

May 19, 2020

Mr. Mark Krening
Waste Management, Inc.
7227 NE 55th Avenue
Portland, OR 97218

RE: NW Natural Source Control Groundwater Treatment Facility - Incline Plate Clarifier
Vapor Phase Carbon Residuals Request

Dear Mark:

On behalf of NW Natural, Sevenson Environmental Services, Inc. (SES) has prepared the following package for Waste Management, Inc. This package includes lab analyses and a Waste Management profile for the disposal of spent vapor phase carbon.

Table 1 includes sample data from NW Natural Incline Plate Clarifier Vapor Phase Carbon Drums C301 and C302. These data include samples that were submitted to Apex Laboratories, LLC (Apex) on April 14, 2020 for analysis of: gasoline-range total petroleum hydrocarbons (TPH), diesel- and oil-range TPH, total cyanide, volatile organic compounds, leachable (TCLP) volatile organic compounds, semi-volatile organic compounds, (TCLP) semi-volatile organic compounds, total Metals, and leachable (TCLP) metals.

The testing results are from a three part composite sample of spent carbon from each of the two drums, then composited by Apex into a single sample for analysis. The Apex Laboratory results show removal and concentration of volatiles in activated carbon resulting from approximately 24 months of capture of vapors during treatment of groundwater at the main treatment building.

APEX provided the testing results for the above analyses in laboratory report number A0D0342 (enclosed) and SES has summarized the results in Table 1 (enclosed). Table 1 includes Method Detection Limits (MDLs) for “non-detect” constituents. Neither the detected concentrations nor the MDLs for these constituents exceed Resource Conservation and Recovery Act (RCRA) toxicity characteristic regulatory levels. These regulatory levels are based on leachate concentrations tested by Toxicity Characteristic Leaching Procedure (TCLP) methodology (Table 1)..

Based on the analytical testing and screening procedures described above, it is concluded that the two steel drums of spent vapor phase carbon media are acceptable for disposal at a RCRA Subtitle D non-hazardous waste disposal facility. Attached please find Profile

133069OR, inclusive of the Apex Laboratory analytical report documenting the chemistry of the residual treatment materials and Table 1, a summary of those testing results. In response to the EZ Profile Addendum #D.7, requesting documentation regarding the State-mandated cleanup, NW Natural's Voluntary Agreement with DEQ, no. WMCVC-NWR-94-13, dated August 8, 1994, as amended July 19, 2006 has been provided to Waste Management under separate cover.

Please contact me if you have any questions.

Thank You,



William Byrd
WWTP Superintendent
Sevenson Environmental Services

Cc: Robert Wyatt (NW Natural), Mike Hayward (NW Natural), Patty Dost (Pearl Legal Group), Rachel Melissa (Pearl Legal Group), Rob Ede (Hahn and Associates), Ryan Barth (Anchor QEA), 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 (1):

Table 1 – Incline Plate Clarifier Vapor Carbon Drums C301 and C302
APEX Lab Analyses A0D0342
Signed Waste Management Profile #133069OR

Requested Facility: Hillsboro Landfill ☐ Unsure Profile Number: 133069OR
☐ Multiple Generator Locations (Attach Locations) ☐ Request Certificate of Disposal ☐ Renewal? Original Profile Number: _____

A. GENERATOR INFORMATION (MATERIAL ORIGIN)

1. Generator Name: NW Natural
2. Site Address: 7900 N.W. St. Helens Road
(City, State, ZIP) Portland OR 97210
3. County: Multnomah
4. Contact Name: Chip Byrd
5. Email: wbyrd@sevenson.com
6. Phone: (503) 286-1785 7. Fax: _____
8. Generator EPA ID: OR00000204701 ☐ N/A
9. State ID: _____ ☐ N/A

C. MATERIAL INFORMATION

1. Common Name: Spent Activation Carbon
Describe Process Generating Material: ☒ See Attached

Contaminated groundwater flows through Incline Plate Clarifiers (IPC) at rates 0 to 800 pgm as part of a multi-phase groundwater treatment system. Exhaust fans extract vapors at 100 scfm from the effluent end of each IPC and forces vapors

2. Material Composition and Contaminants: ☐ See Attached

1. solids	95-100 %
2. steel drum	0-5 %
3.	
4.	

Total comp. must be equal to or greater than 100% ≥100%
3. State Waste Codes: _____ ☒ N/A
4. Color: Black
5. Physical State at 70°F: ☒ Solid ☐ Liquid ☐ Other: _____
6. Free Liquid Range Percentage: _____ to _____ ☒ N/A
7. pH: _____ to _____ ☒ N/A
8. Strong Odor: ☒ Yes ☐ No Describe: Petroleum
9. Flash Point: ☐ <140°F ☐ 140°–199°F ☐ ≥200° ☒ N/A

E. ANALYTICAL AND OTHER REPRESENTATIVE INFORMATION

1. Analytical attached ☒ Yes
Please identify applicable samples and/or lab reports:

Apex Lab Report #A0D0342, Sample ID A0D0342-4, Client ID # IPCVS-041420-3 Composite

2. Other information attached (such as MSDS)? ☐ Yes

G. GENERATOR CERTIFICATION (PLEASE READ AND CERTIFY BY SIGNATURE)

By signing this EZ Profile™ form, I hereby certify that all information submitted in this and all attached documents contain true and accurate descriptions of this material, and that all relevant information necessary for proper material characterization and to identify known and suspected hazards has been provided. Any analytical data attached was derived from a sample that is representative as defined in 40 CFR 261 – Appendix 1 or by using an equivalent method. All changes occurring in the character of the material (i.e., changes in the process or new analytical) will be identified by the Generator and be disclosed to Waste Management prior to providing the material to Waste Management.

☒ I am an Authorized Agent signing on behalf of the Generator, and I have confirmed with the Generator that information contained in this profile, as well as supporting documents provided, are accurate and complete.

Name (Print): Robert J. Wyatt Date: May 15, 2020
Title: Director, Legacy Environmental Program
Company: NW Natural

B. BILLING INFORMATION
☐ SAME AS GENERATOR

1. Billing Name: Sevenson Environmental Services
2. Billing Address: 2749 Lockport Road
(City, State, ZIP) Niagara Fall NY 14305
3. Contact Name: William Byrd
4. Email: wbyrd@sevenson.com
5. Phone: (503) 286-1785 6. Fax: (503) 283-0298
7. WM Hauled? ☐ Yes ☐ No
8. P.O. Number: _____
9. Payment Method: ☒ Credit Account ☐ Cash ☐ Credit Card

D. REGULATORY INFORMATION

1. EPA Hazardous Waste? ☐ Yes* ☒ No
Code: _____
2. State Hazardous Waste? ☐ Yes ☒ No
Code: _____
3. Is this material non-hazardous due to Treatment, Delisting, or an Exclusion? ☐ Yes* ☒ No
4. Contains Underlying Hazardous Constituents? ☐ Yes* ☒ No
5. From an industry regulated under Benzene NESHAP? ☐ Yes* ☒ No
6. Facility remediation subject to 40 CFR 63 GGGGG? ☐ Yes* ☒ No
7. CERCLA or State-mandated clean-up? ☒ Yes* ☐ No
8. NRC or State-regulated radioactive or NORM waste? ☐ Yes* ☒ No
***If Yes, see Addendum (page 2) for additional questions and space.**
9. Contains PCBs? → If Yes, answer a, b and c. ☐ Yes ☒ No
a. Regulated by 40 CFR 761? ☐ Yes ☐ No
b. Remediation under 40 CFR 761.61 (a)? ☐ Yes ☐ No
c. Were PCB imported into the US? ☐ Yes ☐ No
10. Regulated and/or Untreated Medical/Infectious Waste? ☐ Yes ☒ No
11. Contains Asbestos? ☐ Yes ☒ No
→ If Yes: ☐ Non-Friable ☐ Non-Friable – Regulated ☐ Friable

F. SHIPPING AND DOT INFORMATION

1. ☐ One-Time Event ☒ Repeat Event/Ongoing Business
2. Estimated Quantity/Unit of Measure: 8
☐ Tons ☐ Yards ☒ Drums ☐ Gallons ☐ Other: _____
3. Container Type and Size: 55 gallon DOT Steel Drum
4. USDOT Proper Shipping Name: _____ ☐ N/A
Spent Activated Carbon

Certification Signature



Only complete this Addendum if prompted by responses on EZ Profile™ (page 1) or to provide additional information. Sections and question numbers correspond to EZ Profile™.

Profile Number: 133069OR

C. MATERIAL INFORMATION

Describe Process Generating Material (Continued from page 1):

If more space is needed, please attach additional pages.

through activated carbon drums. Primary vapors being treated include benzene ethyl benzene, xylenes, and naphthalene.

Material Composition and Contaminants (Continued from page 1):

If more space is needed, please attach additional pages.

5.	
6.	
7.	
8.	
9.	
Total composition must be equal to or greater than 100%	
	≥100%

D. REGULATORY INFORMATION

Only questions with a "Yes" response in Section D on the EZ Profile™ form (page 1) need to be answered here.

1. EPA Hazardous Waste

a. Please list all USEPA listed and characteristic waste code numbers:

b. Is the material subject to the Alternative Debris standards (40 CFR 268.45)?

☐ Yes ☐ No

c. Is the material subject to the Alternative Soil standards (40 CFR 268.49)? → If Yes, complete question 4.

☐ Yes ☐ No

d. Is the material exempt from Subpart CC Controls (40 CFR 264.1083)?

☐ Yes ☐ No

→ If Yes, please check **one** of the following:

☐ Waste meets LDR or treatment exemptions for organics (40 CFR 264.1082(c)(2) or (c)(4))

☐ Waste contains VOCs that average <500 ppmw (CFR 264.1082(c)(1)) – will require annual update.

2. State Hazardous Waste → Please list all state waste codes:

3. For material that is Treated, Delisted, or Excluded → Please indicate the category, below:

☐ Delisted Hazardous Waste

☐ Excluded Waste under 40 CFR 261.4 → Specify Exclusion: _____

☐ Treated Hazardous Waste Debris

☐ Treated Characteristic Hazardous Waste → If checked, complete question 4.

4. Underlying Hazardous Constituents → Please list all Underlying Hazardous Constituents:

5. Industries regulated under Benzene NESHAP include petroleum refineries, chemical manufacturing plants, coke by-product recovery plants, and TSDFs.

a. Are you a TSDF? → If yes, please complete Benzene NESHAP questionnaire. If not, continue.

☐ Yes ☐ No

b. Does this material contain benzene?

☐ Yes ☐ No

1. If yes, what is the flow weighted average concentration?

_____ ppmw

c. What is your facility's current total annual benzene quantity in Megagrams?

☐ <1 Mg ☐ 1–9.99 Mg ☐ ≥10 Mg

d. Is this waste soil from a remediation?

☐ Yes ☐ No

1. If yes, what is the benzene concentration in remediation waste?

_____ ppmw

e. Does the waste contain >10% water/moisture?

☐ Yes ☐ No

f. Has material been treated to remove 99% of the benzene or to achieve <10 ppmw?

☐ Yes ☐ No

g. Is material exempt from controls in accordance with 40 CFR 61.342?

☐ Yes ☐ No

→ If yes, specify exemption: _____

h. Based on your knowledge of your waste and the BWON regulations, do you believe that this waste stream is subject to treatment and control requirements at an off-site TSDF?

☐ Yes ☐ No

6. 40 CFR 63 GGGGG → Does the material contain <500 ppmw VOHAPs at the point of determination?

☐ Yes ☐ No

7. CERCLA or State-Mandated clean up → Please submit the Record of Decision or other documentation with process information to assist others in the evaluation for proper disposal. A "Determination of Acceptability" may be needed for CERCLA wastes not going to a CERCLA approved facility.

8. NRC or state regulated radioactive or NORM Waste → Please identify Isotopes and pCi/g: _____

Table 1: Incline Plate Clarifier Spent Vapor Carbon Drums C301 C302

Sample: VentSorb Carbon		C301 & C302-VentSorb-041420-3	
Sample ID		IPCVS-041420-3 Composite	
LAB ID		A0D0342-4	
	EPA TCLP Level (20 x) in ug/kg dry (Actual TCLP Level in µg/L)	Results	Qualifier
Diesel and/or Oil Hydrocarbons by NWTPH-Dx (ug/kg dry)			
Diesel		127000000	F-13
Oil		<2000000	
Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx (ug/kg dry)			
Gasoline Range Organics		13800000	F-13
Volatile Organic Compounds by EPA 8260C (ug/kg dry)			
Acetone		<19500	
Benzene	10,000 (500 µg/L)	411000	
Bromobenzene		<488	
Bromochloromethane		<977	
Bromodichloromethane		1330	J
Bromoform		<1950	
Bromomethane		<19500	
2-Butanone (MEK)		<9770	
n-Butylbenzene		<5860	R-02
sec-Butylbenzene		3520	
tert-Butylbenzene		<1950	
Carbon tetrachloride	10,000 (500µg/L)	<977	
Chlorobenzene	2,000,000 (100,000 µg/L)	2510	
Chloroethane		<9770	
Chloroform	120,000 (6,000 µg/L)	1770	J
Chloromethane		<4880	
2-Chlorotoluene		<1950	
4-Chlorotoluene		<977	
Dibromochloromethane		1950	
1,2-Dibromo-3-chloropropane		<4880	
1,2-Dibromoethane (EDB)		<977	
Dibromomethane		<977	
1,2-Dichlorobenzene		1810	
1,3-Dichlorobenzene		<488	
1,4-Dichlorobenzene	150,000 (7,500 µg/L)	<488	
Dichlorodifluoromethane		<1950	
1,1-Dichloroethane		<488	
1,2-Dichloroethane (EDC)	10,000 (500 µg/L)	<488	
1,1-Dichloroethene	14,000 (700 µg/L)	<488	
cis-1,2-Dichloroethene		2620	
trans-1,2-Dichloroethene		<488	
1,2-Dichloropropane		<488	
1,3-Dichloropropane		<977	
2,2-Dichloropropane		<977	
1,1-Dichloropropene		<977	
cis-1,3-Dichloropropene		<977	
trans-1,3-Dichloropropene		<977	
Ethylbenzene		511000	
Hexachlorobutadiene	10,000 (500 µg/L)	<1950	
2-Hexanone		<9770	
Isopropylbenzene		30000	
4-Isopropyltoluene		7060	M-02
Methylene chloride		<9770	

Table 1: Incline Plate Clarifier Spent Vapor Carbon Drums C301 C302

4-Methyl-2-pentanone (MIBK)		<9770	
Methyl tert-butyl ether (MTBE)		1540	J
Naphthalene		17300	
n-Propylbenzene		6690	
Stryrene		2500	
1,1,1,2-Tetrachloroethane		<488	
1,1,2,2-Tetrachloroethane		<7320	R-02
Tetrachloroethene (PCE)	14,000 (700 µg/L)	<488	
Toluene		223000	
1,2,3-Trichlorobenzene		<4880	
1,2,4-Trichlorobenzene		<4880	
1,1,1-Trichloroethane		<488	
1,1,2-Trichloroethane		<488	
Trichloroethene (TCE)	10,000 (500 µg/L)	<488	
Trichlorofluoromethane		<1950	
1,2,3-Trichloropropane		3860	
1,2,4-Trimethylbenzene		77500	
1,3,5-Trimethylbenzene		37400	
Vinyl chloride	4,000 (200 µg/L)	<488	
m,p-Xylene		228000	
o-Xylene		104000	
TCLP Volatile Organic Compounds by EPA 8260C (mg/L)			
	(Actual TCLP Level in mg/L)		
Acetone		<0.500	
Benzene	0.5 mg/L	0.148	
Bromobenzene		<0.0125	
Bromochloromethane		<0.0250	
Bromodichloromethane		<0.0250	
Bromoform		<0.0250	
Naphthalene		<0.0500	
Bromomethane		<0.250	
2-Butanone (MEK)		<0.250	
n-Butylbenzene		<0.0250	
sec-Butylbenzene		<0.0250	
tert-Butylbenzene		<0.0250	
Carbon tetrachloride	0.5 mg/L	<0.0250	
Chlorobenzene	100 mg/L	<0.0125	
Chloroethane		<0.250	
Chloroform	6.0 mg/L	<0.0250	
Chloromethane		<0.125	
2-Chlorotoluene		<0.0250	
4-Chlorotoluene		<0.0250	
1,2-Dibromo-3-chloropropane		<0.125	
Dibromochloromethane		<0.0250	
1,2-Dibromoethane (EDB)		<0.0125	
Dibromomethane		<0.0250	
1,2-Dichlorobenzene		<0.0125	
1,3-Dichlorobenzene		<0.0125	
1,4-Dichlorobenzene	7.5 mg/L	<0.0125	
Dichlorodifluoromethane		<0.0250	
1,1-Dichloroethane		<0.0125	
1,1-Dichloroethene	0.7 mg/L	<0.0125	
1,2-Dichloroethane (EDC)	0.5 mg/L	<0.0125	
cis-1,2-Dichloroethene		<0.0250	
trans-1,2-Dichloroethene		<0.0125	
1,2-Dichloropropane		<0.0125	

Table 1: Incline Plate Clarifier Spent Vapor Carbon Drums C301 C302

1,3-Dichloropropane		<0.0250	
2,2-Dichloropropane		<0.0250	
1,1-Dichloropropene		<0.0250	
cis-1,3-Dichloropropene		<0.0250	
trans-1,3-Dichloropropene		<0.0250	
Ethylbenzene		<0.0125	
Hexachlorobutadiene	0.5 mg/L	<0.125	
2-Hexanone		<0.250	
Isopropylbenzene		<0.0250	
4-Isopropyltoluene		<0.0250	
4-Methyl-2-pentanone (MiBK)		<0.250	
Methyl tert-butyl ether (MTBE)		<0.0250	
Methylene chloride		<250	
n-Propylbenzene		<0.0125	
Styrene		<0.0250	
1,1,1,2-Tetrachloroethane		<0.0125	
1,1,2,2-Tetrachloroethane		<0.0125	
Tetrachloroethene (PCE)	0.7 mg/L	<0.0125	
Toluene		<0.0250	
1,2,3-Trichlorobenzene		<0.0250	
1,2,4-Trichlorobenzene		<0.0500	
1,1,1-Trichloroethane		<0.0125	
1,1,2-Trichloroethane		<0.0125	
Trichloroethene (TCE)	0.5 mg/L	<0.0125	
Trichlorofluoromethane		<0.0500	
1,2,3-Trichloropropane		<0.0250	
1,2,4-Trimethylbenzene		<0.0250	
1,3,5-Trimethylbenzene		<0.0250	
Vinyl chloride	0.2 mg/L	<0.0125	
m,p-Xylene		<0.0250	
o-Xylene		<0.0125	
Cyanide - Total (Non-Aqueous Water Leach) by EPA 9013M/9014 (mg/kg dry)			
Total Cyanide		0.164	
Semivolatile Organic Compounds by EPA 8270D (ug/kg dry)			
	EPA TCLP Level (20 x) in ug/kg dry (Actual TCLP Level in µg/L)		
Acenaphthene		<3290	
Acenaphthylene		<3290	
Anthracene		<3290	
Benz(a)anthracene		<3290	
Benzo(a)pyrene		<4950	
Benzo(b)fluoranthene		<4950	
Benzo(k)fluoranthene		<4950	
Benzo(g,h,i)perylene		<3290	
Chrysene		<3290	
Dibenz(a,h)anthracene		<3290	
Fluoranthene		<3290	
Fluorene		<3290	
Indeno(1,2,3-cd)pyrene		<3290	
1-Methlnaphthalene		<6610	
2-Methlnaphthalene		<6610	
Naphthalene		109000	
Phenanthrene		<3290	
Pyrene		<3290	
Carbazole		<4950	
Dibenzofuran		<3290	

Table 1: Incline Plate Clarifier Spent Vapor Carbon Drums C301 C302

2-Chlorophenol		<16500	
4-Chloro-3-methylphenol		<66100	
2,4-Dichlorophenol		<16500	
2,4-Dimethylphenol		<32900	
2,4-Dinitrophenol		<82500	
4,6-Dinitro-2-methylphenol	4,000,000 (200,000µg/L)	<82500	
2-Methylphenol	4,000,000 (200,000µg/L)	<8250	
3+4-Methylphenol(s)		<8250	
2-Nitrophenol		<218000	R-02
4-Nitrophenol		<32900	
Pentachlorophenol(PCP)	2,000,000 (100,000µg/L)	<32900	
Phenol		<6610	
2,3,4,6-Tetrachlorophenol		<16500	
2,3,5,6-Tetrachlorophenol		<16500	
2,4,5-Trichlorophenol	8,000,000 (400,000µg/L)	<16500	
Nitrobenzene	40,000 (2,000µg/L)	<32900	
2,4,6-Trichlorophenol	40,000 (2,000µg/L)	<16500	
Bis(2-ethylhexyl)phthalate		<49500	
Butyl benzyl phthalate		<32900	
Diethylphthalate		<32900	
Dimethylphthalate		<32900	
Di-n-butylphthalate		<32900	
Di-n-octyl phthalate		<32900	
N-Nitrosodimethylamine		<8250	
N-Nitroso-di-n-propylamine		<104000	R-02
N-Nitrosodiphenylamine		<8250	
Bis(2-Chloroethoxy) methane		<8250	
Bis(2-Chloroethyl) ether		<8250	
2,2'- Oxybis (1-Chloropropane)		<8250	
Hexachlorobenzene	2,600 (130µg/L)	<3290	
Hexachlorobutadiene	10,000 (500µg/L)	<8250	
Hexachlorocyclopentadiene		<16500	
Hexachloroethane	60,000 (3,000µg/L)	<8250	
2-Chloronaphthalene		<3290	
1,2,4-Trichlorobenzene		<16500	
4-Bromophenyl phenyl ether		<8250	
4-Chlorophenyl phenyl ether		<8250	
Aniline		<16500	
4-Chloroaniline		<31400	R-02
2-Nitroaniline		<66100	
3-Nitroaniline		<66100	
4-Nitroaniline		<66100	
2,4-Dinitrotoluene	2,600 (130µg/L)	<32900	
2,6-Dinitrotoluene		<32900	
Benzoic acid		<414000	
Benzyl alcohol		<32900	
Isophorone		<644000	R-02
Azobenzene (1,2-DPH)		<8250	
Bis(2-Ethylhexyl)adipate		<82500	
3,3'-Dichlorobenzidine		<66100	Q-52
1,2-Dinitrobenzene		<82500	
1,3-Dinitrobenzene		<82500	
1,4-Dinitrobenzene	100,000 (5,000µg/L)	<82500	
Pyridine		<16500	
1,2-Dichlorobenzene		<8250	
1,3-Dichlorobenzene		<8250	
1,4-Dichlorobenzene	150,000 (7,500µg/L)	<8250	
TCLP Semivolatile Organic Compounds by EPA 8270D (mg/L)			

Table 1: Incline Plate Clarifier Spent Vapor Carbon Drums C301 C302

	EPA TCLP Level (20 x) in mg/L dry (Actual TCLP Level in mg/L)		
Acenaphthene		<0.00100	
Acenaphthylene		<0.00100	
Anthracene		<0.00100	
Benz(a)anthracene		<0.00100	
Benzo(a)pyrene		<0.00150	
Benzo(b)fluoranthene		<0.00150	
Benzo(k)fluoranthene		<0.00150	
Benzo(g,h,i)perylene		<0.00100	
Chrysene		<0.00100	
Dibenz(a,h)anthracene		<0.00100	
Fluoranthene		<0.00100	
Fluorene		<0.00100	
Indeno(1,2,3-cd)pyrene		<0.00100	
1-Methlnaphthalene		<0.00200	
2-Methlnaphthalene		<0.00200	
Naphthalene		<0.00200	
Phenanthrene		<0.00100	
Pyrene		<0.00100	
Carbazole		<0.00150	
Dibenzofuran		<0.00100	
2-Chlorophenol		<0.00500	
4-Chloro-3-methylphenol		<0.0100	
2,4-Dichlorophenol		<0.00500	
2,4-Dimethyphenol		<0.00500	
2,4-Dinitrophenol		<0.0250	
4,6-Dinitro-2-methylphenol	4,000 (200 mg/L)	<0.0250	
2-Methylphenol	4,000 (200 mg/L)	<0.00250	
3+4-Methyphenol(s)		<0.00250	
2-Nitrophenol		<0.0100	
4-Nitrophenol		<0.0100	
Pentachlorophenol(PCP)	2,000(100 mg/L)	<0.0100	
Phenol		<0.0200	
2,3,4,6-Tetrachlorophenol		<0.00500	
2,3,5,6-Tetrachlorophenol		<0.00500	
2,4,5-Trichlorophenol	8,000 (400 mg/L)	<0.00500	
Nitrobenzene	40 (2 mg/L)	<0.0100	
2,4,6-Trichlorophenol	40 (2 mg/L)	<0.00500	
Bis(2-ethylhexyl)phthalate		<0.0200	
Butyl benzyl phthalate		<0.0200	
Diethylphthalate		<0.0200	
Dimethylphthalate		<0.0200	
Di-n-butylphthalate		<0.0200	
Di-n-octyl phthalate		<0.0200	
N-Nitrosodimethylamine		<0.00250	
N-Nitroso-di-n-propylamine		<0.00250	
N-Nitrosodiphenylamine		<0.00250	
Bis(2-Chloroethoxy) methane		<0.00250	
Bis(2-Chloroethyl) ether		<0.00250	
2,2'-Oxybis(1-Chloropropane		<0.00250	
Hexachlorobenzene	2.6 (0.130 mg/L)	<0.00100	
Hexachlorobutadiene	10 (0.5 mg/L)	<0.00250	
Hexachlorocyclopentadiene		<0.00500	
Hexachloroethane	60 (3 mg/L)	<0.00250	
2-Chloronaphthalene		<0.00100	
1,2,4-Trichlorobenzene		<0.000500	
4-Bromophenyl phenyl ether		<0.00250	



Apex Laboratories, LLC

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

Friday, May 1, 2020

Chip Byrd

Sevenson Environmental Services, Inc.

2749 Lockport Road

Niagara Falls, NY 14305

RE: A0D0342 - 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 A0D0342, which was received by the laboratory on 4/15/2020 at 9:44:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@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

2.6 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.

Darwin Thomas, Business Development Director



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:

A0D0342 - 05 01 20 1122

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IPCVS-041420-3 A	A0D0342-01	Solid	04/14/20 14:30	04/15/20 09:44
IPCVS-041420-3 B	A0D0342-02	Solid	04/14/20 14:30	04/15/20 09:44
IPCVS-041420-3 C	A0D0342-03	Solid	04/14/20 14:30	04/15/20 09:44
IPCVS-041420-3 Composite	A0D0342-04	Solid	04/14/20 14:30	04/15/20 09:44

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.

Darwin Thomas, Business Development Director

Page 2 of 83

NWN-PCI0781366

**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:
A0D0342 - 05 01 20 1122

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
IPCVS-041420-3 Composite (A0D0342-04RE1)				Matrix: Solid		Batch: 0040556		
Diesel	127000000	999000	2000000	ug/kg dry	100	04/17/20 07:44	NWTPH-Dx	F-13
Oil	ND	2000000	4000000	ug/kg dry	100	04/17/20 07:44	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: %</i>		<i>Limits: 50-150 %</i>	<i>100</i>	<i>04/17/20 07:44</i>	<i>NWTPH-Dx</i>	<i>S-01</i>

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.

Darwin Thomas, Business Development Director

Page 3 of 83

NWN-PCI0781367



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:
A0D0342 - 05 01 20 1122

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
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040620	COMP, V-15	
Gasoline Range Organics	13800000	97700	195000	ug/kg dry	500	04/20/20 20:44	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery:	104 %	Limits: 50-150 %	1	04/20/20 20:44	NWTPH-Gx (MS)	
1,4-Difluorobenzene (Sur)			97 %	50-150 %	1	04/20/20 20:44	NWTPH-Gx (MS)	

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.

Darwin Thomas, Business Development Director

**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:

A0D0342 - 05 01 20 1122

ANALYTICAL SAMPLE RESULTS**Volatile Organic Compounds by EPA 5035A/8260C**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040620	COMP, V-15	
Acetone	ND	19500	39100	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Bromobenzene	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Bromochloromethane	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Bromodichloromethane	1330	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	J
Bromoform	ND	1950	3910	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Bromomethane	ND	19500	19500	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
2-Butanone (MEK)	ND	9770	19500	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
n-Butylbenzene	ND	5860	5860	ug/kg dry	500	04/20/20 20:44	5035A/8260C	R-02
sec-Butylbenzene	3520	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
tert-Butylbenzene	ND	1950	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Carbon tetrachloride	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Chlorobenzene	2510	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Chloroethane	ND	9770	19500	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Chloroform	1770	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	J
Chloromethane	ND	4880	9770	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
2-Chlorotoluene	ND	1950	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
4-Chlorotoluene	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Dibromochloromethane	ND	1950	3910	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,2-Dibromo-3-chloropropane	ND	4880	9770	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,2-Dibromoethane (EDB)	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Dibromomethane	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,2-Dichlorobenzene	1810	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,3-Dichlorobenzene	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,4-Dichlorobenzene	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Dichlorodifluoromethane	ND	1950	3910	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,1-Dichloroethane	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,2-Dichloroethane (EDC)	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,1-Dichloroethene	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
cis-1,2-Dichloroethene	2620	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
trans-1,2-Dichloroethene	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,2-Dichloropropane	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,3-Dichloropropane	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
2,2-Dichloropropane	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	

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.

Darwin Thomas, Business Development Director

**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:****A0D0342 - 05 01 20 1122****ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 5035A/8260C**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040620	COMP, V-15	
1,1-Dichloropropene	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
cis-1,3-Dichloropropene	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
trans-1,3-Dichloropropene	ND	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Hexachlorobutadiene	ND	1950	3910	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
2-Hexanone	ND	9770	19500	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Isopropylbenzene	30000	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
4-Isopropyltoluene	7060	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	M-02
Methylene chloride	ND	9770	19500	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
4-Methyl-2-pentanone (MiBK)	ND	9770	19500	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Methyl tert-butyl ether (MTBE)	1540	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	J
Naphthalene	17300	1950	3910	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
n-Propylbenzene	6690	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Styrene	2500	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,1,1,2-Tetrachloroethane	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,1,2,2-Tetrachloroethane	ND	7320	7320	ug/kg dry	500	04/20/20 20:44	5035A/8260C	R-02
Tetrachloroethene (PCE)	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Toluene	223000	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,2,3-Trichlorobenzene	ND	4880	9770	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,2,4-Trichlorobenzene	ND	4880	9770	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,1,1-Trichloroethane	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,1,2-Trichloroethane	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Trichloroethene (TCE)	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Trichlorofluoromethane	ND	1950	3910	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,2,3-Trichloropropane	3860	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,2,4-Trimethylbenzene	77500	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
1,3,5-Trimethylbenzene	37400	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
Vinyl chloride	ND	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
m,p-Xylene	228000	977	1950	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
o-Xylene	104000	488	977	ug/kg dry	500	04/20/20 20:44	5035A/8260C	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery:</i>	100 %	<i>Limits:</i>	80-120 %	1	04/20/20 20:44	5035A/8260C
<i>Toluene-d8 (Surr)</i>			99 %		80-120 %	1	04/20/20 20:44	5035A/8260C
<i>4-Bromofluorobenzene (Surr)</i>			104 %		80-120 %	1	04/20/20 20:44	5035A/8260C

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.

Darwin Thomas, Business Development Director



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:
A0D0342 - 05 01 20 1122

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04RE1)				Matrix: Solid		Batch: 0040648	COMP, V-15	
Benzene	411000	1950	3910	ug/kg dry	5000	04/21/20 12:06	5035A/8260C	
Ethylbenzene	511000	4880	9770	ug/kg dry	5000	04/21/20 12:06	5035A/8260C	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/21/20 12:06</i>	<i>5035A/8260C</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/21/20 12:06</i>	<i>5035A/8260C</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/21/20 12:06</i>	<i>5035A/8260C</i>	

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.

Darwin Thomas, Business Development Director

Page 7 of 83

NWN-PCI0781371

**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:
A0D0342 - 05 01 20 1122

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
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040577		
Acetone	ND	0.500	1.00	mg/L	50	04/17/20 12:25	1311/8260C	
Benzene	0.148	0.00625	0.0125	mg/L	50	04/17/20 12:25	1311/8260C	
Bromobenzene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Bromochloromethane	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
Bromodichloromethane	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
Bromoform	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
Naphthalene	ND	0.0500	0.100	mg/L	50	04/17/20 12:25	1311/8260C	
Bromomethane	ND	0.250	0.250	mg/L	50	04/17/20 12:25	1311/8260C	
2-Butanone (MEK)	ND	0.250	0.500	mg/L	50	04/17/20 12:25	1311/8260C	
n-Butylbenzene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
sec-Butylbenzene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
tert-Butylbenzene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
Carbon tetrachloride	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
Chlorobenzene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Chloroethane	ND	0.250	0.250	mg/L	50	04/17/20 12:25	1311/8260C	
Chloroform	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
Chloromethane	ND	0.125	0.250	mg/L	50	04/17/20 12:25	1311/8260C	
2-Chlorotoluene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
4-Chlorotoluene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,2-Dibromo-3-chloropropane	ND	0.125	0.250	mg/L	50	04/17/20 12:25	1311/8260C	
Dibromochloromethane	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,2-Dibromoethane (EDB)	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Dibromomethane	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,2-Dichlorobenzene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
1,3-Dichlorobenzene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
1,4-Dichlorobenzene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Dichlorodifluoromethane	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,1-Dichloroethane	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
1,1-Dichloroethene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
1,2-Dichloroethane (EDC)	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
cis-1,2-Dichloroethene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
trans-1,2-Dichloroethene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
1,2-Dichloropropane	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	

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.

Darwin Thomas, Business Development Director

**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:****A0D0342 - 05 01 20 1122****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
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040577		
1,3-Dichloropropane	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
2,2-Dichloropropane	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,1-Dichloropropene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
cis-1,3-Dichloropropene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
trans-1,3-Dichloropropene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
Ethylbenzene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Hexachlorobutadiene	ND	0.125	0.250	mg/L	50	04/17/20 12:25	1311/8260C	
2-Hexanone	ND	0.250	0.500	mg/L	50	04/17/20 12:25	1311/8260C	
Isopropylbenzene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
4-Isopropyltoluene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
4-Methyl-2-pentanone (MiBK)	ND	0.250	0.500	mg/L	50	04/17/20 12:25	1311/8260C	
Methyl tert-butyl ether (MTBE)	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
Methylene chloride	ND	250	500	mg/L	50	04/17/20 12:25	1311/8260C	
n-Propylbenzene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Styrene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,1,1,2-Tetrachloroethane	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
1,1,1,2,2-Tetrachloroethane	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Tetrachloroethene (PCE)	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Toluene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,2,3-Trichlorobenzene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,2,4-Trichlorobenzene	ND	0.0500	0.100	mg/L	50	04/17/20 12:25	1311/8260C	
1,1,1-Trichloroethane	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
1,1,2-Trichloroethane	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Trichloroethene (TCE)	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
Trichlorofluoromethane	ND	0.0500	0.100	mg/L	50	04/17/20 12:25	1311/8260C	
1,2,3-Trichloropropane	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,2,4-Trimethylbenzene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
1,3,5-Trimethylbenzene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
Vinyl chloride	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
m,p-Xylene	ND	0.0250	0.0500	mg/L	50	04/17/20 12:25	1311/8260C	
o-Xylene	ND	0.0125	0.0250	mg/L	50	04/17/20 12:25	1311/8260C	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery:</i>	<i>104 %</i>	<i>Limits:</i>	<i>80-120 %</i>	<i>1</i>	<i>04/17/20 12:25</i>	<i>1311/8260C</i>
<i>Toluene-d8 (Surr)</i>			<i>103 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/17/20 12:25</i>	<i>1311/8260C</i>

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.

Darwin Thomas, Business Development Director

**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:

A0D0342 - 05 01 20 1122

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040551		
Acenaphthene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Acenaphthylene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Anthracene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Benz(a)anthracene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Benzo(a)pyrene	ND	4950	9910	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Benzo(b)fluoranthene	ND	4950	9910	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Benzo(k)fluoranthene	ND	4950	9910	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Benzo(g,h,i)perylene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Chrysene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Dibenz(a,h)anthracene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Fluoranthene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Fluorene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
1-Methylnaphthalene	ND	6610	13200	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2-Methylnaphthalene	ND	6610	13200	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Naphthalene	109000	6610	13200	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Phenanthrene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Pyrene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Carbazole	ND	4950	9910	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Dibenzofuran	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2-Chlorophenol	ND	16500	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	
4-Chloro-3-methylphenol	ND	66100	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2,4-Dichlorophenol	ND	16500	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2,4-Dimethylphenol	ND	32900	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2,4-Dinitrophenol	ND	82500	165000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
4,6-Dinitro-2-methylphenol	ND	82500	165000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2-Methylphenol	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
3+4-Methylphenol(s)	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2-Nitrophenol	ND	218000	218000	ug/kg	1000	04/16/20 16:46	EPA 8270D	R-02
4-Nitrophenol	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Pentachlorophenol (PCP)	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Phenol	ND	6610	13200	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2,3,4,6-Tetrachlorophenol	ND	16500	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	

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.

Darwin Thomas, Business Development Director

**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:

A0D0342 - 05 01 20 1122

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040551		
2,3,5,6-Tetrachlorophenol	ND	16500	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2,4,5-Trichlorophenol	ND	16500	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Nitrobenzene	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2,4,6-Trichlorophenol	ND	16500	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Bis(2-ethylhexyl)phthalate	ND	49500	99100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Butyl benzyl phthalate	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Diethylphthalate	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Dimethylphthalate	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Di-n-butylphthalate	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Di-n-octyl phthalate	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
N-Nitrosodimethylamine	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
N-Nitroso-di-n-propylamine	ND	104000	104000	ug/kg	1000	04/16/20 16:46	EPA 8270D	R-02
N-Nitrosodiphenylamine	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Bis(2-Chloroethoxy) methane	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Bis(2-Chloroethyl) ether	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2,2'-Oxybis(1-Chloropropane)	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Hexachlorobenzene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Hexachlorobutadiene	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Hexachlorocyclopentadiene	ND	16500	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Hexachloroethane	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2-Chloronaphthalene	ND	3290	6610	ug/kg	1000	04/16/20 16:46	EPA 8270D	
1,2,4-Trichlorobenzene	ND	16500	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
4-Bromophenyl phenyl ether	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
4-Chlorophenyl phenyl ether	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Aniline	ND	16500	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	
4-Chloroaniline	ND	31400	31400	ug/kg	1000	04/16/20 16:46	EPA 8270D	R-02
2-Nitroaniline	ND	66100	132000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
3-Nitroaniline	ND	66100	132000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
4-Nitroaniline	ND	66100	132000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2,4-Dinitrotoluene	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
2,6-Dinitrotoluene	ND	32900	66100	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Benzoic acid	ND	414000	825000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Benzyl alcohol	ND	32900	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	

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.

Darwin Thomas, Business Development Director

Page 12 of 83

NWN-PCI0781376

**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:
A0D0342 - 05 01 20 1122

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040551		
Isophorone	ND	644000	644000	ug/kg	1000	04/16/20 16:46	EPA 8270D	R-02
Azobenzene (1,2-DPH)	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Bis(2-Ethylhexyl) adipate	ND	82500	165000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
3,3'-Dichlorobenzidine	ND	66100	132000	ug/kg	1000	04/16/20 16:46	EPA 8270D	Q-52
1,2-Dinitrobenzene	ND	82500	165000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
1,3-Dinitrobenzene	ND	82500	165000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
1,4-Dinitrobenzene	ND	82500	165000	ug/kg	1000	04/16/20 16:46	EPA 8270D	
Pyridine	ND	16500	32900	ug/kg	1000	04/16/20 16:46	EPA 8270D	
1,2-Dichlorobenzene	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
1,3-Dichlorobenzene	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
1,4-Dichlorobenzene	ND	8250	16500	ug/kg	1000	04/16/20 16:46	EPA 8270D	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 12900 %</i>		<i>Limits: 37-122 %</i>	<i>1000</i>	<i>04/16/20 16:46</i>	<i>EPA 8270D</i>	<i>S-05</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>15 %</i>		<i>44-120 %</i>	<i>1000</i>	<i>04/16/20 16:46</i>	<i>EPA 8270D</i>	<i>S-05</i>
<i>Phenol-d6 (Surr)</i>		<i>31 %</i>		<i>33-122 %</i>	<i>1000</i>	<i>04/16/20 16:46</i>	<i>EPA 8270D</i>	<i>S-05</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>%</i>		<i>54-127 %</i>	<i>1000</i>	<i>04/16/20 16:46</i>	<i>EPA 8270D</i>	<i>S-01</i>
<i>2-Fluorophenol (Surr)</i>		<i>1710 %</i>		<i>35-120 %</i>	<i>1000</i>	<i>04/16/20 16:46</i>	<i>EPA 8270D</i>	<i>S-05</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>%</i>		<i>39-132 %</i>	<i>1000</i>	<i>04/16/20 16:46</i>	<i>EPA 8270D</i>	<i>S-01</i>

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.

Darwin Thomas, Business Development Director

Page 13 of 83

NWN-PCI0781377

**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:****A0D0342 - 05 01 20 1122****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
IPCVS-041420-3 Composite (A0D0342-04RE1)				Matrix: Solid		Batch: 0040593		R-04
Acenaphthene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Acenaphthylene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Anthracene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Benz(a)anthracene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Benzo(a)pyrene	ND	0.00150	0.00300	mg/L	10	04/20/20 17:39	1311/8270D	
Benzo(b)fluoranthene	ND	0.00150	0.00300	mg/L	10	04/20/20 17:39	1311/8270D	
Benzo(k)fluoranthene	ND	0.00150	0.00300	mg/L	10	04/20/20 17:39	1311/8270D	
Benzo(g,h,i)perylene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Chrysene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Dibenz(a,h)anthracene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Fluoranthene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Fluorene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Indeno(1,2,3-cd)pyrene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
1-Methylnaphthalene	ND	0.00200	0.00400	mg/L	10	04/20/20 17:39	1311/8270D	
2-Methylnaphthalene	ND	0.00200	0.00400	mg/L	10	04/20/20 17:39	1311/8270D	
Naphthalene	ND	0.00200	0.00400	mg/L	10	04/20/20 17:39	1311/8270D	
Phenanthrene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Pyrene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Carbazole	ND	0.00150	0.00300	mg/L	10	04/20/20 17:39	1311/8270D	
Dibenzofuran	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
2-Chlorophenol	ND	0.00500	0.0100	mg/L	10	04/20/20 17:39	1311/8270D	
4-Chloro-3-methylphenol	ND	0.0100	0.0200	mg/L	10	04/20/20 17:39	1311/8270D	
2,4-Dichlorophenol	ND	0.00500	0.0100	mg/L	10	04/20/20 17:39	1311/8270D	
2,4-Dimethylphenol	ND	0.00500	0.0100	mg/L	10	04/20/20 17:39	1311/8270D	
2,4-Dinitrophenol	ND	0.0250	0.0500	mg/L	10	04/20/20 17:39	1311/8270D	
4,6-Dinitro-2-methylphenol	ND	0.0250	0.0500	mg/L	10	04/20/20 17:39	1311/8270D	
2-Methylphenol	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
3+4-Methylphenol(s)	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
2-Nitrophenol	ND	0.0100	0.0200	mg/L	10	04/20/20 17:39	1311/8270D	
4-Nitrophenol	ND	0.0100	0.0200	mg/L	10	04/20/20 17:39	1311/8270D	
Pentachlorophenol (PCP)	ND	0.0100	0.0200	mg/L	10	04/20/20 17:39	1311/8270D	
Phenol	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
2,3,4,6-Tetrachlorophenol	ND	0.00500	0.0100	mg/L	10	04/20/20 17:39	1311/8270D	

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.

Darwin Thomas, Business Development Director

**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:****A0D0342 - 05 01 20 1122****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
IPCVS-041420-3 Composite (A0D0342-04RE1)				Matrix: Solid		Batch: 0040593		R-04
2,3,5,6-Tetrachlorophenol	ND	0.00500	0.0100	mg/L	10	04/20/20 17:39	1311/8270D	
2,4,5-Trichlorophenol	ND	0.00500	0.0100	mg/L	10	04/20/20 17:39	1311/8270D	
Nitrobenzene	ND	0.0100	0.0200	mg/L	10	04/20/20 17:39	1311/8270D	
2,4,6-Trichlorophenol	ND	0.00500	0.0100	mg/L	10	04/20/20 17:39	1311/8270D	
Bis(2-ethylhexyl)phthalate	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
Butyl benzyl phthalate	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
Diethylphthalate	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
Dimethylphthalate	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
Di-n-butylphthalate	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
Di-n-octyl phthalate	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
N-Nitrosodimethylamine	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
N-Nitroso-di-n-propylamine	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
N-Nitrosodiphenylamine	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
Bis(2-Chloroethoxy) methane	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
Bis(2-Chloroethyl) ether	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
2,2'-Oxybis(1-Chloropropane)	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
Hexachlorobenzene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
Hexachlorobutadiene	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
Hexachlorocyclopentadiene	ND	0.00500	0.0100	mg/L	10	04/20/20 17:39	1311/8270D	
Hexachloroethane	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
2-Chloronaphthalene	ND	0.00100	0.00200	mg/L	10	04/20/20 17:39	1311/8270D	
1,2,4-Trichlorobenzene	ND	0.000500	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
4-Bromophenyl phenyl ether	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
4-Chlorophenyl phenyl ether	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
Aniline	ND	0.00500	0.0100	mg/L	10	04/20/20 17:39	1311/8270D	
4-Chloroaniline	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
2-Nitroaniline	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
3-Nitroaniline	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
4-Nitroaniline	ND	0.0200	0.0400	mg/L	10	04/20/20 17:39	1311/8270D	
2,4-Dinitrotoluene	ND	0.0100	0.0200	mg/L	10	04/20/20 17:39	1311/8270D	
2,6-Dinitrotoluene	ND	0.0100	0.0200	mg/L	10	04/20/20 17:39	1311/8270D	
Benzoic acid	ND	0.100	0.200	mg/L	10	04/20/20 17:39	1311/8270D	
Benzyl alcohol	ND	0.0100	0.0200	mg/L	10	04/20/20 17:39	1311/8270D	

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.

Darwin Thomas, Business Development Director

**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:****A0D0342 - 05 01 20 1122****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
IPCVS-041420-3 Composite (A0D0342-04RE1)				Matrix: Solid		Batch: 0040593		R-04
Isophorone	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
Azobenzene (1,2-DPH)	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
Bis(2-Ethylhexyl) adipate	ND	0.0250	0.0500	mg/L	10	04/20/20 17:39	1311/8270D	
1,2-Dinitrobenzene	ND	0.0250	0.0500	mg/L	10	04/20/20 17:39	1311/8270D	
1,3-Dinitrobenzene	ND	0.0250	0.0500	mg/L	10	04/20/20 17:39	1311/8270D	
1,4-Dinitrobenzene	ND	0.0250	0.0500	mg/L	10	04/20/20 17:39	1311/8270D	
Pyridine	ND	0.0100	0.0200	mg/L	10	04/20/20 17:39	1311/8270D	
1,2-Dichlorobenzene	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
1,3-Dichlorobenzene	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
1,4-Dichlorobenzene	ND	0.00250	0.00500	mg/L	10	04/20/20 17:39	1311/8270D	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery:</i>	78 %	<i>Limits:</i>	44-120 %	10	04/20/20 17:39	1311/8270D
<i>2-Fluorobiphenyl (Surr)</i>			74 %		44-120 %	10	04/20/20 17:39	1311/8270D
<i>Phenol-d6 (Surr)</i>			23 %		10-133 %	10	04/20/20 17:39	1311/8270D
<i>p-Terphenyl-d14 (Surr)</i>			85 %		50-134 %	10	04/20/20 17:39	1311/8270D
<i>2-Fluorophenol (Surr)</i>			42 %		19-120 %	10	04/20/20 17:39	1311/8270D
<i>2,4,6-Tribromophenol (Surr)</i>			75 %		43-140 %	10	04/20/20 17:39	1311/8270D Q-41

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.

Darwin Thomas, Business Development Director

Page 16 of 83

NWN-PCI0781380



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:
A0D0342 - 05 01 20 1122

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid				
Batch: 0040528								
Arsenic	ND	589	1180	ug/kg dry	10	04/16/20 15:30	EPA 6020A	Q-42
Barium	3760	589	1180	ug/kg dry	10	04/16/20 15:30	EPA 6020A	Q-39, Q-42
Cadmium	ND	118	235	ug/kg dry	10	04/16/20 15:30	EPA 6020A	
Chromium	947	589	1180	ug/kg dry	10	04/16/20 15:30	EPA 6020A	J, Q-39, Q-42
Lead	ND	589	1180	ug/kg dry	10	04/16/20 15:30	EPA 6020A	Q-42
Mercury	ND	47.1	94.2	ug/kg dry	10	04/16/20 15:30	EPA 6020A	
Selenium	ND	589	1180	ug/kg dry	10	04/16/20 15:30	EPA 6020A	
Silver	ND	118	235	ug/kg dry	10	04/16/20 15:30	EPA 6020A	

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.

Darwin Thomas, Business Development Director



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:
A0D0342 - 05 01 20 1122

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid				
Batch: 0040585								
Arsenic	ND	50.0	100	ug/L	10	04/17/20 18:01	1311/6020A	
Barium	ND	2500	5000	ug/L	10	04/17/20 18:01	1311/6020A	
Cadmium	ND	50.0	100	ug/L	10	04/17/20 18:01	1311/6020A	
Chromium	ND	50.0	100	ug/L	10	04/17/20 18:01	1311/6020A	
Lead	ND	25.0	50.0	ug/L	10	04/17/20 18:01	1311/6020A	
Mercury	ND	3.50	7.00	ug/L	10	04/17/20 18:01	1311/6020A	
Selenium	ND	50.0	100	ug/L	10	04/17/20 18:01	1311/6020A	
Silver	ND	50.0	100	ug/L	10	04/17/20 18:01	1311/6020A	

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.

Darwin Thomas, Business Development Director



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:
A0D0342 - 05 01 20 1122

ANALYTICAL SAMPLE RESULTS

Total Cyanide by Flow Analysis (Non-Aqueous/Water Leach)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040656		
Total Cyanide	0.164	0.109	0.109	mg/kg dry	1	04/21/20 12:42	EPA 9013M/9012	

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.

Darwin Thomas, Business Development Director



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:
A0D0342 - 05 01 20 1122

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid				
Batch: 0040521								
Soil pH (measured in H2O)	7.64			pH Units	1	04/15/20 18:03	EPA 9045D	pH_S
pH Temperature (deg C)	24.5			pH Units	1	04/15/20 18:03	EPA 9045D	pH_S

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.

Darwin Thomas, Business Development Director

Page 20 of 83

NWN-PCI0781384



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:
A0D0342 - 05 01 20 1122

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040579		
% Solids	91.3	1.00	1.00	%	1	04/20/20 08:39	EPA 8000C	

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.

Darwin Thomas, Business Development Director



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:
A0D0342 - 05 01 20 1122

ANALYTICAL SAMPLE RESULTS

TCLP Extraction by EPA 1311

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
IPCVS-041420-3 Composite (A0D0342-04)				Matrix: Solid		Batch: 0040545		
TCLP Extraction	PREP			N/A	1	04/16/20 15:15	EPA 1311	
TCLP Extraction	PREP			N/A	1	04/16/20 15:15	EPA 1311	
TCLP ZHE Extraction	PREP			N/A	1	04/16/20 15:45	EPA 1311 ZHE	

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.

Darwin Thomas, Business Development Director

Page 22 of 83

NWN-PCI0781386

**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:
A0D0342 - 05 01 20 1122

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 0040556 - EPA 3546 (Fuels)						Solid						
Blank (0040556-BLK1)			Prepared: 04/16/20 12:52 Analyzed: 04/16/20 23:35									
NWTPH-Dx												
Diesel	ND	9090	18200	ug/kg wet	1	---	---	---	---	---	---	
Oil	ND	18200	36400	ug/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 107 %		Limits: 50-150 %		Dilution: 1x						
LCS (0040556-BS1)			Prepared: 04/16/20 12:52 Analyzed: 04/16/20 23:57									
NWTPH-Dx												
Diesel	122000	10000	20000	ug/kg wet	1	125000	---	98	73-115%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 107 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (0040556-DUP1)			Prepared: 04/16/20 12:52 Analyzed: 04/17/20 00:42									
QC Source Sample: Non-SDG (A0D0326-01)												
Diesel	113000000	909000	1820000	ug/kg wet	1	---	127000000	---	---	12	30%	F-15
Oil	18000000	1820000	3640000	ug/kg wet	1	---	198000000	---	---	10	30%	F-16
		0										
Surr: o-Terphenyl (Surr)		Recovery: 85 %		Limits: 50-150 %		Dilution: 1x						

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.

Darwin Thomas, Business Development Director

Page 23 of 83

NWN-PCI0781387



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:
A0D0342 - 05 01 20 1122

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 0040620 - EPA 5035A						Soil						
Blank (0040620-BLK1)			Prepared: 04/20/20 09:00 Analyzed: 04/20/20 11:44									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	1670	3330	ug/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		102 %		50-150 %		"						
LCS (0040620-BS2)			Prepared: 04/20/20 09:00 Analyzed: 04/20/20 11:17									
NWTPH-Gx (MS)												
Gasoline Range Organics	23800	2500	5000	ug/kg wet	50	25000	---	95	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 98 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		98 %		50-150 %		"						
Duplicate (0040620-DUP1)			Prepared: 04/15/20 12:20 Analyzed: 04/20/20 13:32									
QC Source Sample: Non-SDG (A0D0367-06)												
Gasoline Range Organics	ND	2890	5770	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		103 %		50-150 %		"						

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040620 - EPA 5035A						Soil						
Blank (0040620-BLK1)			Prepared: 04/20/20 09:00 Analyzed: 04/20/20 11:44									
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	---	---	---	---	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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	Limits	RPD	RPD Limit	Notes
Batch 0040620 - EPA 5035A						Soil						
Blank (0040620-BLK1)		Prepared: 04/20/20 09:00 Analyzed: 04/20/20 11:44										
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	167	333	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	---	---	---	---	---	---	
1,1,2,2-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: 100 %		Limits: 80-120 %		Dilution: 1x						

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040620 - EPA 5035A						Soil						
Blank (0040620-BLK1)			Prepared: 04/20/20 09:00		Analyzed: 04/20/20 11:44							
Surr: Toluene-d8 (Surr)		Recovery: 99 %		Limits: 80-120 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		101 %		79-120 %		"						
LCS (0040620-BS1)			Prepared: 04/20/20 09:00		Analyzed: 04/20/20 10:50							
5035A/8260C												
Acetone	2250	500	1000	ug/kg wet	50	2000	---	113	80-120%	---	---	
Acrylonitrile	1140	50.0	100	ug/kg wet	50	1000	---	114	80-120%	---	---	
Benzene	945	5.00	10.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
Bromobenzene	1020	12.5	25.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
Bromochloromethane	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Bromodichloromethane	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Bromoform	1140	50.0	100	ug/kg wet	50	1000	---	114	80-120%	---	---	
Bromomethane	985	500	500	ug/kg wet	50	1000	---	99	80-120%	---	---	
2-Butanone (MEK)	2170	250	500	ug/kg wet	50	2000	---	109	80-120%	---	---	
n-Butylbenzene	977	25.0	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
sec-Butylbenzene	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
tert-Butylbenzene	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Carbon disulfide	742	250	500	ug/kg wet	50	1000	---	74	80-120%	---	---	Q-55
Carbon tetrachloride	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Chlorobenzene	958	12.5	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Chloroethane	775	250	500	ug/kg wet	50	1000	---	78	80-120%	---	---	Q-55
Chloroform	997	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Chloromethane	818	125	250	ug/kg wet	50	1000	---	82	80-120%	---	---	
2-Chlorotoluene	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
4-Chlorotoluene	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Dibromochloromethane	993	50.0	100	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,2-Dibromo-3-chloropropane	1080	125	250	ug/kg wet	50	1000	---	108	80-120%	---	---	
1,2-Dibromoethane (EDB)	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
Dibromomethane	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
1,2-Dichlorobenzene	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
1,3-Dichlorobenzene	1020	12.5	25.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
1,4-Dichlorobenzene	961	12.5	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Dichlorodifluoromethane	846	50.0	100	ug/kg wet	50	1000	---	85	80-120%	---	---	
1,1-Dichloroethane	990	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	

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.

Darwin Thomas, Business Development Director

Page 27 of 83

NWN-PCI0781391

**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:

A0D0342 - 05 01 20 1122

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 0040620 - EPA 5035A						Soil						
LCS (0040620-BS1)			Prepared: 04/20/20 09:00		Analyzed: 04/20/20 10:50							
1,2-Dichloroethane (EDC)	984	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	Q-55
1,1-Dichloroethene	771	12.5	25.0	ug/kg wet	50	1000	---	77	80-120%	---	---	
cis-1,2-Dichloroethene	966	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
trans-1,2-Dichloroethene	936	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
1,2-Dichloropropane	979	50.0	100	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,3-Dichloropropane	992	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
2,2-Dichloropropane	1020	25.0	50.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
1,1-Dichloropropene	1000	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
cis-1,3-Dichloropropene	1000	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
trans-1,3-Dichloropropene	1100	25.0	50.0	ug/kg wet	50	1000	---	110	80-120%	---	---	
Ethylbenzene	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Hexachlorobutadiene	979	50.0	100	ug/kg wet	50	1000	---	98	80-120%	---	---	
2-Hexanone	1920	250	500	ug/kg wet	50	2000	---	96	80-120%	---	---	
Isopropylbenzene	1050	25.0	50.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
4-Isopropyltoluene	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Methylene chloride	995	250	500	ug/kg wet	50	1000	---	99	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	2160	250	500	ug/kg wet	50	2000	---	108	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	996	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Naphthalene	1100	50.0	100	ug/kg wet	50	1000	---	110	80-120%	---	---	
n-Propylbenzene	988	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
Styrene	959	25.0	50.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
Tetrachloroethene (PCE)	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Toluene	933	25.0	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
1,2,3-Trichlorobenzene	1040	125	250	ug/kg wet	50	1000	---	104	80-120%	---	---	
1,2,4-Trichlorobenzene	1040	125	250	ug/kg wet	50	1000	---	104	80-120%	---	---	
1,1,1-Trichloroethane	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
1,1,2-Trichloroethane	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Trichloroethene (TCE)	942	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
Trichlorofluoromethane	815	50.0	100	ug/kg wet	50	1000	---	81	80-120%	---	---	
1,2,3-Trichloropropane	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
1,2,4-Trimethylbenzene	1080	25.0	50.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
1,3,5-Trimethylbenzene	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	

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.

Darwin Thomas, Business Development Director

Page 28 of 83

NWN-PCI0781392

**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:
A0D0342 - 05 01 20 1122

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 0040620 - EPA 5035A						Soil						
LCS (0040620-BS1)						Prepared: 04/20/20 09:00 Analyzed: 04/20/20 10:50						
Vinyl chloride	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
m,p-Xylene	1970	25.0	50.0	ug/kg wet	50	2000	---	98	80-120%	---	---	
o-Xylene	957	12.5	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>79-120 %</i>		<i>"</i>						

Duplicate (0040620-DUP1)

Prepared: 04/15/20 12:20 Analyzed: 04/20/20 13:32

QC Source Sample: Non-SDG (A0D0367-06)

Acetone	ND	577	1150	ug/kg dry	50	---	ND	---	---	---	30%
Acrylonitrile	ND	57.7	115	ug/kg dry	50	---	ND	---	---	---	30%
Benzene	ND	5.77	11.5	ug/kg dry	50	---	ND	---	---	---	30%
Bromobenzene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%
Bromochloromethane	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
Bromodichloromethane	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
Bromoform	ND	57.7	115	ug/kg dry	50	---	ND	---	---	---	30%
Bromomethane	ND	577	577	ug/kg dry	50	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	289	577	ug/kg dry	50	---	ND	---	---	---	30%
n-Butylbenzene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
sec-Butylbenzene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
tert-Butylbenzene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
Carbon disulfide	ND	289	577	ug/kg dry	50	---	ND	---	---	---	30%
Carbon tetrachloride	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
Chlorobenzene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%
Chloroethane	ND	289	577	ug/kg dry	50	---	ND	---	---	---	30%
Chloroform	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
Chloromethane	ND	144	289	ug/kg dry	50	---	ND	---	---	---	30%
2-Chlorotoluene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
4-Chlorotoluene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
Dibromochloromethane	ND	57.7	115	ug/kg dry	50	---	ND	---	---	---	30%
1,2-Dibromo-3-chloropropane	ND	144	289	ug/kg dry	50	---	ND	---	---	---	30%
1,2-Dibromoethane (EDB)	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
Dibromomethane	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%
1,2-Dichlorobenzene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040620 - EPA 5035A						Soil						
Duplicate (0040620-DUP1)				Prepared: 04/15/20 12:20 Analyzed: 04/20/20 13:32								
QC Source Sample: Non-SDG (A0D0367-06)												
1,3-Dichlorobenzene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	57.7	115	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	57.7	115	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	289	577	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	289	577	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	289	577	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	ND	57.7	115	ug/kg dry	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	28.9	57.7	ug/kg dry	50	---	60.7	---	---	***	30%	Q-05
1,2,3-Trichlorobenzene	ND	144	289	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	144	289	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	

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.

Darwin Thomas, Business Development Director

Page 30 of 83

NWN-PCI0781394

**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:

A0D0342 - 05 01 20 1122

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 0040620 - EPA 5035A						Soil						
Duplicate (0040620-DUP1)			Prepared: 04/15/20 12:20 Analyzed: 04/20/20 13:32									
QC Source Sample: Non-SDG (A0D0367-06)												
Trichloroethene (TCE)	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	57.7	115	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	28.9	57.7	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	14.4	28.9	ug/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	28.9	57.7	ug/kg dry	50	---	40.1	---	---	***	30%	Q-05
o-Xylene	ND	14.4	28.9	ug/kg dry	50	---	16.0	---	---	***	30%	Q-05
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 101 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		100 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		101 %		79-120 %		"						

Matrix Spike (0040620-MS1)

Prepared: 04/15/20 13:15 Analyzed: 04/20/20 15:47

QC Source Sample: Non-SDG (A0D0367-08)**5035A/8260C**

Acetone	1750	472	945	ug/kg dry	50	1890	ND	93	36-164%	---	---	
Acrylonitrile	945	47.2	94.5	ug/kg dry	50	945	ND	100	65-134%	---	---	
Benzene	916	4.72	9.45	ug/kg dry	50	945	ND	97	77-121%	---	---	
Bromobenzene	956	11.8	23.6	ug/kg dry	50	945	ND	101	78-121%	---	---	
Bromochloromethane	978	23.6	47.2	ug/kg dry	50	945	ND	103	78-125%	---	---	
Bromodichloromethane	1020	23.6	47.2	ug/kg dry	50	945	ND	108	75-127%	---	---	
Bromoform	1100	47.2	94.5	ug/kg dry	50	945	ND	116	67-132%	---	---	
Bromomethane	1030	472	472	ug/kg dry	50	945	ND	109	53-143%	---	---	
2-Butanone (MEK)	1820	236	472	ug/kg dry	50	1890	ND	96	51-148%	---	---	
n-Butylbenzene	931	23.6	47.2	ug/kg dry	50	945	ND	98	70-128%	---	---	
sec-Butylbenzene	1000	23.6	47.2	ug/kg dry	50	945	ND	106	73-126%	---	---	
tert-Butylbenzene	971	23.6	47.2	ug/kg dry	50	945	ND	103	73-125%	---	---	
Carbon disulfide	753	236	472	ug/kg dry	50	945	ND	80	63-132%	---	---	Q-54c
Carbon tetrachloride	1040	23.6	47.2	ug/kg dry	50	945	ND	110	70-135%	---	---	
Chlorobenzene	932	11.8	23.6	ug/kg dry	50	945	ND	99	79-120%	---	---	
Chloroethane	1360	236	472	ug/kg dry	50	945	ND	144	59-139%	---	---	Q-54
Chloroform	991	23.6	47.2	ug/kg dry	50	945	ND	105	78-123%	---	---	
Chloromethane	792	118	236	ug/kg dry	50	945	ND	84	50-136%	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040620 - EPA 5035A						Soil						
Matrix Spike (0040620-MS1)				Prepared: 04/15/20 13:15 Analyzed: 04/20/20 15:47								
QC Source Sample: Non-SDG (A0D0367-08)												
2-Chlorotoluene	956	23.6	47.2	ug/kg dry	50	945	ND	101	75-122%	---	---	
4-Chlorotoluene	973	23.6	47.2	ug/kg dry	50	945	ND	103	72-124%	---	---	
Dibromochloromethane	970	47.2	94.5	ug/kg dry	50	945	ND	103	74-126%	---	---	
1,2-Dibromo-3-chloropropane	958	118	236	ug/kg dry	50	945	ND	101	61-132%	---	---	
1,2-Dibromoethane (EDB)	990	23.6	47.2	ug/kg dry	50	945	ND	105	78-122%	---	---	
Dibromomethane	1000	23.6	47.2	ug/kg dry	50	945	ND	106	78-125%	---	---	
1,2-Dichlorobenzene	979	11.8	23.6	ug/kg dry	50	945	ND	104	78-121%	---	---	
1,3-Dichlorobenzene	975	11.8	23.6	ug/kg dry	50	945	ND	103	77-121%	---	---	
1,4-Dichlorobenzene	922	11.8	23.6	ug/kg dry	50	945	ND	98	75-120%	---	---	
Dichlorodifluoromethane	889	47.2	94.5	ug/kg dry	50	945	ND	94	29-149%	---	---	
1,1-Dichloroethane	993	11.8	23.6	ug/kg dry	50	945	ND	105	76-125%	---	---	
1,2-Dichloroethane (EDC)	957	11.8	23.6	ug/kg dry	50	945	ND	101	73-128%	---	---	
1,1-Dichloroethene	786	11.8	23.6	ug/kg dry	50	945	ND	83	70-131%	---	---	Q-54b
cis-1,2-Dichloroethene	945	11.8	23.6	ug/kg dry	50	945	ND	100	77-123%	---	---	
trans-1,2-Dichloroethene	914	11.8	23.6	ug/kg dry	50	945	ND	97	74-125%	---	---	
1,2-Dichloropropane	939	47.2	94.5	ug/kg dry	50	945	ND	99	76-123%	---	---	
1,3-Dichloropropane	954	23.6	47.2	ug/kg dry	50	945	ND	101	77-121%	---	---	
2,2-Dichloropropane	856	23.6	47.2	ug/kg dry	50	945	ND	91	67-133%	---	---	
1,1-Dichloropropene	968	23.6	47.2	ug/kg dry	50	945	ND	102	76-125%	---	---	
cis-1,3-Dichloropropene	905	23.6	47.2	ug/kg dry	50	945	ND	96	74-126%	---	---	
trans-1,3-Dichloropropene	1050	23.6	47.2	ug/kg dry	50	945	ND	111	71-130%	---	---	
Ethylbenzene	980	11.8	23.6	ug/kg dry	50	945	ND	104	76-122%	---	---	
Hexachlorobutadiene	949	47.2	94.5	ug/kg dry	50	945	ND	100	61-135%	---	---	
2-Hexanone	1810	236	472	ug/kg dry	50	1890	ND	96	53-145%	---	---	
Isopropylbenzene	1010	23.6	47.2	ug/kg dry	50	945	ND	107	68-134%	---	---	
4-Isopropyltoluene	958	23.6	47.2	ug/kg dry	50	945	ND	101	73-127%	---	---	
Methylene chloride	948	236	472	ug/kg dry	50	945	ND	100	70-128%	---	---	
4-Methyl-2-pentanone (MiBK)	2060	236	472	ug/kg dry	50	1890	ND	109	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	931	23.6	47.2	ug/kg dry	50	945	ND	98	73-125%	---	---	
Naphthalene	982	47.2	94.5	ug/kg dry	50	945	ND	104	62-129%	---	---	
n-Propylbenzene	933	11.8	23.6	ug/kg dry	50	945	ND	99	73-125%	---	---	
Styrene	927	23.6	47.2	ug/kg dry	50	945	ND	98	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1040	11.8	23.6	ug/kg dry	50	945	ND	110	78-125%	---	---	

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.

Darwin Thomas, Business Development Director

Page 32 of 83

NWN-PCI0781396

**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:
A0D0342 - 05 01 20 1122

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 0040620 - EPA 5035A						Soil						
Matrix Spike (0040620-MS1)			Prepared: 04/15/20 13:15		Analyzed: 04/20/20 15:47							
QC Source Sample: Non-SDG (A0D0367-08)												
1,1,2,2-Tetrachloroethane	1030	23.6	47.2	ug/kg dry	50	945	ND	109	70-124%	---	---	Q-01
Tetrachloroethene (PCE)	1150	11.8	23.6	ug/kg dry	50	945	158	105	73-128%	---	---	
Toluene	924	23.6	47.2	ug/kg dry	50	945	ND	98	77-121%	---	---	
1,2,3- Trichlorobenzene	956	118	236	ug/kg dry	50	945	ND	101	66-130%	---	---	
1,2,4- Trichlorobenzene	957	118	236	ug/kg dry	50	945	ND	101	67-129%	---	---	
1,1,1-Trichloroethane	992	11.8	23.6	ug/kg dry	50	945	ND	105	73-130%	---	---	
1,1,2-Trichloroethane	997	11.8	23.6	ug/kg dry	50	945	ND	105	78-121%	---	---	
Trichloroethene (TCE)	923	11.8	23.6	ug/kg dry	50	945	ND	98	77-123%	---	---	
Trichlorofluoromethane	1590	47.2	94.5	ug/kg dry	50	945	ND	169	62-140%	---	---	
1,2,3- Trichloropropane	1030	23.6	47.2	ug/kg dry	50	945	ND	108	73-125%	---	---	
1,2,4- Trimethylbenzene	1020	23.6	47.2	ug/kg dry	50	945	ND	108	75-123%	---	---	
1,3,5- Trimethylbenzene	1000	23.6	47.2	ug/kg dry	50	945	ND	106	73-124%	---	---	
Vinyl chloride	876	11.8	23.6	ug/kg dry	50	945	ND	93	56-135%	---	---	
m,p-Xylene	1920	23.6	47.2	ug/kg dry	50	1890	ND	102	77-124%	---	---	
o-Xylene	914	11.8	23.6	ug/kg dry	50	945	ND	97	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 99 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		98 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		97 %		79-120 %		"						

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040648 - EPA 5035A						Soil						
Blank (0040648-BLK1)			Prepared: 04/21/20 09:00 Analyzed: 04/21/20 11:39									
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	---	---	---	---	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040648 - EPA 5035A						Soil						
Blank (0040648-BLK1)						Prepared: 04/21/20 09:00 Analyzed: 04/21/20 11:39						
1,2-Dichloropropane	ND	33.3	66.7	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	167	333	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: 100 %		Limits: 80-120 %		Dilution: 1x						

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040648 - EPA 5035A						Soil						
Blank (0040648-BLK1)						Prepared: 04/21/20 09:00 Analyzed: 04/21/20 11:39						
Surr: Toluene-d8 (Surr)		Recovery: 102 %		Limits: 80-120 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		104 %		79-120 %		"						

LCS (0040648-BS1)

Prepared: 04/21/20 09:00 Analyzed: 04/21/20 10:45

5035A/8260C

Acetone	2200	500	1000	ug/kg wet	50	2000	---	110	80-120%	---	---
Acrylonitrile	1170	50.0	100	ug/kg wet	50	1000	---	117	80-120%	---	---
Benzene	1020	5.00	10.0	ug/kg wet	50	1000	---	102	80-120%	---	---
Bromobenzene	1050	12.5	25.0	ug/kg wet	50	1000	---	105	80-120%	---	---
Bromochloromethane	1050	25.0	50.0	ug/kg wet	50	1000	---	105	80-120%	---	---
Bromodichloromethane	1100	25.0	50.0	ug/kg wet	50	1000	---	110	80-120%	---	---
Bromoform	1180	50.0	100	ug/kg wet	50	1000	---	118	80-120%	---	---
Bromomethane	997	500	500	ug/kg wet	50	1000	---	100	80-120%	---	---
2-Butanone (MEK)	2240	250	500	ug/kg wet	50	2000	---	112	80-120%	---	---
n-Butylbenzene	1020	25.0	50.0	ug/kg wet	50	1000	---	102	80-120%	---	---
sec-Butylbenzene	1130	25.0	50.0	ug/kg wet	50	1000	---	113	80-120%	---	---
tert-Butylbenzene	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---
Carbon disulfide	797	250	500	ug/kg wet	50	1000	---	80	80-120%	---	---
Carbon tetrachloride	1120	25.0	50.0	ug/kg wet	50	1000	---	112	80-120%	---	---
Chlorobenzene	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---
Chloroethane	879	250	500	ug/kg wet	50	1000	---	88	80-120%	---	---
Chloroform	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---
Chloromethane	811	125	250	ug/kg wet	50	1000	---	81	80-120%	---	---
2-Chlorotoluene	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---
4-Chlorotoluene	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---
Dibromochloromethane	1050	50.0	100	ug/kg wet	50	1000	---	105	80-120%	---	---
1,2-Dibromo-3-chloropropane	1060	125	250	ug/kg wet	50	1000	---	106	80-120%	---	---
1,2-Dibromoethane (EDB)	1100	25.0	50.0	ug/kg wet	50	1000	---	110	80-120%	---	---
Dibromomethane	1110	25.0	50.0	ug/kg wet	50	1000	---	111	80-120%	---	---
1,2-Dichlorobenzene	1070	12.5	25.0	ug/kg wet	50	1000	---	107	80-120%	---	---
1,3-Dichlorobenzene	1070	12.5	25.0	ug/kg wet	50	1000	---	107	80-120%	---	---
1,4-Dichlorobenzene	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---
Dichlorodifluoromethane	903	50.0	100	ug/kg wet	50	1000	---	90	80-120%	---	---
1,1-Dichloroethane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---

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.

Darwin Thomas, Business Development Director

**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:

A0D0342 - 05 01 20 1122

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 0040648 - EPA 5035A						Soil						
LCS (0040648-BS1)			Prepared: 04/21/20 09:00		Analyzed: 04/21/20 10:45							
1,2-Dichloroethane (EDC)	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
1,1-Dichloroethene	816	12.5	25.0	ug/kg wet	50	1000	---	82	80-120%	---	---	
cis-1,2-Dichloroethene	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
trans-1,2-Dichloroethene	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
1,2-Dichloropropane	1040	50.0	100	ug/kg wet	50	1000	---	104	80-120%	---	---	
1,3-Dichloropropane	1050	25.0	50.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
2,2-Dichloropropane	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
1,1-Dichloropropene	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
cis-1,3-Dichloropropene	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
trans-1,3-Dichloropropene	1140	25.0	50.0	ug/kg wet	50	1000	---	114	80-120%	---	---	
Ethylbenzene	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Hexachlorobutadiene	1040	50.0	100	ug/kg wet	50	1000	---	104	80-120%	---	---	
2-Hexanone	1970	250	500	ug/kg wet	50	2000	---	98	80-120%	---	---	
Isopropylbenzene	1110	25.0	50.0	ug/kg wet	50	1000	---	111	80-120%	---	---	
4-Isopropyltoluene	1080	25.0	50.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
Methylene chloride	1030	250	500	ug/kg wet	50	1000	---	103	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	2250	250	500	ug/kg wet	50	2000	---	113	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1050	25.0	50.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
Naphthalene	1110	50.0	100	ug/kg wet	50	1000	---	111	80-120%	---	---	
n-Propylbenzene	1050	12.5	25.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
Styrene	998	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1110	12.5	25.0	ug/kg wet	50	1000	---	111	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1140	25.0	50.0	ug/kg wet	50	1000	---	114	80-120%	---	---	
Tetrachloroethene (PCE)	1080	12.5	25.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
Toluene	994	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,2,3-Trichlorobenzene	1050	125	250	ug/kg wet	50	1000	---	105	80-120%	---	---	
1,2,4-Trichlorobenzene	1060	125	250	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,1,1-Trichloroethane	1080	12.5	25.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
1,1,2-Trichloroethane	1100	12.5	25.0	ug/kg wet	50	1000	---	110	80-120%	---	---	
Trichloroethene (TCE)	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Trichlorofluoromethane	875	50.0	100	ug/kg wet	50	1000	---	87	80-120%	---	---	
1,2,3-Trichloropropane	1100	25.0	50.0	ug/kg wet	50	1000	---	110	80-120%	---	---	
1,2,4-Trimethylbenzene	1120	25.0	50.0	ug/kg wet	50	1000	---	112	80-120%	---	---	
1,3,5-Trimethylbenzene	1120	25.0	50.0	ug/kg wet	50	1000	---	112	80-120%	---	---	

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.

Darwin Thomas, Business Development Director

Page 37 of 83

NWN-PCI0781401

**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:

A0D0342 - 05 01 20 1122

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 0040648 - EPA 5035A						Soil						
LCS (0040648-BS1)			Prepared: 04/21/20 09:00		Analyzed: 04/21/20 10:45							
Vinyl chloride	952	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
m,p-Xylene	2060	25.0	50.0	ug/kg wet	50	2000	---	103	80-120%	---	---	
o-Xylene	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 100 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		98 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		100 %		79-120 %		"						

Duplicate (0040648-DUP1)

Prepared: 04/15/20 16:24 Analyzed: 04/21/20 12:33

QC Source Sample: IPCVS-041420-3 Composite (A0D0342-04RE1)**5035A/8260C**

Acetone	ND	195000	391000	ug/kg dry	5000	---	ND	---	---	---	30%
Acrylonitrile	ND	19500	39100	ug/kg dry	5000	---	ND	---	---	---	30%
Benzene	405000	1950	3910	ug/kg dry	5000	---	411000	---	---	1	30%
Bromobenzene	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%
Bromochloromethane	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
Bromodichloromethane	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
Bromoform	ND	19500	39100	ug/kg dry	5000	---	ND	---	---	---	30%
Bromomethane	ND	195000	391000	ug/kg dry	5000	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	97700	195000	ug/kg dry	5000	---	ND	---	---	---	30%
n-Butylbenzene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
sec-Butylbenzene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
tert-Butylbenzene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
Carbon disulfide	ND	97700	195000	ug/kg dry	5000	---	ND	---	---	---	30%
Carbon tetrachloride	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
Chlorobenzene	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%
Chloroethane	ND	97700	195000	ug/kg dry	5000	---	ND	---	---	---	30%
Chloroform	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
Chloromethane	ND	48800	97700	ug/kg dry	5000	---	ND	---	---	---	30%
2-Chlorotoluene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
4-Chlorotoluene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
Dibromochloromethane	ND	19500	39100	ug/kg dry	5000	---	ND	---	---	---	30%
1,2-Dibromo-3-chloropropane	ND	48800	97700	ug/kg dry	5000	---	ND	---	---	---	30%
1,2-Dibromoethane (EDB)	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%
Dibromomethane	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%

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.

Darwin Thomas, Business Development Director

**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:

A0D0342 - 05 01 20 1122

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 0040648 - EPA 5035A						Soil						
Duplicate (0040648-DUP1)			Prepared: 04/15/20 16:24 Analyzed: 04/21/20 12:33									
QC Source Sample: IPCVS-041420-3 Composite (A0D0342-04RE1)												
1,2-Dichlorobenzene	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	19500	39100	ug/kg dry	5000	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	4880	9770	ug/kg dry	5000	---	5160	---	---	***	30%	Q-05
trans-1,2-Dichloroethene	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	19500	39100	ug/kg dry	5000	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
Ethylbenzene	521000	4880	9770	ug/kg dry	5000	---	511000	---	---	2	30%	
Hexachlorobutadiene	ND	19500	39100	ug/kg dry	5000	---	ND	---	---	---	30%	
2-Hexanone	ND	97700	195000	ug/kg dry	5000	---	ND	---	---	---	30%	
Isopropylbenzene	20200	9770	19500	ug/kg dry	5000	---	21800	---	---	7	30%	
4-Isopropyltoluene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
Methylene chloride	ND	97700	195000	ug/kg dry	5000	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	97700	195000	ug/kg dry	5000	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
Naphthalene	ND	19500	39100	ug/kg dry	5000	---	36900	---	---	***	30%	Q-05
n-Propylbenzene	5530	4880	9770	ug/kg dry	5000	---	7850	---	---	35	30%	J, Q-05
Styrene	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
Toluene	225000	9770	19500	ug/kg dry	5000	---	227000	---	---	1	30%	
1,2,3-Trichlorobenzene	ND	48800	97700	ug/kg dry	5000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	48800	97700	ug/kg dry	5000	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	

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.

Darwin Thomas, Business Development Director

Page 39 of 83

NWN-PCI0781403

**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:
A0D0342 - 05 01 20 1122

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	Limits	RPD	RPD Limit	Notes
Batch 0040648 - EPA 5035A						Soil						
Duplicate (0040648-DUP1)			Prepared: 04/15/20 16:24 Analyzed: 04/21/20 12:33									
QC Source Sample: IPCVS-041420-3 Composite (A0D0342-04RE1)												
1,1,2-Trichloroethane	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	19500	39100	ug/kg dry	5000	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	9770	19500	ug/kg dry	5000	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	53300	9770	19500	ug/kg dry	5000	---	52300	---	---	2	30%	
1,3,5-Trimethylbenzene	27400	9770	19500	ug/kg dry	5000	---	28900	---	---	5	30%	
Vinyl chloride	ND	4880	9770	ug/kg dry	5000	---	ND	---	---	---	30%	
m,p-Xylene	196000	9770	19500	ug/kg dry	5000	---	198000	---	---	1	30%	
o-Xylene	81500	4880	9770	ug/kg dry	5000	---	82100	---	---	0.7	30%	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 96 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		100 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		100 %		79-120 %		"						

Matrix Spike (0040648-MS2)

Prepared: 04/15/20 14:26 Analyzed: 04/21/20 17:29

QC Source Sample: Non-SDG (A0D0334-04RE2)**5035A/8260C**

Acetone	1100000	299000	597000	ug/kg dry	5000	1190000	ND	92	36-164%	---	---
Acrylonitrile	607000	29900	59700	ug/kg dry	5000	597000	ND	102	65-134%	---	---
Benzene	568000	2990	5970	ug/kg dry	5000	597000	ND	95	77-121%	---	---
Bromobenzene	615000	7470	14900	ug/kg dry	5000	597000	ND	103	78-121%	---	---
Bromochloromethane	579000	14900	29900	ug/kg dry	5000	597000	ND	97	78-125%	---	---
Bromodichloromethane	624000	14900	29900	ug/kg dry	5000	597000	ND	104	75-127%	---	---
Bromoform	662000	29900	59700	ug/kg dry	5000	597000	ND	111	67-132%	---	---
Bromomethane	594000	299000	299000	ug/kg dry	5000	597000	ND	99	53-143%	---	---
2-Butanone (MEK)	1120000	149000	299000	ug/kg dry	5000	1190000	ND	94	51-148%	---	---
n-Butylbenzene	614000	14900	29900	ug/kg dry	5000	597000	ND	103	70-128%	---	---
sec-Butylbenzene	662000	14900	29900	ug/kg dry	5000	597000	ND	111	73-126%	---	---
tert-Butylbenzene	640000	14900	29900	ug/kg dry	5000	597000	ND	107	73-125%	---	---
Carbon disulfide	448000	149000	299000	ug/kg dry	5000	597000	ND	75	63-132%	---	---
Carbon tetrachloride	628000	14900	29900	ug/kg dry	5000	597000	ND	105	70-135%	---	---
Chlorobenzene	573000	7470	14900	ug/kg dry	5000	597000	ND	96	79-120%	---	---
Chloroethane	570000	149000	299000	ug/kg dry	5000	597000	ND	95	59-139%	---	---
Chloroform	594000	14900	29900	ug/kg dry	5000	597000	ND	99	78-123%	---	---

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.

Darwin Thomas, Business Development Director

**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:

A0D0342 - 05 01 20 1122

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 0040648 - EPA 5035A						Soil						
Matrix Spike (0040648-MS2)			Prepared: 04/15/20 14:26 Analyzed: 04/21/20 17:29									
QC Source Sample: Non-SDG (A0D0334-04RE2)												
Chloromethane	458000	74700	149000	ug/kg dry	5000	597000	ND	77	50-136%	---	---	
2-Chlorotoluene	621000	14900	29900	ug/kg dry	5000	597000	ND	104	75-122%	---	---	
4-Chlorotoluene	627000	14900	29900	ug/kg dry	5000	597000	ND	105	72-124%	---	---	
Dibromochloromethane	597000	29900	59700	ug/kg dry	5000	597000	ND	100	74-126%	---	---	
1,2-Dibromo-3-chloropropane	610000	74700	149000	ug/kg dry	5000	597000	ND	102	61-132%	---	---	
1,2-Dibromoethane (EDB)	616000	14900	29900	ug/kg dry	5000	597000	ND	103	78-122%	---	---	
Dibromomethane	622000	14900	29900	ug/kg dry	5000	597000	ND	104	78-125%	---	---	
1,2-Dichlorobenzene	617000	7470	14900	ug/kg dry	5000	597000	ND	103	78-121%	---	---	
1,3-Dichlorobenzene	615000	7470	14900	ug/kg dry	5000	597000	ND	103	77-121%	---	---	
1,4-Dichlorobenzene	587000	7470	14900	ug/kg dry	5000	597000	ND	98	75-120%	---	---	
Dichlorodifluoromethane	495000	29900	59700	ug/kg dry	5000	597000	ND	83	29-149%	---	---	
1,1-Dichloroethane	585000	7470	14900	ug/kg dry	5000	597000	ND	98	76-125%	---	---	
1,2-Dichloroethane (EDC)	575000	7470	14900	ug/kg dry	5000	597000	ND	96	73-128%	---	---	
1,1-Dichloroethene	465000	7470	14900	ug/kg dry	5000	597000	ND	78	70-131%	---	---	
cis-1,2-Dichloroethene	580000	7470	14900	ug/kg dry	5000	597000	ND	97	77-123%	---	---	
trans-1,2-Dichloroethene	571000	7470	14900	ug/kg dry	5000	597000	ND	96	74-125%	---	---	
1,2-Dichloropropane	588000	29900	59700	ug/kg dry	5000	597000	ND	98	76-123%	---	---	
1,3-Dichloropropane	595000	14900	29900	ug/kg dry	5000	597000	ND	100	77-121%	---	---	
2,2-Dichloropropane	605000	14900	29900	ug/kg dry	5000	597000	ND	101	67-133%	---	---	
1,1-Dichloropropene	606000	14900	29900	ug/kg dry	5000	597000	ND	101	76-125%	---	---	
cis-1,3-Dichloropropene	598000	14900	29900	ug/kg dry	5000	597000	ND	100	74-126%	---	---	
trans-1,3-Dichloropropene	659000	14900	29900	ug/kg dry	5000	597000	ND	110	71-130%	---	---	
Ethylbenzene	608000	7470	14900	ug/kg dry	5000	597000	ND	102	76-122%	---	---	
Hexachlorobutadiene	628000	29900	59700	ug/kg dry	5000	597000	ND	105	61-135%	---	---	
2-Hexanone	1080000	149000	299000	ug/kg dry	5000	1190000	ND	91	53-145%	---	---	
Isopropylbenzene	630000	14900	29900	ug/kg dry	5000	597000	ND	105	68-134%	---	---	
4-Isopropyltoluene	633000	14900	29900	ug/kg dry	5000	597000	ND	106	73-127%	---	---	
Methylene chloride	555000	149000	299000	ug/kg dry	5000	597000	ND	93	70-128%	---	---	
4-Methyl-2-pentanone (MiBK)	1230000	149000	299000	ug/kg dry	5000	1190000	ND	103	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	589000	14900	29900	ug/kg dry	5000	597000	ND	99	73-125%	---	---	
Naphthalene	1980000	29900	59700	ug/kg dry	5000	597000	1370000	101	62-129%	---	---	
n-Propylbenzene	611000	7470	14900	ug/kg dry	5000	597000	ND	102	73-125%	---	---	
Styrene	566000	14900	29900	ug/kg dry	5000	597000	ND	95	76-124%	---	---	

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.

Darwin Thomas, Business Development Director

Page 41 of 83

NWN-PCI0781405

**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:
A0D0342 - 05 01 20 1122

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 0040648 - EPA 5035A						Soil						
Matrix Spike (0040648-MS2)			Prepared: 04/15/20 14:26 Analyzed: 04/21/20 17:29									
QC Source Sample: Non-SDG (A0D0334-04RE2)												
1,1,1,2-Tetrachloroethane	637000	7470	14900	ug/kg dry	5000	597000	ND	107	78-125%	---	---	
1,1,2,2-Tetrachloroethane	663000	14900	29900	ug/kg dry	5000	597000	ND	111	70-124%	---	---	
Tetrachloroethene (PCE)	615000	7470	14900	ug/kg dry	5000	597000	ND	103	73-128%	---	---	
Toluene	566000	14900	29900	ug/kg dry	5000	597000	ND	95	77-121%	---	---	
1,2,3-Trichlorobenzene	609000	74700	149000	ug/kg dry	5000	597000	ND	102	66-130%	---	---	
1,2,4-Trichlorobenzene	623000	74700	149000	ug/kg dry	5000	597000	ND	104	67-129%	---	---	
1,1,1-Trichloroethane	597000	7470	14900	ug/kg dry	5000	597000	ND	100	73-130%	---	---	
1,1,2-Trichloroethane	620000	7470	14900	ug/kg dry	5000	597000	ND	104	78-121%	---	---	
Trichloroethene (TCE)	565000	7470	14900	ug/kg dry	5000	597000	ND	95	77-123%	---	---	
Trichlorofluoromethane	532000	29900	59700	ug/kg dry	5000	597000	ND	89	62-140%	---	---	
1,2,3-Trichloropropane	638000	14900	29900	ug/kg dry	5000	597000	ND	107	73-125%	---	---	
1,2,4-Trimethylbenzene	666000	14900	29900	ug/kg dry	5000	597000	ND	111	75-123%	---	---	
1,3,5-Trimethylbenzene	648000	14900	29900	ug/kg dry	5000	597000	ND	109	73-124%	---	---	
Vinyl chloride	506000	7470	14900	ug/kg dry	5000	597000	ND	85	56-135%	---	---	
m,p-Xylene	1170000	14900	29900	ug/kg dry	5000	1190000	ND	98	77-124%	---	---	
o-Xylene	565000	7470	14900	ug/kg dry	5000	597000	ND	95	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 101 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		99 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		102 %		79-120 %		"						

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.

Darwin Thomas, Business Development Director

Page 42 of 83

NWN-PCI0781406

**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:
A0D0342 - 05 01 20 1122

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 0040577 - EPA 1311/5030B TCLP Volatiles						Water						
Blank (0040577-BLK1)			Prepared: 04/17/20 07:52		Analyzed: 04/17/20 10:08		TCLPa					
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	---	---	---	---	---	---	
Naphthalene	ND	0.0500	0.100	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	---	---	---	---	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040577 - EPA 1311/5030B TCLP Volatiles						Water						
Blank (0040577-BLK1)			Prepared: 04/17/20 07:52 Analyzed: 04/17/20 10:08								TCLPa	
1,3-Dichloropropane	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
Ethylbenzene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.125	0.250	mg/L	50	---	---	---	---	---	---	
2-Hexanone	ND	0.250	0.500	mg/L	50	---	---	---	---	---	---	
Isopropylbenzene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MIBK)	ND	0.250	0.500	mg/L	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
Methylene chloride	ND	0.250	0.500	mg/L	50	---	---	---	---	---	---	
n-Propylbenzene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Styrene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Toluene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	0.0500	0.100	mg/L	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	0.0500	0.100	mg/L	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
Vinyl chloride	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
m,p-Xylene	ND	0.0250	0.0500	mg/L	50	---	---	---	---	---	---	
o-Xylene	ND	0.0125	0.0250	mg/L	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 106 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		103 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		101 %		80-120 %		"						

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040577 - EPA 1311/5030B TCLP Volatiles							Water					
LCS (0040577-BS1)				Prepared: 04/17/20 07:52 Analyzed: 04/17/20 09:37								TCLPa
1311/8260C												
Acetone	2.02	0.500	1.00	mg/L	50	2.00	---	101	80-120%	---	---	
Benzene	1.09	0.00625	0.0125	mg/L	50	1.00	---	109	80-120%	---	---	
Bromobenzene	0.939	0.0125	0.0250	mg/L	50	1.00	---	94	80-120%	---	---	
Bromochloromethane	1.14	0.0250	0.0500	mg/L	50	1.00	---	114	80-120%	---	---	
Bromodichloromethane	1.16	0.0250	0.0500	mg/L	50	1.00	---	116	80-120%	---	---	
Bromoform	1.04	0.0250	0.0500	mg/L	50	1.00	---	104	80-120%	---	---	
Naphthalene	1.02	0.0500	0.100	mg/L	50	1.00	---	102	80-120%	---	---	
Bromomethane	1.06	0.250	0.250	mg/L	50	1.00	---	106	80-120%	---	---	
2-Butanone (MEK)	2.29	0.250	0.500	mg/L	50	2.00	---	115	80-120%	---	---	
n-Butylbenzene	1.12	0.0250	0.0500	mg/L	50	1.00	---	112	80-120%	---	---	
sec-Butylbenzene	1.12	0.0250	0.0500	mg/L	50	1.00	---	112	80-120%	---	---	
tert-Butylbenzene	1.07	0.0250	0.0500	mg/L	50	1.00	---	107	80-120%	---	---	
Carbon tetrachloride	1.28	0.0250	0.0500	mg/L	50	1.00	---	128	80-120%	---	---	Q-56
Chlorobenzene	1.02	0.0125	0.0250	mg/L	50	1.00	---	102	80-120%	---	---	
Chloroethane	1.16	0.250	0.250	mg/L	50	1.00	---	116	80-120%	---	---	
Chloroform	1.09	0.0250	0.0500	mg/L	50	1.00	---	109	80-120%	---	---	
Chloromethane	1.06	0.125	0.250	mg/L	50	1.00	---	106	80-120%	---	---	
2-Chlorotoluene	1.01	0.0250	0.0500	mg/L	50	1.00	---	101	80-120%	---	---	
4-Chlorotoluene	1.05	0.0250	0.0500	mg/L	50	1.00	---	105	80-120%	---	---	
1,2-Dibromo-3-chloropropane	1.05	0.125	0.250	mg/L	50	1.00	---	105	80-120%	---	---	
Dibromochloromethane	1.05	0.0250	0.0500	mg/L	50	1.00	---	105	80-120%	---	---	
1,2-Dibromoethane (EDB)	1.07	0.0125	0.0250	mg/L	50	1.00	---	107	80-120%	---	---	
Dibromomethane	1.14	0.0250	0.0500	mg/L	50	1.00	---	114	80-120%	---	---	
1,2-Dichlorobenzene	1.03	0.0125	0.0250	mg/L	50	1.00	---	103	80-120%	---	---	
1,3-Dichlorobenzene	1.04	0.0125	0.0250	mg/L	50	1.00	---	104	80-120%	---	---	
1,4-Dichlorobenzene	0.956	0.0125	0.0250	mg/L	50	1.00	---	96	80-120%	---	---	
Dichlorodifluoromethane	0.997	0.0250	0.0500	mg/L	50	1.00	---	100	80-120%	---	---	
1,1-Dichloroethane	1.07	0.0125	0.0250	mg/L	50	1.00	---	107	80-120%	---	---	
1,1-Dichloroethene	1.05	0.0125	0.0250	mg/L	50	1.00	---	105	80-120%	---	---	
1,2-Dichloroethane (EDC)	1.11	0.0125	0.0250	mg/L	50	1.00	---	111	80-120%	---	---	
cis-1,2-Dichloroethene	1.13	0.0250	0.0500	mg/L	50	1.00	---	113	80-120%	---	---	
trans-1,2-Dichloroethene	1.06	0.0125	0.0250	mg/L	50	1.00	---	106	80-120%	---	---	
1,2-Dichloropropane	1.06	0.0125	0.0250	mg/L	50	1.00	---	106	80-120%	---	---	

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.

Darwin Thomas, Business Development Director

**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:

A0D0342 - 05 01 20 1122

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 0040577 - EPA 1311/5030B TCLP Volatiles						Water						
LCS (0040577-BS1)				Prepared: 04/17/20 07:52 Analyzed: 04/17/20 09:37							TCLPa	
1,3-Dichloropropane	1.12	0.0250	0.0500	mg/L	50	1.00	---	112	80-120%	---	---	Q-56
2,2-Dichloropropane	1.41	0.0250	0.0500	mg/L	50	1.00	---	141	80-120%	---	---	
1,1-Dichloropropene	1.14	0.0250	0.0500	mg/L	50	1.00	---	114	80-120%	---	---	Q-56
cis-1,3-Dichloropropene	1.26	0.0250	0.0500	mg/L	50	1.00	---	126	80-120%	---	---	
trans-1,3-Dichloropropene	1.11	0.0250	0.0500	mg/L	50	1.00	---	111	80-120%	---	---	
Ethylbenzene	1.06	0.0125	0.0250	mg/L	50	1.00	---	106	80-120%	---	---	
Hexachlorobutadiene	1.08	0.125	0.250	mg/L	50	1.00	---	108	80-120%	---	---	
2-Hexanone	2.13	0.250	0.500	mg/L	50	2.00	---	107	80-120%	---	---	
Isopropylbenzene	1.03	0.0250	0.0500	mg/L	50	1.00	---	103	80-120%	---	---	
4-Isopropyltoluene	1.02	0.0250	0.0500	mg/L	50	1.00	---	102	80-120%	---	---	
4-Methyl-2-pentanone (MIBK)	2.20	0.250	0.500	mg/L	50	2.00	---	110	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1.14	0.0250	0.0500	mg/L	50	1.00	---	114	80-120%	---	---	
Methylene chloride	1.08	0.250	0.500	mg/L	50	1.00	---	108	80-120%	---	---	
n-Propylbenzene	1.03	0.0125	0.0250	mg/L	50	1.00	---	103	80-120%	---	---	
Styrene	1.02	0.0250	0.0500	mg/L	50	1.00	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1.15	0.0125	0.0250	mg/L	50	1.00	---	115	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1.17	0.0125	0.0250	mg/L	50	1.00	---	117	80-120%	---	---	
Tetrachloroethene (PCE)	0.994	0.0125	0.0250	mg/L	50	1.00	---	99	80-120%	---	---	
Toluene	1.05	0.0250	0.0500	mg/L	50	1.00	---	105	80-120%	---	---	
1,2,3-Trichlorobenzene	1.13	0.0250	0.0500	mg/L	50	1.00	---	113	80-120%	---	---	
1,2,4-Trichlorobenzene	1.07	0.0500	0.100	mg/L	50	1.00	---	107	80-120%	---	---	
1,1,1-Trichloroethane	1.19	0.0125	0.0250	mg/L	50	1.00	---	119	80-120%	---	---	
1,1,2-Trichloroethane	1.09	0.0125	0.0250	mg/L	50	1.00	---	109	80-120%	---	---	
Trichloroethene (TCE)	0.962	0.0125	0.0250	mg/L	50	1.00	---	96	80-120%	---	---	
Trichlorofluoromethane	1.08	0.0500	0.100	mg/L	50	1.00	---	108	80-120%	---	---	
1,2,3-Trichloropropane	1.04	0.0250	0.0500	mg/L	50	1.00	---	104	80-120%	---	---	
1,2,4-Trimethylbenzene	1.09	0.0250	0.0500	mg/L	50	1.00	---	109	80-120%	---	---	
1,3,5-Trimethylbenzene	1.10	0.0250	0.0500	mg/L	50	1.00	---	110	80-120%	---	---	
Vinyl chloride	1.02	0.0125	0.0250	mg/L	50	1.00	---	102	80-120%	---	---	
m,p-Xylene	2.11	0.0250	0.0500	mg/L	50	2.00	---	105	80-120%	---	---	
o-Xylene	1.01	0.0125	0.0250	mg/L	50	1.00	---	101	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)												
		Recovery:		101 %	Limits:		80-120 %		Dilution:		1x	
Toluene-d8 (Surr)				100 %			80-120 %				"	
4-Bromofluorobenzene (Surr)				93 %			80-120 %				"	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040577 - EPA 1311/5030B TCLP Volatiles						Water						
Duplicate (0040577-DUP1)			Prepared: 04/17/20 07:52 Analyzed: 04/17/20 11:57									
QC Source Sample: Non-SDG (A0D0267-01)												
1,2-Dichloropropane	ND	0.0125	0.0250	mg/L	50	---	ND	---	---	---	30%	
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	0.250	0.500	mg/L	50	---	ND	---	---	---	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: 108 %		Limits: 80-120 %		Dilution: 1x						

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040577 - EPA 1311/5030B TCLP Volatiles						Water						
Duplicate (0040577-DUP1)			Prepared: 04/17/20 07:52 Analyzed: 04/17/20 11:57									
QC Source Sample: Non-SDG (A0D0267-01)												
Surr: Toluene-d8 (Surr)		Recovery: 102 %		Limits: 80-120 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		100 %		80-120 %		"						
Matrix Spike (0040577-MS1)			Prepared: 04/17/20 07:52 Analyzed: 04/17/20 12:52									
QC Source Sample: IPCVS-041420-3 Composite (A0D0342-04)												
1311/8260C												
Acetone	2.16	0.500	1.00	mg/L	50	2.00	ND	108	39-160%	---	---	Q-01
Benzene	1.36	0.00625	0.0125	mg/L	50	1.00	0.148	121	79-120%	---	---	
Bromobenzene	0.989	0.0125	0.0250	mg/L	50	1.00	ND	99	80-120%	---	---	
Bromochloromethane	1.23	0.0250	0.0500	mg/L	50	1.00	ND	123	78-123%	---	---	
Bromodichloromethane	1.22	0.0250	0.0500	mg/L	50	1.00	ND	122	79-125%	---	---	Q-54d
Bromoform	1.04	0.0250	0.0500	mg/L	50	1.00	ND	104	66-130%	---	---	
Naphthalene	1.05	0.0500	0.100	mg/L	50	1.00	ND	105	61-128%	---	---	
Bromomethane	1.14	0.250	0.250	mg/L	50	1.00	ND	114	53-141%	---	---	
2-Butanone (MEK)	2.42	0.250	0.500	mg/L	50	2.00	ND	121	56-143%	---	---	Q-54d
n-Butylbenzene	1.25	0.0250	0.0500	mg/L	50	1.00	ND	125	75-128%	---	---	
sec-Butylbenzene	1.23	0.0250	0.0500	mg/L	50	1.00	ND	123	77-126%	---	---	
tert-Butylbenzene	1.19	0.0250	0.0500	mg/L	50	1.00	ND	119	78-124%	---	---	
Carbon tetrachloride	1.34	0.0250	0.0500	mg/L	50	1.00	ND	134	72-136%	---	---	Q-54d
Chlorobenzene	1.07	0.0125	0.0250	mg/L	50	1.00	ND	107	80-120%	---	---	
Chloroethane	1.32	0.250	0.250	mg/L	50	1.00	ND	132	60-138%	---	---	
Chloroform	1.17	0.0250	0.0500	mg/L	50	1.00	ND	117	79-124%	---	---	
Chloromethane	1.19	0.125	0.250	mg/L	50	1.00	ND	119	50-139%	---	---	Q-54d
2-Chlorotoluene	1.08	0.0250	0.0500	mg/L	50	1.00	ND	108	79-122%	---	---	
4-Chlorotoluene	1.15	0.0250	0.0500	mg/L	50	1.00	ND	115	78-122%	---	---	
1,2-Dibromo-3-chloropropane	1.07	0.125	0.250	mg/L	50	1.00	ND	107	62-128%	---	---	
Dibromochloromethane	1.08	0.0250	0.0500	mg/L	50	1.00	ND	108	74-126%	---	---	Q-54d
1,2-Dibromoethane (EDB)	1.12	0.0125	0.0250	mg/L	50	1.00	ND	112	77-121%	---	---	
Dibromomethane	1.15	0.0250	0.0500	mg/L	50	1.00	ND	115	79-123%	---	---	
1,2-Dichlorobenzene	1.10	0.0125	0.0250	mg/L	50	1.00	ND	110	80-120%	---	---	
1,3-Dichlorobenzene	1.11	0.0125	0.0250	mg/L	50	1.00	ND	111	80-120%	---	---	Q-54d
1,4-Dichlorobenzene	1.02	0.0125	0.0250	mg/L	50	1.00	ND	102	79-120%	---	---	
Dichlorodifluoromethane	1.12	0.0250	0.0500	mg/L	50	1.00	ND	112	32-152%	---	---	

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.

Darwin Thomas, Business Development Director

Page 49 of 83

NWN-PCI0781413

**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:
A0D0342 - 05 01 20 1122

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 0040577 - EPA 1311/5030B TCLP Volatiles						Water						
Matrix Spike (0040577-MS1)			Prepared: 04/17/20 07:52 Analyzed: 04/17/20 12:52									
QC Source Sample: IPCVS-041420-3 Composite (A0D0342-04)												
1,1-Dichloroethane	1.17	0.0125	0.0250	mg/L	50	1.00	ND	117	77-125%	---	---	
1,1-Dichloroethene	1.07	0.0125	0.0250	mg/L	50	1.00	ND	107	71-131%	---	---	
1,2-Dichloroethane (EDC)	1.18	0.0125	0.0250	mg/L	50	1.00	ND	118	73-128%	---	---	
cis-1,2-Dichloroethene	1.22	0.0250	0.0500	mg/L	50	1.00	ND	122	78-123%	---	---	
trans-1,2-Dichloroethene	1.16	0.0125	0.0250	mg/L	50	1.00	ND	116	75-124%	---	---	
1,2-Dichloropropane	1.15	0.0125	0.0250	mg/L	50	1.00	ND	115	78-122%	---	---	
1,3-Dichloropropane	1.18	0.0250	0.0500	mg/L	50	1.00	ND	118	80-120%	---	---	
2,2-Dichloropropane	1.49	0.0250	0.0500	mg/L	50	1.00	ND	149	60-139%	---	---	Q-54a
1,1-Dichloropropene	1.25	0.0250	0.0500	mg/L	50	1.00	ND	125	79-125%	---	---	
cis-1,3-Dichloropropene	1.33	0.0250	0.0500	mg/L	50	1.00	ND	133	75-124%	---	---	Q-54c
trans-1,3-Dichloropropene	1.15	0.0250	0.0500	mg/L	50	1.00	ND	115	73-127%	---	---	
Ethylbenzene	1.16	0.0125	0.0250	mg/L	50	1.00	ND	116	79-121%	---	---	
Hexachlorobutadiene	1.17	0.125	0.250	mg/L	50	1.00	ND	117	66-134%	---	---	
2-Hexanone	2.25	0.250	0.500	mg/L	50	2.00	ND	113	57-139%	---	---	
Isopropylbenzene	1.12	0.0250	0.0500	mg/L	50	1.00	ND	112	72-131%	---	---	
4-Isopropyltoluene	1.12	0.0250	0.0500	mg/L	50	1.00	ND	112	77-127%	---	---	
4-Methyl-2-pentanone (MiBK)	2.32	0.250	0.500	mg/L	50	2.00	ND	116	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	1.20	0.0250	0.0500	mg/L	50	1.00	ND	120	71-124%	---	---	
Methylene chloride	1.13	0.250	0.500	mg/L	50	1.00	ND	113	74-124%	---	---	
n-Propylbenzene	1.14	0.0125	0.0250	mg/L	50	1.00	ND	114	76-126%	---	---	
Styrene	1.09	0.0250	0.0500	mg/L	50	1.00	ND	109	78-123%	---	---	
1,1,1,2-Tetrachloroethane	1.17	0.0125	0.0250	mg/L	50	1.00	ND	117	78-124%	---	---	
1,1,2,2-Tetrachloroethane	1.23	0.0125	0.0250	mg/L	50	1.00	ND	123	71-121%	---	---	Q-01
Tetrachloroethene (PCE)	1.04	0.0125	0.0250	mg/L	50	1.00	ND	104	74-129%	---	---	
Toluene	1.14	0.0250	0.0500	mg/L	50	1.00	ND	114	80-121%	---	---	
1,2,3-Trichlorobenzene	1.17	0.0250	0.0500	mg/L	50	1.00	ND	117	69-129%	---	---	
1,2,4-Trichlorobenzene	1.12	0.0500	0.100	mg/L	50	1.00	ND	112	69-130%	---	---	
1,1,1-Trichloroethane	1.28	0.0125	0.0250	mg/L	50	1.00	ND	128	74-131%	---	---	
1,1,2-Trichloroethane	1.14	0.0125	0.0250	mg/L	50	1.00	ND	114	80-120%	---	---	
Trichloroethene (TCE)	1.02	0.0125	0.0250	mg/L	50	1.00	ND	102	79-123%	---	---	
Trichlorofluoromethane	1.19	0.0500	0.100	mg/L	50	1.00	ND	119	65-141%	---	---	
1,2,3-Trichloropropane	1.10	0.0250	0.0500	mg/L	50	1.00	ND	110	73-122%	---	---	
1,2,4-Trimethylbenzene	1.19	0.0250	0.0500	mg/L	50	1.00	ND	119	76-124%	---	---	

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.

Darwin Thomas, Business Development Director

Page 50 of 83

NWN-PCI0781414



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:
A0D0342 - 05 01 20 1122

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 0040577 - EPA 1311/5030B TCLP Volatiles							Water					
Matrix Spike (0040577-MS1)			Prepared: 04/17/20 07:52 Analyzed: 04/17/20 12:52									
QC Source Sample: IPCVS-041420-3 Composite (A0D0342-04)												
1,3,5-Trimethylbenzene	1.20	0.0250	0.0500	mg/L	50	1.00	ND	120	75-124%	---	---	
Vinyl chloride	1.15	0.0125	0.0250	mg/L	50	1.00	ND	115	58-137%	---	---	
m,p-Xylene	2.29	0.0250	0.0500	mg/L	50	2.00	ND	115	80-121%	---	---	
o-Xylene	1.10	0.0125	0.0250	mg/L	50	1.00	ND	110	78-122%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 99 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		100 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		94 %		80-120 %		"						

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040551 - EPA 3546						Solid						
Blank (0040551-BLK1)			Prepared: 04/16/20 11:06		Analyzed: 04/16/20 14:21							
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	ug/kg	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	ug/kg	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	ug/kg	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	ug/kg	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	ug/kg	1	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	ug/kg	1	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	ug/kg	1	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	ug/kg	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	ug/kg	1	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	ug/kg	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040551 - EPA 3546						Solid						
Blank (0040551-BLK1)			Prepared: 04/16/20 11:06		Analyzed: 04/16/20 14:21							
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	ug/kg	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	ug/kg	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	ug/kg	1	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	ug/kg	1	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	ug/kg	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	ug/kg	1	---	---	---	---	---	---	
Benzoic acid	ND	157	312	ug/kg	1	---	---	---	---	---	---	
Benzyl alcohol	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---	
Isophorone	ND	7.41	7.41	ug/kg	1	---	---	---	---	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040551 - EPA 3546						Solid								
Blank (0040551-BLK1)		Prepared: 04/16/20 11:06					Analyzed: 04/16/20 14:21							
Azobenzene (1,2-DPH)	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---	Q-52		
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	ug/kg	1	---	---	---	---	---	---			
3,3'-Dichlorobenzidine	ND	25.0	50.0	ug/kg	1	---	---	---	---	---	---			
1,2-Dinitrobenzene	ND	31.2	62.5	ug/kg	1	---	---	---	---	---	---			
1,3-Dinitrobenzene	ND	31.2	62.5	ug/kg	1	---	---	---	---	---	---			
1,4-Dinitrobenzene	ND	31.2	62.5	ug/kg	1	---	---	---	---	---	---	Q-41		
Pyridine	ND	6.25	12.5	ug/kg	1	---	---	---	---	---	---			
1,2-Dichlorobenzene	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---			
1,3-Dichlorobenzene	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---			
1,4-Dichlorobenzene	ND	3.12	6.25	ug/kg	1	---	---	---	---	---	---			
Surr: Nitrobenzene-d5 (Surr)		Recovery:		79 %		Limits:		37-122 %		Dilution:			1x	
2-Fluorobiphenyl (Surr)				73 %				44-120 %					"	
Phenol-d6 (Surr)				77 %				33-122 %					"	
p-Terphenyl-d14 (Surr)				89 %				54-127 %					"	
2-Fluorophenol (Surr)				62 %				35-120 %					"	
2,4,6-Tribromophenol (Surr)				78 %				39-132 %					"	

LCS (0040551-BS1)			Prepared: 04/16/20 11:06 Analyzed: 04/16/20 14:57									Q-18
EPA 8270D												
Acenaphthene	441	1.33	2.67	ug/kg	1	533	---	83	40-123%	---	---	
Acenaphthylene	463	1.33	2.67	ug/kg	1	533	---	87	32-132%	---	---	
Anthracene	473	1.33	2.67	ug/kg	1	533	---	89	47-123%	---	---	
Benz(a)anthracene	482	1.33	2.67	ug/kg	1	533	---	90	49-126%	---	---	
Benzo(a)pyrene	480	2.00	4.00	ug/kg	1	533	---	90	45-129%	---	---	
Benzo(b)fluoranthene	468	2.00	4.00	ug/kg	1	533	---	88	45-132%	---	---	
Benzo(k)fluoranthene	463	2.00	4.00	ug/kg	1	533	---	87	47-132%	---	---	
Benzo(g,h,i)perylene	484	1.33	2.67	ug/kg	1	533	---	91	43-134%	---	---	
Chrysene	457	1.33	2.67	ug/kg	1	533	---	86	50-124%	---	---	
Dibenz(a,h)anthracene	484	1.33	2.67	ug/kg	1	533	---	91	45-134%	---	---	
Fluoranthene	501	1.33	2.67	ug/kg	1	533	---	94	50-127%	---	---	
Fluorene	465	1.33	2.67	ug/kg	1	533	---	87	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	455	1.33	2.67	ug/kg	1	533	---	85	45-133%	---	---	
1-Methylnaphthalene	468	2.67	5.33	ug/kg	1	533	---	88	40-120%	---	---	
2-Methylnaphthalene	464	2.67	5.33	ug/kg	1	533	---	87	38-122%	---	---	

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.

Darwin Thomas, Business Development Director

Page 54 of 83

NWN-PCI0781418

**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:

A0D0342 - 05 01 20 1122

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 0040551 - EPA 3546						Solid						
LCS (0040551-BS1)						Prepared: 04/16/20 11:06 Analyzed: 04/16/20 14:57						Q-18
Hexachlorobenzene	471	1.33	2.67	ug/kg	1	533	---	88	45-122%	---	---	
Hexachlorobutadiene	438	3.33	6.67	ug/kg	1	533	---	82	32-123%	---	---	
Hexachlorocyclopentadiene	400	6.67	13.3	ug/kg	1	533	---	75	10-140%	---	---	
Hexachloroethane	426	3.33	6.67	ug/kg	1	533	---	80	28-120%	---	---	
2-Chloronaphthalene	443	1.33	2.67	ug/kg	1	533	---	83	41-120%	---	---	
1,2,4-Trichlorobenzene	437	3.33	6.67	ug/kg	1	533	---	82	34-120%	---	---	
4-Bromophenyl phenyl ether	499	3.33	6.67	ug/kg	1	533	---	94	46-124%	---	---	
4-Chlorophenyl phenyl ether	486	3.33	6.67	ug/kg	1	533	---	91	45-121%	---	---	
Aniline	472	6.67	13.3	ug/kg	1	533	---	89	10-120%	---	---	
4-Chloroaniline	355	3.33	6.67	ug/kg	1	533	---	67	17-120%	---	---	
2-Nitroaniline	494	26.7	53.3	ug/kg	1	533	---	93	44-127%	---	---	
3-Nitroaniline	358	26.7	53.3	ug/kg	1	533	---	67	33-120%	---	---	
4-Nitroaniline	498	26.7	53.3	ug/kg	1	533	---	93	70-138%	---	---	
2,4-Dinitrotoluene	491	13.3	26.7	ug/kg	1	533	---	92	48-126%	---	---	
2,6-Dinitrotoluene	484	13.3	26.7	ug/kg	1	533	---	91	46-124%	---	---	
Benzoic acid	1060	167	333	ug/kg	1	1070	---	100	10-140%	---	---	Q-41
Benzyl alcohol	470	6.67	13.3	ug/kg	1	533	---	88	29-122%	---	---	
Isophorone	469	7.90	7.90	ug/kg	1	533	---	88	30-122%	---	---	
Azobenzene (1,2-DPH)	424	3.33	6.67	ug/kg	1	533	---	80	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	447	33.3	66.7	ug/kg	1	533	---	84	61-121%	---	---	
3,3'-Dichlorobenzidine	981	26.7	53.3	ug/kg	1	1070	---	92	22-121%	---	---	Q-41
1,2-Dinitrobenzene	491	33.3	66.7	ug/kg	1	533	---	92	44-120%	---	---	
1,3-Dinitrobenzene	498	33.3	66.7	ug/kg	1	533	---	93	43-127%	---	---	
1,4-Dinitrobenzene	505	33.3	66.7	ug/kg	1	533	---	95	37-132%	---	---	
Pyridine	333	6.67	13.3	ug/kg	1	533	---	62	10-120%	---	---	
1,2-Dichlorobenzene	420	3.33	6.67	ug/kg	1	533	---	79	33-120%	---	---	
1,3-Dichlorobenzene	412	3.33	6.67	ug/kg	1	533	---	77	30-120%	---	---	
1,4-Dichlorobenzene	416	3.33	6.67	ug/kg	1	533	---	78	31-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>												
			Recovery:	86 %	Limits:	37-122 %	Dilution:	1x				
<i>2-Fluorobiphenyl (Surr)</i>				78 %		44-120 %		"				
<i>Phenol-d6 (Surr)</i>				90 %		33-122 %		"				
<i>p-Terphenyl-d14 (Surr)</i>				89 %		54-127 %		"				
<i>2-Fluorophenol (Surr)</i>				85 %		35-120 %		"				
<i>2,4,6-Tribromophenol (Surr)</i>				99 %		39-132 %		"				
											Q-41	

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.

Darwin Thomas, Business Development Director

Page 56 of 83

NWN-PCI0781420

**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:
A0D0342 - 05 01 20 1122

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 0040551 - EPA 3546						Solid						
Duplicate (0040551-DUP1)			Prepared: 04/16/20 11:06 Analyzed: 04/16/20 16:10									
QC Source Sample: Non-SDG (A0D0334-04)												
Acenaphthene	145000	3230	6490	ug/kg	1000	---	133000	---	---	9	30%	M-05
Acenaphthylene	34400	3230	6490	ug/kg	1000	---	32000	---	---	7	30%	
Anthracene	117000	3230	6490	ug/kg	1000	---	110000	---	---	6	30%	
Benz(a)anthracene	78500	3230	6490	ug/kg	1000	---	71100	---	---	10	30%	
Benzo(a)pyrene	98600	4860	9720	ug/kg	1000	---	91600	---	---	7	30%	
Benzo(b)fluoranthene	75400	4860	9720	ug/kg	1000	---	70500	---	---	7	30%	
Benzo(k)fluoranthene	29300	4860	9720	ug/kg	1000	---	28100	---	---	4	30%	
Benzo(g,h,i)perylene	59600	3230	6490	ug/kg	1000	---	54900	---	---	8	30%	
Chrysene	91300	3230	6490	ug/kg	1000	---	86200	---	---	6	30%	
Dibenz(a,h)anthracene	6580	3230	6490	ug/kg	1000	---	5740	---	---	14	30%	
Fluoranthene	310000	3230	6490	ug/kg	1000	---	312000	---	---	0.7	30%	
Fluorene	121000	3230	6490	ug/kg	1000	---	109000	---	---	10	30%	
Indeno(1,2,3-cd)pyrene	52000	3230	6490	ug/kg	1000	---	48200	---	---	8	30%	
1-Methylnaphthalene	150000	6490	13000	ug/kg	1000	---	142000	---	---	6	30%	
2-Methylnaphthalene	265000	6490	13000	ug/kg	1000	---	249000	---	---	6	30%	
Naphthalene	463000	6490	13000	ug/kg	1000	---	437000	---	---	6	30%	
Phenanthrene	602000	3230	6490	ug/kg	1000	---	568000	---	---	6	30%	
Pyrene	357000	3230	6490	ug/kg	1000	---	360000	---	---	0.9	30%	
Carbazole	11500	4860	9720	ug/kg	1000	---	10600	---	---	8	30%	
Dibenzofuran	26100	3230	6490	ug/kg	1000	---	24200	---	---	8	30%	
2-Chlorophenol	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	80900	162000	ug/kg	1000	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	80900	162000	ug/kg	1000	---	ND	---	---	---	30%	
2-Methylphenol	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
2-Nitrophenol	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
4-Nitrophenol	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
Phenol	ND	6490	13000	ug/kg	1000	---	ND	---	---	---	30%	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040551 - EPA 3546							Solid					
Duplicate (0040551-DUP1)			Prepared: 04/16/20 11:06 Analyzed: 04/16/20 16:10									
QC Source Sample: Non-SDG (A0D0334-04)												
2,3,4,6-Tetrachlorophenol	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
Nitrobenzene	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	48600	97200	ug/kg	1000	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
Diethylphthalate	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
Dimethylphthalate	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	16200	16200	ug/kg	1000	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
2,2'-Oxybis(1-Chloropropane)	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	3230	6490	ug/kg	1000	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
Hexachloroethane	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	3230	6490	ug/kg	1000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
Aniline	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
4-Chloroaniline	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
2-Nitroaniline	ND	64900	130000	ug/kg	1000	---	ND	---	---	---	30%	
3-Nitroaniline	ND	64900	130000	ug/kg	1000	---	ND	---	---	---	30%	
4-Nitroaniline	ND	64900	130000	ug/kg	1000	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	32300	64900	ug/kg	1000	---	ND	---	---	---	30%	
Benzoic acid	ND	406000	809000	ug/kg	1000	---	ND	---	---	---	30%	

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.

Darwin Thomas, Business Development Director

Page 58 of 83

NWN-PCI0781422

**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:
A0D0342 - 05 01 20 1122

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 0040551 - EPA 3546						Solid						
Duplicate (0040551-DUP1)			Prepared: 04/16/20 11:06		Analyzed: 04/16/20 16:10							
QC Source Sample: Non-SDG (A0D0334-04)												
Benzyl alcohol	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	Q-52
Isophorone	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	80900	162000	ug/kg	1000	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	64900	130000	ug/kg	1000	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	80900	162000	ug/kg	1000	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	80900	162000	ug/kg	1000	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	80900	162000	ug/kg	1000	---	ND	---	---	---	30%	
Pyridine	ND	16200	32300	ug/kg	1000	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	8090	16200	ug/kg	1000	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)		Recovery: 29 %		Limits: 37-122 %		Dilution: 1000x						S-05
2-Fluorobiphenyl (Surr)		170 %		44-120 %		"						S-05
Phenol-d6 (Surr)		%		33-122 %		"						S-01
p-Terphenyl-d14 (Surr)		219 %		54-127 %		"						S-05
2-Fluorophenol (Surr)		46 %		35-120 %		"						S-05
2,4,6-Tribromophenol (Surr)		%		39-132 %		"						S-01

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.

Darwin Thomas, Business Development Director

Page 59 of 83

NWN-PCI0781423

**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:
A0D0342 - 05 01 20 1122

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 0040593 - EPA 1311/3510C (BNA Extraction)						Water						
Blank (0040593-BLK1)			Prepared: 04/17/20 11:02		Analyzed: 04/20/20 14:57							
1311/8270D												
Acenaphthene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Anthracene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.000150	0.000300	mg/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.000150	0.000300	mg/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.000150	0.000300	mg/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Chrysene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Fluoranthene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Fluorene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.000200	0.000400	mg/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.000200	0.000400	mg/L	1	---	---	---	---	---	---	
Naphthalene	ND	0.000200	0.000400	mg/L	1	---	---	---	---	---	---	
Phenanthrene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Pyrene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Carbazole	ND	0.000150	0.000300	mg/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
2-Chlorophenol	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	0.00100	0.00200	mg/L	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	0.00250	0.00500	mg/L	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	0.00250	0.00500	mg/L	1	---	---	---	---	---	---	
2-Methylphenol	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
2-Nitrophenol	ND	0.00100	0.00200	mg/L	1	---	---	---	---	---	---	
4-Nitrophenol	ND	0.00100	0.00200	mg/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	0.00112	0.00100	0.00200	mg/L	1	---	---	---	---	---	---	B-02, J
Phenol	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	

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.

Darwin Thomas, Business Development Director

Page 60 of 83

NWN-PCI0781424

**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:
A0D0342 - 05 01 20 1122

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 0040593 - EPA 1311/3510C (BNA Extraction)						Water						
Blank (0040593-BLK1)			Prepared: 04/17/20 11:02		Analyzed: 04/20/20 14:57							
2,3,5,6-Tetrachlorophenol	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	
Nitrobenzene	ND	0.00100	0.00200	mg/L	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
Diethylphthalate	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
Dimethylphthalate	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	
Hexachloroethane	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	0.000100	0.000200	mg/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	0.0000500	0.000500	mg/L	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
Aniline	ND	0.000500	0.00100	mg/L	1	---	---	---	---	---	---	
4-Chloroaniline	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
2-Nitroaniline	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
3-Nitroaniline	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
4-Nitroaniline	ND	0.00200	0.00400	mg/L	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	0.00100	0.00200	mg/L	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	0.00100	0.00200	mg/L	1	---	---	---	---	---	---	
Benzoic acid	0.0101	0.0100	0.0200	mg/L	1	---	---	---	---	---	---	B-02, J
Benzyl alcohol	ND	0.00100	0.00200	mg/L	1	---	---	---	---	---	---	
Isophorone	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040593 - EPA 1311/3510C (BNA Extraction)						Water						
Blank (0040593-BLK1)			Prepared: 04/17/20 11:02		Analyzed: 04/20/20 14:57							
Azobenzene (1,2-DPH)	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	0.00250	0.00500	mg/L	1	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	0.00250	0.00500	mg/L	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	0.00250	0.00500	mg/L	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	0.00250	0.00500	mg/L	1	---	---	---	---	---	---	
Pyridine	ND	0.00100	0.00200	mg/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.000250	0.000500	mg/L	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)		Recovery: 80 %		Limits: 44-120 %		Dilution: 1x						
2-Fluorobiphenyl (Surr)		64 %		44-120 %		"						
Phenol-d6 (Surr)		28 %		10-133 %		"						
p-Terphenyl-d14 (Surr)		92 %		50-134 %		"						
2-Fluorophenol (Surr)		46 %		19-120 %		"						
2,4,6-Tribromophenol (Surr)		91 %		43-140 %		"						
												Q-41

LCS (0040593-BS1)			Prepared: 04/17/20 11:02 Analyzed: 04/20/20 15:33									
1311/8270D												
Acenaphthene	0.0295	0.000100	0.000200	mg/L	1	0.0400	---	74	47-122%	---	---	
Acenaphthylene	0.0308	0.000100	0.000200	mg/L	1	0.0400	---	77	41-130%	---	---	
Anthracene	0.0325	0.000100	0.000200	mg/L	1	0.0400	---	81	57-123%	---	---	
Benz(a)anthracene	0.0335	0.000100	0.000200	mg/L	1	0.0400	---	84	58-125%	---	---	
Benzo(a)pyrene	0.0330	0.000150	0.000300	mg/L	1	0.0400	---	82	54-128%	---	---	
Benzo(b)fluoranthene	0.0336	0.000150	0.000300	mg/L	1	0.0400	---	84	53-131%	---	---	
Benzo(k)fluoranthene	0.0330	0.000150	0.000300	mg/L	1	0.0400	---	82	57-129%	---	---	
Benzo(g,h,i)perylene	0.0345	0.000100	0.000200	mg/L	1	0.0400	---	86	50-134%	---	---	
Chrysene	0.0325	0.000100	0.000200	mg/L	1	0.0400	---	81	59-123%	---	---	
Dibenz(a,h)anthracene	0.0344	0.000100	0.000200	mg/L	1	0.0400	---	86	51-134%	---	---	
Fluoranthene	0.0355	0.000100	0.000200	mg/L	1	0.0400	---	89	57-128%	---	---	
Fluorene	0.0328	0.000100	0.000200	mg/L	1	0.0400	---	82	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	0.0331	0.000100	0.000200	mg/L	1	0.0400	---	83	52-134%	---	---	
1-Methylnaphthalene	0.0291	0.000200	0.000400	mg/L	1	0.0400	---	73	41-120%	---	---	
2-Methylnaphthalene	0.0284	0.000200	0.000400	mg/L	1	0.0400	---	71	40-121%	---	---	
Naphthalene	0.0259	0.000200	0.000400	mg/L	1	0.0400	---	65	40-121%	---	---	

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.

Darwin Thomas, Business Development Director

**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:

A0D0342 - 05 01 20 1122

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 0040593 - EPA 1311/3510C (BNA Extraction)						Water						
LCS (0040593-BS1)						Prepared: 04/17/20 11:02 Analyzed: 04/20/20 15:33						
Phenanthrene	0.0308	0.000100	0.000200	mg/L	1	0.0400	---	77	59-120%	---	---	
Pyrene	0.0339	0.000100	0.000200	mg/L	1	0.0400	---	85	57-126%	---	---	
Carbazole	0.0318	0.000150	0.000300	mg/L	1	0.0400	---	79	60-122%	---	---	
Dibenzofuran	0.0314	0.000100	0.000200	mg/L	1	0.0400	---	78	53-120%	---	---	
2-Chlorophenol	0.0307	0.000500	0.00100	mg/L	1	0.0400	---	77	38-120%	---	---	
4-Chloro-3-methylphenol	0.0361	0.00100	0.00200	mg/L	1	0.0400	---	90	52-120%	---	---	Q-41
2,4-Dichlorophenol	0.0350	0.000500	0.00100	mg/L	1	0.0400	---	87	47-121%	---	---	Q-41
2,4-Dimethylphenol	0.0233	0.000500	0.00100	mg/L	1	0.0400	---	58	31-124%	---	---	
2,4-Dinitrophenol	0.0404	0.00250	0.00500	mg/L	1	0.0400	---	101	23-143%	---	---	
4,6-Dinitro-2-methylphenol	0.0365	0.00250	0.00500	mg/L	1	0.0400	---	91	44-137%	---	---	
2-Methylphenol	0.0285	0.000250	0.000500	mg/L	1	0.0400	---	71	30-120%	---	---	
3+4-Methylphenol(s)	0.0255	0.000250	0.000500	mg/L	1	0.0400	---	64	29-120%	---	---	
2-Nitrophenol	0.0327	0.00100	0.00200	mg/L	1	0.0400	---	82	47-123%	---	---	
4-Nitrophenol	0.0128	0.00100	0.00200	mg/L	1	0.0400	---	32	10-120%	---	---	
Pentachlorophenol (PCP)	0.0374	0.00100	0.00200	mg/L	1	0.0400	---	93	35-138%	---	---	B-02, Q-41
Phenol	0.0127	0.00200	0.00400	mg/L	1	0.0400	---	32	10-120%	---	---	
2,3,4,6-Tetrachlorophenol	0.0379	0.000500	0.00100	mg/L	1	0.0400	---	95	50-128%	---	---	Q-41
2,3,5,6-Tetrachlorophenol	0.0373	0.000500	0.00100	mg/L	1	0.0400	---	93	50-121%	---	---	Q-41
2,4,5-Trichlorophenol	0.0391	0.000500	0.00100	mg/L	1	0.0400	---	98	53-123%	---	---	Q-41
Nitrobenzene	0.0324	0.00100	0.00200	mg/L	1	0.0400	---	81	45-121%	---	---	
2,4,6-Trichlorophenol	0.0365	0.000500	0.00100	mg/L	1	0.0400	---	91	50-125%	---	---	Q-41
Bis(2-ethylhexyl)phthalate	0.0322	0.00200	0.00400	mg/L	1	0.0400	---	80	55-135%	---	---	
Butyl benzyl phthalate	0.0331	0.00200	0.00400	mg/L	1	0.0400	---	83	53-134%	---	---	
Diethylphthalate	0.0346	0.00200	0.00400	mg/L	1	0.0400	---	87	56-125%	---	---	
Dimethylphthalate	0.0348	0.00200	0.00400	mg/L	1	0.0400	---	87	45-127%	---	---	
Di-n-butylphthalate	0.0332	0.00200	0.00400	mg/L	1	0.0400	---	83	59-127%	---	---	
Di-n-octyl phthalate	0.0349	0.00200	0.00400	mg/L	1	0.0400	---	87	51-140%	---	---	
N-Nitrosodimethylamine	0.0189	0.000250	0.000500	mg/L	1	0.0400	---	47	10-120%	---	---	
N-Nitroso-di-n-propylamine	0.0377	0.000250	0.000500	mg/L	1	0.0400	---	94	49-120%	---	---	Q-41
N-Nitrosodiphenylamine	0.0316	0.000250	0.000500	mg/L	1	0.0400	---	79	51-123%	---	---	
Bis(2-Chloroethoxy) methane	0.0308	0.000250	0.000500	mg/L	1	0.0400	---	77	48-120%	---	---	
Bis(2-Chloroethyl) ether	0.0294	0.000250	0.000500	mg/L	1	0.0400	---	74	43-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	0.0287	0.000250	0.000500	mg/L	1	0.0400	---	72	37-130%	---	---	
Hexachlorobenzene	0.0337	0.000100	0.000200	mg/L	1	0.0400	---	84	53-125%	---	---	

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.

Darwin Thomas, Business Development Director

Page 63 of 83

NWN-PCI0781427

**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:
A0D0342 - 05 01 20 1122

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 0040593 - EPA 1311/3510C (BNA Extraction)						Water						
LCS (0040593-BS1)			Prepared: 04/17/20 11:02		Analyzed: 04/20/20 15:33							
Hexachlorobutadiene	0.0233	0.000250	0.000500	mg/L	1	0.0400	---	58	22-124%	---	---	
Hexachlorocyclopentadiene	0.0211	0.000500	0.00100	mg/L	1	0.0400	---	53	10-127%	---	---	
Hexachloroethane	0.0217	0.000250	0.000500	mg/L	1	0.0400	---	54	21-120%	---	---	
2-Chloronaphthalene	0.0284	0.000100	0.000200	mg/L	1	0.0400	---	71	40-120%	---	---	
1,2,4- Trichlorobenzene	0.0247	0.0000500	0.000500	mg/L	1	0.0400	---	62	29-120%	---	---	
4-Bromophenyl phenyl ether	0.0351	0.000250	0.000500	mg/L	1	0.0400	---	88	55-124%	---	---	
4-Chlorophenyl phenyl ether	0.0336	0.000250	0.000500	mg/L	1	0.0400	---	84	53-121%	---	---	
Aniline	0.0237	0.000500	0.00100	mg/L	1	0.0400	---	59	10-120%	---	---	
4-Chloroaniline	0.0298	0.000250	0.000500	mg/L	1	0.0400	---	74	33-120%	---	---	
2-Nitroaniline	0.0354	0.00200	0.00400	mg/L	1	0.0400	---	88	55-127%	---	---	
3-Nitroaniline	0.0320	0.00200	0.00400	mg/L	1	0.0400	---	80	41-128%	---	---	
4-Nitroaniline	0.0304	0.00200	0.00400	mg/L	1	0.0400	---	76	54-128%	---	---	
2,4-Dinitrotoluene	0.0347	0.00100	0.00200	mg/L	1	0.0400	---	87	57-128%	---	---	
2,6-Dinitrotoluene	0.0346	0.00100	0.00200	mg/L	1	0.0400	---	87	57-124%	---	---	
Benzoic acid	0.0456	0.0100	0.0200	mg/L	1	0.0800	---	57	10-120%	---	---	B-02, Q-41
Benzyl alcohol	0.0271	0.00100	0.00200	mg/L	1	0.0400	---	68	31-120%	---	---	
Isophorone	0.0321	0.000250	0.000500	mg/L	1	0.0400	---	80	42-124%	---	---	
Azobenzene (1,2-DPH)	0.0299	0.000250	0.000500	mg/L	1	0.0400	---	75	61-120%	---	---	
Bis(2-Ethylhexyl) adipate	0.0323	0.00250	0.00500	mg/L	1	0.0400	---	81	57-136%	---	---	
1,2-Dinitrobenzene	0.0349	0.00250	0.00500	mg/L	1	0.0400	---	87	59-120%	---	---	
1,3-Dinitrobenzene	0.0355	0.00250	0.00500	mg/L	1	0.0400	---	89	49-128%	---	---	
1,4-Dinitrobenzene	0.0360	0.00250	0.00500	mg/L	1	0.0400	---	90	72-130%	---	---	Q-41
Pyridine	0.0156	0.00100	0.00200	mg/L	1	0.0400	---	39	10-120%	---	---	
1,2-Dichlorobenzene	0.0231	0.000250	0.000500	mg/L	1	0.0400	---	58	32-120%	---	---	
1,3-Dichlorobenzene	0.0220	0.000250	0.000500	mg/L	1	0.0400	---	55	28-120%	---	---	
1,4-Dichlorobenzene	0.0225	0.000250	0.000500	mg/L	1	0.0400	---	56	29-120%	---	---	
Surr: Nitrobenzene-d5 (Surr) Recovery: 86 % Limits: 44-120 % Dilution: 1x												
2-Fluorobiphenyl (Surr) 72 % 44-120 % "												
Phenol-d6 (Surr) 30 % 10-133 % "												
p-Terphenyl-d14 (Surr) 87 % 50-134 % "												
2-Fluorophenol (Surr) 44 % 19-120 % "												
2,4,6-Tribromophenol (Surr) 101 % 43-140 % " Q-41												

LCS Dup (0040593-BSD1)

Prepared: 04/17/20 11:02 Analyzed: 04/20/20 16:10

Q-19

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040593 - EPA 1311/3510C (BNA Extraction)						Water						
LCS Dup (0040593-BSD1)			Prepared: 04/17/20 11:02		Analyzed: 04/20/20 16:10						Q-19	
1311/8270D												
Acenaphthene	0.0298	0.000100	0.000200	mg/L	1	0.0400	---	75	47-122%	1	30%	
Acenaphthylene	0.0317	0.000100	0.000200	mg/L	1	0.0400	---	79	41-130%	3	30%	
Anthracene	0.0336	0.000100	0.000200	mg/L	1	0.0400	---	84	57-123%	3	30%	
Benz(a)anthracene	0.0356	0.000100	0.000200	mg/L	1	0.0400	---	89	58-125%	6	30%	
Benzo(a)pyrene	0.0344	0.000150	0.000300	mg/L	1	0.0400	---	86	54-128%	4	30%	
Benzo(b)fluoranthene	0.0345	0.000150	0.000300	mg/L	1	0.0400	---	86	53-131%	3	30%	
Benzo(k)fluoranthene	0.0349	0.000150	0.000300	mg/L	1	0.0400	---	87	57-129%	6	30%	
Benzo(g,h,i)perylene	0.0357	0.000100	0.000200	mg/L	1	0.0400	---	89	50-134%	3	30%	
Chrysene	0.0343	0.000100	0.000200	mg/L	1	0.0400	---	86	59-123%	5	30%	
Dibenz(a,h)anthracene	0.0361	0.000100	0.000200	mg/L	1	0.0400	---	90	51-134%	5	30%	
Fluoranthene	0.0378	0.000100	0.000200	mg/L	1	0.0400	---	94	57-128%	6	30%	
Fluorene	0.0330	0.000100	0.000200	mg/L	1	0.0400	---	83	52-124%	0.8	30%	
Indeno(1,2,3-cd)pyrene	0.0349	0.000100	0.000200	mg/L	1	0.0400	---	87	52-134%	5	30%	
1-Methylnaphthalene	0.0286	0.000200	0.000400	mg/L	1	0.0400	---	72	41-120%	1	30%	
2-Methylnaphthalene	0.0280	0.000200	0.000400	mg/L	1	0.0400	---	70	40-121%	1	30%	
Naphthalene	0.0260	0.000200	0.000400	mg/L	1	0.0400	---	65	40-121%	0.5	30%	
Phenanthrene	0.0316	0.000100	0.000200	mg/L	1	0.0400	---	79	59-120%	3	30%	
Pyrene	0.0364	0.000100	0.000200	mg/L	1	0.0400	---	91	57-126%	7	30%	
Carbazole	0.0339	0.000150	0.000300	mg/L	1	0.0400	---	85	60-122%	6	30%	
Dibenzofuran	0.0321	0.000100	0.000200	mg/L	1	0.0400	---	80	53-120%	2	30%	
2-Chlorophenol	0.0326	0.000500	0.00100	mg/L	1	0.0400	---	82	38-120%	6	30%	
4-Chloro-3-methylphenol	0.0363	0.00100	0.00200	mg/L	1	0.0400	---	91	52-120%	0.5	30%	Q-41
2,4-Dichlorophenol	0.0362	0.000500	0.00100	mg/L	1	0.0400	---	90	47-121%	3	30%	Q-41
2,4-Dimethylphenol	0.0278	0.000500	0.00100	mg/L	1	0.0400	---	69	31-124%	18	30%	
2,4-Dinitrophenol	0.0408	0.00250	0.00500	mg/L	1	0.0400	---	102	23-143%	1	30%	
4,6-Dinitro-2-methylphenol	0.0370	0.00250	0.00500	mg/L	1	0.0400	---	93	44-137%	1	30%	
2-Methylphenol	0.0306	0.000250	0.000500	mg/L	1	0.0400	---	76	30-120%	7	30%	
3+4-Methylphenol(s)	0.0271	0.000250	0.000500	mg/L	1	0.0400	---	68	29-120%	6	30%	
2-Nitrophenol	0.0344	0.00100	0.00200	mg/L	1	0.0400	---	86	47-123%	5	30%	
4-Nitrophenol	0.0144	0.00100	0.00200	mg/L	1	0.0400	---	36	10-120%	12	30%	
Pentachlorophenol (PCP)	0.0387	0.00100	0.00200	mg/L	1	0.0400	---	97	35-138%	3	30%	B-02, Q-41
Phenol	0.0141	0.00200	0.00400	mg/L	1	0.0400	---	35	10-120%	10	30%	
2,3,4,6-Tetrachlorophenol	0.0386	0.000500	0.00100	mg/L	1	0.0400	---	97	50-128%	2	30%	Q-41

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.

Darwin Thomas, Business Development Director

Page 65 of 83

NWN-PCI0781429

**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:
A0D0342 - 05 01 20 1122

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 0040593 - EPA 1311/3510C (BNA Extraction)						Water						
LCS Dup (0040593-BSD1)			Prepared: 04/17/20 11:02 Analyzed: 04/20/20 16:10						Q-19			
2,3,5,6-Tetrachlorophenol	0.0379	0.000500	0.00100	mg/L	1	0.0400	---	95	50-121%	1	30%	Q-41
2,4,5-Trichlorophenol	0.0401	0.000500	0.00100	mg/L	1	0.0400	---	100	53-123%	3	30%	Q-41
Nitrobenzene	0.0336	0.00100	0.00200	mg/L	1	0.0400	---	84	45-121%	4	30%	
2,4,6-Trichlorophenol	0.0379	0.000500	0.00100	mg/L	1	0.0400	---	95	50-125%	4	30%	Q-41
Bis(2-ethylhexyl)phthalate	0.0337	0.00200	0.00400	mg/L	1	0.0400	---	84	55-135%	5	30%	
Butyl benzyl phthalate	0.0346	0.00200	0.00400	mg/L	1	0.0400	---	86	53-134%	4	30%	
Diethylphthalate	0.0351	0.00200	0.00400	mg/L	1	0.0400	---	88	56-125%	1	30%	
Dimethylphthalate	0.0355	0.00200	0.00400	mg/L	1	0.0400	---	89	45-127%	2	30%	
Di-n-butylphthalate	0.0357	0.00200	0.00400	mg/L	1	0.0400	---	89	59-127%	7	30%	
Di-n-octyl phthalate	0.0357	0.00200	0.00400	mg/L	1	0.0400	---	89	51-140%	2	30%	
N-Nitrosodimethylamine	0.0203	0.000250	0.000500	mg/L	1	0.0400	---	51	10-120%	7	30%	
N-Nitroso-di-n-propylamine	0.0383	0.000250	0.000500	mg/L	1	0.0400	---	96	49-120%	2	30%	Q-41
N-Nitrosodiphenylamine	0.0317	0.000250	0.000500	mg/L	1	0.0400	---	79	51-123%	0.5	30%	
Bis(2-Chloroethoxy) methane	0.0315	0.000250	0.000500	mg/L	1	0.0400	---	79	48-120%	2	30%	
Bis(2-Chloroethyl) ether	0.0308	0.000250	0.000500	mg/L	1	0.0400	---	77	43-120%	5	30%	
2,2'-Oxybis(1-Chloropropane)	0.0297	0.000250	0.000500	mg/L	1	0.0400	---	74	37-130%	3	30%	
Hexachlorobenzene	0.0341	0.000100	0.000200	mg/L	1	0.0400	---	85	53-125%	1	30%	
Hexachlorobutadiene	0.0229	0.000250	0.000500	mg/L	1	0.0400	---	57	22-124%	2	30%	
Hexachlorocyclopentadiene	0.0219	0.000500	0.00100	mg/L	1	0.0400	---	55	10-127%	3	30%	
Hexachloroethane	0.0216	0.000250	0.000500	mg/L	1	0.0400	---	54	21-120%	0.6	30%	
2-Chloronaphthalene	0.0294	0.000100	0.000200	mg/L	1	0.0400	---	74	40-120%	4	30%	
1,2,4-Trichlorobenzene	0.0246	0.0000500	0.000500	mg/L	1	0.0400	---	62	29-120%	0.4	30%	
4-Bromophenyl phenyl ether	0.0352	0.000250	0.000500	mg/L	1	0.0400	---	88	55-124%	0.3	30%	
4-Chlorophenyl phenyl ether	0.0339	0.000250	0.000500	mg/L	1	0.0400	---	85	53-121%	0.9	30%	
Aniline	0.0279	0.000500	0.00100	mg/L	1	0.0400	---	70	10-120%	16	30%	
4-Chloroaniline	0.0331	0.000250	0.000500	mg/L	1	0.0400	---	83	33-120%	11	30%	
2-Nitroaniline	0.0369	0.00200	0.00400	mg/L	1	0.0400	---	92	55-127%	4	30%	
3-Nitroaniline	0.0340	0.00200	0.00400	mg/L	1	0.0400	---	85	41-128%	6	30%	
4-Nitroaniline	0.0326	0.00200	0.00400	mg/L	1	0.0400	---	82	54-128%	7	30%	
2,4-Dinitrotoluene	0.0358	0.00100	0.00200	mg/L	1	0.0400	---	90	57-128%	3	30%	
2,6-Dinitrotoluene	0.0354	0.00100	0.00200	mg/L	1	0.0400	---	89	57-124%	2	30%	
Benzoic acid	0.0455	0.0100	0.0200	mg/L	1	0.0800	---	57	10-120%	0.3	30%	B-02, Q-41
Benzyl alcohol	0.0292	0.00100	0.00200	mg/L	1	0.0400	---	73	31-120%	7	30%	
Isophorone	0.0329	0.000250	0.000500	mg/L	1	0.0400	---	82	42-124%	2	30%	

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.

Darwin Thomas, Business Development Director

Page 66 of 83

NWN-PCI0781430

**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:
A0D0342 - 05 01 20 1122

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 0040593 - EPA 1311/3510C (BNA Extraction)							Water					
LCS Dup (0040593-BSD1)			Prepared: 04/17/20 11:02		Analyzed: 04/20/20 16:10		Q-19					
Azobenzene (1,2-DPH)	0.0297	0.000250	0.000500	mg/L	1	0.0400	---	74	61-120%	0.6	30%	Q-41
Bis(2-Ethylhexyl) adipate	0.0341	0.00250	0.00500	mg/L	1	0.0400	---	85	57-136%	5	30%	
1,2-Dinitrobenzene	0.0350	0.00250	0.00500	mg/L	1	0.0400	---	88	59-120%	0.4	30%	
1,3-Dinitrobenzene	0.0364	0.00250	0.00500	mg/L	1	0.0400	---	91	49-128%	2	30%	
1,4-Dinitrobenzene	0.0370	0.00250	0.00500	mg/L	1	0.0400	---	93	72-130%	3	30%	
Pyridine	0.0165	0.00100	0.00200	mg/L	1	0.0400	---	41	10-120%	6	30%	
1,2-Dichlorobenzene	0.0230	0.000250	0.000500	mg/L	1	0.0400	---	57	32-120%	0.5	30%	
1,3-Dichlorobenzene	0.0220	0.000250	0.000500	mg/L	1	0.0400	---	55	28-120%	0.3	30%	
1,4-Dichlorobenzene	0.0225	0.000250	0.000500	mg/L	1	0.0400	---	56	29-120%	0.1	30%	
Surr: Nitrobenzene-d5 (Surr)		Recovery: 86 %		Limits: 44-120 %		Dilution: 1x						
2-Fluorobiphenyl (Surr)		72 %		44-120 %		"						
Phenol-d6 (Surr)		32 %		10-133 %		"						
p-Terphenyl-d14 (Surr)		87 %		50-134 %		"						
2-Fluorophenol (Surr)		47 %		19-120 %		"						
2,4,6-Tribromophenol (Surr)		99 %		43-140 %		"		Q-41				

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.

Darwin Thomas, Business Development Director

Page 67 of 83

NWN-PCI0781431

**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:
A0D0342 - 05 01 20 1122

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	Limits	RPD	RPD Limit	Notes
Batch 0040528 - EPA 3051A						Solid						
Blank (0040528-BLK1)				Prepared: 04/16/20 07:39 Analyzed: 04/16/20 14:59								
EPA 6020A												
Arsenic	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Barium	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	96.2	192	ug/kg wet	10	---	---	---	---	---	---	
Chromium	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Lead	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Mercury	ND	38.5	76.9	ug/kg wet	10	---	---	---	---	---	---	
Selenium	ND	481	962	ug/kg wet	10	---	---	---	---	---	---	
Silver	ND	96.2	192	ug/kg wet	10	---	---	---	---	---	---	
LCS (0040528-BS1)				Prepared: 04/16/20 07:39 Analyzed: 04/16/20 15:04								
EPA 6020A												
Arsenic	50500	500	1000	ug/kg wet	10	50000	---	101	80-120%	---	---	
Barium	51400	500	1000	ug/kg wet	10	50000	---	103	80-120%	---	---	
Cadmium	50200	100	200	ug/kg wet	10	50000	---	100	80-120%	---	---	
Chromium	51000	500	1000	ug/kg wet	10	50000	---	102	80-120%	---	---	
Lead	56300	500	1000	ug/kg wet	10	50000	---	113	80-120%	---	---	
Mercury	1080	40.0	80.0	ug/kg wet	10	1000	---	108	80-120%	---	---	
Selenium	25600	500	1000	ug/kg wet	10	25000	---	102	80-120%	---	---	
Silver	26200	100	200	ug/kg wet	10	25000	---	105	80-120%	---	---	
Duplicate (0040528-DUP1)				Prepared: 04/16/20 07:39 Analyzed: 04/16/20 15:36								
QC Source Sample: IPCVS-041420-3 Composite (A0D0342-04)												
EPA 6020A												
Arsenic	787	579	1160	ug/kg dry	10	---	ND	---	---		40%	Q-05, J
Barium	12900	579	1160	ug/kg dry	10	---	3760	---	---	110	40%	Q-04
Cadmium	ND	116	232	ug/kg dry	10	---	ND	---	---	---	40%	
Chromium	7470	579	1160	ug/kg dry	10	---	947	---	---	155	40%	Q-04
Lead	886	579	1160	ug/kg dry	10	---	ND	---	---		40%	Q-05, J
Mercury	ND	46.3	92.6	ug/kg dry	10	---	ND	---	---	---	40%	
Selenium	ND	579	1160	ug/kg dry	10	---	ND	---	---	---	40%	
Silver	ND	116	232	ug/kg dry	10	---	ND	---	---	---	40%	

Matrix Spike (0040528-MS1)

Prepared: 04/16/20 07:39 Analyzed: 04/16/20 15:41

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.

Darwin Thomas, Business Development Director



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:
A0D0342 - 05 01 20 1122

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 0040528 - EPA 3051A							Solid					
Matrix Spike (0040528-MS1)				Prepared: 04/16/20 07:39 Analyzed: 04/16/20 15:41								
QC Source Sample: IPCVS-041420-3 Composite (A0D0342-04)												
EPA 6020A												
Arsenic	53500	562	1120	ug/kg dry	10	56200	ND	95	75-125%	---	---	
Barium	70000	562	1120	ug/kg dry	10	56200	3760	118	75-125%	---	---	
Cadmium	54000	112	225	ug/kg dry	10	56200	ND	96	75-125%	---	---	
Chromium	54200	562	1120	ug/kg dry	10	56200	947	95	75-125%	---	---	
Lead	59800	562	1120	ug/kg dry	10	56200	ND	106	75-125%	---	---	
Mercury	1150	45.0	89.9	ug/kg dry	10	1120	ND	103	75-125%	---	---	
Selenium	28400	562	1120	ug/kg dry	10	28100	ND	101	75-125%	---	---	
Silver	27600	112	225	ug/kg dry	10	28100	ND	98	75-125%	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040585 - EPA 1311/3015						Solid						
Blank (0040585-BLK1)				Prepared: 04/17/20 09:08 Analyzed: 04/17/20 17:51								
1311/6020A												
Arsenic	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLP
Barium	ND	2500	5000	ug/L	10	---	---	---	---	---	---	TCLP
Cadmium	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLP
Chromium	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLP
Lead	ND	25.0	50.0	ug/L	10	---	---	---	---	---	---	TCLP
Mercury	ND	3.50	7.00	ug/L	10	---	---	---	---	---	---	TCLP
Selenium	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLP
Silver	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLP
LCS (0040585-BS1)				Prepared: 04/17/20 09:08 Analyzed: 04/17/20 17:56								
1311/6020A												
Arsenic	4840	50.0	100	ug/L	10	5000	---	97	80-120%	---	---	TCLP
Barium	9810	2500	5000	ug/L	10	10000	---	98	80-120%	---	---	TCLP
Cadmium	951	50.0	100	ug/L	10	1000	---	95	80-120%	---	---	TCLP
Chromium	4910	50.0	100	ug/L	10	5000	---	98	80-120%	---	---	TCLP
Lead	5090	25.0	50.0	ug/L	10	5000	---	102	80-120%	---	---	TCLP
Mercury	103	3.50	7.00	ug/L	10	100	---	103	80-120%	---	---	TCLP
Selenium	1030	50.0	100	ug/L	10	1000	---	103	80-120%	---	---	TCLP
Silver	997	50.0	100	ug/L	10	1000	---	100	80-120%	---	---	TCLP
Matrix Spike (0040585-MS1)				Prepared: 04/17/20 09:08 Analyzed: 04/17/20 18:06								
QC Source Sample: IPCVS-041420-3 Composite (A0D0342-04)												
1311/6020A												
Arsenic	4720	50.0	100	ug/L	10	5000	ND	94	50-150%	---	---	
Barium	9800	2500	5000	ug/L	10	10000	ND	98	50-150%	---	---	
Cadmium	932	50.0	100	ug/L	10	1000	ND	93	50-150%	---	---	
Chromium	4820	50.0	100	ug/L	10	5000	ND	96	50-150%	---	---	
Lead	4880	25.0	50.0	ug/L	10	5000	ND	98	50-150%	---	---	
Mercury	98.1	3.50	7.00	ug/L	10	100	ND	98	50-150%	---	---	
Selenium	1010	50.0	100	ug/L	10	1000	ND	101	50-150%	---	---	
Silver	974	50.0	100	ug/L	10	1000	ND	97	50-150%	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

QUALITY CONTROL (QC) SAMPLE RESULTS**Total Cyanide by Flow Analysis (Non-Aqueous/Water Leach)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0040656 - DI Leach						Soil						
Blank (0040656-BLK1)			Prepared: 04/21/20 11:03 Analyzed: 04/21/20 12:20									
EPA 9013M/9012												
Total Cyanide	ND	0.100	0.100	mg/kg wet	1	---	---	---	---	---	---	
LCS (0040656-BS1)			Prepared: 04/21/20 11:03 Analyzed: 04/21/20 12:22									
EPA 9013M/9012												
Total Cyanide	3.83	0.100	0.100	mg/kg wet	1	4.00	---	96	76-120%	---	---	
Duplicate (0040656-DUP1)			Prepared: 04/21/20 11:03 Analyzed: 04/21/20 12:26									
QC Source Sample: Non-SDG (A0D0328-03)												
Total Cyanide	ND	0.108	0.108	mg/kg dry	1	---	ND	---	---	---	20%	
Matrix Spike (0040656-MS1)			Prepared: 04/21/20 11:03 Analyzed: 04/21/20 12:28									
QC Source Sample: Non-SDG (A0D0328-03)												
EPA 9013M/9012												
Total Cyanide	4.28	0.108	0.108	mg/kg dry	1	4.31	ND	99	76-120%	---	---	

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.

Darwin Thomas, Business Development Director

Page 71 of 83

NWN-PCI0781435



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:
A0D0342 - 05 01 20 1122

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 0040521 - DI Leach						Soil						
Duplicate (0040521-DUP1)				Prepared: 04/15/20 16:40 Analyzed: 04/15/20 18:04								
EPA 9045D												
Soil pH (measured in H2O)	7.68			pH Units	1	---		---	---		5%	pH_S
pH Temperature (deg C)	24.4			pH Units	1	---		---	---		30%	pH_S
Reference (0040521-SRM1)				Prepared: 04/15/20 16:40 Analyzed: 04/15/20 18:01								
EPA 9045D												
Soil pH (measured in H2O)	6.00			pH Units	1	6.00		100	33333-101.666	---	---	
pH Temperature (deg C)	22.7			pH Units	1	20.0		114	50-200%	---	---	
Reference (0040521-SRM2)				Prepared: 04/15/20 16:40 Analyzed: 04/15/20 18:05								
EPA 9045D												
Soil pH (measured in H2O)	7.94			pH Units	1	8.00		99	98.75-101.25%	---	---	
pH Temperature (deg C)	22.7			pH Units	1	20.0		114	50-200%	---	---	

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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 0040579 - Total Solids (Dry Weight)							Soil					
Duplicate (0040579-DUP1)			Prepared: 04/17/20 08:29 Analyzed: 04/20/20 08:39									
QC Source Sample: Non-SDG (A0D0314-03)												
% Solids	71.2	1.00	1.00	%	1	---	71.2	---	---	0.09	10%	
Duplicate (0040579-DUP2)			Prepared: 04/17/20 08:29 Analyzed: 04/20/20 08:39									
QC Source Sample: Non-SDG (A0D0314-20)												
% Solids	86.6	1.00	1.00	%	1	---	86.2	---	---	0.5	10%	
Duplicate (0040579-DUP3)			Prepared: 04/17/20 18:31 Analyzed: 04/20/20 08:39									
QC Source Sample: Non-SDG (A0D0325-01)												
% Solids	18.3	1.00	1.00	%	1	---	18.8	---	---	3	10%	
Duplicate (0040579-DUP4)			Prepared: 04/17/20 18:31 Analyzed: 04/20/20 08:39									
QC Source Sample: Non-SDG (A0D0418-05)												
% Solids	70.8	1.00	1.00	%	1	---	70.8	---	---	0.009	10%	

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

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

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
<u>Batch: 0040556</u>							
A0D0342-04RE1	Solid	NWTPH-Dx	04/14/20 14:30	04/16/20 12:52	10.96g/5mL	10g/5mL	0.91

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
<u>Batch: 0040620</u>							
A0D0342-04	Solid	NWTPH-Gx (MS)	04/14/20 14:30	04/15/20 16:24	4.31g/15mL	5g/5mL	3.48

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
<u>Batch: 0040620</u>							
A0D0342-04	Solid	5035A/8260C	04/14/20 14:30	04/15/20 16:24	4.31g/15mL	5g/5mL	3.48
<u>Batch: 0040648</u>							
A0D0342-04RE1	Solid	5035A/8260C	04/14/20 14:30	04/15/20 16:24	4.31g/15mL	5g/5mL	3.48

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
<u>Batch: 0040577</u>							
A0D0342-04	Solid	1311/8260C	04/14/20 14:30	04/17/20 07:53	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
<u>Batch: 0040551</u>							
A0D0342-04	Solid	EPA 8270D	04/14/20 14:30	04/16/20 11:06	15.14g/5mL	15g/2mL	2.48

TCLP Semivolatile Organic Compounds by EPA 1311/8270D

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.

Darwin Thomas, Business Development Director

**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:
A0D0342 - 05 01 20 1122

SAMPLE PREPARATION INFORMATION**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
<u>Batch: 0040593</u>							
A0D0342-04RE1	Solid	1311/8270D	04/14/20 14:30	04/17/20 11:02	200mL/2mL	200mL/2mL	1.00

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0040528</u>							
A0D0342-04	Solid	EPA 6020A	04/14/20 14:30	04/16/20 07:39	0.465g/50mL	0.5g/50mL	1.08

TCLP Metals by EPA 6020A (ICPMS)

Prep: EPA 1311/3015

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0040585</u>							
A0D0342-04	Solid	1311/6020A	04/14/20 14:30	04/17/20 09:08	10mL/50mL	10mL/50mL	1.00

Total Cyanide by Flow Analysis (Non-Aqueous/Water Leach)

Prep: DI Leach

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0040656</u>							
A0D0342-04	Solid	EPA 9013M/9012	04/14/20 14:30	04/21/20 11:03	2.5038g/50mL	2.5g/50mL	1.00

Conventional Chemistry Parameters

Prep: DI Leach

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0040521</u>							
A0D0342-04	Solid	EPA 9045D	04/14/20 14:30	04/15/20 16:40	10.1745g/20mL	10g/10mL	NA

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0040579</u>							
A0D0342-04	Solid	EPA 8000C	04/14/20 14:30	04/17/20 18:31			NA

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.

Darwin Thomas, Business Development Director



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:
A0D0342 - 05 01 20 1122

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

TCLP Extraction by EPA 1311

Prep: EPA 1311 (TCLP)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0040545</u>							
A0D0342-04	Solid	EPA 1311	04/14/20 14:30	04/16/20 15:15	100g/2000mL	100g/2000mL	NA

Prep: EPA 1311 TCLP/ZHE

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0040562</u>							
A0D0342-04	Solid	EPA 1311 ZHE	04/14/20 14:30	04/16/20 15:45	20g/400mL	25g/500mL	NA

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.

Darwin Thomas, Business Development Director



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:
A0D0342 - 05 01 20 1122

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- B-02** Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
- COMP** Sample is a composite of discrete samples. See prep information for details.
- F-13** The chromatographic pattern does not resemble the fuel standard used for quantitation
- F-15** Results for diesel are estimated due to overlap from the reported oil result.
- F-16** Results for oil are estimated due to overlap from the reported diesel result.
- J** Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- M-02** Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
- M-05** Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
- pH_S** Method recommends preparation 'as soon as possible'. See Sample Preparation Information section of report for details. Consult regulator or permit manager to determine the usability of data for intended purpose.
- Q-01** Spike recovery and/or RPD is outside acceptance limits.
- Q-04** Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-18** Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-39** Results for sample duplicate are significantly higher than the sample results. See duplicate results in QC section of the report.
- Q-41** Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-42** Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
- Q-52** Due to erratic or low blank spike recoveries, results for this analyte are considered Estimated Values.
- Q-54** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +2%. The results are reported as Estimated Values.
- Q-54a** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +21%. The results are reported as Estimated Values.
- Q-54b** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +3%. The results are reported as Estimated Values.
- Q-54c** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +6%. The results are reported as Estimated Values.

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.

Darwin Thomas, Business Development Director



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:

A0D0342 - 05 01 20 1122

- Q-54d** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +8%. The results are reported as Estimated Values.
- Q-55** Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260C, however there is adequate sensitivity to ensure detection at the reporting level.
- 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.
- R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
- 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 0040545.
- TCLPa** This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 0040562.
- V-15** Sample aliquot was subsampled from the sample container. The subsampled aliquot was preserved in the laboratory within 48 hours of sampling.

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.

Darwin Thomas, Business Development Director

Page 78 of 83

NWN-PCI0781442



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:
A0D0342 - 05 01 20 1122

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

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.

Darwin Thomas, Business Development Director



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:
A0D0342 - 05 01 20 1122

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

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.

Darwin Thomas, Business Development Director

