---	92	50-121%	---	---	
1,2,4-Trichlorobenzene	29.1	0.200	2.00	ug/L	4	40.0	---	73	29-120%	---	---	
2,4,5-Trichlorophenol	37.5	2.00	4.00	ug/L	4	40.0	---	94	53-123%	---	---	
2,4,6-Trichlorophenol	38.1	2.00	4.00	ug/L	4	40.0	---	95	50-125%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 74 % Limits: 44-120 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 86 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 25 % 10-120 % "</i>												
<i>p-Terphenyl-d14 (Surr) 105 % 50-133 % "</i>												
<i>2-Fluorophenol (Surr) 45 % 19-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 91 % 43-140 % "</i>												

LCS Dup (9110535-BSD1)

Prepared: 11/06/19 13:54 Analyzed: 11/07/19 11:23

Q-19

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NWN-PCI0777708



AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

EPA ID: OR01039

Sevenson Environmental Services, Inc.

2749 Lockport Road

Niagara Falls, NY 14305

Project: Gasco -- Carbon

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110535 - EPA 1311/3510C (BNA Extraction)						Soil						
LCS Dup (9110535-BSD1)			Prepared: 11/06/19 13:54		Analyzed: 11/07/19 11:23		Q-19					
1311/8270D												
Acenaphthene	35.3	0.400	0.800	ug/L	4	40.0	---	88	47-122%	4	30%	B-02
Acenaphthylene	36.4	0.400	0.800	ug/L	4	40.0	---	91	41-130%	5	30%	
Aniline	16.6	2.00	4.00	ug/L	4	40.0	---	41	6-120%	97	30%	Q-31, Q-24
Anthracene	38.4	0.400	0.800	ug/L	4	40.0	---	96	57-123%	3	30%	
Azobenzene (1,2-DPH)	31.5	1.00	2.00	ug/L	4	40.0	---	79	61-120%	3	30%	
Benz(a)anthracene	39.6	0.400	0.800	ug/L	4	40.0	---	99	58-125%	1	30%	
Benzo(a)pyrene	37.6	0.600	1.20	ug/L	4	40.0	---	94	54-128%	1	30%	
Benzo(b)fluoranthene	39.0	0.600	1.20	ug/L	4	40.0	---	98	53-131%	2	30%	
Benzo(k)fluoranthene	39.7	0.600	1.20	ug/L	4	40.0	---	99	57-129%	0.3	30%	
Benzo(g,h,i)perylene	41.1	0.400	0.800	ug/L	4	40.0	---	103	50-134%	2	30%	
Benzoic acid	46.3	40.0	40.0	ug/L	4	80.0	---	58	5-120%	6	30%	B-02
Benzyl alcohol	24.3	4.00	8.00	ug/L	4	40.0	---	61	31-120%	18	30%	
Bis(2-Chloroethoxy) methane	34.0	1.00	2.00	ug/L	4	40.0	---	85	48-120%	2	30%	
Bis(2-Chloroethyl) ether	32.8	1.00	2.00	ug/L	4	40.0	---	82	43-120%	34	30%	Q-24
2,2'-Oxybis(1-Chloropropane)	23.0	1.00	2.00	ug/L	4	40.0	---	57	37-130%	1	30%	Q-31
Bis(2-Ethylhexyl) adipate	37.3	10.0	20.0	ug/L	4	40.0	---	93	40-125%	5	30%	
Bis(2-ethylhexyl)phthalate	39.9	8.00	16.0	ug/L	4	40.0	---	100	55-135%	3	30%	
4-Bromophenyl phenyl ether	38.0	1.00	2.00	ug/L	4	40.0	---	95	54-124%	0.8	30%	
Butyl benzyl phthalate	39.0	8.00	16.0	ug/L	4	40.0	---	98	53-134%	1	30%	
Carbazole	44.4	0.600	1.20	ug/L	4	40.0	---	111	60-122%	14	30%	
4-Chloroaniline	17.8	1.00	2.00	ug/L	4	40.0	---	44	33-120%	2	30%	Q-31
4-Chloro-3-methylphenol	34.9	4.00	8.00	ug/L	4	40.0	---	87	52-120%	2	30%	
2-Chloronaphthalene	37.2	0.400	0.800	ug/L	4	40.0	---	93	40-120%	7	30%	
2-Chlorophenol	30.3	2.00	4.00	ug/L	4	40.0	---	76	38-120%	4	30%	
4-Chlorophenyl phenyl ether	38.9	1.00	2.00	ug/L	4	40.0	---	97	53-121%	5	30%	
Chrysene	39.2	0.400	0.800	ug/L	4	40.0	---	98	59-123%	1	30%	
Dibenz(a,h)anthracene	39.4	0.400	0.800	ug/L	4	40.0	---	98	51-134%	1	30%	
Dibenzofuran	38.8	0.400	0.800	ug/L	4	40.0	---	97	53-120%	5	30%	
1,2-Dichlorobenzene	27.4	1.00	2.00	ug/L	4	40.0	---	68	32-120%	10	30%	
1,3-Dichlorobenzene	27.1	1.00	2.00	ug/L	4	40.0	---	68	28-120%	14	30%	
1,4-Dichlorobenzene	27.0	1.00	2.00	ug/L	4	40.0	---	67	29-120%	14	30%	
2,4-Dichlorophenol	34.1	2.00	4.00	ug/L	4	40.0	---	85	47-121%	0.2	30%	
Di-n-butylphthalate	39.8	8.00	16.0	ug/L	4	40.0	---	99	59-127%	7	30%	

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Darrell Auvil For Darwin Thomas, Business Development Director

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NWN-PCI0777709



AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: Gasco -- Carbon
Project Number: 111317
Project Manager: Chip Byrd

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110535 - EPA 1311/3510C (BNA Extraction)						Soil						
LCS Dup (9110535-BSD1)						Prepared: 11/06/19 13:54 Analyzed: 11/07/19 11:23						Q-19
Diethylphthalate	40.9	8.00	16.0	ug/L	4	40.0	---	102	55-125%	4	30%	
Dimethylphthalate	40.4	8.00	16.0	ug/L	4	40.0	---	101	45-127%	3	30%	
2,4-Dimethylphenol	33.4	2.00	4.00	ug/L	4	40.0	---	83	31-124%	1	30%	
1,2-Dinitrobenzene	40.3	10.0	20.0	ug/L	4	40.0	---	101	59-120%	8	30%	
1,3-Dinitrobenzene	44.4	10.0	20.0	ug/L	4	40.0	---	111	49-128%	17	30%	
1,4-Dinitrobenzene	47.2	10.0	20.0	ug/L	4	40.0	---	118	40-120%	14	30%	Q-41
4,6-Dinitro-2-methylphenol	54.0	10.0	20.0	ug/L	4	40.0	---	135	44-137%	24	30%	Q-41
2,4-Dinitrophenol	50.5	10.0	20.0	ug/L	4	40.0	---	126	23-143%	32	30%	Q-24
2,4-Dinitrotoluene	41.7	4.00	8.00	ug/L	4	40.0	---	104	57-128%	10	30%	
2,6-Dinitrotoluene	39.9	4.00	8.00	ug/L	4	40.0	---	100	57-124%	2	30%	
Di-n-octyl phthalate	39.8	8.00	16.0	ug/L	4	40.0	---	99	51-140%	4	30%	
Fluoranthene	40.9	0.400	0.800	ug/L	4	40.0	---	102	57-128%	7	30%	B-02
Fluorene	37.7	0.400	0.800	ug/L	4	40.0	---	94	52-124%	2	30%	
Hexachlorobenzene	37.6	0.400	0.800	ug/L	4	40.0	---	94	52-125%	2	30%	
Hexachlorobutadiene	29.9	1.00	2.00	ug/L	4	40.0	---	75	22-124%	6	30%	
Hexachlorocyclopentadiene	33.5	2.00	4.00	ug/L	4	40.0	---	84	5-127%	28	30%	Q-41
Hexachloroethane	29.2	1.00	2.00	ug/L	4	40.0	---	73	21-120%	22	30%	
Indeno(1,2,3-cd)pyrene	37.2	0.400	0.800	ug/L	4	40.0	---	93	52-133%	1	30%	
Isophorone	33.0	1.00	2.00	ug/L	4	40.0	---	82	42-124%	0.4	30%	
1-Methylnaphthalene	34.2	0.800	1.60	ug/L	4	40.0	---	86	41-120%	5	30%	
2-Methylnaphthalene	34.7	0.800	1.60	ug/L	4	40.0	---	87	40-121%	5	30%	B-02
2-Methylphenol	27.1	1.00	2.00	ug/L	4	40.0	---	68	30-120%	5	30%	
3+4-Methylphenol(s)	24.4	1.00	2.00	ug/L	4	40.0	---	61	29-120%	3	30%	
Naphthalene	33.9	0.800	1.60	ug/L	4	40.0	---	85	40-121%	8	30%	B
2-Nitroaniline	43.1	8.00	16.0	ug/L	4	40.0	---	108	54-127%	13	30%	
3-Nitroaniline	43.9	8.00	16.0	ug/L	4	40.0	---	110	41-128%	29	30%	
4-Nitroaniline	53.2	8.00	16.0	ug/L	4	40.0	---	133	35-120%	30	30%	Q-29, Q-41
Nitrobenzene	30.1	4.00	8.00	ug/L	4	40.0	---	75	45-121%	6	30%	
2-Nitrophenol	48.4	4.00	8.00	ug/L	4	40.0	---	121	47-123%	4	30%	Q-41
4-Nitrophenol	17.1	4.00	8.00	ug/L	4	40.0	---	43	5-120%	29	30%	
N-Nitrosodimethylamine	17.9	1.00	2.00	ug/L	4	40.0	---	45	6-120%	30	30%	
N-Nitroso-di-n-propylamine	28.7	1.00	2.00	ug/L	4	40.0	---	72	49-120%	0.9	30%	
N-Nitrosodiphenylamine	39.3	1.00	2.00	ug/L	4	40.0	---	98	51-123%	6	30%	
Pentachlorophenol (PCP)	36.7	4.00	8.00	ug/L	4	40.0	---	92	35-138%	18	30%	B-02

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Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110535 - EPA 1311/3510C (BNA Extraction)						Soil						
LCS Dup (9110535-BSD1)						Prepared: 11/06/19 13:54 Analyzed: 11/07/19 11:23						Q-19
Phenanthrene	37.2	0.400	0.800	ug/L	4	40.0	---	93	59-120%	4	30%	B
Phenol	11.6	8.00	8.00	ug/L	4	40.0	---	29	5-120%	7	30%	
Pyrene	41.3	0.400	0.800	ug/L	4	40.0	---	103	57-126%	7	30%	B-02
Pyridine	15.6	4.00	8.00	ug/L	4	40.0	---	39	5-120%	49	30%	Q-24
2,3,4,6-Tetrachlorophenol	39.9	2.00	4.00	ug/L	4	40.0	---	100	50-128%	14	30%	
2,3,5,6-Tetrachlorophenol	42.6	2.00	4.00	ug/L	4	40.0	---	106	50-121%	15	30%	
1,2,4-Trichlorobenzene	31.9	0.200	2.00	ug/L	4	40.0	---	80	29-120%	9	30%	
2,4,5-Trichlorophenol	40.3	2.00	4.00	ug/L	4	40.0	---	101	53-123%	7	30%	
2,4,6-Trichlorophenol	40.6	2.00	4.00	ug/L	4	40.0	---	102	50-125%	6	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>												
		<i>Recovery:</i>		<i>76 %</i>		<i>Limits:</i>		<i>44-120 %</i>		<i>Dilution:</i>		<i>4x</i>
<i>2-Fluorobiphenyl (Surr)</i>				<i>92 %</i>				<i>44-120 %</i>				<i>"</i>
<i>Phenol-d6 (Surr)</i>				<i>25 %</i>				<i>10-120 %</i>				<i>"</i>
<i>p-Terphenyl-d14 (Surr)</i>				<i>105 %</i>				<i>50-133 %</i>				<i>"</i>
<i>2-Fluorophenol (Surr)</i>				<i>46 %</i>				<i>19-120 %</i>				<i>"</i>
<i>2,4,6-Tribromophenol (Surr)</i>				<i>93 %</i>				<i>43-140 %</i>				<i>"</i>

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NWN-PCI0777711



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503-718-2323

EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.

2749 Lockport Road

Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: 111317

Project Manager: Chip Byrd

Report ID:

A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110409 - EPA 3051A						Solid						
Blank (9110409-BLK1)				Prepared: 11/04/19 07:40 Analyzed: 11/04/19 18:35								
EPA 6020A												
Antimony	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Barium	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Beryllium	ND	96.2	192	ug/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	96.2	192	ug/kg wet	10	---	---	---	---	---	---	
Chromium	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Cobalt	ND	96.2	192	ug/kg wet	10	---	---	---	---	---	---	
Iron	ND	24000	48100	ug/kg wet	10	---	---	---	---	---	---	
Lead	ND	96.2	192	ug/kg wet	10	---	---	---	---	---	---	
Mercury	ND	38.5	76.9	ug/kg wet	10	---	---	---	---	---	---	
Molybdenum	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Nickel	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Selenium	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Silver	ND	96.2	192	ug/kg wet	10	---	---	---	---	---	---	
Thallium	ND	96.2	192	ug/kg wet	10	---	---	---	---	---	---	
Vanadium	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Zinc	ND	1920	3850	ug/kg wet	10	---	---	---	---	---	---	
Blank (9110409-BLK2)				Prepared: 11/04/19 07:40 Analyzed: 11/05/19 17:06								
EPA 6020A												
Copper	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	Q-16
LCS (9110409-BS1)				Prepared: 11/04/19 07:40 Analyzed: 11/04/19 18:40								
EPA 6020A												
Antimony	26300	500	1000	ug/kg wet	10	25000	---	105	80-120%	---	---	
Arsenic	49900	500	1000	ug/kg wet	10	50000	---	100	80-120%	---	---	
Barium	53600	500	1000	ug/kg wet	10	50000	---	107	80-120%	---	---	
Beryllium	25500	100	200	ug/kg wet	10	25000	---	102	80-120%	---	---	
Cadmium	52300	100	200	ug/kg wet	10	50000	---	105	80-120%	---	---	
Chromium	50200	500	1000	ug/kg wet	10	50000	---	100	80-120%	---	---	
Cobalt	51300	100	200	ug/kg wet	10	50000	---	103	80-120%	---	---	
Copper	52900	500	1000	ug/kg wet	10	50000	---	106	80-120%	---	---	
Iron	2740000	25000	50000	ug/kg wet	10	2500000	---	110	80-120%	---	---	

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**Apex Laboratories, LLC**

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Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**Total Metals by EPA 6020A (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110409 - EPA 3051A												
Solid												
LCS (9110409-BS1)												
Prepared: 11/04/19 07:40 Analyzed: 11/04/19 18:40												
Lead	50900	100	200	ug/kg wet	10	50000	---	102	80-120%	---	---	
Mercury	976	40.0	80.0	ug/kg wet	10	1000	---	98	80-120%	---	---	
Molybdenum	26400	500	1000	ug/kg wet	10	25000	---	106	80-120%	---	---	
Nickel	51400	500	1000	ug/kg wet	10	50000	---	103	80-120%	---	---	
Selenium	25000	500	1000	ug/kg wet	10	25000	---	100	80-120%	---	---	
Silver	27600	100	200	ug/kg wet	10	25000	---	110	80-120%	---	---	
Thallium	26100	100	200	ug/kg wet	10	25000	---	104	80-120%	---	---	
Vanadium	50900	500	1000	ug/kg wet	10	50000	---	102	80-120%	---	---	
Zinc	51700	2000	4000	ug/kg wet	10	50000	---	103	80-120%	---	---	

Duplicate (9110409-DUP1)

Prepared: 11/04/19 07:40 Analyzed: 11/04/19 18:54

QC Source Sample: Non-SDG (A9J1123-01)

Antimony	613	518	1040	ug/kg wet	10	---	801	---	---	27	40%	J
Arsenic	1290	518	1040	ug/kg wet	10	---	1370	---	---	6	40%	
Barium	33500	518	1040	ug/kg wet	10	---	33500	---	---	0.08	40%	
Beryllium	ND	104	207	ug/kg wet	10	---	ND	---	---	---	40%	
Cadmium	ND	104	207	ug/kg wet	10	---	131	---	---	***	40%	Q-05
Chromium	23800	518	1040	ug/kg wet	10	---	54400	---	---	78	40%	Q-04
Cobalt	6440	104	207	ug/kg wet	10	---	15500	---	---	83	40%	Q-04
Copper	96900	518	1040	ug/kg wet	10	---	54200	---	---	57	40%	Q-04
Iron	12800000	25900	51800	ug/kg wet	10	---	22600000	---	---	55	40%	Q-04
Lead	5000	104	207	ug/kg wet	10	---	7550	---	---	41	40%	Q-04
Mercury	ND	41.4	82.8	ug/kg wet	10	---	ND	---	---	---	40%	
Molybdenum	1970	518	1040	ug/kg wet	10	---	13700	---	---	150	40%	Q-04
Nickel	13300	518	1040	ug/kg wet	10	---	24800	---	---	60	40%	Q-04
Selenium	ND	518	1040	ug/kg wet	10	---	ND	---	---	---	40%	
Silver	3600	104	207	ug/kg wet	10	---	1410	---	---	88	40%	Q-04
Thallium	ND	104	207	ug/kg wet	10	---	ND	---	---	---	40%	
Vanadium	10600	518	1040	ug/kg wet	10	---	21600	---	---	68	40%	Q-04
Zinc	361000	2070	4140	ug/kg wet	10	---	482000	---	---	29	40%	

Matrix Spike (9110409-MS1)

Prepared: 11/04/19 07:40 Analyzed: 11/04/19 18:58

QC Source Sample: Non-SDG (A9J1123-01)**EPA 6020A**

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Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110517 - EPA 1311/3015							Solid					
Matrix Spike (9110517-MS2)				Prepared: 11/06/19 10:26 Analyzed: 11/06/19 14:49								
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01)												
1311/6020A												
Arsenic	5260	50.0	100	ug/L	10	5000	ND	105	50-150%	---	---	
Barium	11600	2500	5000	ug/L	10	10000	ND	116	50-150%	---	---	
Cadmium	1050	50.0	100	ug/L	10	1000	ND	105	50-150%	---	---	
Chromium	5170	50.0	100	ug/L	10	5000	ND	103	50-150%	---	---	
Lead	5050	25.0	50.0	ug/L	10	5000	ND	101	50-150%	---	---	
Mercury	101	3.50	7.00	ug/L	10	100	ND	101	50-150%	---	---	
Selenium	1020	50.0	100	ug/L	10	1000	ND	102	50-150%	---	---	
Silver	1090	50.0	100	ug/L	10	1000	ND	109	50-150%	---	---	

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NWN-PCI0777716

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EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS**Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110823 - ASTM D7511-12mod (S)						Solid						
Blank (9110823-BLK1)			Prepared: 11/15/19 06:29 Analyzed: 11/15/19 10:41									
D7511-12												
Total Cyanide	ND	50.0	100	ug/kg wet	1	---	---	---	---	---	---	
LCS (9110823-BS1)			Prepared: 11/15/19 06:29 Analyzed: 11/15/19 10:43									
D7511-12												
Total Cyanide	424	50.0	100	ug/kg wet	1	400	---	106	84-116%	---	---	
LCS (9110823-BS2)			Prepared: 11/15/19 06:29 Analyzed: 11/15/19 10:39									
D7511-12												
Total Cyanide	ND	50.0	100	ug/kg wet	1	200	---		0-100%	---	---	CN_I
Matrix Spike (9110823-MS3)			Prepared: 11/15/19 06:29 Analyzed: 11/15/19 18:27									
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01RE2)												
D7511-12												
Total Cyanide	556	56.2	112	ug/kg dry	1	449	216	76	64-136%	---	---	Q-16
Matrix Spike Dup (9110823-MSD3)			Prepared: 11/15/19 06:29 Analyzed: 11/15/19 18:29									
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01RE2)												
D7511-12												
Total Cyanide	615	55.7	111	ug/kg dry	1	445	216	90	64-136%	10	47%	Q-16

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NWN-PCI0777717



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AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110441 - DI Leach						Solid						
Duplicate (9110441-DUP1)				Prepared: 11/04/19 13:30 Analyzed: 11/04/19 17:23								
QC Source Sample: Vapor Carbon-T125-110119 (A9K0048-01)												
EPA 9045D												
Solid pH (measured in H2O)	7.97	---		pH Units	1	---	7.95	---	---	0.3	5%	pH_S
pH Temperature (deg C)	21.5	---		pH Units	1	---	21.7	---	---	0.9	30%	pH_S
Reference (9110441-SRM1)				Prepared: 11/04/19 13:30 Analyzed: 11/04/19 17:20								
EPA 9045D												
Solid pH (measured in H2O)	6.04	---		pH Units	1	6.00		101	33333-101.666	---	---	
pH Temperature (deg C)	22.1	---		pH Units	1	20.0		110	50-200%	---	---	
Reference (9110441-SRM2)				Prepared: 11/04/19 13:30 Analyzed: 11/04/19 17:25								
EPA 9045D												
Solid pH (measured in H2O)	7.99	---		pH Units	1	8.00		100	98.75-101.25%	---	---	
pH Temperature (deg C)	22.2	---		pH Units	1	20.0		111	50-200%	---	---	

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NWN-PCI0777718



Apex Laboratories, LLC

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9110798 - Total Solids (Dry Weight)							Soil					
Duplicate (9110798-DUP1)			Prepared: 11/14/19 10:12 Analyzed: 11/15/19 08:37									
QC Source Sample: Non-SDG (A9K0234-01)												
% Solids	86.2	---	1.00	%	1	---	86.0	---	---	0.2	10%	
Duplicate (9110798-DUP2)			Prepared: 11/14/19 10:12 Analyzed: 11/15/19 08:37									
QC Source Sample: Non-SDG (A9K0325-01)												
% Solids	75.0	---	1.00	%	1	---	75.3	---	---	0.4	10%	
Duplicate (9110798-DUP3)			Prepared: 11/14/19 10:12 Analyzed: 11/15/19 08:37									
QC Source Sample: Non-SDG (A9K0349-03)												
% Solids	79.7	---	1.00	%	1	---	80.2	---	---	0.6	10%	
Duplicate (9110798-DUP4)			Prepared: 11/14/19 10:12 Analyzed: 11/15/19 08:37									
QC Source Sample: Non-SDG (A9K0361-02)												
% Solids	71.3	---	1.00	%	1	---	77.8	---	---	9	10%	
Duplicate (9110798-DUP5)			Prepared: 11/14/19 18:24 Analyzed: 11/15/19 08:37									
QC Source Sample: Non-SDG (A9K0392-05)												
% Solids	92.0	---	1.00	%	1	---	91.8	---	---	0.2	10%	
Duplicate (9110798-DUP6)			Prepared: 11/14/19 18:24 Analyzed: 11/15/19 08:37									
QC Source Sample: Non-SDG (A9K0422-04)												
% Solids	80.7	---	1.00	%	1	---	80.0	---	---	0.8	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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NWN-PCI0777719

**Apex Laboratories, LLC**

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

SAMPLE PREPARATION INFORMATION**Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9110843							
A9K0048-01	Solid	NWTPH-Dx	11/01/19 11:00	11/15/19 10:15	10.23g/5mL	10g/5mL	0.98

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9110716							
A9K0048-01	Solid	NWTPH-Gx (MS)	11/01/19 11:00	11/14/19 17:50	3.07g/5mL	5g/5mL	1.63

Volatile Organic Compounds by EPA 5035A/8260C

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9110716							
A9K0048-01	Solid	5035A/8260C	11/01/19 11:00	11/14/19 17:50	3.07g/5mL	5g/5mL	1.63

TCLP Volatile Organic Compounds by EPA 1311/8260C

Prep: EPA 1311/5030B TCLP Volatiles

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9110460							
A9K0048-01	Solid	1311/8260C	11/01/19 11:00	11/05/19 10:08	5mL/5mL	5mL/5mL	1.00

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0010350							
A9K0048-01	Solid	EPA 8270D	11/01/19 11:00	01/13/20 12:45	2.15g/2mL	15g/2mL	6.98
A9K0048-01RE1	Solid	EPA 8270D	11/01/19 11:00	01/13/20 12:45	2.15g/2mL	15g/2mL	6.98
A9K0048-01RE2	Solid	EPA 8270D	11/01/19 11:00	01/13/20 12:45	2.15g/2mL	15g/2mL	6.98

TCLP Semivolatile Organic Compounds by EPA 1311/8270D

Prep: EPA 1311/3510C (BNA Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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Apex Laboratories

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Darrell Auvil For Darwin Thomas, Business Development Director



Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.

2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**

Project Number: **111317**

Project Manager: **Chip Byrd**

Report ID:

A9K0048 - 01 14 20 1658

- Q-54a** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +11.1%. The results are reported as Estimated Values.
- Q-56** Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260C
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- S-01** Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
- S-05** Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- TCLP** This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 9110443.
- TCLPa** This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 9110477.
- V-15** Sample aliquot was subsampled from the sample container. The subsampled aliquot was preserved in the laboratory within 48 hours of sampling.
- V-16** Sample aliquot was subsampled from the sample container in the laboratory. The subsampled aliquot was not preserved within 48 hours of sampling.

Apex Laboratories

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Darrell Auil For Darwin Thomas, Business Development Director

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AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.
"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

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Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: **Gasco -- Carbon**
Project Number: **111317**
Project Manager: **Chip Byrd**

Report ID:
A9K0048 - 01 14 20 1658

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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Darrell Auvil For Darwin Thomas, Business Development Director

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AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: Gasco -- Carbon
Project Number: 111317
Project Manager: Chip Byrd

Report ID:
A9K0048 - 01 14 20 1658

APEX LABS COOLER RECEIPT FORM

Client: Sevenson Element WO#: A9 K0048

Project/Project #: Gasco - Carbon 111317

Delivery Info:

Date/time received: 11/4/19 @ 930 By: ES
Delivered by: Apex ☒ Client ☐ ESS ☐ FedEx ☐ UPS ☐ Swift ☐ Senvoy ☐ SDS ☐ Other ☐

Cooler Inspection Date/time inspected: 11/4/19 @ 1013 By: ES

Chain of Custody included? Yes ☒ No ☐ Custody seals? Yes ☐ No ☒

Signed/dated by client? Yes ☒ No ☐

Signed/dated by Apex? Yes ☒ No ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>0.9</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Gel</u>						
Condition:	<u>Good</u>						

Cooler out of temp? (Y/N) ☒ Possible reason why: Out of temp

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/NA ☒

Out of temperature samples form initiated? Yes/No/NA ☒

Samples Inspection: Date/time inspected: 11/4/19 @ 430 1027 By: SD

All samples intact? Yes ☒ No ☐ Comments: NO T on container

Bottle labels/COCs agree? Yes ☒ No ☐ Comments: NO T on container

COC/container discrepancies form initiated? Yes ☐ No ☐ NA ☒

Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments:

Do VOA vials have visible headspace? Yes ☐ No ☐ NA ☒

Comments:

Water samples: pH checked: Yes ☐ No ☐ NA ☒ pH appropriate? Yes ☐ No ☐ NA ☒

Comments:

Additional information:

Labeled by: (Signature) Witness: AK Cooler Inspected by: (Signature) See Project Contact Form: Y

Apex Laboratories

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(Signature)

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