Sevenson Environmental Services, Inc.

Sevenson Environmental Services
2749 Lockport Road
Niagara Falls, NY 14305
Phone 716.284.0431
Fax 716.284.1796

October 17, 2023

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

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

Dear Mr. Krening:

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

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

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

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

Sample data are attached to the profile from testing of the solid material accumulated within the Vapor Phase Carbon Tank (T-125) located at Siltronic pretreatment plant. The sample of material within this Tank was submitted to Apex Laboratories, LLC on July 17, 2023 for analysis of: dry weight, total metals, leachable metals (toxicity characteristic leaching procedure-TCLP), total cyanide, total volatile organic compounds (VOCs) and TCLP VOCs, total semi volatile organic compounds (SVOCs) and TCLP SVOCs, low level mercury, and heat of combustion.

Attached please find the profile for this waste stream (Profile OR356805). Also attached please find the Apex Laboratory analytical report (A3G1118) dated July 17, 2023 documenting the chemistry of the residual treatment materials, and Table 1, a summary of those testing results.

As indicated on the laboratory testing and as described in the attached profile (OR356805), it is requested that Waste Management Inc. approve disposal of the contaminated coalescing media residuals as F002 hazardous waste at the Chemical Waste Management (CWM) RCRA Subtitle C permitted landfill in Arlington, Oregon. NW Natural anticipates the generation of similar quantities of accumulated residuals on a frequency of approximately two times per year. Prior to arranging for disposal of future accumulations of residuals from the Siltronic Vapor Carbon T-125 under Profile OR356805, sampling and characterization will be completed identical to that described herein in order to confirm the residuals match the profile in-place at that time. These data will be provided for Waste Management's information and use prior to disposal.

Please contact me if you have any questions.

Thank You,

William Byrd
Sevenson Environmental Services

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

Enclosures:
Table 1— Apex Charted Lab Results
Waste Management profile OR356805
Apex Laboratory Report #A3G1118

Table 1: Apex Charted Lab Results

		Sample	**T-125 Vapor Phase Carbon**	
		Sample ID	**T125-071723-3**	
		LAB ID	**A3G1118-01**	
	EPA Toxicity Characteristic (TC) Regulatory Threshold Values		**Results**	**Qualifier**
	20x EPA TC values in ug/kg*	**Actual EPA TC values in ug/L**		
Diesel (ug/kg dry)			<9820	
Oil (ug/kg dry)			<19600	
Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx (ug/kg dry)			**10,100**	
Volatile Organic Compounds by EPA 8260D			**ug/kg dry**	
Acetone			<605	
Benzene	10,000	500	**6660**	
Bromobenzene			<15.1	
Bromochloromethane			<30.3	
Bromodichloromethane			<30.3	
Bromoform			<60.5	
Bromomethane			<605	
2-Butanone (MEK)	4,000,000	200,000	<303	
n-Butylbenzene			<30.3	
sec-Butylbenzene			<30.3	
tert-Butylbenzene			<30.3	
Carbon tetrachloride	10,000	500	**30.9**	**J**
Chlorobenzene	2,000,000	100,000	<15.1	
Chloroethane			<303	
Chloroform	120,000	6,000	<30.3	
Chloromethane			**324**	
2-Chlorotoluene			<30.3	
4-Chlorotoluene			<30.3	
Dibromochloromethane			<60.5	
1,2-Dibromo-3-chloropropane			<151	
1,2-Dibromoethane (EDB)			<30.3	
Dibromomethane			<30.3	
1,2-Dichlorobenzene			<15.1	
1,3-Dichlorobenzene			<15.1	
1,4-Dichlorobenzene	150,000	7,500	<15.1	
Dichlorodifluoromethane			<60.5	
1,1-Dichloroethane			**49.0**	
1,2-Dichloroethane (EDC)	10,000	500	**34.5**	
1,1-Dichloroethene	14,000	700	**28.4**	**J**
cis-1,2-Dichloroethene			**3640**	
trans-1,2-Dichloroethene			**105**	
1,2-Dichloropropane			<15.1	
1,3-Dichloropropane			<30.3	
2,2-Dichloropropane			<30.3	
1,1-Dichloropropene			<30.3	
cis-1,3-Dichloropropene			<30.3	
trans-1,3-Dichloropropene			<30.3	
Ethylbenzene			<15.1	
Hexachlorobutadiene	10,000	500	<60.5	
2-Hexanone			<303	
Isopropylbenzene			<30.3	
4-Isopropyltoluene			<30.3	
Methylene chloride			<303	
4-Methyl-2-pentanone (MiBK)			<303	
Methyl tert-butyl ether (MTBE)			**15,600**	

Table 1: Apex Charted Lab Results

Naphthalene			<60.5	
n-Propylbenzene			<15.1	
Styrene			<30.3	
1,1,1,2-Tetrachloroethane			<15.1	
1,1,2,2-Tetrachloroethane			<30.3	
Tetrachloroethene (PCE)	14,000	700	<15.1	
Toluene			<30.3	
1,2,3-Trichlorobenzene			<151	
1,2,4-Trichlorobenzene			<151	
1,1,1-Trichloroethane			<15.1	
1,1,2-Trichloroethane			<15.1	
Trichloroethene (TCE)	10,000	500	<15.1	
Trichlorofluromethane			<60.5	
1,2,3-Trichloropropane			<30.3	
1,2,4-Trimethylbenzene			<30.3	
1,3,5-Trimethylbenzene			<30.3	
Vinyl chloride	4,000	200	**214**	
m,p-Xylene			<30.3	
o-Xylene			<15.1	
TCLP Volatile Organic Compounds by EPA1311/8260D			**ug/L**	
Acetone			<500	
Benzene	10,000	500	**7.00**	**J**
Bromobenzene			<12.5	
Bromochloromethane			<25.0	
Bromodichloromethane			<25.0	
Bromoform			<25.0	
Bromomethane			<250	
2-Butanone (MEK)	4,000,000	200,000	<250	
n-Butylbenzene			<25.0	
sec-Butylbenzene			<25.0	
tert-Butylbenzene			<25.0	
Carbon tetrachloride	10,000	500	<25.0	
Chlorobenzene	2,000,000	100,000	<12.5	
Chloroethane			<250	
Chloroform	120,000	6,000	<25.0	
Chloromethane			<125	
2-Chlorotoluene			<25.0	
4-Chlorotoluene			<25.0	
1,2-Dibromo-3-chloropropane			<125	
Dibromochloromethane			<25.0	
1,2-Dibromoethane (EDB)			<12.5	
Dibromomethane			<25.0	
1,2-Dichlorobenzene			<12.5	
1,3-Dichlorobenzene			<12.5	
1,4-Dichlorobenzene	150,000	7,500	<12.5	
Dichlorodifluoromethane			<25.0	
1,1-Dichloroethane			<12.5	
1,1-Dichloroethene	14,000	700	<12.5	
1,2-Dichloroethane (EDC)	10,000	500	<12.5	
cis-1,2-Dichloroethene			<25.0	
trans-1,2-Dichloroethene			<12.5	
1,2-Dichloropropane			<12.5	
1,3-Dichloropropane			<25.0	
2,2-Dichloropropane			<25.0	
1,1-Dichloropropene			<25.0	
cis-1,3-Dichloropropene			<25.0	

Table 1: Apex Charted Lab Results

trans-1,3-Dichloropropene			<25.0	
Ethylbenzene			<12.5	
Hexachlorobutaldiene	10,000	500	<125	
2-Hexanone			<250	
Isopropylbenzene			<25.0	
4-Isopropyltoluene			<25.0	
4-Methyl-2-pentanone (MiBK)			<250	
Methyl tert-butyl ether (MTBE)			<25.0	
Methylene chloride			<250	
n-Propylbenzene			<12.5	
Stryrene			<25.0	
1,1,1,2-Tetrachloroethane			<12.5	
1,1,2,2-Tetrachloroethane			<12.5	
Naphthalene			<50.0	
Tetrachloroethene (PCE)	14,000	700	<12.5	
Toluene			<25.0	
1,2,3-Trichlorobenzene			<25.0	
1,2,4-Trichlorobenzene			<50.0	
1,1,1-Trichloroethane			<12.5	
1,1,2-Trichloroethane			<12.5	
Trichloroethene (TCE)	10,000	500	<12.5	
Trichlorofluromethane			<50.0	
1,2,3-Trichloropropane			<25.0	
1,2,4-Trimethylbenzene			<25.0	
1,3,5-Trimethylbenzene			<25.0	
Vinyl chloride	4,000	200	<12.5	
m,p-Xylene			<25.0	
o-Xylene			<12.5	
Semivolatile Organic Compounds by EPA 8270E			**ug/kg dry**	
Acenaphthene			<3.60	
Acenaphthylene			<3.60	
Anthracene			<3.60	
Benz(a)anthracene			<3.60	
Benzo(a)pyrene			<5.42	
Benzo(b)fluoranthene			<5.42	
Benzo(k)fluoranthene			<5.42	
Benzo(g,h,i)perylene			<3.60	
Chrysene			<3.60	
Dibenz(a,h)anthracene			<3.60	
Fluoranthene			<3.60	
Fluorene			<3.60	
Indeno(1,2,3-cd)pyrene			<3.60	
1-Methlnaphthalene			<7.23	
2-Methlnaphthalene			<7.23	
Naphthalene			**31.4**	
Phenanthrene			<3.60	
Pyrene			<3.60	
Carbazole			<5.42	
Dibenzofuran			<3.60	
2-Chlorophenol			<18.1	
4-Chloro-3-methyplenol			<36.0	
2,4-Dichlorophenol			<18.1	
2,4-Dimethyphenol			<18.1	
2,4-Dinitrophenol			<90.2	

Table 1: Apex Charted Lab Results

4,6-Dinitro-2-methylphenol			<90.2	
2-Methylphenol	4,000,000	200,000	<9.02	
3+4-Methyphenol(s)			<9.02	
2-Niptrophenol			<36.0	
4-Nitrophenol			<36.0	
Pentachlorophenol(PCP)	2,000,000	100,000	<36.0	
Phenol			<7.23	
2,3,4,6-Tetrachlorophenol			<18.1	
2,3,5,6-Tetrachlorophenol			<18.1	
2,4,5-Trichlorophenol	8,000,000	400,000	<18.1	
2,4,6-Trichlorophenol	40,000	2,000	<18.1	
Bis(2-ethylhexyl)phthalate			<54.2	
Butyl benzyl phtalate			<36.0	
Diethyphthalate			<36.0	
Dimethylphthalate			<36.0	
Di-n-butylphthalate			<36.0	
Di-n-octyl phthalate			<36.0	
N-Nitrosodimethylamine			<9.02	
N-Nitroso-di-n-propylamine			<9.02	
N-Nitrosodiphenylamine			<9.02	
Bis(2-Chloroethoxy) methane			<9.02	
Bis(2-Chloroethyl) ether			<9.02	
2,2'- Oxybis (1-Chloropropane)			<9.02	
Hexachlorobenzene	2,600	130	<3.60	
Hexachlorobutadiene	10,000	500	<9.02	
Hexachlorocyclopentadiene			<18.1	
Hexachloroethane	60,000	3,000	<9.02	
2-Chloronaphthalene			<3.60	
1,2,4-Trichlorobenzene			**46.7**	
4-Bromophenyl phenyl ether			<9.02	
4-Chlorophenyl phenyl ether			<9.02	
Aniline			<18.1	
4-Chloroaniline			<9.02	
2-Nitroaniline			<72.3	
3-Nitroaniline			<72.3	
4-Nitroaniline			<72.3	
Nitrobenzene	40,000	2,000	<36.0	
2,4-Dinitrotoluene	2,600	130	<36.0	
2,6-Dinitrotoluene			<36.0	
Benzoic acid			<452	
Benzyl alchohol			<18.1	
Isophorone			<9.02	
Azobenzene (1,2-DPH)			<9.02	
Bis(2-Ethylhexyl)adipate			<90.2	
3,3'-Dichlorobenzidine			<72.3	Q-52
1,2-Dinitrobenzene			<90.2	
1,3-Dinitrobenzene			<90.2	
1,4-Dinitrobenzene			<90.2	
Pyridine	100,000	5,000	<18.1	
1,2-Dichlorobenzene			**48.6**	
1,3-Dichlorobenzene			**64.0**	
1,4-Dichlorobenzene	150,000	7,500	**27.7**	
TCLP Semivolatile Organic Compounds by EPA 8270D (ug/L)			**ug/L**	
Acenaphthene			<1.00	

Table 1: Apex Charted Lab Results

Acenaphthylene			<1.00	
Anthracene			<1.00	
Benz(a)anthracene			<1.00	
Benzo(a)pyrene			<1.50	
Benzo(b)fluoranthene			<1.50	
Benzo(k)fluoranthene			<1.50	
Benzo(g,h,i)perylene			<1.00	
Chrysene			<1.00	
Dibenz(a,h)anthracene			<1.00	
Fluoranthene			<1.00	
Fluorene			<1.00	
Indeno(1,2,3-cd)pyrene			<1.00	
1-Methlnaphthalene			<2.00	
2-Methlnaphthalene			<2.00	
Naphthalene			<2.00	
Phenanthrene			<1.00	
Pyrene			<1.00	
Carbazole			<1.50	
Dibenzofuran			<1.00	
2-Chlorophenol			<5.00	
4-Chloro-3-methylplenol			<10.0	
2,4-Dichlorophenol			<5.00	
2,4-Dimethyphenol			<5.00	
2,4-Dinitrophenol			<25.0	
4,6-Dinitro-2-methylphenol			<25.0	
2-Methylphenol	4,000,000	200,000	<2.50	
3+4-Methyphenol(s)			<2.50	
2-Niptrophenol			<10.0	
4-Nitrophenol			<10.0	
Pentachlorophenol(PCP)	2,000,000	100,000	<10.0	
Phenol			<20.0	
2,3,4,6-Tetrachlorophenol			<5.00	
2,3,5,6-Tetrachlorophenol			<5.00	
2,4,5-Trichlorophenol	8,000,000	400,000	<5.00	
2,4,6-Trichlorophenol	40,000	2,000	<5.00	
Bis(2-ethylhexyl)phthalate			<20.0	
Butyl benzyl phtalate			<20.0	
Diethyphthalate			<20.0	
Dimethylphthalate			<20.0	
Di-n-butylphthalate			<20.0	
Di-n-octyl phthalate			<20.0	
N-Nitrosodimethylamine			<2.50	
N-Nitroso-di-n-propylamine			<2.50	
N-Nitrosodiphenylamine			<2.50	
Bis(2-Chloroethoxy) methane			<2.50	
Bis(2-Chloroethyl) ether			<2.50	
2,2'- Oxybis (1-Chloropropane)			<2.50	
Hexachlorobenzene	2,600	130	<1.00	
Hexachlorobutadiene	10,000	500	<2.50	
Hexachlorocyclopentadiene			<5.00	
Hexachloroethane	60,000	3,000	<2.50	
2-Chloronaphthalene			<1.00	
1,2,4-Trichlorobenzene			<0.500	
4-Bromophenyl phenyl ether			<2.50	
4-Chlorophenyl phenyl ether			<2.50	

Table 1: Apex Charted Lab Results

Aniline			<5.00	
4-Chloroaniline			<2.50	
2-Nitroaniline			<20.0	
3-Nitroaniline			<20.0	
4-Nitroaniline			<20.0	
Nitrobenzene	40,000	2,000	<10.0	
2,4-Dinitrotoluene	2,600	130	<10.0	
2,6-Dinitrotoluene			<10.0	
Benzoic acid			<125	
Benzyl alchohol			<10.0	
Isophorone			<2.50	
Azobenzene (1,2-DPH)			<2.50	
3,3'-Dichlorobenzidine				
1,2-Dinitrobenzene			<25.0	
1,3-Dinitrobenzene			<25.0	
1,4-Dinitrobenzene			<25.0	
Pyridine	100,000	5,000	<10.0	
1,2-Dichlorobenzene			<2.50	Q-30
1,3-Dichlorobenzene			<2.50	
1,4-Dichlorobenzene	150,000	7,500	<2.50	
Mercury by Cold Vapor Atomic Fluorescence			<1.62	
Total Metals by EPA 6020B(ICPMS)			**ug/kg dry**	
Arsenic	100,000	5,000	**2090**	
Barium	2,000,000	100,000	**65300**	**Q-42**
Cadmium	20,000	1,000	<97.1	
Chromium	100,000	5,000	**13100**	
Lead	100,000	5,000	**2070**	
Mercury	4,000	200	<38.8	
Selenium	20,000	1,000	<485	
Silver	100,000	5,000	<97.1	
TCLP Metals by EPA 6020B (ICPMS)			**ug/kg dry**	
Arsenic	100,000	5,000	<50.0	
Barium	2,000,000	100,000	<2500	
Cadmium	20,000	1,000	<50.0	
Chromium	100,000	5,000	<50.0	
Lead	100,000	5,000	<25.0	
Mercury	4,000	200	<3.75	
Selenium	20,000	1,000	<50.0	
Silver	100,000	5,000	<50.0	
Conventionals				
Cyanide - Total (Non-Aqueous Water Leach) by EPA 9013M/9014 (ug/kg dry)				
Total Cyanide (ug/kg dry)			**401**	
Percent Dry Weight by EPA 8000C or Free Liquid (mL)				
%Solids			**77.0**	
Heat of Combustion BTU/LB (D-240)				
			9,477	

NOTES:

***If laboratory results from the totals test reported in ug/kg exceed the "20x TC Threshold" value, then see results of the TCLP test for direct comparison to actual TC regulatory levels reported in ug/L for regulatory status determination.**

J = Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.

Q-30 = Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.

Q-42 = Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is

Table 1: Apex Charted Lab Results

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.

Table 2 - Charted Pace Anaytical Results

Sample Indentification	**T125-071723-3**				
Report Date	**26-Sep-23**				
Pace Analytical Report	**L1658719**				
PaceSample Indentification	**L1658719-01**				
Radiochemistry by Method DOE Ga-01-R/901.1					
Analyte (*1)	**WM Limits (*2)**	**Results**	**Qualifier**	**Uncertainty (+/-)**	**MDA**
	pCi/g	**pCi/g**			**pCi/g**
Potassium-40		120		0.513	0.704
Thallium-208		0.0299	**J**	0.0230	0.0404
Lead-210	**10**	1.09	**U**	1.53	2.73
Lead-212		0.0967		0.0534	0.0846
Lead-214		0.135		0.0535	0.0967
Bismuth-212		0.00811	**U**	0.301	0.625
Bismuth-214 (Ra-226)	**5**	0.131		0.0594	0.102
Radium-226 (186 KeV)	**5**	0.211	**U**	0.277	0.518
Actinium-228 (Ra-228)	**20**	0.0520	**U**	0.0713	0.158
Thorium-234 (U-238)	**10**	0.198	**U**	0.253	0.578
Protactinium-234m		3.65	**U**	3.14	19.4
Uranium-235	**10**	0.0264	**J**	0.0275	0.0519

NOTES:

J=The identification of the analyte is acceptable; the reported valve is an estimate.

U= Below Detectable Limits: Indicates that the analyte was not detected.

Waste Management (WM) uses a custom gamma spec isotope list agreed upon with Oregon Department of Energy (*1).
The main isotopes of concern are Radium226, Radium228, Uranium, Thorium, and Lead210 (and all their daughter products).
For a material to not require a pathway exemption to be disposed of in Oregon it needs to be below the limits
provided in OAR 345-050's table 1 which WM has simplified (*2).
Please keep in mind that factors such as uncertainty effect the final value.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Friday, July 28, 2023

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

RE: A3G1118 - Gasco -- Carbon - 111323

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 A3G1118, which was received by the laboratory on 7/17/2023 at 9:50:00AM.

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)

Default Cooler	2.8	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
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T125-071723-3	A3G1118-01	Solid	07/17/23 06:30	07/17/23 09:50

Apex Laboratories

Darwin Thomas, Business Development Director

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

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
T125-071723-3 (A3G1118-01)				**Matrix: Solid**		**Batch: 23G0724**		
Diesel	ND	9820	19600	ug/kg	1	07/25/23 06:25	NWTPH-Dx	
Oil	ND	19600	39300	ug/kg	1	07/25/23 06:25	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 43 %*		*Limits: 50-150 %*	*1*	*07/25/23 06:25*	*NWTPH-Dx*	*S-04*

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

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
T125-071723-3 (A3G1118-01RE1)				**Matrix: Solid**		**Batch: 23G0536**		**V-15**
Gasoline Range Organics	**10100**	3030	6050	ug/kg	50	07/19/23 22:47	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 92 %*		*Limits: 50-150 %*	*1*	*07/19/23 22:47*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*07/19/23 22:47*	*NWTPH-Gx (MS)*	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01)				**Matrix: Solid**		**Batch: 23G0494**		**V-15**
Benzene	**6660**	60.5	121	ug/kg	500	07/18/23 21:15	5035A/8260D	
Methyl tert-butyl ether (MTBE)	**15600**	303	605	ug/kg	500	07/18/23 21:15	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 118 %*		*Limits: 80-120 %*	*1*	*07/18/23 21:15*	*5035A/8260D*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*07/18/23 21:15*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*	*1*	*07/18/23 21:15*	*5035A/8260D*	
T125-071723-3 (A3G1118-01RE1)				**Matrix: Solid**		**Batch: 23G0536**		**V-15**
Acetone	ND	605	1210	ug/kg	50	07/19/23 22:47	5035A/8260D	
Bromobenzene	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
Bromochloromethane	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
Bromodichloromethane	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
Bromoform	ND	60.5	121	ug/kg	50	07/19/23 22:47	5035A/8260D	
Bromomethane	ND	605	605	ug/kg	50	07/19/23 22:47	5035A/8260D	
2-Butanone (MEK)	ND	303	605	ug/kg	50	07/19/23 22:47	5035A/8260D	
n-Butylbenzene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
sec-Butylbenzene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
tert-Butylbenzene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
Carbon tetrachloride	**30.9**	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	**J**
Chlorobenzene	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
Chloroethane	ND	303	605	ug/kg	50	07/19/23 22:47	5035A/8260D	
Chloroform	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
Chloromethane	**324**	151	303	ug/kg	50	07/19/23 22:47	5035A/8260D	
2-Chlorotoluene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
4-Chlorotoluene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
Dibromochloromethane	ND	60.5	121	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	151	303	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
Dibromomethane	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,2-Dichlorobenzene	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,3-Dichlorobenzene	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,4-Dichlorobenzene	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
Dichlorodifluoromethane	ND	60.5	121	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,1-Dichloroethane	**49.0**	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01RE1)				**Matrix: Solid**		**Batch: 23G0536**		**V-15**
1,2-Dichloroethane (EDC)	**34.5**	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,1-Dichloroethene	**28.4**	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	**J**
cis-1,2-Dichloroethene	**3640**	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
trans-1,2-Dichloroethene	**105**	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,2-Dichloropropane	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,3-Dichloropropane	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
2,2-Dichloropropane	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,1-Dichloropropene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
cis-1,3-Dichloropropene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
trans-1,3-Dichloropropene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
Ethylbenzene	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
Hexachlorobutadiene	ND	60.5	121	ug/kg	50	07/19/23 22:47	5035A/8260D	
2-Hexanone	ND	303	605	ug/kg	50	07/19/23 22:47	5035A/8260D	
Isopropylbenzene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
4-Isopropyltoluene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
Methylene chloride	ND	303	605	ug/kg	50	07/19/23 22:47	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	303	605	ug/kg	50	07/19/23 22:47	5035A/8260D	
Naphthalene	ND	60.5	121	ug/kg	50	07/19/23 22:47	5035A/8260D	
n-Propylbenzene	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
Styrene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
Tetrachloroethene (PCE)	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
Toluene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,2,3-Trichlorobenzene	ND	151	303	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,2,4-Trichlorobenzene	ND	151	303	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,1,1-Trichloroethane	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,1,2-Trichloroethane	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
Trichloroethene (TCE)	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
Trichlorofluoromethane	ND	60.5	121	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,2,3-Trichloropropane	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,2,4-Trimethylbenzene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
1,3,5-Trimethylbenzene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01RE1)				**Matrix: Solid**		**Batch: 23G0536**		**V-15**
Vinyl chloride	**214**	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
m,p-Xylene	ND	30.3	60.5	ug/kg	50	07/19/23 22:47	5035A/8260D	
o-Xylene	ND	15.1	30.3	ug/kg	50	07/19/23 22:47	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits: 80-120 %*	*1*	*07/19/23 22:47*	*5035A/8260D*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*07/19/23 22:47*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*79-120 %*	*1*	*07/19/23 22:47*	*5035A/8260D*	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01)				**Matrix: Solid**		**Batch: 23G0502**		
Acetone	ND	500	1000	ug/L	50	07/18/23 15:08	1311/8260D	
Benzene	**7.00**	6.25	12.5	ug/L	50	07/18/23 15:08	1311/8260D	**J**
Bromobenzene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Bromochloromethane	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
Bromodichloromethane	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
Bromoform	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
Bromomethane	ND	250	250	ug/L	50	07/18/23 15:08	1311/8260D	
2-Butanone (MEK)	ND	250	500	ug/L	50	07/18/23 15:08	1311/8260D	
n-Butylbenzene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
sec-Butylbenzene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
tert-Butylbenzene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
Carbon tetrachloride	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
Chlorobenzene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Chloroethane	ND	250	250	ug/L	50	07/18/23 15:08	1311/8260D	
Chloroform	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
Chloromethane	ND	125	250	ug/L	50	07/18/23 15:08	1311/8260D	
2-Chlorotoluene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
4-Chlorotoluene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,2-Dibromo-3-chloropropane	ND	125	250	ug/L	50	07/18/23 15:08	1311/8260D	
Dibromochloromethane	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,2-Dibromoethane (EDB)	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Dibromomethane	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,2-Dichlorobenzene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,3-Dichlorobenzene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,4-Dichlorobenzene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Dichlorodifluoromethane	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,1-Dichloroethane	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,1-Dichloroethene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,2-Dichloroethane (EDC)	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
cis-1,2-Dichloroethene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
trans-1,2-Dichloroethene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,2-Dichloropropane	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,3-Dichloropropane	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	

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ANALYTICAL REPORT

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01)				**Matrix: Solid**		**Batch: 23G0502**		
2,2-Dichloropropane	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,1-Dichloropropene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
cis-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
trans-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
Ethylbenzene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Hexachlorobutadiene	ND	125	250	ug/L	50	07/18/23 15:08	1311/8260D	
2-Hexanone	ND	250	500	ug/L	50	07/18/23 15:08	1311/8260D	
Isopropylbenzene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
4-Isopropyltoluene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
4-Methyl-2-pentanone (MiBK)	ND	250	500	ug/L	50	07/18/23 15:08	1311/8260D	
Methyl tert-butyl ether (MTBE)	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
Methylene chloride	ND	250	500	ug/L	50	07/18/23 15:08	1311/8260D	
n-Propylbenzene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Styrene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,1,1,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,1,2,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Naphthalene	ND	50.0	100	ug/L	50	07/18/23 15:08	1311/8260D	
Tetrachloroethene (PCE)	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Toluene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,2,3-Trichlorobenzene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,2,4-Trichlorobenzene	ND	50.0	100	ug/L	50	07/18/23 15:08	1311/8260D	
1,1,1-Trichloroethane	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,1,2-Trichloroethane	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Trichloroethene (TCE)	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Trichlorofluoromethane	ND	50.0	100	ug/L	50	07/18/23 15:08	1311/8260D	
1,2,3-Trichloropropane	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,2,4-Trimethylbenzene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
1,3,5-Trimethylbenzene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
Vinyl chloride	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
m,p-Xylene	ND	25.0	50.0	ug/L	50	07/18/23 15:08	1311/8260D	
o-Xylene	ND	12.5	25.0	ug/L	50	07/18/23 15:08	1311/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits:*	*80-120 %*	*1*	*07/18/23 15:08*	*1311/8260D*
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*07/18/23 15:08*	*1311/8260D*

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Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01)				**Matrix: Solid**		**Batch: 23G0502**		
Surrogate: 4-Bromofluorobenzene (Surr)		*Recovery: 104 %*		*Limits: 80-120 %*	*1*	*07/18/23 15:08*	*1311/8260D*	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01RE2)				**Matrix: Solid**		**Batch: 23G0614**		
Acenaphthene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Acenaphthylene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Anthracene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Benz(a)anthracene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Benzo(a)pyrene	ND	5.42	10.8	ug/kg	1	07/24/23 16:58	EPA 8270E	
Benzo(b)fluoranthene	ND	5.42	10.8	ug/kg	1	07/24/23 16:58	EPA 8270E	
Benzo(k)fluoranthene	ND	5.42	10.8	ug/kg	1	07/24/23 16:58	EPA 8270E	
Benzo(g,h,i)perylene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Chrysene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Dibenz(a,h)anthracene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Fluoranthene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Fluorene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
1-Methylnaphthalene	ND	7.23	14.4	ug/kg	1	07/24/23 16:58	EPA 8270E	
2-Methylnaphthalene	ND	7.23	14.4	ug/kg	1	07/24/23 16:58	EPA 8270E	
Naphthalene	**31.4**	7.23	14.4	ug/kg	1	07/24/23 16:58	EPA 8270E	
Phenanthrene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Pyrene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Carbazole	ND	5.42	10.8	ug/kg	1	07/24/23 16:58	EPA 8270E	
Dibenzofuran	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
2-Chlorophenol	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	
4-Chloro-3-methylphenol	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
2,4-Dichlorophenol	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	
2,4-Dimethylphenol	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	
2,4-Dinitrophenol	ND	90.2	181	ug/kg	1	07/24/23 16:58	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	90.2	181	ug/kg	1	07/24/23 16:58	EPA 8270E	
2-Methylphenol	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
3+4-Methylphenol(s)	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
2-Nitrophenol	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
4-Nitrophenol	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
Pentachlorophenol (PCP)	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
Phenol	ND	7.23	14.4	ug/kg	1	07/24/23 16:58	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	

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ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01RE2)				**Matrix: Solid**		**Batch: 23G0614**		
2,3,5,6-Tetrachlorophenol	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	
2,4,5-Trichlorophenol	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	
2,4,6-Trichlorophenol	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	54.2	108	ug/kg	1	07/24/23 16:58	EPA 8270E	
Butyl benzyl phthalate	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
Diethylphthalate	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
Dimethylphthalate	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
Di-n-butylphthalate	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
Di-n-octyl phthalate	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
N-Nitrosodimethylamine	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
N-Nitrosodiphenylamine	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
Hexachlorobenzene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
Hexachlorobutadiene	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
Hexachlorocyclopentadiene	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	
Hexachloroethane	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
2-Chloronaphthalene	ND	3.60	7.23	ug/kg	1	07/24/23 16:58	EPA 8270E	
1,2,4-Trichlorobenzene	**46.7**	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
4-Bromophenyl phenyl ether	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
Aniline	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	
4-Chloroaniline	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
2-Nitroaniline	ND	72.3	144	ug/kg	1	07/24/23 16:58	EPA 8270E	
3-Nitroaniline	ND	72.3	144	ug/kg	1	07/24/23 16:58	EPA 8270E	
4-Nitroaniline	ND	72.3	144	ug/kg	1	07/24/23 16:58	EPA 8270E	
Nitrobenzene	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
2,4-Dinitrotoluene	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
2,6-Dinitrotoluene	ND	36.0	72.3	ug/kg	1	07/24/23 16:58	EPA 8270E	
Benzoic acid	ND	452	902	ug/kg	1	07/24/23 16:58	EPA 8270E	
Benzyl alcohol	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01RE2)				**Matrix: Solid**		**Batch: 23G0614**		
Isophorone	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
Azobenzene (1,2-DPH)	ND	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	90.2	181	ug/kg	1	07/24/23 16:58	EPA 8270E	
3,3'-Dichlorobenzidine	ND	72.3	144	ug/kg	1	07/24/23 16:58	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	90.2	181	ug/kg	1	07/24/23 16:58	EPA 8270E	
1,3-Dinitrobenzene	ND	90.2	181	ug/kg	1	07/24/23 16:58	EPA 8270E	
1,4-Dinitrobenzene	ND	90.2	181	ug/kg	1	07/24/23 16:58	EPA 8270E	
Pyridine	ND	18.1	36.0	ug/kg	1	07/24/23 16:58	EPA 8270E	
1,2-Dichlorobenzene	**48.6**	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
1,3-Dichlorobenzene	**64.0**	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
1,4-Dichlorobenzene	**27.7**	9.02	18.1	ug/kg	1	07/24/23 16:58	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*28 %*	*Limits: 37-122 %*	*1*	*07/24/23 16:58*	*EPA 8270E*	*S-03*
2-Fluorobiphenyl (Surr)			*19 %*	*44-120 %*	*1*	*07/24/23 16:58*	*EPA 8270E*	*S-03*
Phenol-d6 (Surr)			*2 %*	*33-122 %*	*1*	*07/24/23 16:58*	*EPA 8270E*	*S-03*
p-Terphenyl-d14 (Surr)			*1 %*	*54-127 %*	*1*	*07/24/23 16:58*	*EPA 8270E*	*S-03*
2-Fluorophenol (Surr)			*2 %*	*35-120 %*	*1*	*07/24/23 16:58*	*EPA 8270E*	*S-03*
2,4,6-Tribromophenol (Surr)			*3 %*	*39-132 %*	*1*	*07/24/23 16:58*	*EPA 8270E*	*Q-41, S-03*

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01RE1)				**Matrix: Solid**		**Batch: 23G0660**		
Acenaphthene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Acenaphthylene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Anthracene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Benz(a)anthracene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Benzo(a)pyrene	ND	1.50	3.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Benzo(b)fluoranthene	ND	1.50	3.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Benzo(k)fluoranthene	ND	1.50	3.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Benzo(g,h,i)perylene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Chrysene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Dibenz(a,h)anthracene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Fluoranthene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Fluorene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Indeno(1,2,3-cd)pyrene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
1-Methylnaphthalene	ND	2.00	4.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2-Methylnaphthalene	ND	2.00	4.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Naphthalene	ND	2.00	4.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Phenanthrene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Pyrene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Carbazole	ND	1.50	3.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Dibenzofuran	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2-Chlorophenol	ND	5.00	10.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
4-Chloro-3-methylphenol	ND	10.0	20.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2,4-Dichlorophenol	ND	5.00	10.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2,4-Dimethylphenol	ND	5.00	10.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2,4-Dinitrophenol	ND	25.0	50.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
4,6-Dinitro-2-methylphenol	ND	25.0	50.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2-Methylphenol	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
3+4-Methylphenol(s)	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2-Nitrophenol	ND	10.0	20.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
4-Nitrophenol	ND	10.0	20.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Pentachlorophenol (PCP)	ND	10.0	20.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Phenol	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2,3,4,6-Tetrachlorophenol	ND	5.00	10.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01RE1)				**Matrix: Solid**		**Batch: 23G0660**		
2,3,5,6-Tetrachlorophenol	ND	5.00	10.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2,4,5-Trichlorophenol	ND	5.00	10.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2,4,6-Trichlorophenol	ND	5.00	10.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Bis(2-ethylhexyl)phthalate	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Butyl benzyl phthalate	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Diethylphthalate	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Dimethylphthalate	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Di-n-butylphthalate	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Di-n-octyl phthalate	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
N-Nitrosodimethylamine	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
N-Nitroso-di-n-propylamine	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
N-Nitrosodiphenylamine	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Bis(2-Chloroethoxy) methane	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Bis(2-Chloroethyl) ether	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2,2'-Oxybis(1-Chloropropane)	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Hexachlorobenzene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Hexachlorocyclopentadiene	ND	5.00	10.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Hexachloroethane	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2-Chloronaphthalene	ND	1.00	2.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
1,2,4-Trichlorobenzene	ND	0.500	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
4-Bromophenyl phenyl ether	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
4-Chlorophenyl phenyl ether	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Aniline	ND	5.00	10.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
4-Chloroaniline	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2-Nitroaniline	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
3-Nitroaniline	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
4-Nitroaniline	ND	20.0	40.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Nitrobenzene	ND	10.0	20.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2,4-Dinitrotoluene	ND	10.0	20.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
2,6-Dinitrotoluene	ND	10.0	20.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Benzoic acid	ND	125	250	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Benzyl alcohol	ND	10.0	20.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01RE1)				**Matrix: Solid**		**Batch: 23G0660**		
Isophorone	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Azobenzene (1,2-DPH)	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Bis(2-Ethylhexyl) adipate	ND	25.0	50.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
1,2-Dinitrobenzene	ND	25.0	50.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
1,3-Dinitrobenzene	ND	25.0	50.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
1,4-Dinitrobenzene	ND	25.0	50.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Pyridine	ND	10.0	20.0	ug/L	10	07/24/23 18:42	1311/8270E-LL	
1,2-Dichlorobenzene	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	Q-30
1,3-Dichlorobenzene	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
1,4-Dichlorobenzene	ND	2.50	5.00	ug/L	10	07/24/23 18:42	1311/8270E-LL	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*61 %*	*Limits: 44-120 %*	*10*	*07/24/23 18:42*	*1311/8270E-LL*	
2-Fluorobiphenyl (Surr)			*58 %*	*44-120 %*	*10*	*07/24/23 18:42*	*1311/8270E-LL*	
Phenol-d6 (Surr)			*24 %*	*10-133 %*	*10*	*07/24/23 18:42*	*1311/8270E-LL*	
p-Terphenyl-d14 (Surr)			*79 %*	*50-134 %*	*10*	*07/24/23 18:42*	*1311/8270E-LL*	
2-Fluorophenol (Surr)			*32 %*	*19-120 %*	*10*	*07/24/23 18:42*	*1311/8270E-LL*	
2,4,6-Tribromophenol (Surr)			*83 %*	*43-140 %*	*10*	*07/24/23 18:42*	*1311/8270E-LL*	*Q-41*

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

Mercury by Cold Vapor Atomic Fluorescence (CVAF) by EPA 1631E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01RE1)				**Matrix: Solid**		**Batch: 23G0792**		
Mercury	ND	1.62	3.25	ug/kg	1	07/26/23 13:59	EPA 1631E	

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01)				**Matrix: Solid**				
Batch: 23G0515								
Arsenic	**2090**	485	971	ug/kg	10	07/19/23 10:49	EPA 6020B	
Barium	**65300**	485	971	ug/kg	10	07/19/23 10:49	EPA 6020B	**Q-42**
Cadmium	ND	97.1	194	ug/kg	10	07/19/23 10:49	EPA 6020B	
Chromium	**13100**	485	971	ug/kg	10	07/19/23 10:49	EPA 6020B	
Lead	**2070**	97.1	194	ug/kg	10	07/19/23 10:49	EPA 6020B	
Mercury	ND	38.8	77.7	ug/kg	10	07/19/23 10:49	EPA 6020B	
Selenium	ND	485	971	ug/kg	10	07/19/23 10:49	EPA 6020B	
Silver	ND	97.1	194	ug/kg	10	07/19/23 10:49	EPA 6020B	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01)				**Matrix: Solid**				
Batch: 23G0635								
Arsenic	ND	50.0	100	ug/L	10	07/21/23 18:44	1311/6020B	
Barium	ND	2500	5000	ug/L	10	07/21/23 18:44	1311/6020B	
Cadmium	ND	50.0	100	ug/L	10	07/21/23 18:44	1311/6020B	
Chromium	ND	50.0	100	ug/L	10	07/21/23 18:44	1311/6020B	
Lead	ND	25.0	50.0	ug/L	10	07/21/23 18:44	1311/6020B	
Mercury	ND	3.75	7.00	ug/L	10	07/21/23 18:44	1311/6020B	
Selenium	ND	50.0	100	ug/L	10	07/21/23 18:44	1311/6020B	
Silver	ND	50.0	100	ug/L	10	07/21/23 18:44	1311/6020B	

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

Soluble Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01)				**Matrix: Solid**		**Batch: 23G0673**		
Total Cyanide	**401**	64.8	130	ug/kg dry	1	07/24/23 14:38	D7511-12	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01)				**Matrix: Solid**		**Batch: 23G0490**		
% Solids	**77.0**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	

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ANALYTICAL REPORT

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

ANALYTICAL SAMPLE RESULTS

TCLP Extraction by EPA 1311 (ZHE)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T125-071723-3 (A3G1118-01)				**Matrix: Solid**		**Batch: 23G0464**		
TCLP ZHE Extraction	0.00	---		N/A	1	07/17/23 14:55	EPA 1311 ZHE	
TCLP Extraction	PREP	---		N/A	1	07/20/23 16:00	EPA 1311	
TCLP Extraction	PREP	---		N/A	1	07/20/23 16:00	EPA 1311	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

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 23G0724 - EPA 3546 (Fuels)									Solid			
Blank (23G0724-BLK1)			Prepared: 07/24/23 17:08		Analyzed: 07/25/23 05:43							
NWTPH-Dx												
Diesel	ND	10000	20000	ug/kg	1	---	---	---	---	---	---	
Oil	ND	20000	40000	ug/kg	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (23G0724-BS1)			Prepared: 07/24/23 17:08		Analyzed: 07/25/23 06:04							
NWTPH-Dx												
Diesel	116000	10000	20000	ug/kg	1	125000	---	93	38-132%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*		*Dilution: 1x*						
Duplicate (23G0724-DUP1)			Prepared: 07/24/23 17:08		Analyzed: 07/25/23 06:45							
QC Source Sample: T125-071723-3 (A3G1118-01)												
NWTPH-Dx												
Diesel	ND	9600	19200	ug/kg	1	---	ND	---	---	---	30%	
Oil	ND	19200	38400	ug/kg	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 53 %*	*Limits: 50-150 %*		*Dilution: 1x*						

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

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 23G0494 - EPA 5035A									Soil			
Blank (23G0494-BLK1)			Prepared: 07/18/23 10:00 Analyzed: 07/18/23 12:47									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	2500	5000	ug/kg	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 92 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*			*"*					
LCS (23G0494-BS2)			Prepared: 07/18/23 10:00 Analyzed: 07/18/23 12:17									
NWTPH-Gx (MS)												
Gasoline Range Organics	20900	2500	5000	ug/kg	50	25000	---	83	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 92 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*			*"*					
Duplicate (23G0494-DUP1)			Prepared: 07/14/23 12:00 Analyzed: 07/18/23 14:28									
QC Source Sample: Non-SDG (A3G1104-02)												
Gasoline Range Organics	**219000**	6680	13400	ug/kg	100	---	230000	---	---	5	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 93 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*			*"*					
Duplicate (23G0494-DUP2)			Prepared: 07/17/23 11:30 Analyzed: 07/18/23 15:44									**TEMP**
QC Source Sample: Non-SDG (A3G1126-01)												
Gasoline Range Organics	ND	5100	10200	ug/kg	100	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 91 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*			*"*					

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ANALYTICAL REPORT

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

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 23G0536 - EPA 5035A									Soil			
Blank (23G0536-BLK1)			Prepared: 07/19/23 10:22 Analyzed: 07/19/23 13:54									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	2500	5000	ug/kg	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 91 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*			*"*					
LCS (23G0536-BS2)			Prepared: 07/19/23 10:22 Analyzed: 07/19/23 13:21									
NWTPH-Gx (MS)												
Gasoline Range Organics	20000	2500	5000	ug/kg	50	25000	---	80	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 93 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*			*"*					
Duplicate (23G0536-DUP1)			Prepared: 07/14/23 15:00 Analyzed: 07/19/23 16:00									
QC Source Sample: Non-SDG (A3G1122-10)												
Gasoline Range Organics	ND	2680	5350	ug/kg	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 90 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*			*"*					

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							**Soil**					
Blank (23G0494-BLK1)			Prepared: 07/18/23 10:00 Analyzed: 07/18/23 12:47									
5035A/8260D												
Acetone	ND	500	1000	ug/kg	50	---	---	---	---	---	---	
Acrylonitrile	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
Benzene	ND	5.00	10.0	ug/kg	50	---	---	---	---	---	---	
Bromobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Bromochloromethane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Bromodichloromethane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Bromoform	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
Bromomethane	ND	500	500	ug/kg	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	250	500	ug/kg	50	---	---	---	---	---	---	
n-Butylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Carbon disulfide	ND	250	500	ug/kg	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Chlorobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Chloroethane	ND	500	500	ug/kg	50	---	---	---	---	---	---	
Chloroform	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Chloromethane	ND	125	250	ug/kg	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Dibromochloromethane	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	250	250	ug/kg	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Dibromomethane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	

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ANALYTICAL REPORT

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							**Soil**					
Blank (23G0494-BLK1)			Prepared: 07/18/23 10:00 Analyzed: 07/18/23 12:47									
1,2-Dichloropropane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Ethylbenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
2-Hexanone	ND	250	500	ug/kg	50	---	---	---	---	---	---	
Isopropylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Methylene chloride	ND	250	500	ug/kg	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	250	500	ug/kg	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Naphthalene	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
n-Propylbenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Styrene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Toluene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	125	250	ug/kg	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	125	250	ug/kg	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Vinyl chloride	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
m,p-Xylene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
o-Xylene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 113 %* *Limits: 80-120 %* *Dilution: 1x*

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Darwin Thomas, Business Development Director

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							Soil					
Blank (23G0494-BLK1)			Prepared: 07/18/23 10:00 Analyzed: 07/18/23 12:47									
Surr: Toluene-d8 (Surr)			*Recovery: 98 %*	*Limits: 80-120 %*				*Dilution: 1x*				
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*				*"*				
LCS (23G0494-BS1)			Prepared: 07/18/23 10:00 Analyzed: 07/18/23 11:52									
5035A/8260D												
Acetone	1790	500	1000	ug/kg	50	2000	---	89	80-120%	---	---	
Acrylonitrile	1150	50.0	100	ug/kg	50	1000	---	115	80-120%	---	---	
Benzene	1170	5.00	10.0	ug/kg	50	1000	---	117	80-120%	---	---	
Bromobenzene	970	12.5	25.0	ug/kg	50	1000	---	97	80-120%	---	---	
Bromochloromethane	992	25.0	50.0	ug/kg	50	1000	---	99	80-120%	---	---	
Bromodichloromethane	846	25.0	50.0	ug/kg	50	1000	---	85	80-120%	---	---	
Bromoform	800	50.0	100	ug/kg	50	1000	---	80	80-120%	---	---	
Bromomethane	968	500	500	ug/kg	50	1000	---	97	80-120%	---	---	
2-Butanone (MEK)	1980	250	500	ug/kg	50	2000	---	99	80-120%	---	---	
n-Butylbenzene	907	25.0	50.0	ug/kg	50	1000	---	91	80-120%	---	---	
sec-Butylbenzene	960	25.0	50.0	ug/kg	50	1000	---	96	80-120%	---	---	
tert-Butylbenzene	838	25.0	50.0	ug/kg	50	1000	---	84	80-120%	---	---	
Carbon disulfide	1120	250	500	ug/kg	50	1000	---	112	80-120%	---	---	
Carbon tetrachloride	892	25.0	50.0	ug/kg	50	1000	---	89	80-120%	---	---	
Chlorobenzene	954	12.5	25.0	ug/kg	50	1000	---	95	80-120%	---	---	
Chloroethane	783	500	500	ug/kg	50	1000	---	**78**	**80-120%**	---	---	Q-55
Chloroform	938	25.0	50.0	ug/kg	50	1000	---	94	80-120%	---	---	
Chloromethane	982	125	250	ug/kg	50	1000	---	98	80-120%	---	---	
2-Chlorotoluene	924	25.0	50.0	ug/kg	50	1000	---	92	80-120%	---	---	
4-Chlorotoluene	870	25.0	50.0	ug/kg	50	1000	---	87	80-120%	---	---	
Dibromochloromethane	814	50.0	100	ug/kg	50	1000	---	81	80-120%	---	---	
1,2-Dibromo-3-chloropropane	766	250	250	ug/kg	50	1000	---	**77**	**80-120%**	---	---	Q-55
1,2-Dibromoethane (EDB)	933	25.0	50.0	ug/kg	50	1000	---	93	80-120%	---	---	
Dibromomethane	1000	25.0	50.0	ug/kg	50	1000	---	100	80-120%	---	---	
1,2-Dichlorobenzene	894	12.5	25.0	ug/kg	50	1000	---	89	80-120%	---	---	
1,3-Dichlorobenzene	892	12.5	25.0	ug/kg	50	1000	---	89	80-120%	---	---	
1,4-Dichlorobenzene	904	12.5	25.0	ug/kg	50	1000	---	90	80-120%	---	---	
Dichlorodifluoromethane	1050	50.0	100	ug/kg	50	1000	---	105	80-120%	---	---	
1,1-Dichloroethane	998	12.5	25.0	ug/kg	50	1000	---	100	80-120%	---	---	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							**Soil**					
LCS (23G0494-BS1)			Prepared: 07/18/23 10:00 Analyzed: 07/18/23 11:52									
1,2-Dichloroethane (EDC)	843	12.5	25.0	ug/kg	50	1000	---	84	80-120%	---	---	
1,1-Dichloroethene	1050	12.5	25.0	ug/kg	50	1000	---	105	80-120%	---	---	
cis-1,2-Dichloroethene	947	12.5	25.0	ug/kg	50	1000	---	95	80-120%	---	---	
trans-1,2-Dichloroethene	1010	12.5	25.0	ug/kg	50	1000	---	101	80-120%	---	---	
1,2-Dichloropropane	1070	12.5	25.0	ug/kg	50	1000	---	107	80-120%	---	---	
1,3-Dichloropropane	908	25.0	50.0	ug/kg	50	1000	---	91	80-120%	---	---	
2,2-Dichloropropane	880	25.0	50.0	ug/kg	50	1000	---	88	80-120%	---	---	
1,1-Dichloropropene	1060	25.0	50.0	ug/kg	50	1000	---	106	80-120%	---	---	
cis-1,3-Dichloropropene	890	25.0	50.0	ug/kg	50	1000	---	89	80-120%	---	---	
trans-1,3-Dichloropropene	838	25.0	50.0	ug/kg	50	1000	---	84	80-120%	---	---	
Ethylbenzene	911	12.5	25.0	ug/kg	50	1000	---	91	80-120%	---	---	
Hexachlorobutadiene	848	50.0	100	ug/kg	50	1000	---	85	80-120%	---	---	
2-Hexanone	1600	250	500	ug/kg	50	2000	---	80	80-120%	---	---	
Isopropylbenzene	933	25.0	50.0	ug/kg	50	1000	---	93	80-120%	---	---	
4-Isopropyltoluene	933	25.0	50.0	ug/kg	50	1000	---	93	80-120%	---	---	
Methylene chloride	1210	250	500	ug/kg	50	1000	---	**121**	**80-120%**	---	---	Q-56
4-Methyl-2-pentanone (MiBK)	1700	250	500	ug/kg	50	2000	---	85	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	959	25.0	50.0	ug/kg	50	1000	---	96	80-120%	---	---	
Naphthalene	886	50.0	100	ug/kg	50	1000	---	89	80-120%	---	---	
n-Propylbenzene	928	12.5	25.0	ug/kg	50	1000	---	93	80-120%	---	---	
Styrene	942	25.0	50.0	ug/kg	50	1000	---	94	80-120%	---	---	
1,1,1,2-Tetrachloroethane	812	12.5	25.0	ug/kg	50	1000	---	81	80-120%	---	---	
1,1,2,2-Tetrachloroethane	890	25.0	50.0	ug/kg	50	1000	---	89	80-120%	---	---	
Tetrachloroethene (PCE)	999	12.5	25.0	ug/kg	50	1000	---	100	80-120%	---	---	
Toluene	940	25.0	50.0	ug/kg	50	1000	---	94	80-120%	---	---	
1,2,3-Trichlorobenzene	874	125	250	ug/kg	50	1000	---	87	80-120%	---	---	
1,2,4-Trichlorobenzene	848	125	250	ug/kg	50	1000	---	85	80-120%	---	---	
1,1,1-Trichloroethane	924	12.5	25.0	ug/kg	50	1000	---	92	80-120%	---	---	
1,1,2-Trichloroethane	970	12.5	25.0	ug/kg	50	1000	---	97	80-120%	---	---	
Trichloroethene (TCE)	1110	12.5	25.0	ug/kg	50	1000	---	111	80-120%	---	---	
Trichlorofluoromethane	808	50.0	100	ug/kg	50	1000	---	81	80-120%	---	---	
1,2,3-Trichloropropane	819	25.0	50.0	ug/kg	50	1000	---	82	80-120%	---	---	
1,2,4-Trimethylbenzene	946	25.0	50.0	ug/kg	50	1000	---	95	80-120%	---	---	
1,3,5-Trimethylbenzene	918	25.0	50.0	ug/kg	50	1000	---	92	80-120%	---	---	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							**Soil**					
LCS (23G0494-BS1)			Prepared: 07/18/23 10:00 Analyzed: 07/18/23 11:52									
Vinyl chloride	1200	12.5	25.0	ug/kg	50	1000	---	120	80-120%	---	---	
m,p-Xylene	1810	25.0	50.0	ug/kg	50	2000	---	90	80-120%	---	---	
o-Xylene	879	12.5	25.0	ug/kg	50	1000	---	88	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 113 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*100 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*				*"*			
Duplicate (23G0494-DUP1)			Prepared: 07/14/23 12:00 Analyzed: 07/18/23 14:28									
QC Source Sample: Non-SDG (A3G1104-02)												
Acetone	ND	1340	2670	ug/kg	100	---	ND	---	---	---	30%	
Acrylonitrile	ND	134	267	ug/kg	100	---	ND	---	---	---	30%	
Benzene	ND	13.4	26.7	ug/kg	100	---	ND	---	---	---	30%	
Bromobenzene	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
Bromochloromethane	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
Bromodichloromethane	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
Bromoform	ND	134	267	ug/kg	100	---	ND	---	---	---	30%	
Bromomethane	ND	1340	1340	ug/kg	100	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	668	1340	ug/kg	100	---	ND	---	---	---	30%	
n-Butylbenzene	**756**	66.8	134	ug/kg	100	---	798	---	---	5	30%	M-02
sec-Butylbenzene	**513**	66.8	134	ug/kg	100	---	532	---	---	4	30%	
tert-Butylbenzene	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
Carbon disulfide	ND	668	1340	ug/kg	100	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
Chlorobenzene	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
Chloroethane	ND	1340	1340	ug/kg	100	---	ND	---	---	---	30%	
Chloroform	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
Chloromethane	ND	334	668	ug/kg	100	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
Dibromochloromethane	ND	134	267	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	668	668	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
Dibromomethane	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							**Soil**					
Duplicate (23G0494-DUP1)			Prepared: 07/14/23 12:00 Analyzed: 07/18/23 14:28									
QC Source Sample: Non-SDG (A3G1104-02)												
1,3-Dichlorobenzene	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	134	267	ug/kg	100	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
Ethylbenzene	**168**	33.4	66.8	ug/kg	100	---	184	---	---	9	30%	
Hexachlorobutadiene	ND	134	267	ug/kg	100	---	ND	---	---	---	30%	
2-Hexanone	ND	668	1340	ug/kg	100	---	ND	---	---	---	30%	
Isopropylbenzene	**200**	66.8	134	ug/kg	100	---	218	---	---	8	30%	
4-Isopropyltoluene	**617**	66.8	134	ug/kg	100	---	651	---	---	5	30%	M-02
Methylene chloride	ND	668	1340	ug/kg	100	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	668	1340	ug/kg	100	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
Naphthalene	**2230**	134	267	ug/kg	100	---	2280	---	---	2	30%	
n-Propylbenzene	**504**	33.4	66.8	ug/kg	100	---	541	---	---	7	30%	
Styrene	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	134	134	ug/kg	100	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
Toluene	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	334	668	ug/kg	100	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	334	668	ug/kg	100	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							**Soil**					
Duplicate (23G0494-DUP1)			Prepared: 07/14/23 12:00 Analyzed: 07/18/23 14:28									
QC Source Sample: Non-SDG (A3G1104-02)												
Trichloroethene (TCE)	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	134	267	ug/kg	100	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	66.8	134	ug/kg	100	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	**3540**	66.8	134	ug/kg	100	---	3710	---	---	5	30%	
1,3,5-Trimethylbenzene	**253**	66.8	134	ug/kg	100	---	269	---	---	6	30%	
Vinyl chloride	ND	33.4	66.8	ug/kg	100	---	ND	---	---	---	30%	
m,p-Xylene	**305**	66.8	134	ug/kg	100	---	325	---	---	6	30%	
o-Xylene	**48.1**	33.4	66.8	ug/kg	100	---	49.4	---	---	3	30%	J
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 117 %*		*Limits: 80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*97 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*102 %*		*79-120 %*		*"*					
Duplicate (23G0494-DUP2)			Prepared: 07/17/23 11:30 Analyzed: 07/18/23 15:44									**TEMP**
QC Source Sample: Non-SDG (A3G1126-01)												
Acetone	ND	1020	2040	ug/kg	100	---	ND	---	---	---	30%	
Acrylonitrile	ND	102	204	ug/kg	100	---	ND	---	---	---	30%	
Benzene	ND	10.2	20.4	ug/kg	100	---	ND	---	---	---	30%	
Bromobenzene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
Bromochloromethane	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Bromodichloromethane	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Bromoform	ND	102	204	ug/kg	100	---	ND	---	---	---	30%	
Bromomethane	ND	1020	1020	ug/kg	100	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	510	1020	ug/kg	100	---	ND	---	---	---	30%	
n-Butylbenzene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Carbon disulfide	ND	510	1020	ug/kg	100	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Chlorobenzene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
Chloroethane	ND	1020	1020	ug/kg	100	---	ND	---	---	---	30%	
Chloroform	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Chloromethane	ND	255	510	ug/kg	100	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							**Soil**					
Duplicate (23G0494-DUP2)			Prepared: 07/17/23 11:30 Analyzed: 07/18/23 15:44									**TEMP**
QC Source Sample: Non-SDG (A3G1126-01)												
4-Chlorotoluene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Dibromochloromethane	ND	102	204	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	510	510	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Dibromomethane	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	102	204	ug/kg	100	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Ethylbenzene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	102	204	ug/kg	100	---	ND	---	---	---	30%	
2-Hexanone	ND	510	1020	ug/kg	100	---	ND	---	---	---	30%	
Isopropylbenzene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Methylene chloride	ND	510	1020	ug/kg	100	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	510	1020	ug/kg	100	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Naphthalene	ND	102	204	ug/kg	100	---	ND	---	---	---	30%	
n-Propylbenzene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
Styrene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							Soil					
Duplicate (23G0494-DUP2)			Prepared: 07/17/23 11:30 Analyzed: 07/18/23 15:44									TEMP
QC Source Sample: Non-SDG (A3G1126-01)												
Tetrachloroethene (PCE)	**170**	25.5	51.0	ug/kg	100	---	181	---	---	6	30%	
Toluene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	255	510	ug/kg	100	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	255	510	ug/kg	100	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	102	204	ug/kg	100	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
Vinyl chloride	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
m,p-Xylene	ND	51.0	102	ug/kg	100	---	ND	---	---	---	30%	
o-Xylene	ND	25.5	51.0	ug/kg	100	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 117 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*97 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*				*"*			
Matrix Spike (23G0494-MS1)			Prepared: 07/14/23 17:35 Analyzed: 07/18/23 19:07									
QC Source Sample: Non-SDG (A3G1119-05)												
5035A/8260D												
Acetone	2200	581	1160	ug/kg	50	2320	ND	94	36-164%	---	---	
Acrylonitrile	1440	58.1	116	ug/kg	50	1160	ND	124	65-134%	---	---	
Benzene	1540	5.81	11.6	ug/kg	50	1160	ND	**132**	**77-121%**	---	---	Q-01
Bromobenzene	1260	14.5	29.0	ug/kg	50	1160	ND	108	78-121%	---	---	
Bromochloromethane	1260	29.0	58.1	ug/kg	50	1160	ND	108	78-125%	---	---	
Bromodichloromethane	1090	29.0	58.1	ug/kg	50	1160	ND	93	75-127%	---	---	
Bromoform	1010	58.1	116	ug/kg	50	1160	ND	87	67-132%	---	---	
Bromomethane	1110	581	581	ug/kg	50	1160	ND	96	53-143%	---	---	
2-Butanone (MEK)	2530	290	581	ug/kg	50	2320	ND	109	51-148%	---	---	
n-Butylbenzene	1180	29.0	58.1	ug/kg	50	1160	ND	101	70-128%	---	---	
sec-Butylbenzene	1260	29.0	58.1	ug/kg	50	1160	ND	108	73-126%	---	---	
tert-Butylbenzene	1090	29.0	58.1	ug/kg	50	1160	ND	93	73-125%	---	---	

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Darwin Thomas, Business Development Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							Soil					
Matrix Spike (23G0494-MS1)			Prepared: 07/14/23 17:35 Analyzed: 07/18/23 19:07									
QC Source Sample: Non-SDG (A3G1119-05)												
Carbon disulfide	1430	290	581	ug/kg	50	1160	ND	123	63-132%	---	---	
Carbon tetrachloride	1120	29.0	58.1	ug/kg	50	1160	ND	96	70-135%	---	---	
Chlorobenzene	1200	14.5	29.0	ug/kg	50	1160	ND	103	79-120%	---	---	
Chloroethane	820	581	581	ug/kg	50	1160	ND	71	59-139%	---	---	Q-54c
Chloroform	1190	29.0	58.1	ug/kg	50	1160	ND	103	78-123%	---	---	
Chloromethane	937	145	290	ug/kg	50	1160	ND	81	50-136%	---	---	
2-Chlorotoluene	1210	29.0	58.1	ug/kg	50	1160	ND	104	75-122%	---	---	
4-Chlorotoluene	1110	29.0	58.1	ug/kg	50	1160	ND	95	72-124%	---	---	
Dibromochloromethane	1010	58.1	116	ug/kg	50	1160	ND	87	74-126%	---	---	
1,2-Dibromo-3-chloropropane	971	290	290	ug/kg	50	1160	ND	84	61-132%	---	---	Q-54d
1,2-Dibromoethane (EDB)	1120	29.0	58.1	ug/kg	50	1160	ND	97	78-122%	---	---	
Dibromomethane	1270	29.0	58.1	ug/kg	50	1160	ND	109	78-125%	---	---	
1,2-Dichlorobenzene	1170	14.5	29.0	ug/kg	50	1160	ND	100	78-121%	---	---	
1,3-Dichlorobenzene	1170	14.5	29.0	ug/kg	50	1160	ND	100	77-121%	---	---	
1,4-Dichlorobenzene	1160	14.5	29.0	ug/kg	50	1160	ND	100	75-120%	---	---	
Dichlorodifluoromethane	738	58.1	116	ug/kg	50	1160	ND	64	29-149%	---	---	
1,1-Dichloroethane	1270	14.5	29.0	ug/kg	50	1160	ND	110	76-125%	---	---	
1,2-Dichloroethane (EDC)	1030	14.5	29.0	ug/kg	50	1160	ND	89	73-128%	---	---	
1,1-Dichloroethene	1360	14.5	29.0	ug/kg	50	1160	ND	117	70-131%	---	---	
cis-1,2-Dichloroethene	1220	14.5	29.0	ug/kg	50	1160	ND	105	77-123%	---	---	
trans-1,2-Dichloroethene	1290	14.5	29.0	ug/kg	50	1160	ND	111	74-125%	---	---	
1,2-Dichloropropane	1360	14.5	29.0	ug/kg	50	1160	ND	117	76-123%	---	---	
1,3-Dichloropropane	1120	29.0	58.1	ug/kg	50	1160	ND	96	77-121%	---	---	
2,2-Dichloropropane	1100	29.0	58.1	ug/kg	50	1160	ND	95	67-133%	---	---	
1,1-Dichloropropene	1360	29.0	58.1	ug/kg	50	1160	ND	117	76-125%	---	---	
cis-1,3-Dichloropropene	1090	29.0	58.1	ug/kg	50	1160	ND	94	74-126%	---	---	
trans-1,3-Dichloropropene	1030	29.0	58.1	ug/kg	50	1160	ND	89	71-130%	---	---	
Ethylbenzene	1150	14.5	29.0	ug/kg	50	1160	ND	99	76-122%	---	---	
Hexachlorobutadiene	1160	58.1	116	ug/kg	50	1160	ND	100	61-135%	---	---	
2-Hexanone	2040	290	581	ug/kg	50	2320	ND	88	53-145%	---	---	
Isopropylbenzene	1200	29.0	58.1	ug/kg	50	1160	ND	103	68-134%	---	---	
4-Isopropyltoluene	1210	29.0	58.1	ug/kg	50	1160	ND	104	73-127%	---	---	
Methylene chloride	1520	290	581	ug/kg	50	1160	ND	**131**	**70-128%**	---	---	Q-54

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0494 - EPA 5035A							**Soil**					
Matrix Spike (23G0494-MS1)			Prepared: 07/14/23 17:35 Analyzed: 07/18/23 19:07									
QC Source Sample: Non-SDG (A3G1119-05)												
4-Methyl-2-pentanone (MiBK)	2100	290	581	ug/kg	50	2320	ND	90	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1210	29.0	58.1	ug/kg	50	1160	ND	104	73-125%	---	---	
Naphthalene	1170	58.1	116	ug/kg	50	1160	ND	100	62-129%	---	---	
n-Propylbenzene	1210	14.5	29.0	ug/kg	50	1160	ND	104	73-125%	---	---	
Styrene	1200	29.0	58.1	ug/kg	50	1160	ND	103	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1060	14.5	29.0	ug/kg	50	1160	ND	91	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1130	29.0	58.1	ug/kg	50	1160	ND	98	70-124%	---	---	
Tetrachloroethene (PCE)	1290	14.5	29.0	ug/kg	50	1160	ND	111	73-128%	---	---	
Toluene	1180	29.0	58.1	ug/kg	50	1160	ND	101	77-121%	---	---	
1,2,3-Trichlorobenzene	1170	145	290	ug/kg	50	1160	ND	101	66-130%	---	---	
1,2,4-Trichlorobenzene	1130	145	290	ug/kg	50	1160	ND	98	67-129%	---	---	
1,1,1-Trichloroethane	1180	14.5	29.0	ug/kg	50	1160	ND	101	73-130%	---	---	
1,1,2-Trichloroethane	1210	14.5	29.0	ug/kg	50	1160	ND	104	78-121%	---	---	
Trichloroethene (TCE)	1490	14.5	29.0	ug/kg	50	1160	ND	**128**	**77-123%**	---	---	Q-01
Trichlorofluoromethane	2070	58.1	116	ug/kg	50	1160	ND	**178**	**62-140%**	---	---	Q-01
1,2,3-Trichloropropane	1000	29.0	58.1	ug/kg	50	1160	ND	86	73-125%	---	---	
1,2,4-Trimethylbenzene	1220	29.0	58.1	ug/kg	50	1160	ND	105	75-123%	---	---	
1,3,5-Trimethylbenzene	1180	29.0	58.1	ug/kg	50	1160	ND	101	73-124%	---	---	
Vinyl chloride	1310	14.5	29.0	ug/kg	50	1160	ND	113	56-135%	---	---	
m,p-Xylene	2260	29.0	58.1	ug/kg	50	2320	ND	97	77-124%	---	---	
o-Xylene	1100	14.5	29.0	ug/kg	50	1160	ND	95	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 119 %*			*Limits: 80-120 %*			*Dilution: 1x*			
Toluene-d8 (Surr)			*99 %*			*80-120 %*			*"*			
4-Bromofluorobenzene (Surr)			*102 %*			*79-120 %*			*"*			

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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0536 - EPA 5035A							Soil					
Blank (23G0536-BLK1)			Prepared: 07/19/23 10:22 Analyzed: 07/19/23 13:54									
5035A/8260D												
Acetone	ND	500	1000	ug/kg	50	---	---	---	---	---	---	
Acrylonitrile	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
Benzene	ND	5.00	10.0	ug/kg	50	---	---	---	---	---	---	
Bromobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Bromochloromethane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Bromodichloromethane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Bromoform	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
Bromomethane	ND	500	500	ug/kg	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	250	500	ug/kg	50	---	---	---	---	---	---	
n-Butylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Carbon disulfide	ND	250	500	ug/kg	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Chlorobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Chloroethane	ND	250	500	ug/kg	50	---	---	---	---	---	---	
Chloroform	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Chloromethane	ND	125	250	ug/kg	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Dibromochloromethane	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	125	250	ug/kg	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Dibromomethane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	

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Darwin Thomas, Business Development Director

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0536 - EPA 5035A							**Soil**					
Blank (23G0536-BLK1)			Prepared: 07/19/23 10:22 Analyzed: 07/19/23 13:54									
1,2-Dichloropropane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Ethylbenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
2-Hexanone	ND	250	500	ug/kg	50	---	---	---	---	---	---	
Isopropylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Methylene chloride	ND	250	500	ug/kg	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	250	500	ug/kg	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Naphthalene	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
n-Propylbenzene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Styrene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Toluene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	125	250	ug/kg	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	125	250	ug/kg	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	50.0	100	ug/kg	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
Vinyl chloride	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	
m,p-Xylene	ND	25.0	50.0	ug/kg	50	---	---	---	---	---	---	
o-Xylene	ND	12.5	25.0	ug/kg	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 116 %* *Limits: 80-120 %* *Dilution: 1x*

Apex Laboratories

Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0536 - EPA 5035A							**Soil**					
Blank (23G0536-BLK1)				Prepared: 07/19/23 10:22 Analyzed: 07/19/23 13:54								
Surr: Toluene-d8 (Surr)			*Recovery: 95 %*	*Limits: 80-120 %*			*Dilution: 1x*					
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*			*"*					
LCS (23G0536-BS1)				Prepared: 07/19/23 10:22 Analyzed: 07/19/23 12:56								
5035A/8260D												
Acetone	1730	500	1000	ug/kg	50	2000	---	86	80-120%	---	---	
Acrylonitrile	1160	50.0	100	ug/kg	50	1000	---	116	80-120%	---	---	
Benzene	1220	5.00	10.0	ug/kg	50	1000	---	**122**	**80-120%**	---	---	Q-56
Bromobenzene	1120	12.5	25.0	ug/kg	50	1000	---	112	80-120%	---	---	
Bromochloromethane	1010	25.0	50.0	ug/kg	50	1000	---	101	80-120%	---	---	
Bromodichloromethane	880	25.0	50.0	ug/kg	50	1000	---	88	80-120%	---	---	
Bromoform	928	50.0	100	ug/kg	50	1000	---	93	80-120%	---	---	
Bromomethane	1020	500	500	ug/kg	50	1000	---	102	80-120%	---	---	
2-Butanone (MEK)	1990	250	500	ug/kg	50	2000	---	100	80-120%	---	---	
n-Butylbenzene	1010	25.0	50.0	ug/kg	50	1000	---	101	80-120%	---	---	
sec-Butylbenzene	1080	25.0	50.0	ug/kg	50	1000	---	108	80-120%	---	---	
tert-Butylbenzene	932	25.0	50.0	ug/kg	50	1000	---	93	80-120%	---	---	
Carbon disulfide	1130	250	500	ug/kg	50	1000	---	113	80-120%	---	---	
Carbon tetrachloride	909	25.0	50.0	ug/kg	50	1000	---	91	80-120%	---	---	
Chlorobenzene	1040	12.5	25.0	ug/kg	50	1000	---	104	80-120%	---	---	
Chloroethane	820	250	500	ug/kg	50	1000	---	82	80-120%	---	---	
Chloroform	986	25.0	50.0	ug/kg	50	1000	---	99	80-120%	---	---	
Chloromethane	990	125	250	ug/kg	50	1000	---	99	80-120%	---	---	
2-Chlorotoluene	1060	25.0	50.0	ug/kg	50	1000	---	106	80-120%	---	---	
4-Chlorotoluene	964	25.0	50.0	ug/kg	50	1000	---	96	80-120%	---	---	
Dibromochloromethane	880	50.0	100	ug/kg	50	1000	---	88	80-120%	---	---	
1,2-Dibromo-3-chloropropane	900	125	250	ug/kg	50	1000	---	90	80-120%	---	---	
1,2-Dibromoethane (EDB)	988	25.0	50.0	ug/kg	50	1000	---	99	80-120%	---	---	
Dibromomethane	1040	25.0	50.0	ug/kg	50	1000	---	104	80-120%	---	---	
1,2-Dichlorobenzene	1040	12.5	25.0	ug/kg	50	1000	---	104	80-120%	---	---	
1,3-Dichlorobenzene	1030	12.5	25.0	ug/kg	50	1000	---	103	80-120%	---	---	
1,4-Dichlorobenzene	1030	12.5	25.0	ug/kg	50	1000	---	103	80-120%	---	---	
Dichlorodifluoromethane	1060	50.0	100	ug/kg	50	1000	---	106	80-120%	---	---	
1,1-Dichloroethane	1040	12.5	25.0	ug/kg	50	1000	---	104	80-120%	---	---	

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Darwin Thomas, Business Development Director

APEX LABORATORIES

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0536 - EPA 5035A							**Soil**					
LCS (23G0536-BS1)			Prepared: 07/19/23 10:22 Analyzed: 07/19/23 12:56									
1,2-Dichloroethane (EDC)	860	12.5	25.0	ug/kg	50	1000	---	86	80-120%	---	---	
1,1-Dichloroethene	1050	12.5	25.0	ug/kg	50	1000	---	105	80-120%	---	---	
cis-1,2-Dichloroethene	986	12.5	25.0	ug/kg	50	1000	---	99	80-120%	---	---	
trans-1,2-Dichloroethene	1030	12.5	25.0	ug/kg	50	1000	---	103	80-120%	---	---	
1,2-Dichloropropane	1070	12.5	25.0	ug/kg	50	1000	---	107	80-120%	---	---	
1,3-Dichloropropane	939	25.0	50.0	ug/kg	50	1000	---	94	80-120%	---	---	
2,2-Dichloropropane	956	25.0	50.0	ug/kg	50	1000	---	96	80-120%	---	---	
1,1-Dichloropropene	1110	25.0	50.0	ug/kg	50	1000	---	111	80-120%	---	---	
cis-1,3-Dichloropropene	954	25.0	50.0	ug/kg	50	1000	---	95	80-120%	---	---	
trans-1,3-Dichloropropene	896	25.0	50.0	ug/kg	50	1000	---	90	80-120%	---	---	
Ethylbenzene	974	12.5	25.0	ug/kg	50	1000	---	97	80-120%	---	---	
Hexachlorobutadiene	1040	50.0	100	ug/kg	50	1000	---	104	80-120%	---	---	
2-Hexanone	1680	250	500	ug/kg	50	2000	---	84	80-120%	---	---	
Isopropylbenzene	1010	25.0	50.0	ug/kg	50	1000	---	101	80-120%	---	---	
4-Isopropyltoluene	1060	25.0	50.0	ug/kg	50	1000	---	106	80-120%	---	---	
Methylene chloride	1310	250	500	ug/kg	50	1000	---	**131**	**80-120%**	---	---	Q-56
4-Methyl-2-pentanone (MiBK)	1720	250	500	ug/kg	50	2000	---	86	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	992	25.0	50.0	ug/kg	50	1000	---	99	80-120%	---	---	
Naphthalene	1030	50.0	100	ug/kg	50	1000	---	103	80-120%	---	---	
n-Propylbenzene	1030	12.5	25.0	ug/kg	50	1000	---	103	80-120%	---	---	
Styrene	1020	25.0	50.0	ug/kg	50	1000	---	102	80-120%	---	---	
1,1,1,2-Tetrachloroethane	908	12.5	25.0	ug/kg	50	1000	---	91	80-120%	---	---	
1,1,2,2-Tetrachloroethane	998	25.0	50.0	ug/kg	50	1000	---	100	80-120%	---	---	
Tetrachloroethene (PCE)	1120	12.5	25.0	ug/kg	50	1000	---	112	80-120%	---	---	
Toluene	998	25.0	50.0	ug/kg	50	1000	---	100	80-120%	---	---	
1,2,3-Trichlorobenzene	1050	125	250	ug/kg	50	1000	---	105	80-120%	---	---	
1,2,4-Trichlorobenzene	1000	125	250	ug/kg	50	1000	---	100	80-120%	---	---	
1,1,1-Trichloroethane	973	12.5	25.0	ug/kg	50	1000	---	97	80-120%	---	---	
1,1,2-Trichloroethane	1050	12.5	25.0	ug/kg	50	1000	---	105	80-120%	---	---	
Trichloroethene (TCE)	1210	12.5	25.0	ug/kg	50	1000	---	**121**	**80-120%**	---	---	Q-56
Trichlorofluoromethane	936	50.0	100	ug/kg	50	1000	---	94	80-120%	---	---	
1,2,3-Trichloropropane	898	25.0	50.0	ug/kg	50	1000	---	90	80-120%	---	---	
1,2,4-Trimethylbenzene	1060	25.0	50.0	ug/kg	50	1000	---	106	80-120%	---	---	
1,3,5-Trimethylbenzene	1020	25.0	50.0	ug/kg	50	1000	---	102	80-120%	---	---	

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0536 - EPA 5035A							**Soil**					
LCS (23G0536-BS1)			Prepared: 07/19/23 10:22 Analyzed: 07/19/23 12:56									
Vinyl chloride	1160	12.5	25.0	ug/kg	50	1000	---	116	80-120%	---	---	
m,p-Xylene	1920	25.0	50.0	ug/kg	50	2000	---	96	80-120%	---	---	
o-Xylene	935	12.5	25.0	ug/kg	50	1000	---	94	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 115 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*99 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*103 %*		*79-120 %*				*"*			
Duplicate (23G0536-DUP1)			Prepared: 07/14/23 15:00 Analyzed: 07/19/23 16:00									
QC Source Sample: Non-SDG (A3G1122-10)												
Acetone	ND	535	1070	ug/kg	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	53.5	107	ug/kg	50	---	ND	---	---	---	30%	
Benzene	ND	5.35	10.7	ug/kg	50	---	ND	---	---	---	30%	
Bromobenzene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Bromoform	ND	53.5	107	ug/kg	50	---	ND	---	---	---	30%	
Bromomethane	ND	535	535	ug/kg	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	268	535	ug/kg	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	268	535	ug/kg	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
Chloroethane	ND	268	535	ug/kg	50	---	ND	---	---	---	30%	
Chloroform	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Chloromethane	ND	134	268	ug/kg	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	53.5	107	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	134	268	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Dibromomethane	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

APEX LABORATORIES

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0536 - EPA 5035A							**Soil**					
Duplicate (23G0536-DUP1)			Prepared: 07/14/23 15:00 Analyzed: 07/19/23 16:00									
QC Source Sample: Non-SDG (A3G1122-10)												
1,3-Dichlorobenzene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	53.5	107	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	53.5	107	ug/kg	50	---	ND	---	---	---	30%	
2-Hexanone	ND	268	535	ug/kg	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Methylene chloride	ND	268	535	ug/kg	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	268	535	ug/kg	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Naphthalene	ND	53.5	107	ug/kg	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
Styrene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
Toluene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	134	268	ug/kg	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	134	268	ug/kg	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	

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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0536 - EPA 5035A							**Soil**					
Duplicate (23G0536-DUP1)			Prepared: 07/14/23 15:00 Analyzed: 07/19/23 16:00									
QC Source Sample: Non-SDG (A3G1122-10)												
Trichloroethene (TCE)	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	53.5	107	ug/kg	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	13.4	26.8	ug/kg	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	26.8	53.5	ug/kg	50	---	ND	---	---	---	30%	
o-Xylene	ND	13.4	26.8	ug/kg	50	---	13.4	---	---	***	**30%**	Q-05
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 111 %*		*Limits: 80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*96 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*		*"*					
Matrix Spike (23G0536-MS1)			Prepared: 07/13/23 14:23 Analyzed: 07/19/23 21:06									
QC Source Sample: Non-SDG (A3G1100-30)												
5035A/8260D												
Acetone	2220	619	1240	ug/kg	50	2480	ND	90	36-164%	---	---	
Acrylonitrile	1290	61.9	124	ug/kg	50	1240	ND	104	65-134%	---	---	
Benzene	1390	6.19	12.4	ug/kg	50	1240	ND	112	77-121%	---	---	Q-54b
Bromobenzene	1270	15.5	31.0	ug/kg	50	1240	ND	103	78-121%	---	---	
Bromochloromethane	1200	31.0	61.9	ug/kg	50	1240	ND	96	78-125%	---	---	
Bromodichloromethane	1120	31.0	61.9	ug/kg	50	1240	ND	91	75-127%	---	---	
Bromoform	1120	61.9	124	ug/kg	50	1240	ND	90	67-132%	---	---	
Bromomethane	1210	619	619	ug/kg	50	1240	ND	98	53-143%	---	---	
2-Butanone (MEK)	2250	310	619	ug/kg	50	2480	ND	91	51-148%	---	---	
n-Butylbenzene	1280	31.0	61.9	ug/kg	50	1240	ND	103	70-128%	---	---	
sec-Butylbenzene	1320	31.0	61.9	ug/kg	50	1240	ND	107	73-126%	---	---	
tert-Butylbenzene	1240	31.0	61.9	ug/kg	50	1240	ND	100	73-125%	---	---	
Carbon disulfide	1260	310	619	ug/kg	50	1240	ND	102	63-132%	---	---	
Carbon tetrachloride	1280	31.0	61.9	ug/kg	50	1240	ND	103	70-135%	---	---	
Chlorobenzene	1260	15.5	31.0	ug/kg	50	1240	ND	102	79-120%	---	---	
Chloroethane	1290	310	619	ug/kg	50	1240	ND	104	59-139%	---	---	
Chloroform	1250	31.0	61.9	ug/kg	50	1240	ND	101	78-123%	---	---	
Chloromethane	1100	155	310	ug/kg	50	1240	ND	89	50-136%	---	---	

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0536 - EPA 5035A							**Soil**					
Matrix Spike (23G0536-MS1)			Prepared: 07/13/23 14:23		Analyzed: 07/19/23 21:06							
QC Source Sample: Non-SDG (A3G1100-30)												
2-Chlorotoluene	1240	31.0	61.9	ug/kg	50	1240	ND	100	75-122%	---	---	
4-Chlorotoluene	1220	31.0	61.9	ug/kg	50	1240	ND	98	72-124%	---	---	
Dibromochloromethane	1150	61.9	124	ug/kg	50	1240	ND	93	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1020	155	310	ug/kg	50	1240	ND	83	61-132%	---	---	
1,2-Dibromoethane (EDB)	1240	31.0	61.9	ug/kg	50	1240	ND	100	78-122%	---	---	
Dibromomethane	1230	31.0	61.9	ug/kg	50	1240	ND	99	78-125%	---	---	
1,2-Dichlorobenzene	1210	15.5	31.0	ug/kg	50	1240	ND	98	78-121%	---	---	
1,3-Dichlorobenzene	1220	15.5	31.0	ug/kg	50	1240	ND	98	77-121%	---	---	
1,4-Dichlorobenzene	1230	15.5	31.0	ug/kg	50	1240	ND	99	75-120%	---	---	
Dichlorodifluoromethane	1370	61.9	124	ug/kg	50	1240	ND	111	29-149%	---	---	
1,1-Dichloroethane	1270	15.5	31.0	ug/kg	50	1240	ND	102	76-125%	---	---	
1,2-Dichloroethane (EDC)	1190	15.5	31.0	ug/kg	50	1240	ND	96	73-128%	---	---	
1,1-Dichloroethene	1320	15.5	31.0	ug/kg	50	1240	ND	106	70-131%	---	---	
cis-1,2-Dichloroethene	1200	15.5	31.0	ug/kg	50	1240	ND	97	77-123%	---	---	
trans-1,2-Dichloroethene	1260	15.5	31.0	ug/kg	50	1240	ND	101	74-125%	---	---	
1,2-Dichloropropane	1240	15.5	31.0	ug/kg	50	1240	ND	100	76-123%	---	---	
1,3-Dichloropropane	1230	31.0	61.9	ug/kg	50	1240	ND	99	77-121%	---	---	
2,2-Dichloropropane	1150	31.0	61.9	ug/kg	50	1240	ND	93	67-133%	---	---	
1,1-Dichloropropene	1350	31.0	61.9	ug/kg	50	1240	ND	109	76-125%	---	---	
cis-1,3-Dichloropropene	1180	31.0	61.9	ug/kg	50	1240	ND	95	74-126%	---	---	
trans-1,3-Dichloropropene	1180	31.0	61.9	ug/kg	50	1240	ND	95	71-130%	---	---	
Ethylbenzene	1250	15.5	31.0	ug/kg	50	1240	ND	101	76-122%	---	---	
Hexachlorobutadiene	1250	61.9	124	ug/kg	50	1240	ND	100	61-135%	---	---	
2-Hexanone	2110	310	619	ug/kg	50	2480	ND	85	53-145%	---	---	
Isopropylbenzene	1290	31.0	61.9	ug/kg	50	1240	ND	104	68-134%	---	---	
4-Isopropyltoluene	1310	31.0	61.9	ug/kg	50	1240	ND	106	73-127%	---	---	
Methylene chloride	1370	310	619	ug/kg	50	1240	ND	110	70-128%	---	---	Q-54a
4-Methyl-2-pentanone (MiBK)	2190	310	619	ug/kg	50	2480	ND	88	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1180	31.0	61.9	ug/kg	50	1240	ND	95	73-125%	---	---	
Naphthalene	1150	61.9	124	ug/kg	50	1240	ND	93	62-129%	---	---	
n-Propylbenzene	1280	15.5	31.0	ug/kg	50	1240	ND	103	73-125%	---	---	
Styrene	1290	31.0	61.9	ug/kg	50	1240	ND	104	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1200	15.5	31.0	ug/kg	50	1240	ND	97	78-125%	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0536 - EPA 5035A							**Soil**					
Matrix Spike (23G0536-MS1)			Prepared: 07/13/23 14:23		Analyzed: 07/19/23 21:06							
QC Source Sample: Non-SDG (A3G1100-30)												
1,1,2,2-Tetrachloroethane	1160	31.0	61.9	ug/kg	50	1240	ND	93	70-124%	---	---	
Tetrachloroethene (PCE)	1320	15.5	31.0	ug/kg	50	1240	ND	107	73-128%	---	---	
Toluene	1230	31.0	61.9	ug/kg	50	1240	ND	99	77-121%	---	---	
1,2,3-Trichlorobenzene	1170	155	310	ug/kg	50	1240	ND	94	66-130%	---	---	
1,2,4-Trichlorobenzene	1140	155	310	ug/kg	50	1240	ND	92	67-129%	---	---	
1,1,1-Trichloroethane	1300	15.5	31.0	ug/kg	50	1240	ND	105	73-130%	---	---	
1,1,2-Trichloroethane	1310	15.5	31.0	ug/kg	50	1240	ND	105	78-121%	---	---	
Trichloroethene (TCE)	1350	15.5	31.0	ug/kg	50	1240	ND	109	77-123%	---	---	Q-54
Trichlorofluoromethane	2290	61.9	124	ug/kg	50	1240	ND	**185**	**62-140%**	---	---	Q-01
1,2,3-Trichloropropane	1130	31.0	61.9	ug/kg	50	1240	ND	91	73-125%	---	---	
1,2,4-Trimethylbenzene	1320	31.0	61.9	ug/kg	50	1240	ND	107	75-123%	---	---	
1,3,5-Trimethylbenzene	1290	31.0	61.9	ug/kg	50	1240	ND	104	73-124%	---	---	
Vinyl chloride	1360	15.5	31.0	ug/kg	50	1240	ND	109	56-135%	---	---	
m,p-Xylene	2500	31.0	61.9	ug/kg	50	2480	ND	101	77-124%	---	---	
o-Xylene	1220	15.5	31.0	ug/kg	50	1240	ND	98	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*98 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*99 %*		*79-120 %*				*"*			

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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0502 - EPA 1311/5030C TCLP Volatiles							Water					
Blank (23G0502-BLK1)			Prepared: 07/18/23 11:52 Analyzed: 07/18/23 14:01									TCLP
1311/8260D												
Acetone	ND	500	1000	ug/L	50	---	---	---	---	---	---	
Benzene	ND	6.25	12.5	ug/L	50	---	---	---	---	---	---	
Bromobenzene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Bromochloromethane	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
Bromodichloromethane	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
Bromoform	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
Bromomethane	ND	250	250	ug/L	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	250	500	ug/L	50	---	---	---	---	---	---	
n-Butylbenzene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
Chlorobenzene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Chloroethane	ND	250	250	ug/L	50	---	---	---	---	---	---	
Chloroform	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
Chloromethane	ND	125	250	ug/L	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	125	250	ug/L	50	---	---	---	---	---	---	
Dibromochloromethane	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Dibromomethane	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
1,2-Dichloropropane	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	

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ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0502 - EPA 1311/5030C TCLP Volatiles							**Water**					
Blank (23G0502-BLK1)			Prepared: 07/18/23 11:52		Analyzed: 07/18/23 14:01							**TCLP**
2,2-Dichloropropane	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
Ethylbenzene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	125	250	ug/L	50	---	---	---	---	---	---	
2-Hexanone	ND	250	500	ug/L	50	---	---	---	---	---	---	
Isopropylbenzene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	250	500	ug/L	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
Methylene chloride	ND	250	500	ug/L	50	---	---	---	---	---	---	
n-Propylbenzene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Styrene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Naphthalene	ND	50.0	100	ug/L	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Toluene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	50.0	100	ug/L	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	50.0	100	ug/L	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
Vinyl chloride	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	
m,p-Xylene	ND	25.0	50.0	ug/L	50	---	---	---	---	---	---	
o-Xylene	ND	12.5	25.0	ug/L	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 100 %* *Limits: 80-120 %* *Dilution: 1x*
Toluene-d8 (Surr) *100 %* *80-120 %* *"*
4-Bromofluorobenzene (Surr) *103 %* *80-120 %* *"*

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Darwin Thomas, Business Development Director

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Batch 23G0502 - EPA 1311/5030C TCLP Volatiles — **Water**

LCS (23G0502-BS1) Prepared: 07/18/23 11:52 Analyzed: 07/18/23 13:16 — **TCLP**

1311/8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Acetone	1730	500	1000	ug/L	50	2000	---	86	80-120%	---	---	
Benzene	970	6.25	12.5	ug/L	50	1000	---	97	80-120%	---	---	
Bromobenzene	960	12.5	25.0	ug/L	50	1000	---	96	80-120%	---	---	
Bromochloromethane	1040	25.0	50.0	ug/L	50	1000	---	104	80-120%	---	---	
Bromodichloromethane	945	25.0	50.0	ug/L	50	1000	---	94	80-120%	---	---	
Bromoform	1040	25.0	50.0	ug/L	50	1000	---	104	80-120%	---	---	
Bromomethane	1040	250	250	ug/L	50	1000	---	104	80-120%	---	---	
2-Butanone (MEK)	1980	250	500	ug/L	50	2000	---	99	80-120%	---	---	
n-Butylbenzene	1010	25.0	50.0	ug/L	50	1000	---	101	80-120%	---	---	
sec-Butylbenzene	1020	25.0	50.0	ug/L	50	1000	---	102	80-120%	---	---	
tert-Butylbenzene	1030	25.0	50.0	ug/L	50	1000	---	103	80-120%	---	---	
Carbon tetrachloride	974	25.0	50.0	ug/L	50	1000	---	97	80-120%	---	---	
Chlorobenzene	969	12.5	25.0	ug/L	50	1000	---	97	80-120%	---	---	
Chloroethane	910	250	250	ug/L	50	1000	---	91	80-120%	---	---	
Chloroform	952	25.0	50.0	ug/L	50	1000	---	95	80-120%	---	---	
Chloromethane	836	125	250	ug/L	50	1000	---	84	80-120%	---	---	
2-Chlorotoluene	1100	25.0	50.0	ug/L	50	1000	---	110	80-120%	---	---	
4-Chlorotoluene	1130	25.0	50.0	ug/L	50	1000	---	113	80-120%	---	---	
1,2-Dibromo-3-chloropropane	957	125	250	ug/L	50	1000	---	96	80-120%	---	---	
Dibromochloromethane	1010	25.0	50.0	ug/L	50	1000	---	101	80-120%	---	---	
1,2-Dibromoethane (EDB)	1030	12.5	25.0	ug/L	50	1000	---	103	80-120%	---	---	
Dibromomethane	957	25.0	50.0	ug/L	50	1000	---	96	80-120%	---	---	
1,2-Dichlorobenzene	1010	12.5	25.0	ug/L	50	1000	---	101	80-120%	---	---	
1,3-Dichlorobenzene	1050	12.5	25.0	ug/L	50	1000	---	105	80-120%	---	---	
1,4-Dichlorobenzene	937	12.5	25.0	ug/L	50	1000	---	94	80-120%	---	---	
Dichlorodifluoromethane	840	25.0	50.0	ug/L	50	1000	---	84	80-120%	---	---	
1,1-Dichloroethane	960	12.5	25.0	ug/L	50	1000	---	96	80-120%	---	---	
1,1-Dichloroethene	1010	12.5	25.0	ug/L	50	1000	---	101	80-120%	---	---	
1,2-Dichloroethane (EDC)	950	12.5	25.0	ug/L	50	1000	---	95	80-120%	---	---	
cis-1,2-Dichloroethene	1040	25.0	50.0	ug/L	50	1000	---	104	80-120%	---	---	
trans-1,2-Dichloroethene	975	12.5	25.0	ug/L	50	1000	---	98	80-120%	---	---	
1,2-Dichloropropane	942	12.5	25.0	ug/L	50	1000	---	94	80-120%	---	---	
1,3-Dichloropropane	999	25.0	50.0	ug/L	50	1000	---	100	80-120%	---	---	

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Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0502 - EPA 1311/5030C TCLP Volatiles							**Water**					
LCS (23G0502-BS1)			Prepared: 07/18/23 11:52 Analyzed: 07/18/23 13:16									**TCLP**
2,2-Dichloropropane	1060	25.0	50.0	ug/L	50	1000	---	106	80-120%	---	---	
1,1-Dichloropropene	1060	25.0	50.0	ug/L	50	1000	---	106	80-120%	---	---	
cis-1,3-Dichloropropene	1140	25.0	50.0	ug/L	50	1000	---	114	80-120%	---	---	
trans-1,3-Dichloropropene	1110	25.0	50.0	ug/L	50	1000	---	111	80-120%	---	---	
Ethylbenzene	1070	12.5	25.0	ug/L	50	1000	---	107	80-120%	---	---	
Hexachlorobutadiene	1030	125	250	ug/L	50	1000	---	103	80-120%	---	---	
2-Hexanone	1890	250	500	ug/L	50	2000	---	95	80-120%	---	---	
Isopropylbenzene	1020	25.0	50.0	ug/L	50	1000	---	102	80-120%	---	---	
4-Isopropyltoluene	1030	25.0	50.0	ug/L	50	1000	---	103	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	2060	250	500	ug/L	50	2000	---	103	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1100	25.0	50.0	ug/L	50	1000	---	110	80-120%	---	---	
Methylene chloride	995	250	500	ug/L	50	1000	---	100	80-120%	---	---	
n-Propylbenzene	1070	12.5	25.0	ug/L	50	1000	---	107	80-120%	---	---	
Styrene	1000	25.0	50.0	ug/L	50	1000	---	100	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1030	12.5	25.0	ug/L	50	1000	---	103	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1010	12.5	25.0	ug/L	50	1000	---	101	80-120%	---	---	
Naphthalene	964	50.0	100	ug/L	50	1000	---	96	80-120%	---	---	
Tetrachloroethene (PCE)	991	12.5	25.0	ug/L	50	1000	---	99	80-120%	---	---	
Toluene	975	25.0	50.0	ug/L	50	1000	---	98	80-120%	---	---	
1,2,3-Trichlorobenzene	1080	25.0	50.0	ug/L	50	1000	---	108	80-120%	---	---	
1,2,4-Trichlorobenzene	1090	50.0	100	ug/L	50	1000	---	109	80-120%	---	---	
1,1,1-Trichloroethane	946	12.5	25.0	ug/L	50	1000	---	95	80-120%	---	---	
1,1,2-Trichloroethane	927	12.5	25.0	ug/L	50	1000	---	93	80-120%	---	---	
Trichloroethene (TCE)	980	12.5	25.0	ug/L	50	1000	---	98	80-120%	---	---	
Trichlorofluoromethane	925	50.0	100	ug/L	50	1000	---	92	80-120%	---	---	
1,2,3-Trichloropropane	1030	25.0	50.0	ug/L	50	1000	---	103	80-120%	---	---	
1,2,4-Trimethylbenzene	1040	25.0	50.0	ug/L	50	1000	---	104	80-120%	---	---	
1,3,5-Trimethylbenzene	1030	25.0	50.0	ug/L	50	1000	---	103	80-120%	---	---	
Vinyl chloride	892	12.5	25.0	ug/L	50	1000	---	89	80-120%	---	---	
m,p-Xylene	2050	25.0	50.0	ug/L	50	2000	---	102	80-120%	---	---	
o-Xylene	1020	12.5	25.0	ug/L	50	1000	---	102	80-120%	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 99 %* *Limits: 80-120 %* *Dilution: 1x*
Toluene-d8 (Surr) *97 %* *80-120 %* *"*
4-Bromofluorobenzene (Surr) *100 %* *80-120 %* *"*

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Darwin Thomas, Business Development Director

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0502 - EPA 1311/5030C TCLP Volatiles							**Water**					
Duplicate (23G0502-DUP1)			Prepared: 07/18/23 11:52 Analyzed: 07/18/23 15:31									
QC Source Sample: T125-071723-3 (A3G1118-01)												
1311/8260D												
Acetone	ND	500	1000	ug/L	50	---	ND	---	---	---	30%	
Benzene	**7.50**	6.25	12.5	ug/L	50	---	7.00	---	---	7	30%	J
Bromobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Bromoform	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Bromomethane	ND	250	250	ug/L	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Chloroethane	ND	250	250	ug/L	50	---	ND	---	---	---	30%	
Chloroform	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Chloromethane	ND	125	250	ug/L	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	125	250	ug/L	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Dibromomethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0502 - EPA 1311/5030C TCLP Volatiles							**Water**					
Duplicate (23G0502-DUP1)			Prepared: 07/18/23 11:52 Analyzed: 07/18/23 15:31									
QC Source Sample: T125-071723-3 (A3G1118-01)												
1,2-Dichloropropane	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	125	250	ug/L	50	---	ND	---	---	---	30%	
2-Hexanone	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Methylene chloride	ND	250	500	ug/L	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Styrene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Naphthalene	ND	50.0	100	ug/L	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Toluene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	50.0	100	ug/L	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	50.0	100	ug/L	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	30%	
o-Xylene	ND	12.5	25.0	ug/L	50	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0502 - EPA 1311/5030C TCLP Volatiles												**Water**
Duplicate (23G0502-DUP1)			Prepared: 07/18/23 11:52 Analyzed: 07/18/23 15:31									
QC Source Sample: T125-071723-3 (A3G1118-01)												
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 100 %*		*Limits: 80-120 %*							*Dilution: 1x*
Toluene-d8 (Surr)			*101 %*		*80-120 %*							*"*
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*							*"*
Matrix Spike (23G0502-MS1)			Prepared: 07/18/23 11:52 Analyzed: 07/18/23 15:53									
QC Source Sample: T125-071723-3 (A3G1118-01)												
1311/8260D												
Acetone	1630	500	1000	ug/L	50	2000	ND	81	39-160%	---	---	
Benzene	950	6.25	12.5	ug/L	50	1000	7.00	94	79-120%	---	---	
Bromobenzene	888	12.5	25.0	ug/L	50	1000	ND	89	80-120%	---	---	
Bromochloromethane	977	25.0	50.0	ug/L	50	1000	ND	98	78-123%	---	---	
Bromodichloromethane	890	25.0	50.0	ug/L	50	1000	ND	89	79-125%	---	---	
Bromoform	950	25.0	50.0	ug/L	50	1000	ND	95	66-130%	---	---	
Bromomethane	1140	250	250	ug/L	50	1000	ND	114	53-141%	---	---	
2-Butanone (MEK)	1760	250	500	ug/L	50	2000	ND	88	56-143%	---	---	
n-Butylbenzene	1010	25.0	50.0	ug/L	50	1000	ND	101	75-128%	---	---	
sec-Butylbenzene	1040	25.0	50.0	ug/L	50	1000	ND	104	77-126%	---	---	
tert-Butylbenzene	985	25.0	50.0	ug/L	50	1000	ND	98	78-124%	---	---	
Carbon tetrachloride	1040	25.0	50.0	ug/L	50	1000	ND	104	72-136%	---	---	
Chlorobenzene	924	12.5	25.0	ug/L	50	1000	ND	92	80-120%	---	---	
Chloroethane	1000	250	250	ug/L	50	1000	ND	100	60-138%	---	---	
Chloroform	910	25.0	50.0	ug/L	50	1000	ND	91	79-124%	---	---	
Chloromethane	856	125	250	ug/L	50	1000	ND	86	50-139%	---	---	
2-Chlorotoluene	1030	25.0	50.0	ug/L	50	1000	ND	103	79-122%	---	---	
4-Chlorotoluene	1060	25.0	50.0	ug/L	50	1000	ND	106	78-122%	---	---	
1,2-Dibromo-3-chloropropane	819	125	250	ug/L	50	1000	ND	82	62-128%	---	---	
Dibromochloromethane	936	25.0	50.0	ug/L	50	1000	ND	94	74-126%	---	---	
1,2-Dibromoethane (EDB)	934	12.5	25.0	ug/L	50	1000	ND	93	77-121%	---	---	
Dibromomethane	897	25.0	50.0	ug/L	50	1000	ND	90	79-123%	---	---	
1,2-Dichlorobenzene	930	12.5	25.0	ug/L	50	1000	ND	93	80-120%	---	---	
1,3-Dichlorobenzene	997	12.5	25.0	ug/L	50	1000	ND	100	80-120%	---	---	
1,4-Dichlorobenzene	876	12.5	25.0	ug/L	50	1000	ND	88	79-120%	---	---	
Dichlorodifluoromethane	1000	25.0	50.0	ug/L	50	1000	ND	100	32-152%	---	---	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0502 - EPA 1311/5030C TCLP Volatiles							**Water**					
Matrix Spike (23G0502-MS1)			Prepared: 07/18/23 11:52		Analyzed: 07/18/23 15:53							
QC Source Sample: T125-071723-3 (A3G1118-01)												
1,1-Dichloroethane	930	12.5	25.0	ug/L	50	1000	ND	93	77-125%	---	---	
1,1-Dichloroethene	1070	12.5	25.0	ug/L	50	1000	ND	107	71-131%	---	---	
1,2-Dichloroethane (EDC)	894	12.5	25.0	ug/L	50	1000	ND	89	73-128%	---	---	
cis-1,2-Dichloroethene	972	25.0	50.0	ug/L	50	1000	ND	97	78-123%	---	---	
trans-1,2-Dichloroethene	954	12.5	25.0	ug/L	50	1000	ND	95	75-124%	---	---	
1,2-Dichloropropane	888	12.5	25.0	ug/L	50	1000	ND	89	78-122%	---	---	
1,3-Dichloropropane	930	25.0	50.0	ug/L	50	1000	ND	93	80-120%	---	---	
2,2-Dichloropropane	1010	25.0	50.0	ug/L	50	1000	ND	101	60-139%	---	---	
1,1-Dichloropropene	1100	25.0	50.0	ug/L	50	1000	ND	110	79-125%	---	---	
cis-1,3-Dichloropropene	1030	25.0	50.0	ug/L	50	1000	ND	103	75-124%	---	---	
trans-1,3-Dichloropropene	1010	25.0	50.0	ug/L	50	1000	ND	101	73-127%	---	---	
Ethylbenzene	1040	12.5	25.0	ug/L	50	1000	ND	104	79-121%	---	---	
Hexachlorobutadiene	989	125	250	ug/L	50	1000	ND	99	66-134%	---	---	
2-Hexanone	1620	250	500	ug/L	50	2000	ND	81	57-139%	---	---	
Isopropylbenzene	984	25.0	50.0	ug/L	50	1000	ND	98	72-131%	---	---	
4-Isopropyltoluene	997	25.0	50.0	ug/L	50	1000	ND	100	77-127%	---	---	
4-Methyl-2-pentanone (MiBK)	1840	250	500	ug/L	50	2000	ND	92	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	1010	25.0	50.0	ug/L	50	1000	ND	101	71-124%	---	---	
Methylene chloride	966	250	500	ug/L	50	1000	ND	97	74-124%	---	---	
n-Propylbenzene	1050	12.5	25.0	ug/L	50	1000	ND	105	76-126%	---	---	
Styrene	916	25.0	50.0	ug/L	50	1000	ND	92	78-123%	---	---	
1,1,1,2-Tetrachloroethane	962	12.5	25.0	ug/L	50	1000	ND	96	78-124%	---	---	
1,1,2,2-Tetrachloroethane	936	12.5	25.0	ug/L	50	1000	ND	94	71-121%	---	---	
Naphthalene	812	50.0	100	ug/L	50	1000	ND	81	61-128%	---	---	
Tetrachloroethene (PCE)	1010	12.5	25.0	ug/L	50	1000	ND	101	74-129%	---	---	
Toluene	948	25.0	50.0	ug/L	50	1000	ND	95	80-121%	---	---	
1,2,3-Trichlorobenzene	968	25.0	50.0	ug/L	50	1000	ND	97	69-129%	---	---	
1,2,4-Trichlorobenzene	936	50.0	100	ug/L	50	1000	ND	94	69-130%	---	---	
1,1,1-Trichloroethane	983	12.5	25.0	ug/L	50	1000	ND	98	74-131%	---	---	
1,1,2-Trichloroethane	874	12.5	25.0	ug/L	50	1000	ND	87	80-120%	---	---	
Trichloroethene (TCE)	944	12.5	25.0	ug/L	50	1000	ND	94	79-123%	---	---	
Trichlorofluoromethane	1090	50.0	100	ug/L	50	1000	ND	109	65-141%	---	---	
1,2,3-Trichloropropane	914	25.0	50.0	ug/L	50	1000	ND	91	73-122%	---	---	

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Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0502 - EPA 1311/5030C TCLP Volatiles							**Water**					
Matrix Spike (23G0502-MS1)			Prepared: 07/18/23 11:52 Analyzed: 07/18/23 15:53									
QC Source Sample: T125-071723-3 (A3G1118-01)												
1,2,4-Trimethylbenzene	980	25.0	50.0	ug/L	50	1000	ND	98	76-124%	---	---	
1,3,5-Trimethylbenzene	984	25.0	50.0	ug/L	50	1000	ND	98	75-124%	---	---	
Vinyl chloride	976	12.5	25.0	ug/L	50	1000	ND	98	58-137%	---	---	
m,p-Xylene	1970	25.0	50.0	ug/L	50	2000	ND	98	80-121%	---	---	
o-Xylene	928	12.5	25.0	ug/L	50	1000	ND	93	78-122%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*			*"*				

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ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0614 - EPA 3546							**Solid**					
Blank (23G0614-BLK1)			Prepared: 07/21/23 08:30 Analyzed: 07/21/23 17:30									
EPA 8270E												
Acenaphthene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Anthracene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	2.00	4.00	ug/kg	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	2.00	4.00	ug/kg	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	2.00	4.00	ug/kg	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Chrysene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Fluoranthene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Fluorene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.67	5.33	ug/kg	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.67	5.33	ug/kg	1	---	---	---	---	---	---	
Naphthalene	ND	2.67	5.33	ug/kg	1	---	---	---	---	---	---	
Phenanthrene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Pyrene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Carbazole	ND	2.00	4.00	ug/kg	1	---	---	---	---	---	---	
Dibenzofuran	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
2-Chlorophenol	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	33.3	66.7	ug/kg	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	33.3	66.7	ug/kg	1	---	---	---	---	---	---	
2-Methylphenol	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
2-Nitrophenol	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
4-Nitrophenol	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
Phenol	ND	2.67	5.33	ug/kg	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0614 - EPA 3546							Solid					
Blank (23G0614-BLK1)			Prepared: 07/21/23 08:30 Analyzed: 07/21/23 17:30									
2,3,5,6-Tetrachlorophenol	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	20.0	40.0	ug/kg	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
Diethylphthalate	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
Dimethylphthalate	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
Hexachloroethane	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.33	2.67	ug/kg	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
Aniline	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
4-Chloroaniline	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
2-Nitroaniline	ND	26.7	53.3	ug/kg	1	---	---	---	---	---	---	
3-Nitroaniline	ND	26.7	53.3	ug/kg	1	---	---	---	---	---	---	
4-Nitroaniline	ND	26.7	53.3	ug/kg	1	---	---	---	---	---	---	
Nitrobenzene	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	13.3	26.7	ug/kg	1	---	---	---	---	---	---	
Benzoic acid	ND	167	333	ug/kg	1	---	---	---	---	---	---	
Benzyl alcohol	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
Isophorone	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	

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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0614 - EPA 3546							Solid					
Blank (23G0614-BLK1)			Prepared: 07/21/23 08:30 Analyzed: 07/21/23 17:30									
Azobenzene (1,2-DPH)	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	33.3	66.7	ug/kg	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	26.7	53.3	ug/kg	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	33.3	66.7	ug/kg	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	33.3	66.7	ug/kg	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	33.3	66.7	ug/kg	1	---	---	---	---	---	---	
Pyridine	ND	6.67	13.3	ug/kg	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.33	6.67	ug/kg	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 77 %*		*Limits: 37-122 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*81 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*83 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*89 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*82 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*87 %*		*39-132 %*			*"*				*Q-41*
LCS (23G0614-BS1)			Prepared: 07/21/23 08:30 Analyzed: 07/21/23 18:04									
EPA 8270E												
Acenaphthene	426	5.32	10.7	ug/kg	4	533	---	80	40-123%	---	---	
Acenaphthylene	445	5.32	10.7	ug/kg	4	533	---	84	32-132%	---	---	
Anthracene	442	5.32	10.7	ug/kg	4	533	---	83	47-123%	---	---	
Benz(a)anthracene	433	5.32	10.7	ug/kg	4	533	---	81	49-126%	---	---	
Benzo(a)pyrene	445	8.00	16.0	ug/kg	4	533	---	84	45-129%	---	---	
Benzo(b)fluoranthene	396	8.00	16.0	ug/kg	4	533	---	74	45-132%	---	---	
Benzo(k)fluoranthene	402	8.00	16.0	ug/kg	4	533	---	75	47-132%	---	---	
Benzo(g,h,i)perylene	437	5.32	10.7	ug/kg	4	533	---	82	43-134%	---	---	
Chrysene	450	5.32	10.7	ug/kg	4	533	---	84	50-124%	---	---	
Dibenz(a,h)anthracene	436	5.32	10.7	ug/kg	4	533	---	82	45-134%	---	---	
Fluoranthene	468	5.32	10.7	ug/kg	4	533	---	88	50-127%	---	---	
Fluorene	466	5.32	10.7	ug/kg	4	533	---	87	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	403	5.32	10.7	ug/kg	4	533	---	76	45-133%	---	---	
1-Methylnaphthalene	441	10.7	21.3	ug/kg	4	533	---	83	40-120%	---	---	
2-Methylnaphthalene	461	10.7	21.3	ug/kg	4	533	---	86	38-122%	---	---	

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0614 - EPA 3546							**Solid**					
LCS (23G0614-BS1)			Prepared: 07/21/23 08:30		Analyzed: 07/21/23 18:04							
Naphthalene	419	10.7	21.3	ug/kg	4	533	---	79	35-123%	---	---	
Phenanthrene	420	5.32	10.7	ug/kg	4	533	---	79	50-121%	---	---	
Pyrene	459	5.32	10.7	ug/kg	4	533	---	86	47-127%	---	---	
Carbazole	474	8.00	16.0	ug/kg	4	533	---	89	50-123%	---	---	
Dibenzofuran	459	5.32	10.7	ug/kg	4	533	---	86	44-120%	---	---	
2-Chlorophenol	444	26.7	53.2	ug/kg	4	533	---	83	34-121%	---	---	
4-Chloro-3-methylphenol	459	53.2	107	ug/kg	4	533	---	86	45-122%	---	---	
2,4-Dichlorophenol	487	26.7	53.2	ug/kg	4	533	---	91	40-122%	---	---	
2,4-Dimethylphenol	477	26.7	53.2	ug/kg	4	533	---	89	30-127%	---	---	
2,4-Dinitrophenol	484	133	267	ug/kg	4	533	---	91	10-137%	---	---	Q-41
4,6-Dinitro-2-methylphenol	662	133	267	ug/kg	4	533	---	124	29-132%	---	---	Q-41
2-Methylphenol	458	13.3	26.7	ug/kg	4	533	---	86	32-122%	---	---	
3+4-Methylphenol(s)	462	13.3	26.7	ug/kg	4	533	---	87	34-120%	---	---	
2-Nitrophenol	476	53.2	107	ug/kg	4	533	---	89	36-123%	---	---	
4-Nitrophenol	372	53.2	107	ug/kg	4	533	---	70	30-132%	---	---	
Pentachlorophenol (PCP)	344	53.2	107	ug/kg	4	533	---	64	25-133%	---	---	
Phenol	461	10.7	21.3	ug/kg	4	533	---	86	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	472	26.7	53.2	ug/kg	4	533	---	89	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	469	26.7	53.2	ug/kg	4	533	---	88	40-120%	---	---	
2,4,5-Trichlorophenol	489	26.7	53.2	ug/kg	4	533	---	92	41-124%	---	---	
2,4,6-Trichlorophenol	436	26.7	53.2	ug/kg	4	533	---	82	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	404	80.0	160	ug/kg	4	533	---	76	51-133%	---	---	
Butyl benzyl phthalate	414	53.2	107	ug/kg	4	533	---	78	48-132%	---	---	
Diethylphthalate	456	53.2	107	ug/kg	4	533	---	86	50-124%	---	---	
Dimethylphthalate	460	53.2	107	ug/kg	4	533	---	86	48-124%	---	---	
Di-n-butylphthalate	452	53.2	107	ug/kg	4	533	---	85	51-128%	---	---	
Di-n-octyl phthalate	363	53.2	107	ug/kg	4	533	---	68	45-140%	---	---	
N-Nitrosodimethylamine	326	13.3	26.7	ug/kg	4	533	---	61	23-120%	---	---	
N-Nitroso-di-n-propylamine	415	13.3	26.7	ug/kg	4	533	---	78	36-120%	---	---	
N-Nitrosodiphenylamine	441	13.3	26.7	ug/kg	4	533	---	83	38-127%	---	---	
Bis(2-Chloroethoxy) methane	416	13.3	26.7	ug/kg	4	533	---	78	36-121%	---	---	
Bis(2-Chloroethyl) ether	383	13.3	26.7	ug/kg	4	533	---	72	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	392	13.3	26.7	ug/kg	4	533	---	73	39-120%	---	---	
Hexachlorobenzene	451	5.32	10.7	ug/kg	4	533	---	85	45-122%	---	---	

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Darwin Thomas, Business Development Director

APEX LABORATORIES

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0614 - EPA 3546							**Solid**					
LCS (23G0614-BS1)			Prepared: 07/21/23 08:30 Analyzed: 07/21/23 18:04									
Hexachlorobutadiene	445	13.3	26.7	ug/kg	4	533	---	84	32-123%	---	---	
Hexachlorocyclopentadiene	233	26.7	53.2	ug/kg	4	533	---	44	10-140%	---	---	Q-31
Hexachloroethane	392	13.3	26.7	ug/kg	4	533	---	74	28-120%	---	---	
2-Chloronaphthalene	439	5.32	10.7	ug/kg	4	533	---	82	41-120%	---	---	
1,2,4-Trichlorobenzene	441	13.3	26.7	ug/kg	4	533	---	83	34-120%	---	---	
4-Bromophenyl phenyl ether	466	13.3	26.7	ug/kg	4	533	---	87	46-124%	---	---	
4-Chlorophenyl phenyl ether	490	13.3	26.7	ug/kg	4	533	---	92	45-121%	---	---	
Aniline	278	26.7	53.2	ug/kg	4	533	---	52	10-120%	---	---	Q-31
4-Chloroaniline	398	13.3	26.7	ug/kg	4	533	---	75	17-120%	---	---	
2-Nitroaniline	498	107	213	ug/kg	4	533	---	93	44-127%	---	---	
3-Nitroaniline	507	107	213	ug/kg	4	533	---	95	33-120%	---	---	Q-41
4-Nitroaniline	468	107	213	ug/kg	4	533	---	88	51-125%	---	---	
Nitrobenzene	415	53.2	107	ug/kg	4	533	---	78	34-122%	---	---	
2,4-Dinitrotoluene	510	53.2	107	ug/kg	4	533	---	96	48-126%	---	---	
2,6-Dinitrotoluene	459	53.2	107	ug/kg	4	533	---	86	46-124%	---	---	
Benzoic acid	624	400	400	ug/kg	4	1070	---	58	10-140%	---	---	Q-31
Benzyl alcohol	415	26.7	53.2	ug/kg	4	533	---	78	29-122%	---	---	
Isophorone	408	13.3	26.7	ug/kg	4	533	---	76	30-122%	---	---	
Azobenzene (1,2-DPH)	395	13.3	26.7	ug/kg	4	533	---	74	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	405	133	267	ug/kg	4	533	---	76	61-121%	---	---	
3,3'-Dichlorobenzidine	1860	107	213	ug/kg	4	1070	---	**175**	**22-121%**	---	---	Q-29, Q-41, Q-52
1,2-Dinitrobenzene	430	133	267	ug/kg	4	533	---	81	44-120%	---	---	
1,3-Dinitrobenzene	534	133	267	ug/kg	4	533	---	100	43-127%	---	---	Q-41
1,4-Dinitrobenzene	548	133	267	ug/kg	4	533	---	103	37-132%	---	---	Q-41
Pyridine	337	26.7	53.2	ug/kg	4	533	---	63	10-120%	---	---	
1,2-Dichlorobenzene	406	13.3	26.7	ug/kg	4	533	---	76	33-120%	---	---	
1,3-Dichlorobenzene	401	13.3	26.7	ug/kg	4	533	---	75	30-120%	---	---	
1,4-Dichlorobenzene	401	13.3	26.7	ug/kg	4	533	---	75	31-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 80 %*		*Limits: 37-122 %*			*Dilution: 4x*				
2-Fluorobiphenyl (Surr)			*81 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*85 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*87 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*84 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*106 %*		*39-132 %*			*"*				*Q-41*

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0614 - EPA 3546							**Solid**					
Duplicate (23G0614-DUP2)			Prepared: 07/21/23 08:30		Analyzed: 07/24/23 17:33							
QC Source Sample: T125-071723-3 (A3G1118-01RE2)												
EPA 8270E												
Acenaphthene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Anthracene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	5.94	11.9	ug/kg	1	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	5.94	11.9	ug/kg	1	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	5.94	11.9	ug/kg	1	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Chrysene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Fluoranthene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Fluorene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	7.93	15.8	ug/kg	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	7.93	15.8	ug/kg	1	---	ND	---	---	---	30%	
Naphthalene	**12.8**	7.93	15.8	ug/kg	1	---	31.4	---	---	**84**	**30%**	J, Q-05
Phenanthrene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Pyrene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Carbazole	ND	5.94	11.9	ug/kg	1	---	ND	---	---	---	30%	
Dibenzofuran	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
2-Chlorophenol	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	98.9	198	ug/kg	1	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	98.9	198	ug/kg	1	---	ND	---	---	---	30%	
2-Methylphenol	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
2-Nitrophenol	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
4-Nitrophenol	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0614 - EPA 3546							**Solid**					
Duplicate (23G0614-DUP2)			Prepared: 07/21/23 08:30 Analyzed: 07/24/23 17:33									
QC Source Sample: T125-071723-3 (A3G1118-01RE2)												
Phenol	ND	7.93	15.8	ug/kg	1	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	59.4	119	ug/kg	1	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
Diethylphthalate	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
Dimethylphthalate	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
2,2'-Oxybis(1-Chloropropane)	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
Hexachloroethane	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	3.95	7.93	ug/kg	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	**46.0**	9.89	19.8	ug/kg	1	---	46.7	---	---	2	30%	
4-Bromophenyl phenyl ether	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
Aniline	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
4-Chloroaniline	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
2-Nitroaniline	ND	79.3	158	ug/kg	1	---	ND	---	---	---	30%	
3-Nitroaniline	ND	79.3	158	ug/kg	1	---	ND	---	---	---	30%	
4-Nitroaniline	ND	79.3	158	ug/kg	1	---	ND	---	---	---	30%	
Nitrobenzene	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	39.5	79.3	ug/kg	1	---	ND	---	---	---	30%	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0614 - EPA 3546							**Solid**					
Duplicate (23G0614-DUP2)			Prepared: 07/21/23 08:30		Analyzed: 07/24/23 17:33							
QC Source Sample: T125-071723-3 (A3G1118-01RE2)												
Benzoic acid	ND	496	989	ug/kg	1	---	ND	---	---	---	30%	
Benzyl alcohol	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
Isophorone	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	9.89	19.8	ug/kg	1	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	98.9	198	ug/kg	1	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	79.3	158	ug/kg	1	---	ND	---	---	---	30%	Q-52
1,2-Dinitrobenzene	ND	98.9	198	ug/kg	1	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	98.9	198	ug/kg	1	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	98.9	198	ug/kg	1	---	ND	---	---	---	30%	
Pyridine	ND	19.8	39.5	ug/kg	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	**46.9**	9.89	19.8	ug/kg	1	---	48.6	---	---	4	30%	
1,3-Dichlorobenzene	**61.1**	9.89	19.8	ug/kg	1	---	64.0	---	---	5	30%	
1,4-Dichlorobenzene	**27.7**	9.89	19.8	ug/kg	1	---	27.7	---	---	0.2	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 20 %*		*Limits: 37-122 %*		*Dilution: 1x*					*S-03*
2-Fluorobiphenyl (Surr)			*13 %*		*44-120 %*		*"*					*S-03*
Phenol-d6 (Surr)			*0.9 %*		*33-122 %*		*"*					*S-03*
p-Terphenyl-d14 (Surr)			*0.4 %*		*54-127 %*		*"*					*S-03*
2-Fluorophenol (Surr)			*1 %*		*35-120 %*		*"*					*S-03*
2,4,6-Tribromophenol (Surr)			*3 %*		*39-132 %*		*"*					*Q-41, S-03*

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ORELAP ID: **OR100062**

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0660 - EPA 1311/3510C (BNA Extraction)							**Soil**					
Blank (23G0660-BLK1)			Prepared: 07/24/23 07:07		Analyzed: 07/24/23 14:09							**TCLPa**
1311/8270E-LL												
Acenaphthene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.150	0.300	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.150	0.300	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.150	0.300	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Naphthalene	**1.01**	0.200	0.400	ug/L	1	---	---	---	---	---	---	B
Phenanthrene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	0.150	0.300	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
2-Chlorophenol	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Methylphenol	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
2-Nitrophenol	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
4-Nitrophenol	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Phenol	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	

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Darwin Thomas, Business Development Director

Apex Laboratories, LLC
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Tigard, OR 97223
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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0660 - EPA 1311/3510C (BNA Extraction)							Soil					
Blank (23G0660-BLK1)			Prepared: 07/24/23 07:07		Analyzed: 07/24/23 14:09							TCLPa
2,3,5,6-Tetrachlorophenol	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Diethylphthalate	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Dimethylphthalate	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Hexachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	0.0500	0.500	ug/L	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Aniline	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chloroaniline	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
2-Nitroaniline	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
3-Nitroaniline	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
4-Nitroaniline	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
Nitrobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Benzoic acid	ND	12.5	25.0	ug/L	1	---	---	---	---	---	---	
Benzyl alcohol	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Isophorone	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	

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Darwin Thomas, Business Development Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0660 - EPA 1311/3510C (BNA Extraction)							Soil					
Blank (23G0660-BLK1)			Prepared: 07/24/23 07:07 Analyzed: 07/24/23 14:09									TCLPa
Azobenzene (1,2-DPH)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
Pyridine	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	Q-30
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 68 %*			*Limits: 44-120 %*			*Dilution: 1x*			
2-Fluorobiphenyl (Surr)			*63 %*			*44-120 %*			*"*			
Phenol-d6 (Surr)			*30 %*			*10-133 %*			*"*			
p-Terphenyl-d14 (Surr)			*87 %*			*50-134 %*			*"*			
2-Fluorophenol (Surr)			*43 %*			*19-120 %*			*"*			
2,4,6-Tribromophenol (Surr)			*99 %*			*43-140 %*			*"*			*Q-41*
LCS (23G0660-BS1)			Prepared: 07/24/23 07:07 Analyzed: 07/24/23 14:43									
1311/8270E-LL												
Acenaphthene	22.5	0.400	0.800	ug/L	4	40.0	---	56	47-122%	---	---	
Acenaphthylene	24.4	0.400	0.800	ug/L	4	40.0	---	61	41-130%	---	---	
Anthracene	30.8	0.400	0.800	ug/L	4	40.0	---	77	57-123%	---	---	
Benz(a)anthracene	32.1	0.400	0.800	ug/L	4	40.0	---	80	58-125%	---	---	
Benzo(a)pyrene	32.7	0.600	1.20	ug/L	4	40.0	---	82	54-128%	---	---	
Benzo(b)fluoranthene	29.3	0.600	1.20	ug/L	4	40.0	---	73	53-131%	---	---	
Benzo(k)fluoranthene	29.9	0.600	1.20	ug/L	4	40.0	---	75	57-129%	---	---	
Benzo(g,h,i)perylene	32.9	0.400	0.800	ug/L	4	40.0	---	82	50-134%	---	---	
Chrysene	34.3	0.400	0.800	ug/L	4	40.0	---	86	59-123%	---	---	
Dibenz(a,h)anthracene	33.3	0.400	0.800	ug/L	4	40.0	---	83	51-134%	---	---	
Fluoranthene	33.4	0.400	0.800	ug/L	4	40.0	---	84	57-128%	---	---	
Fluorene	28.1	0.400	0.800	ug/L	4	40.0	---	70	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	30.9	0.400	0.800	ug/L	4	40.0	---	77	52-134%	---	---	
1-Methylnaphthalene	18.3	0.800	1.60	ug/L	4	40.0	---	46	41-120%	---	---	
2-Methylnaphthalene	18.9	0.800	1.60	ug/L	4	40.0	---	47	40-121%	---	---	
Naphthalene	18.4	0.800	1.60	ug/L	4	40.0	---	46	40-121%	---	---	B

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Darwin Thomas, Business Development Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0660 - EPA 1311/3510C (BNA Extraction)							**Soil**					
LCS (23G0660-BS1)			Prepared: 07/24/23 07:07		Analyzed: 07/24/23 14:43							
Phenanthrene	29.1	0.400	0.800	ug/L	4	40.0	---	73	59-120%	---	---	
Pyrene	32.9	0.400	0.800	ug/L	4	40.0	---	82	57-126%	---	---	
Carbazole	36.0	0.600	1.20	ug/L	4	40.0	---	90	60-122%	---	---	
Dibenzofuran	26.3	0.400	0.800	ug/L	4	40.0	---	66	53-120%	---	---	
2-Chlorophenol	24.6	2.00	4.00	ug/L	4	40.0	---	62	38-120%	---	---	
4-Chloro-3-methylphenol	32.4	4.00	8.00	ug/L	4	40.0	---	81	52-120%	---	---	
2,4-Dichlorophenol	32.9	2.00	4.00	ug/L	4	40.0	---	82	47-121%	---	---	
2,4-Dimethylphenol	30.1	2.00	4.00	ug/L	4	40.0	---	75	31-124%	---	---	
2,4-Dinitrophenol	44.8	10.0	20.0	ug/L	4	40.0	---	112	23-143%	---	---	
4,6-Dinitro-2-methylphenol	49.1	10.0	20.0	ug/L	4	40.0	---	123	44-137%	---	---	Q-41
2-Methylphenol	24.6	1.00	2.00	ug/L	4	40.0	---	61	30-120%	---	---	
3+4-Methylphenol(s)	24.6	1.00	2.00	ug/L	4	40.0	---	62	29-120%	---	---	
2-Nitrophenol	31.7	4.00	8.00	ug/L	4	40.0	---	79	47-123%	---	---	
4-Nitrophenol	14.4	4.00	8.00	ug/L	4	40.0	---	36	10-120%	---	---	
Pentachlorophenol (PCP)	30.7	4.00	8.00	ug/L	4	40.0	---	77	35-138%	---	---	
Phenol	11.8	8.00	8.00	ug/L	4	40.0	---	30	10-120%	---	---	
2,3,4,6-Tetrachlorophenol	35.0	2.00	4.00	ug/L	4	40.0	---	87	50-128%	---	---	
2,3,5,6-Tetrachlorophenol	36.1	2.00	4.00	ug/L	4	40.0	---	90	50-121%	---	---	
2,4,5-Trichlorophenol	36.7	2.00	4.00	ug/L	4	40.0	---	92	53-123%	---	---	
2,4,6-Trichlorophenol	32.4	2.00	4.00	ug/L	4	40.0	---	81	50-125%	---	---	
Bis(2-ethylhexyl)phthalate	29.8	8.00	16.0	ug/L	4	40.0	---	74	55-135%	---	---	
Butyl benzyl phthalate	31.1	8.00	16.0	ug/L	4	40.0	---	78	53-134%	---	---	
Diethylphthalate	32.5	8.00	16.0	ug/L	4	40.0	---	81	56-125%	---	---	
Dimethylphthalate	32.9	8.00	16.0	ug/L	4	40.0	---	82	45-127%	---	---	
Di-n-butylphthalate	32.8	8.00	16.0	ug/L	4	40.0	---	82	59-127%	---	---	
Di-n-octyl phthalate	26.0	8.00	16.0	ug/L	4	40.0	---	65	51-140%	---	---	Q-31
N-Nitrosodimethylamine	14.9	1.00	2.00	ug/L	4	40.0	---	37	19-120%	---	---	
N-Nitroso-di-n-propylamine	27.1	1.00	2.00	ug/L	4	40.0	---	68	49-120%	---	---	
N-Nitrosodiphenylamine	30.6	1.00	2.00	ug/L	4	40.0	---	77	51-123%	---	---	
Bis(2-Chloroethoxy) methane	27.7	1.00	2.00	ug/L	4	40.0	---	69	48-120%	---	---	
Bis(2-Chloroethyl) ether	24.5	1.00	2.00	ug/L	4	40.0	---	61	43-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	21.6	1.00	2.00	ug/L	4	40.0	---	54	41-120%	---	---	
Hexachlorobenzene	30.8	0.400	0.800	ug/L	4	40.0	---	77	53-125%	---	---	
Hexachlorobutadiene	10.7	1.00	2.00	ug/L	4	40.0	---	27	22-124%	---	---	

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Darwin Thomas, Business Development Director

APEX LABORATORIES

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0660 - EPA 1311/3510C (BNA Extraction)							**Soil**					
LCS (23G0660-BS1)			Prepared: 07/24/23 07:07		Analyzed: 07/24/23 14:43							
Hexachlorocyclopentadiene	5.60	2.00	4.00	ug/L	4	40.0	---	14	10-127%	---	---	Q-31
Hexachloroethane	9.46	1.00	2.00	ug/L	4	40.0	---	24	21-120%	---	---	
2-Chloronaphthalene	20.0	0.400	0.800	ug/L	4	40.0	---	50	40-120%	---	---	
1,2,4-Trichlorobenzene	13.2	0.200	2.00	ug/L	4	40.0	---	33	29-120%	---	---	
4-Bromophenyl phenyl ether	30.5	1.00	2.00	ug/L	4	40.0	---	76	55-124%	---	---	
4-Chlorophenyl phenyl ether	28.2	1.00	2.00	ug/L	4	40.0	---	71	53-121%	---	---	
Aniline	13.5	2.00	4.00	ug/L	4	40.0	---	34	10-120%	---	---	Q-31
4-Chloroaniline	20.2	1.00	2.00	ug/L	4	40.0	---	51	33-120%	---	---	Q-31
2-Nitroaniline	36.5	8.00	16.0	ug/L	4	40.0	---	91	55-127%	---	---	
3-Nitroaniline	29.3	8.00	16.0	ug/L	4	40.0	---	73	41-128%	---	---	
4-Nitroaniline	31.9	8.00	16.0	ug/L	4	40.0	---	80	25-120%	---	---	
Nitrobenzene	25.6	4.00	8.00	ug/L	4	40.0	---	64	45-121%	---	---	
2,4-Dinitrotoluene	36.5	4.00	8.00	ug/L	4	40.0	---	91	57-128%	---	---	
2,6-Dinitrotoluene	32.2	4.00	8.00	ug/L	4	40.0	---	81	57-124%	---	---	
Benzoic acid	39.4	4.00	4.00	ug/L	4	80.0	---	49	10-120%	---	---	
Benzyl alcohol	24.6	4.00	8.00	ug/L	4	40.0	---	62	31-120%	---	---	
Isophorone	26.4	1.00	2.00	ug/L	4	40.0	---	66	42-124%	---	---	
Azobenzene (1,2-DPH)	27.3	1.00	2.00	ug/L	4	40.0	---	68	61-120%	---	---	
Bis(2-Ethylhexyl) adipate	30.0	10.0	20.0	ug/L	4	40.0	---	75	63-121%	---	---	
1,2-Dinitrobenzene	31.7	10.0	20.0	ug/L	4	40.0	---	79	59-120%	---	---	
1,3-Dinitrobenzene	39.0	10.0	20.0	ug/L	4	40.0	---	97	49-128%	---	---	
1,4-Dinitrobenzene	40.5	10.0	20.0	ug/L	4	40.0	---	101	54-120%	---	---	Q-41
Pyridine	13.3	4.00	8.00	ug/L	4	40.0	---	33	10-120%	---	---	
1,2-Dichlorobenzene	12.2	1.00	2.00	ug/L	4	40.0	---	**30**	**32-120%**	---	---	Q-30
1,3-Dichlorobenzene	11.2	1.00	2.00	ug/L	4	40.0	---	28	28-120%	---	---	
1,4-Dichlorobenzene	11.6	1.00	2.00	ug/L	4	40.0	---	29	29-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 62 %*		*Limits: 44-120 %*			*Dilution: 4x*				
2-Fluorobiphenyl (Surr)			*56 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*24 %*		*10-133 %*			*"*				
p-Terphenyl-d14 (Surr)			*81 %*		*50-134 %*			*"*				
2-Fluorophenol (Surr)			*34 %*		*19-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*99 %*		*43-140 %*			*"*				*Q-41*
LCS Dup (23G0660-BSD1)			Prepared: 07/24/23 07:07		Analyzed: 07/24/23 15:18							**Q-19**

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0660 - EPA 1311/3510C (BNA Extraction)							**Soil**					
LCS Dup (23G0660-BSD1)			Prepared: 07/24/23 07:07		Analyzed: 07/24/23 15:18							**Q-19**
1311/8270E-LL												
Acenaphthene	27.2	0.400	0.800	ug/L	4	40.0	---	68	47-122%	19	30%	
Acenaphthylene	28.0	0.400	0.800	ug/L	4	40.0	---	70	41-130%	14	30%	
Anthracene	31.6	0.400	0.800	ug/L	4	40.0	---	79	57-123%	3	30%	
Benz(a)anthracene	32.4	0.400	0.800	ug/L	4	40.0	---	81	58-125%	0.7	30%	
Benzo(a)pyrene	32.5	0.600	1.20	ug/L	4	40.0	---	81	54-128%	0.5	30%	
Benzo(b)fluoranthene	29.9	0.600	1.20	ug/L	4	40.0	---	75	53-131%	2	30%	
Benzo(k)fluoranthene	29.7	0.600	1.20	ug/L	4	40.0	---	74	57-129%	0.7	30%	
Benzo(g,h,i)perylene	33.6	0.400	0.800	ug/L	4	40.0	---	84	50-134%	2	30%	
Chrysene	34.3	0.400	0.800	ug/L	4	40.0	---	86	59-123%	0.2	30%	
Dibenz(a,h)anthracene	33.1	0.400	0.800	ug/L	4	40.0	---	83	51-134%	0.7	30%	
Fluoranthene	34.4	0.400	0.800	ug/L	4	40.0	---	86	57-128%	3	30%	
Fluorene	30.5	0.400	0.800	ug/L	4	40.0	---	76	52-124%	8	30%	
Indeno(1,2,3-cd)pyrene	30.9	0.400	0.800	ug/L	4	40.0	---	77	52-134%	0.3	30%	
1-Methylnaphthalene	24.9	0.800	1.60	ug/L	4	40.0	---	62	41-120%	**31**	**30%**	Q-24
2-Methylnaphthalene	26.1	0.800	1.60	ug/L	4	40.0	---	65	40-121%	**32**	**30%**	Q-24
Naphthalene	24.0	0.800	1.60	ug/L	4	40.0	---	60	40-121%	27	30%	B
Phenanthrene	30.1	0.400	0.800	ug/L	4	40.0	---	75	59-120%	3	30%	
Pyrene	33.9	0.400	0.800	ug/L	4	40.0	---	85	57-126%	3	30%	
Carbazole	35.7	0.600	1.20	ug/L	4	40.0	---	89	60-122%	0.8	30%	
Dibenzofuran	30.1	0.400	0.800	ug/L	4	40.0	---	75	53-120%	13	30%	
2-Chlorophenol	25.6	2.00	4.00	ug/L	4	40.0	---	64	38-120%	4	30%	
4-Chloro-3-methylphenol	33.1	4.00	8.00	ug/L	4	40.0	---	83	52-120%	2	30%	
2,4-Dichlorophenol	32.8	2.00	4.00	ug/L	4	40.0	---	82	47-121%	0.4	30%	
2,4-Dimethylphenol	30.0	2.00	4.00	ug/L	4	40.0	---	75	31-124%	0.3	30%	
2,4-Dinitrophenol	44.5	10.0	20.0	ug/L	4	40.0	---	111	23-143%	0.6	30%	
4,6-Dinitro-2-methylphenol	48.9	10.0	20.0	ug/L	4	40.0	---	122	44-137%	0.3	30%	Q-41
2-Methylphenol	25.2	1.00	2.00	ug/L	4	40.0	---	63	30-120%	3	30%	
3+4-Methylphenol(s)	25.5	1.00	2.00	ug/L	4	40.0	---	64	29-120%	4	30%	
2-Nitrophenol	31.3	4.00	8.00	ug/L	4	40.0	---	78	47-123%	2	30%	
4-Nitrophenol	15.8	4.00	8.00	ug/L	4	40.0	---	40	10-120%	9	30%	
Pentachlorophenol (PCP)	30.9	4.00	8.00	ug/L	4	40.0	---	77	35-138%	0.8	30%	
Phenol	13.4	8.00	8.00	ug/L	4	40.0	---	34	10-120%	13	30%	
2,3,4,6-Tetrachlorophenol	34.5	2.00	4.00	ug/L	4	40.0	---	86	50-128%	2	30%	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0660 - EPA 1311/3510C (BNA Extraction)							**Soil**					
LCS Dup (23G0660-BSD1)			Prepared: 07/24/23 07:07		Analyzed: 07/24/23 15:18							**Q-19**
2,3,5,6-Tetrachlorophenol	35.2	2.00	4.00	ug/L	4	40.0	---	88	50-121%	3	30%	
2,4,5-Trichlorophenol	37.6	2.00	4.00	ug/L	4	40.0	---	94	53-123%	2	30%	
2,4,6-Trichlorophenol	32.8	2.00	4.00	ug/L	4	40.0	---	82	50-125%	1	30%	
Bis(2-ethylhexyl)phthalate	30.0	8.00	16.0	ug/L	4	40.0	---	75	55-135%	0.6	30%	
Butyl benzyl phthalate	30.2	8.00	16.0	ug/L	4	40.0	---	75	53-134%	3	30%	
Diethylphthalate	32.0	8.00	16.0	ug/L	4	40.0	---	80	56-125%	2	30%	
Dimethylphthalate	32.6	8.00	16.0	ug/L	4	40.0	---	82	45-127%	1	30%	
Di-n-butylphthalate	32.6	8.00	16.0	ug/L	4	40.0	---	82	59-127%	0.5	30%	
Di-n-octyl phthalate	25.6	8.00	16.0	ug/L	4	40.0	---	64	51-140%	2	30%	Q-31
N-Nitrosodimethylamine	15.5	1.00	2.00	ug/L	4	40.0	---	39	19-120%	4	30%	
N-Nitroso-di-n-propylamine	27.2	1.00	2.00	ug/L	4	40.0	---	68	49-120%	0.4	30%	
N-Nitrosodiphenylamine	31.1	1.00	2.00	ug/L	4	40.0	---	78	51-123%	1	30%	
Bis(2-Chloroethoxy) methane	27.9	1.00	2.00	ug/L	4	40.0	---	70	48-120%	0.7	30%	
Bis(2-Chloroethyl) ether	25.0	1.00	2.00	ug/L	4	40.0	---	63	43-120%	2	30%	
2,2'-Oxybis(1-Chloropropane)	23.7	1.00	2.00	ug/L	4	40.0	---	59	41-120%	9	30%	
Hexachlorobenzene	32.1	0.400	0.800	ug/L	4	40.0	---	80	53-125%	4	30%	
Hexachlorobutadiene	19.9	1.00	2.00	ug/L	4	40.0	---	50	22-124%	**60**	**30%**	Q-24
Hexachlorocyclopentadiene	12.9	2.00	4.00	ug/L	4	40.0	---	32	10-127%	**79**	**30%**	Q-24, Q-31
Hexachloroethane	17.4	1.00	2.00	ug/L	4	40.0	---	44	21-120%	**59**	**30%**	Q-24
2-Chloronaphthalene	26.8	0.400	0.800	ug/L	4	40.0	---	67	40-120%	29	30%	
1,2,4-Trichlorobenzene	21.6	0.200	2.00	ug/L	4	40.0	---	54	29-120%	**48**	**30%**	Q-24
4-Bromophenyl phenyl ether	32.9	1.00	2.00	ug/L	4	40.0	---	82	55-124%	7	30%	
4-Chlorophenyl phenyl ether	32.0	1.00	2.00	ug/L	4	40.0	---	80	53-121%	12	30%	
Aniline	17.2	2.00	4.00	ug/L	4	40.0	---	43	10-120%	24	30%	Q-31
4-Chloroaniline	27.4	1.00	2.00	ug/L	4	40.0	---	68	33-120%	30	30%	Q-31
2-Nitroaniline	36.5	8.00	16.0	ug/L	4	40.0	---	91	55-127%	0.2	30%	
3-Nitroaniline	26.1	8.00	16.0	ug/L	4	40.0	---	65	41-128%	12	30%	
4-Nitroaniline	26.9	8.00	16.0	ug/L	4	40.0	---	67	25-120%	17	30%	
Nitrobenzene	26.5	4.00	8.00	ug/L	4	40.0	---	66	45-121%	3	30%	
2,4-Dinitrotoluene	35.9	4.00	8.00	ug/L	4	40.0	---	90	57-128%	2	30%	
2,6-Dinitrotoluene	32.0	4.00	8.00	ug/L	4	40.0	---	80	57-124%	0.7	30%	
Benzoic acid	45.6	4.00	4.00	ug/L	4	80.0	---	57	10-120%	15	30%	
Benzyl alcohol	26.1	4.00	8.00	ug/L	4	40.0	---	65	31-120%	6	30%	
Isophorone	27.2	1.00	2.00	ug/L	4	40.0	---	68	42-124%	3	30%	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0660 - EPA 1311/3510C (BNA Extraction)							**Soil**					
LCS Dup (23G0660-BSD1)			Prepared: 07/24/23 07:07		Analyzed: 07/24/23 15:18							**Q-19**
Azobenzene (1,2-DPH)	28.6	1.00	2.00	ug/L	4	40.0	---	71	61-120%	5	30%	
Bis(2-Ethylhexyl) adipate	29.0	10.0	20.0	ug/L	4	40.0	---	73	63-121%	3	30%	
1,2-Dinitrobenzene	31.1	10.0	20.0	ug/L	4	40.0	---	78	59-120%	2	30%	
1,3-Dinitrobenzene	38.2	10.0	20.0	ug/L	4	40.0	---	96	49-128%	2	30%	
1,4-Dinitrobenzene	40.5	10.0	20.0	ug/L	4	40.0	---	101	54-120%	0.1	30%	Q-41
Pyridine	14.4	4.00	8.00	ug/L	4	40.0	---	36	10-120%	8	30%	
1,2-Dichlorobenzene	19.4	1.00	2.00	ug/L	4	40.0	---	48	32-120%	**46**	**30%**	Q-01
1,3-Dichlorobenzene	18.7	1.00	2.00	ug/L	4	40.0	---	47	28-120%	**50**	**30%**	Q-24
1,4-Dichlorobenzene	18.8	1.00	2.00	ug/L	4	40.0	---	47	29-120%	**47**	**30%**	Q-24
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 64 %*		*Limits: 44-120 %*		*Dilution: 4x*					
2-Fluorobiphenyl (Surr)			*62 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*28 %*		*10-133 %*		*"*					
p-Terphenyl-d14 (Surr)			*81 %*		*50-134 %*		*"*					
2-Fluorophenol (Surr)			*38 %*		*19-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*103 %*		*43-140 %*		*"*					*Q-41*

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

Mercury by Cold Vapor Atomic Fluorescence (CVAF) by EPA 1631E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0792 - 1631E Mercury (Soil)							Soil					
Blank (23G0792-BLK1)			Prepared: 07/25/23 16:56		Analyzed: 07/26/23 13:39							
EPA 1631E												
Mercury	ND	1.50	3.00	ug/kg	1	---	---	---	---	---	---	
Blank (23G0792-BLK2)			Prepared: 07/25/23 16:56		Analyzed: 07/26/23 13:44							
EPA 1631E												
Mercury	ND	1.50	3.00	ug/kg	1	---	---	---	---	---	---	
Blank (23G0792-BLK3)			Prepared: 07/25/23 16:56		Analyzed: 07/26/23 13:49							
EPA 1631E												
Mercury	ND	1.50	3.00	ug/kg	1	---	---	---	---	---	---	
LCS (23G0792-BS1)			Prepared: 07/25/23 16:56		Analyzed: 07/26/23 13:54							
EPA 1631E												
Mercury	8.98	1.50	3.00	ug/kg	1	7.00	---	**128**	**80-120%**	---	---	Q-29
Matrix Spike (23G0792-MS1)			Prepared: 07/25/23 16:56		Analyzed: 07/26/23 14:04							
QC Source Sample: T125-071723-3 (A3G1118-01RE1)												
EPA 1631E												
Mercury	9.49	1.61	3.22	ug/kg	1	7.51	ND	**126**	**75-125%**	---	---	Q-01, Q-29
Matrix Spike Dup (23G0792-MSD1)			Prepared: 07/25/23 16:56		Analyzed: 07/26/23 14:09							
QC Source Sample: T125-071723-3 (A3G1118-01RE1)												
EPA 1631E												
Mercury	9.26	1.61	3.22	ug/kg	1	7.51	ND	123	75-125%	2	24%	Q-29

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0515 - EPA 3051A							**Solid**					
Blank (23G0515-BLK1)			Prepared: 07/19/23 07:05 Analyzed: 07/19/23 10:38									
EPA 6020B												
Arsenic	ND	500	1000	ug/kg	10	---	---	---	---	---	---	
Barium	ND	500	1000	ug/kg	10	---	---	---	---	---	---	
Cadmium	ND	100	200	ug/kg	10	---	---	---	---	---	---	
Chromium	ND	500	1000	ug/kg	10	---	---	---	---	---	---	
Lead	ND	100	200	ug/kg	10	---	---	---	---	---	---	
Mercury	ND	40.0	80.0	ug/kg	10	---	---	---	---	---	---	
Selenium	ND	500	1000	ug/kg	10	---	---	---	---	---	---	
Silver	ND	100	200	ug/kg	10	---	---	---	---	---	---	
LCS (23G0515-BS1)			Prepared: 07/19/23 07:05 Analyzed: 07/19/23 10:43									
EPA 6020B												
Arsenic	47800	500	1000	ug/kg	10	50000	---	96	80-120%	---	---	
Barium	49200	500	1000	ug/kg	10	50000	---	98	80-120%	---	---	
Cadmium	47200	100	200	ug/kg	10	50000	---	94	80-120%	---	---	
Chromium	47400	500	1000	ug/kg	10	50000	---	95	80-120%	---	---	
Lead	53400	100	200	ug/kg	10	50000	---	107	80-120%	---	---	
Mercury	1000	40.0	80.0	ug/kg	10	1000	---	100	80-120%	---	---	
Selenium	24700	500	1000	ug/kg	10	25000	---	99	80-120%	---	---	
Silver	24800	100	200	ug/kg	10	25000	---	99	80-120%	---	---	
Duplicate (23G0515-DUP1)			Prepared: 07/19/23 07:05 Analyzed: 07/19/23 10:54									
QC Source Sample: T125-071723-3 (A3G1118-01)												
EPA 6020B												
Arsenic	**1980**	529	1060	ug/kg	10	---	2090	---	---	6	20%	
Barium	**50500**	529	1060	ug/kg	10	---	65300	---	---	**26**	**20%**	Q-17
Cadmium	ND	106	211	ug/kg	10	---	ND	---	---	---	20%	
Chromium	**14000**	529	1060	ug/kg	10	---	13100	---	---	7	20%	
Lead	**1850**	106	211	ug/kg	10	---	2070	---	---	11	20%	
Mercury	ND	42.3	84.6	ug/kg	10	---	ND	---	---	---	20%	
Selenium	ND	529	1060	ug/kg	10	---	ND	---	---	---	20%	
Silver	ND	106	211	ug/kg	10	---	ND	---	---	---	20%	
Matrix Spike (23G0515-MS1)			Prepared: 07/19/23 07:05 Analyzed: 07/19/23 10:59									

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0515 - EPA 3051A							**Solid**					
Matrix Spike (23G0515-MS1)			Prepared: 07/19/23 07:05 Analyzed: 07/19/23 10:59									
QC Source Sample: T125-071723-3 (A3G1118-01)												
EPA 6020B												
Arsenic	51500	515	1030	ug/kg	10	51500	2090	96	75-125%	---	---	
Barium	119000	515	1030	ug/kg	10	51500	65300	104	75-125%	---	---	
Cadmium	49200	103	206	ug/kg	10	51500	ND	96	75-125%	---	---	
Chromium	64200	515	1030	ug/kg	10	51500	13100	99	75-125%	---	---	
Lead	53200	103	206	ug/kg	10	51500	2070	99	75-125%	---	---	
Mercury	980	41.2	82.5	ug/kg	10	1030	ND	95	75-125%	---	---	
Selenium	26000	515	1030	ug/kg	10	25800	ND	101	75-125%	---	---	
Silver	24700	103	206	ug/kg	10	25800	ND	96	75-125%	---	---	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0635 - EPA 1311/3015A							Solid					
Blank (23G0635-BLK1)			Prepared: 07/21/23 11:28 Analyzed: 07/21/23 18:33									
1311/6020B												
Arsenic	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLPa
Barium	ND	2500	5000	ug/L	10	---	---	---	---	---	---	TCLPa
Cadmium	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLPa
Chromium	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLPa
Lead	ND	25.0	50.0	ug/L	10	---	---	---	---	---	---	TCLPa
Mercury	ND	3.75	7.00	ug/L	10	---	---	---	---	---	---	TCLPa
Selenium	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLPa
Silver	ND	50.0	100	ug/L	10	---	---	---	---	---	---	TCLPa
LCS (23G0635-BS1)			Prepared: 07/21/23 11:28 Analyzed: 07/21/23 18:38									
1311/6020B												
Arsenic	5090	50.0	100	ug/L	10	5000	---	102	80-120%	---	---	TCLPa
Barium	9940	2500	5000	ug/L	10	10000	---	99	80-120%	---	---	TCLPa
Cadmium	1000	50.0	100	ug/L	10	1000	---	100	80-120%	---	---	TCLPa
Chromium	4820	50.0	100	ug/L	10	5000	---	96	80-120%	---	---	TCLPa
Lead	5260	25.0	50.0	ug/L	10	5000	---	105	80-120%	---	---	TCLPa
Mercury	103	3.75	7.00	ug/L	10	100	---	103	80-120%	---	---	TCLPa
Selenium	1040	50.0	100	ug/L	10	1000	---	104	80-120%	---	---	TCLPa
Silver	955	50.0	100	ug/L	10	1000	---	96	80-120%	---	---	TCLPa
Duplicate (23G0635-DUP1)			Prepared: 07/21/23 11:28 Analyzed: 07/21/23 18:54									
QC Source Sample: Non-SDG (A3G1130-01)												
Arsenic	ND	50.0	100	ug/L	10	---	ND	---	---	---	20%	
Barium	ND	2500	5000	ug/L	10	---	ND	---	---	---	20%	
Cadmium	ND	50.0	100	ug/L	10	---	ND	---	---	---	20%	
Chromium	ND	50.0	100	ug/L	10	---	ND	---	---	---	20%	
Lead	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	20%	
Mercury	ND	3.75	7.00	ug/L	10	---	ND	---	---	---	20%	
Selenium	ND	50.0	100	ug/L	10	---	ND	---	---	---	20%	
Silver	ND	50.0	100	ug/L	10	---	ND	---	---	---	20%	
Matrix Spike (23G0635-MS1)			Prepared: 07/21/23 11:28 Analyzed: 07/21/23 18:59									

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0635 - EPA 1311/3015A							**Solid**					
Matrix Spike (23G0635-MS1)			Prepared: 07/21/23 11:28 Analyzed: 07/21/23 18:59									
QC Source Sample: Non-SDG (A3G1130-01)												
1311/6020B												
Arsenic	5100	50.0	100	ug/L	10	5000	ND	102	50-150%	---	---	
Barium	10400	2500	5000	ug/L	10	10000	ND	104	50-150%	---	---	
Cadmium	1040	50.0	100	ug/L	10	1000	ND	104	50-150%	---	---	
Chromium	4800	50.0	100	ug/L	10	5000	ND	96	50-150%	---	---	
Lead	5140	25.0	50.0	ug/L	10	5000	ND	103	50-150%	---	---	
Mercury	99.2	3.75	7.00	ug/L	10	100	ND	99	50-150%	---	---	
Selenium	1040	50.0	100	ug/L	10	1000	ND	104	50-150%	---	---	
Silver	965	50.0	100	ug/L	10	1000	ND	96	50-150%	---	---	

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALITY CONTROL (QC) SAMPLE RESULTS

Soluble Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0673 - ASTM D7511-12mod (S)								Soil				
Blank (23G0673-BLK1)			Prepared: 07/24/23 08:34		Analyzed: 07/24/23 14:32							
D7511-12												
Total Cyanide	ND	50.0	100	ug/kg wet	1	---	---	---	---	---	---	
LCS (23G0673-BS1)			Prepared: 07/24/23 08:34		Analyzed: 07/24/23 14:34							
D7511-12												
Total Cyanide	448	50.0	100	ug/kg wet	1	400	---	112	84-116%	---	---	
Matrix Spike (23G0673-MS1)			Prepared: 07/24/23 08:34		Analyzed: 07/24/23 14:42							
QC Source Sample: T125-071723-3 (A3G1118-01)												
D7511-12												
Total Cyanide	906	64.8	130	ug/kg dry	1	519	401	97	64-136%	---	---	
Matrix Spike Dup (23G0673-MSD1)			Prepared: 07/24/23 08:34		Analyzed: 07/24/23 14:46							
QC Source Sample: T125-071723-3 (A3G1118-01)												
D7511-12												
Total Cyanide	901	64.7	129	ug/kg dry	1	518	401	97	64-136%	0.5	47%	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: Gasco -- Carbon	
2749 Lockport Road	Project Number: 111323	Report ID:
Niagara Falls, NY 14305	Project Manager: Chip Byrd	A3G1118 - 07 28 23 0757

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 23G0490 - Total Solids (Dry Weight) - 2022								Soil				
Duplicate (23G0490-DUP1)			Prepared: 07/18/23 09:25		Analyzed: 07/19/23 06:52							
QC Source Sample: Non-SDG (A3G1113-01)												
% Solids	**77.6**	---	1.00	%	1	---	78.2	---	---	0.8	10%	
Duplicate (23G0490-DUP2)			Prepared: 07/18/23 09:25		Analyzed: 07/19/23 06:52							
QC Source Sample: Non-SDG (A3G1113-02)												
% Solids	**78.0**	---	1.00	%	1	---	77.7	---	---	0.4	10%	
Duplicate (23G0490-DUP3)			Prepared: 07/18/23 09:25		Analyzed: 07/19/23 06:52							
QC Source Sample: Non-SDG (A3G1113-03)												
% Solids	**76.8**	---	1.00	%	1	---	77.2	---	---	0.5	10%	
Duplicate (23G0490-DUP4)			Prepared: 07/18/23 09:25		Analyzed: 07/19/23 06:52							
QC Source Sample: Non-SDG (A3G1113-04)												
% Solids	**80.5**	---	1.00	%	1	---	81.1	---	---	0.7	10%	
Duplicate (23G0490-DUP5)			Prepared: 07/18/23 09:25		Analyzed: 07/19/23 06:52							
QC Source Sample: Non-SDG (A3G1113-05)												
% Solids	**88.6**	---	1.00	%	1	---	86.4	---	---	2	10%	
Duplicate (23G0490-DUP6)			Prepared: 07/18/23 09:25		Analyzed: 07/19/23 06:52							
QC Source Sample: Non-SDG (A3G1113-06)												
% Solids	**86.3**	---	1.00	%	1	---	85.6	---	---	0.8	10%	
Duplicate (23G0490-DUP7)			Prepared: 07/18/23 09:25		Analyzed: 07/19/23 06:52							
QC Source Sample: Non-SDG (A3G1113-07)												
% Solids	**81.5**	---	1.00	%	1	---	80.9	---	---	0.8	10%	
Duplicate (23G0490-DUP8)			Prepared: 07/18/23 09:25		Analyzed: 07/19/23 06:52							
QC Source Sample: Non-SDG (A3G1113-08)												
% Solids	**84.9**	---	1.00	%	1	---	85.6	---	---	0.8	10%	

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ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

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

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

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ANALYTICAL REPORT

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0724							
A3G1118-01	Solid	NWTPH-Dx	07/17/23 06:30	07/24/23 17:08	10.18g/5mL	10g/5mL	0.98

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

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0536							
A3G1118-01RE1	Solid	NWTPH-Gx (MS)	07/17/23 06:30	07/17/23 11:25	5.1g/5mL	5g/5mL	0.98

Volatile Organic Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0494							
A3G1118-01	Solid	5035A/8260D	07/17/23 06:30	07/17/23 11:25	5.1g/5mL	5g/5mL	0.98
Batch: 23G0536							
A3G1118-01RE1	Solid	5035A/8260D	07/17/23 06:30	07/17/23 11:25	5.1g/5mL	5g/5mL	0.98

TCLP Volatile Organic Compounds by EPA 1311/8260D

Prep: EPA 1311/5030C TCLP Volatiles

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0502							
A3G1118-01	Solid	1311/8260D	07/17/23 06:30	07/18/23 11:52	5mL/5mL	5mL/5mL	1.00

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0614							
A3G1118-01RE2	Solid	EPA 8270E	07/17/23 06:30	07/21/23 08:30	5.54g/2mL	15g/2mL	2.71

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

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ANALYTICAL REPORT

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

SAMPLE PREPARATION INFORMATION

TCLP Semivolatile Organic Compounds by EPA 1311/8270E

Prep: EPA 1311/3510C (BNA Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0660							
A3G1118-01RE1	Solid	1311/8270E-LL	07/17/23 06:30	07/24/23 07:07	200mL/2mL	200mL/2mL	1.00

Mercury by Cold Vapor Atomic Fluorescence (CVAF) by EPA 1631E

Prep: 1631E Mercury (Soil)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0792							
A3G1118-01RE1	Solid	EPA 1631E	07/17/23 06:30	07/25/23 15:45	0.462g/500mL	0.5g/50mL	10.80

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0515							
A3G1118-01	Solid	EPA 6020B	07/17/23 06:30	07/19/23 07:05	0.515g/50mL	0.5g/50mL	0.97

TCLP Metals by EPA 6020B (ICPMS)

Prep: EPA 1311/3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0635							
A3G1118-01	Solid	1311/6020B	07/17/23 06:30	07/21/23 11:28	10mL/50mL	10mL/50mL	1.00

Soluble Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Prep: ASTM D7511-12mod (S)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0673							
A3G1118-01	Solid	D7511-12	07/17/23 06:30	07/24/23 08:34	2.506g/50mL	2.5g/50mL	1.00

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0490							
A3G1118-01	Solid	EPA 8000D	07/17/23 06:30	07/18/23 09:25			NA

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2749 Lockport Road	Project Number: **111323**	**Report ID:**
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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
Batch: 23G0584							
A3G1118-01	Solid	EPA 1311	07/17/23 06:30	07/20/23 16:00	100g/2000.5g	100g/2000g	NA

Prep: EPA 1311 TCLP/ZHE

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0464							
A3G1118-01	Solid	EPA 1311 ZHE	07/17/23 06:30	07/17/23 14:55	25.1g/501.3g	25g/500g	NA

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ANALYTICAL REPORT

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Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

QUALIFIER DEFINITIONS

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

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B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
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.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-24	The RPD for this spike and spike duplicate is above established control limits. Recoveries for both the spike and spike duplicate are within control limits.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-30	Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
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 known erratic recoveries, the result and reporting levels for this analyte are reported as Estimated Values. This analyte may not have passed all QC requirements for this method.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +1%. 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 8260/8270 by +11%. 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 8260/8270 by +2%. 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 8260/8270 by -2%. The results are reported as Estimated Values.
Q-54d	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -3%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.

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Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260
S-03	Sample re-extract, or the analysis of an associated Batch QC sample, confirms surrogate failure due to sample matrix effect.
S-04	Surrogate recovery is outside of established control limits due to a sample matrix effect.
TCLP	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 23G0464.
TCLPa	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 23G0584.
TEMP	Sample was received or stored outside of recommended temperature.
V-15	Sample aliquot was subsampled from the sample container. The subsampled aliquot was preserved in the laboratory within 48 hours of sampling.

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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'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

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).

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REPORTING NOTES AND CONVENTIONS (Cont.):

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.

-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, if results are not reported to the MDL.

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.

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ANALYTICAL REPORT

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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

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Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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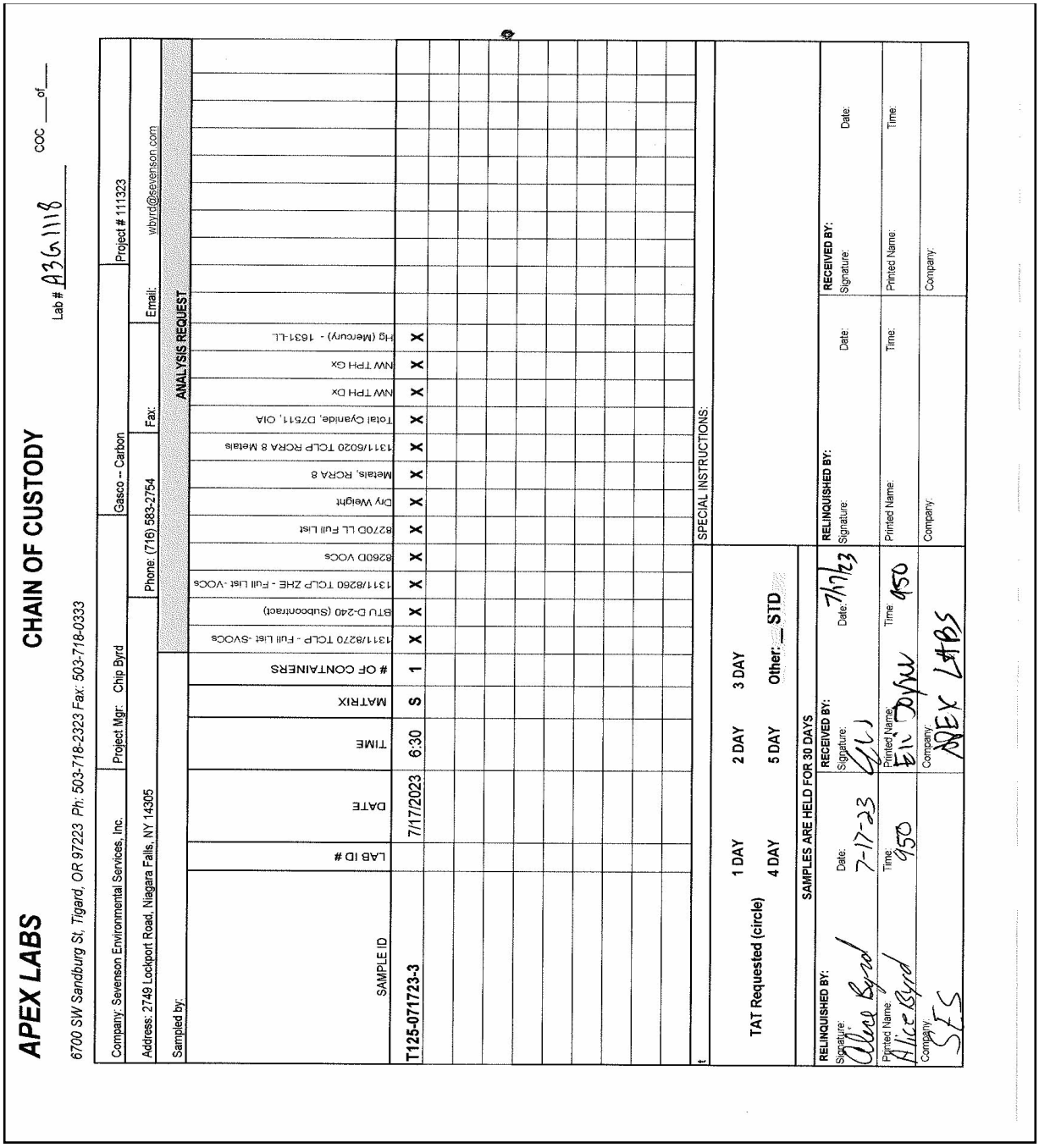


APEX LABS
6700 SW Sandburg St, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

Lab # A3G1118 COC ___of___

Company: Sevenson Environmental Services, Inc. | Project Mgr: Chip Byrd | Gasco -- Carbon | Project # 111323
Address: 2749 Lockport Road, Niagara Falls, NY 14305 | Phone: (716) 583-2754 | Fax: | Email: wbyrd@sevenson.com
Sampled by:

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	8311/8270 TCLP - Full List -SVOCs	BTU D-240 (Subcontract)	8311/8260 TCLP ZHE - Full List -VOCs	8260D VOCs	8270D LL Full List	Dry Weight	Metals, RCRA 8	8311/6020 TCLP RCRA 8 Metals	Total Cyanide, D7511, OIA	NW TPH Dx	NW TPH Gx	Hg (Mercury) - 1631-LL
T125-071723-3		7/17/2023	6:30	S	1	X	X	X	X	X	X	X	X	X	X	X	X

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

TAT Requested (circle)
1 DAY 2 DAY 3 DAY
4 DAY 5 DAY Other: STD

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Alice Byrd Date: 7-17-23 Time: 950 Printed Name: Alice Byrd Company: SES
RECEIVED BY: Signature: Date: 7/17/23 Time: 950 Printed Name: Erin Boyle Company: APEX LABS
RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:
RECEIVED BY: Signature: Date: Time: Printed Name: Company:

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
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sevenson Environmental Services, Inc.	Project: **Gasco -- Carbon**	
2749 Lockport Road	Project Number: **111323**	**Report ID:**
Niagara Falls, NY 14305	Project Manager: **Chip Byrd**	**A3G1118 - 07 28 23 0757**

APEX LABS COOLER RECEIPT FORM

Client: Sevenson Environmental Services, Inc. Element WO#: A3G1118

Project/Project #: Gasco - Carbon 111323

Delivery Info:
Date/time received: 7/17/23 @ 950 By: EST
Delivered by: Apex X Client ESS FedEx UPS Radio Morgan SDS Evergreen Other
Cooler Inspection Date/time inspected: 7/17/23 @ 1040 By: EST
Chain of Custody included? Yes X No
Signed/dated by client? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.8						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Gel						
Condition (In/Out):	In						

Cooler out of temp? (Y/N) Possible reason why:
Green dots applied to out of temperature samples? Yes/No
Out of temperature samples form initiated? Yes/No
Sample Inspection: Date/time inspected: 7-17-23 @ 1109 By: DJS
All samples intact? Yes X No ___ Comments:

Bottle labels/COCs agree? Yes X No ___ Comments:

COC/container discrepancies form initiated? Yes ___ No X
Containers/volumes received appropriate for analysis? Yes X No ___ Comments:

Do VOA vials have visible headspace? Yes ___ No ___ NA X
Comments
Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X
Comments:

Additional information:

Labeled by: DJS Witness: [illegible] Cooler Inspected by: DJS

Form Y-003 R-00

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

PRECISION PETROLEUM LABS, INC.

CERTIFICATE OF ANALYSIS

LABORATORY ADDRESS	Client Name: Apex Laboratories
5915 Star Lane, Houston, TX 77057 Ph. 713-680-9425 Fax: 713-680-9564 Website: precisionlabs.org	Street Address: 6700 SW Sandburg St City, State, Zip: Tigard, OR 97223

INVOICE No:.	99112	DATE/TIME COLLECTED:	07/17/2023 @6:30
LAB REFERENCE No:.	2023-07-334	MATRIX TYPE:	Solid
AUTHORIZED BY:	Darwin Thomas	SAMPLE TYPE:	Bulk
PRODUCT ID:	(A3G1118-01) T125-071723-3		
DATE RECEIVED:	07/19/2023		

PARAMETER	TEST METHOD	REPORTING LIMIT	TEST RESULT
Heat of combustion, BTU/Lb.	D-240	2,150	9,477

Daniel Zabihi **Date: 07/20/2023**
QA Manager

PRIMARY ACCREDITATION TCEQ, #T104704203-22-16
ARIZONA LICENSE # AZ0630

QUALIFIERS & ABBREVIATIONS: BRL - Below Reporting Limit; SCL - Test performed by an approved subcontract laboratory; B - Analyte was detected in the associated method blank; Matrix spike/matrix spike duplicate (M), Laboratory control sample (L), Calibration criteria (C), and Surrogate (S) recoveries were outside acceptance limits. Test deviation applied to Method 8260 (VOCS). Sample date analyzed for each test is available upon request. *Not on laboratory's field of accreditation.

COMMENTS: This certificate is Confidential Business Information and will only be provided to designated customer point-of-contact(s). Other production of this report requires prior authorization from the customer. There were no quality assurance anomalies associated with these tests.

SUBCONTRACT ORDER

Apex Laboratories

A3G1118

AKC 7/17/23 DTW

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darwin Thomas

RECEIVING LABORATORY:

Precision Petroleum Labs
5915 Star Lane
Houston, TX 77057
Phone :(713) 680-9425
Fax: (713) 680-9564

Sample Name: T125-071723-3 **Solid** **Sampled: 07/17/23 06:30** (A3G1118-01)

Analysis	Due	Expires	Comments
BTU by ASTM D-240 (SUB)	07/28/23 17:00	01/13/24 06:30	
Containers Supplied:			
(B)2 oz Glass Jar			

Standard TAT

T. H

RECEIVED
JUL 19 2023
PRECISION PETROLEUM LABS, INC.

10:17 AM

Soil
Bulk

	7-17-23	UPS (Shipper)	
Released By	Date	Received By	Date
UPS (Shipper)			
Released By	Date	Received By	Date

ANALYTICAL REPORT

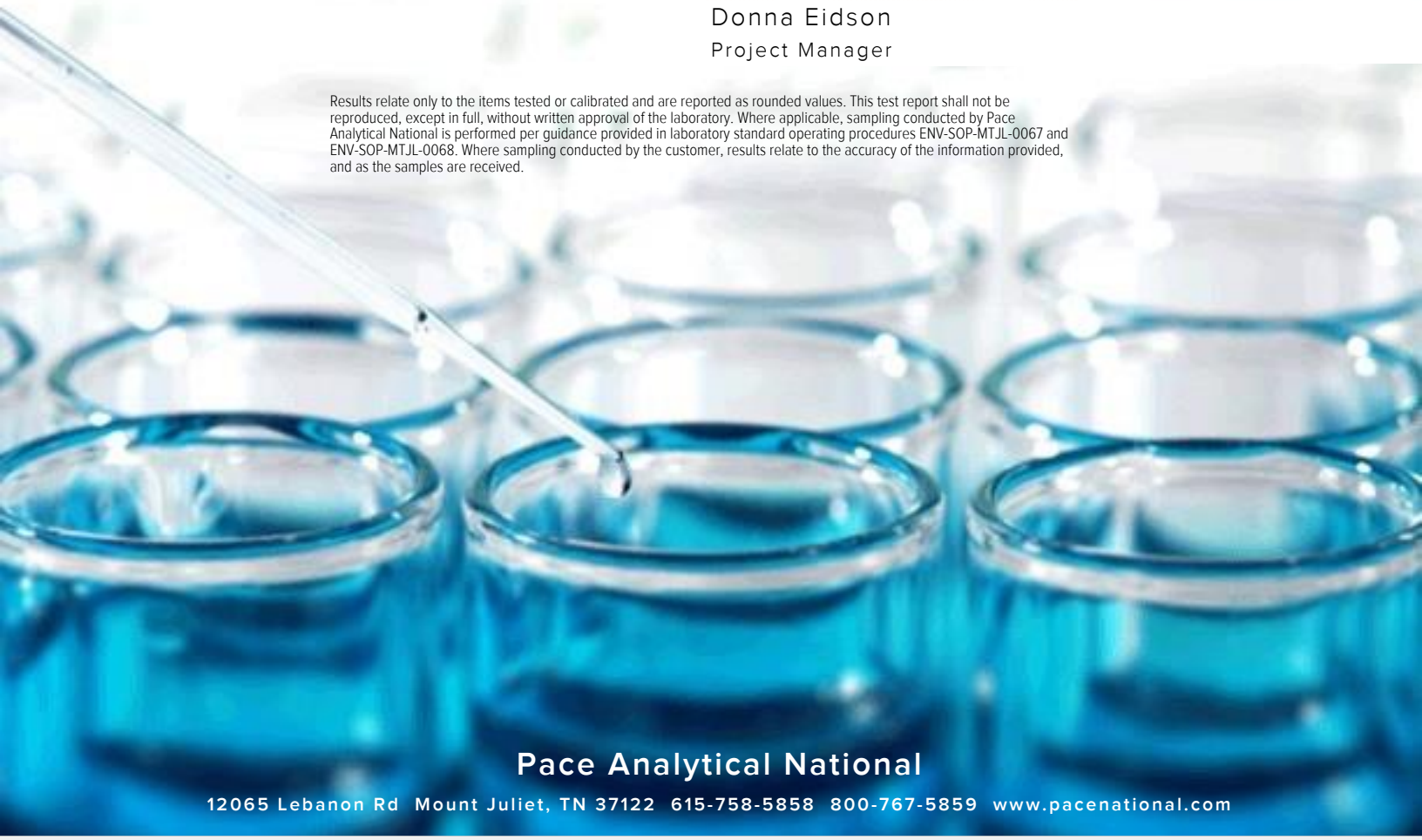
September 26, 2023

Sevenson Environmental - ORL

Sample Delivery Group:	L1658719
Samples Received:	09/22/2023
Project Number:	1113
Description:	T-125 vapor carbon media
Report To:	William Byrd

Entire Report Reviewed By:

Donna Eidson
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

T125-071723-3 L1658719-01 Solids and Chemical Materials

Collected by: JS/JL
Collected date/time: 09/20/23 08:00
Received date/time: 09/22/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method DOE Ga-01-R/901.1	WG2130833	1	09/25/23 10:23	09/25/23 10:56	ZRG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Donna Eidson
Project Manager

Project Narrative

Analyzed as-is

Radiochemistry by Method DOE Ga-01-R/901.1

Analyte	Result pCi/g	Qualifier	Uncertainty + / -	MDA pCi/g	Analysis Date date / time	Batch
Potassium-40	1.20		0.513	0.704	09/25/2023 10:56	WG2130833
Thallium-208	0.0299	J	0.0230	0.0404	09/25/2023 10:56	WG2130833
Lead-210	1.09	U	1.53	2.73	09/25/2023 10:56	WG2130833
Lead-212	0.0967		0.0534	0.0846	09/25/2023 10:56	WG2130833
Lead-214	0.135		0.0535	0.0967	09/25/2023 10:56	WG2130833
Bismuth-212	0.00811	U	0.301	0.625	09/25/2023 10:56	WG2130833
Bismuth-214 (Ra-226)	0.131		0.0594	0.102	09/25/2023 10:56	WG2130833
Radium-226 (186 KeV)	0.211	U	0.277	0.518	09/25/2023 10:56	WG2130833
Actinium-228 (Ra-228)	0.0520	U	0.0713	0.158	09/25/2023 10:56	WG2130833
Thorium-234 (U-238)	0.198	U	0.253	0.578	09/25/2023 10:56	WG2130833
Protactinium-234m	3.65	U	3.14	19.4	09/25/2023 10:56	WG2130833
Uranium-235	0.0264	J	0.0275	0.0519	09/25/2023 10:56	WG2130833

Method Blank (MB)

(MB) R3976320-3 09/21/23 17:13

Analyte	MB Result pCi/g	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/g
Actinium-228 (Ra-228)	-0.0213	U	0.0893	0.232
Americium-241	0.0699	U	0.127	0.232
Bismuth-212	0.0640	U	0.440	0.988
Bismuth-214 (Ra-226)	0.00542	U	0.0577	0.132
Cesium-137	-0.0349	U	0.0338	0.0848
Cobalt-60	0.00790	U	0.0211	0.112
Lead-210	-0.105	U	2.51	4.76
Lead-212	0.0285	U	0.0493	0.0906
Lead-214	-0.0302	U	0.0479	0.118
Potassium-40	-0.173	U	0.387	1.01
Protactinium-234m	4.55	U	5.36	19.5
Radium-226 (186 KeV)	0.108	U	0.396	0.716
Thallium-208	-0.0116	U	0.0346	0.0757
Thorium-234 (U-238)	-0.0294	U	0.464	1.29
Uranium-235	0.0257	U	0.0411	0.0737

L1653531-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1653531-01 09/21/23 17:30 • (DUP) R3976320-2 09/21/23 17:12

Analyte	Original Result pCi/g	Original Uncertainty + / -	Original MDA pCi/g	DUP Result pCi/g	DUP Uncertainty + / -	DUP MDA pCi/g	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Actinium-228 (Ra-228)	0.103	0.0999	0.343	0.0771	0.134	0.656	1	28.9	0.156	U	20	3
Bismuth-212	0.0333	0.470	1.25	0.858	0.734	2.73	1	185	0.946	U	20	3
Bismuth-214 (Ra-226)	0.106	0.0829	0.159	0.0562	0.155	0.338	1	61.5	0.284	U	20	3
Lead-210	0.710	319	812	-349	319	812	1	200	1.10	U	20	3
Lead-212	0.0776	0.0800	0.141	0.0835	0.116	0.213	1	7.28	0.0416	U	20	3
Lead-214	0.0922	0.0944	0.199	0.243	0.132	0.240	1	89.9	0.928		20	3
Potassium-40	0.507	0.522	1.87	0.356	0.621	2.54	1	35.0	0.186	U	20	3
Radium-226 (186 KeV)	0.525	0.535	0.921	0.756	0.663	1.11	1	36.1	0.271	J	20	3
Thallium-208	0.0645	0.0413	0.0814	0.0500	0.0713	0.148	1	25.3	0.176	U	20	3
Thorium-234 (U-238)	0.158	0.361	0.932	-0.353	0.733	2.06	1	200	0.625	U	20	3
Uranium-235	0.0385	0.0521	0.442	0.0615	0.0639	0.732	1	46.0	0.279	U	20	3
Protactinium-234m	1.01	8.15	75.0	-3.70	8.15	75.0	1	200	0.522	U	20	3

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3976320-1 09/21/23 17:10 • (LCSD) R3976320-4 09/21/23 17:29

Analyte	Spike Amount pCi/g	LCS Result pCi/g	LCSD Result pCi/g	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Americium-241	47.3	43.2	45.1	91.3	95.4	60.0-140			4.39	20
Cesium-137	72.4	79.9	74.9	110	103	80.0-120			6.43	20
Cobalt-60	86.9	89.3	79.1	103	91.0	80.0-120			12.1	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Sevenson Environmental

Billing Information:

Pres Chk

Analysis / Container / Preservative

<500 cpm

GSPEC-FULL - 16 oz or gal zip bag 1/2 full

Chain of Custody Page ___ of ___

Pace Analytical™
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **William Byrd**

Email To: **wbyrd@sevenson.com**

Project Description: **T-125 vapor carbon media**

City/State Collected: **Portland, Oregan**

Phone: **716-583-2754**
Fax:

Client Project # **1113**

Lab Project #

L# LL658719
D177

Collected by (print): JS/JL

Site/Facility ID #

P.O. # **111301**

Acctnum: **SEVENENVORL**

Template:

Prelogin:

TSR: **Donna Eidson**

PB:

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
RUSH

Quote #

Date Results Needed **Sep 26, 2023**

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	GSPEC-FULL	Remarks	Sample # (lab only)
T125-071723-3	Grab	SS		9-20-2023	08:00	1	X	WM LIST	-01

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other **scm**

Remarks:
No ice

pH ____ Temp ____

Flow ____ Other ____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 7734 9760 3107

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
William Byrd	9-21-2023	12:00			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: amb °C Bottles Received: 1	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 9/22/23 Time: 900	Hold: Condition: NCF / OK

EZ Profile™

Requested Facility: CWM Arlington ☐ Unsure Profile Number: OR356805

☐ Multiple Generator Locations (Attach Locations) ☐ Request Certificate of Disposal ☐ Renewal? Original Profile Number: _____

A. GENERATOR INFORMATION (MATERIAL ORIGIN)

1. Generator Name: NW Natural
2. Generator 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: OR0000204701 ☐ N/A
9. State ID: _____ ☑ N/A

B. BILLING INFORMATION ☐ SAME AS GENERATOR

1. Billing Name: Sevenson Environmental Services
2. Billing Address: 2749 Lockport Road
   (City, State, ZIP) Niagara Falls NY 14305
3. Contact Name: William Byrd
4. Email: wbyrd@sevenson.com
5. Phone: (503) 286-1785 6. Fax: (503) 286-0298
7. P.O. Number: _____
8. Payment Method: ☐ Credit Account ☐ Cash ☐ Credit Card at Gate

C. MATERIAL INFORMATION

1. Common Name: Spent Vapor Phase Carbon

Describe Process(es) Generating Material: ☐ See Attached

Extraction wells on the site produce petroleum-contaminated groundwater. Extraction rates vary from 0 to 450 gpm that produce vapors which are forced through vapor phase carbon at rates from 0 to 1000 scfm. Primary constituents being

2. Material Composition and Contaminants: ☐ See Attached

1. Carbon	85-95 %
2. Wood Pallets	5-10 %
3. Cardboard Boxes	5-10 %
4. Miscellaneous ppe, plastic, etc	5-10 %
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

D. REGULATORY INFORMATION

1. EPA Hazardous Waste? ☑ Yes* ☐ No
   Code: F002
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. Does the material contain benzene? ☐ Yes* ☑ No
6. Facility remediation subject to 40 CFR 63 GGGGG? ☐ Yes* ☑ No
7. CERCLA or State-mandated clean-up? ☑ Yes* ☐ No
8. NRC, State-regulated, NORM or TENORM 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? ☐ Yes ☐ No
   c. Were PCBs 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
12. Contains Dioxins? (If Yes, please attach analysis) ☐ Yes ☑ No

E. ANALYTICAL AND OTHER REPRESENTATIVE INFORMATION

1. Analytical attached ☑ Yes

Please identify Lab Report(s) and list specific representative Sample ID#s:

PACE Lab Report # L1658719, PACE sample IDL1658719-01; Apex Lab Report A3G1118, Apex Sample ID A3G1118-01, SES ID T125-071723-3. See Table 1 Charted Apex Lab Results

2. Other information attached (such as SDS)? ☑ Yes

F. SHIPPING AND DOT INFORMATION

1. ☐ One-Time Event ☑ Repeat Event/Ongoing Business
2. Estimated Annual Quantity/Unit of Measure: 40
   ☐ Tons ☑ Yards ☐ Drums ☐ Gallons ☐ Other _____
3. Container Type and Size: 20 cubic yard box
4. USDOT Proper Shipping Name ☑ N/A
5. Estimated Start Date _____
6. Transportation Needed? ☐ Yes* ☑ No

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

By signing this Waste Management ("WM") Profile, 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 WM prior to providing the material to WM. I am aware that there are significant penalties for knowingly submitting false information.

☐ I am authorized to sign 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.

☑ I am a duly authorized employee of Generator holding a position of technical responsibility with direct knowledge of the waste stream and the information contained in this profile, and I confirm that information contained in this profile, as well as supporting documents are accurate and complete.

Name (Print): Robert J. Wyatt

Title: Director, Legacy Environmental Program

Company: NW Natural

Date: 10-06-2023

Certification Signature

QUESTIONS? CALL 800 963 4776 FOR ASSISTANCE

EZ Profile™ Addendum

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: OR356805

C. MATERIAL INFORMATION

Describe Process Generating Material (Continued from page 1): If more space is needed, please attach additional pages.

treated include benzene, ethyl benzene, toluene, xylene, and naphthalene. Spent vapor phase carbon is generated during change-out of the tanks.

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.
   e. Form Code: W310 f. Source Code: G14
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. a. Are you an industry regulated under Benzene NESHAP? (Petroleum refineries, chemical manufacturing plants, coke by-product, and TSDFs.) ❑ Yes ❑ No
   b. Are you a TSDF? → If yes, please complete Benzene NESHAP questionnaire. If not, continue. ❑ Yes ❑ No
   c. What is the flow weighted average benzene concentration? _____ ppmw
   d. What is your facility's current total annual benzene quantity in Megagrams? ❑ <1 Mg ❑ 1–9.99 Mg ❑ ≥10 Mg
   e. Is this waste soil from a remediation? ❑ Yes ❑No
      1. If yes, what is the benzene concentration in remediation waste? _____ ppmw
   f. Does the waste contain >10% water/moisture? ❑ Yes ❑No
   g. Has material been treated to remove 99% of the benzene or to achieve <10 ppmw? ❑ Yes ❑No
   h. Is material exempt from controls in accordance with 40 CFR 61.342? ❑ Yes ❑No
      → If yes, specify exemption:
   i. 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, State-regulated radioactive, NORM or TENORM? →
   a. Please select all that apply:
   ❑ Nuclear Regulatory Commission (NRC) Radioactive ❑ Technologically Enhanced Naturally Occurring Radioactive Material (TENORM)
   ❑ State-Regulated Radioactive ❑ Naturally Occurring Radioactive Material
   b. Testing, per individual waste stream, for applicable isotopes and/or other supporting information attached? ❑ Yes ❑ No

Additional Profile Information

Profile Number: OR356805

C. MATERIAL INFORMATION

Material Composition and Contaminants (Continued from page 2): If more space is needed, please attach additional pages.

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35.	
36.	
37.	
38.	
39.	
40.	
Total composition must be equal to or greater than 100%	≥100%

D. REGULATORY INFORMATION

1. EPA Hazardous Waste
   a. Please list all USEPA listed and characteristic waste code numbers (Continued from page 2):

Generator Name NW Natural Profile Number OR356805

Waste Name Spent Vapor Carbon

Generator's NAICS Code 486210 Code Two;

Does the Generator's Facility manage, store, use, process, or discard any of the following materials in or from your production processes;

Yes[1]	No	Waste Classifications
○	◉	**Nuclear Materials**
○	◉	**Mineral Ore mining/overburden processing or extraction** *Uranium, Radium, Thorium, Plutonium, Cobalt, Strontium, Zirconium, Polonium, Beryllium*
○	◉	**Phosphate Fertilizer Production** *Phosphogypsum, Scale, Residuals, Slag*
○	◉	**Coal and Coal Burning Wastes** *Coal Fly/Bottom Ash*
○	◉	**Petroleum Refining/Production** *Filter Socks, Pipe Scale, Stratum Water, Refinery Process Sediments, Tank Bottoms*
◉	○	**Drinking Water and Wastewater Treatment Wastes** *Filter Socks, Pipe Scale, Stratum Water, Tank Bottoms, Bio-solids, Grit and Screenings, septic*
○	◉	**Other Processing Wastes** *Ceramic, Refractory, Zircon sand, Bauxite to Alumina processing, Titanium, Zirconium, Baghouse Dusts with refractory, "Mag-Thor" metals, Ceramic Insulators, Sand Blasting waste*
○	◉	**Geothermal Wastes** *Filter Socks, Pipe Scale, Stratum Water, Tank Bottoms*
○	◉	**Does the generator perform Metals Casting**
○	◉	**Are any of the Generator's wastes subject to an oil and gas exploration and production (E&P) exemption pursuant to section 3001(b)(2)(A)?**
◉	○	**Have any of the Generator's wastes been tested using isotopic testing, or known to contain radioactivity**
○	◉	**Does the Generator's facility have a Federal or State license to store, dispose or transport radioactive materials? Federal License No:** ☐ **State License No:** ☐

1- Any YES answers may require additional information, please contact your TSC representative at wmpnw2@wm.com

GENERATOR CERTIFICATION (PLEASE READ AND CERTIFY BY SIGNATURE)

By signing this form, I hereby certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

☐ 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 10-06-2023

Title Director, Legacy Environmental Program

Company NW Natural

Certification Signature

Sevenson Environmental

Billing Information:

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **William Byrd**

Email To: **wbyrd@sevenson.com**

Project Description: **T-125 vapor carbon media**

City/State Collected: **Portland, Oregan**

Phone: **716-583-2754**
Fax:

Client Project # **1113**

Lab Project #

Collected by (print): JS/JL

Site/Facility ID # | P.O. # **111301**

Collected by (signature):

Immediately Packed on Ice N ____ Y ____

Rush? (Lab MUST Be Notified) RUSH

Quote #

Date Results Needed **Sep 26, 2023**

L #

Table #

Acctnum: **SEVENENVORL**

Template:

Prelogin:

TSR: **Donna Eidson**

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	GSPEC-FULL - 16 oz or gal zip bag 1/2 full	Remarks	Sample # (lab only)
T125-071723-3	Grab	SS		9-20-2023	08:00	1	X	WM LIST	

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other scm

Remarks: **No ice**

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
William Byrd	9-21-2023	12:00			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

VOLUNTARY AGREEMENT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY

DEQ NO. WMCVC-NWR-94-13

BETWEEN: Northwest Natural Gas Company

AND: Oregon Department of Environmental Quality (DEQ)

EFFECTIVE DATE: 8/8/94

Pursuant to ORS 465.260(2) and (4), the Director, Oregon Department of Environmental Quality (DEQ), enters this Agreement with the Northwest Natural Gas Company (NWNG). This Agreement contains the following provisions:

I. RECITALS

A. NWNG is a "person" under ORS 465.200(13).

B. The NWNG site is a "facility" under ORS 465.200(6). The NWNG site occupies approximately 47 acres at 7540 N.W. St. Helens Road, Portland, Oregon and is the location of a former oil gasification plant. A vicinity map and a site map are included in Attachment A to this Agreement.

C. From 1913 until 1956, NWNG, then known as the Portland Gas and Coke Company (GASCO) operated an oil gasification plant on the present property owned by NWNG. An adjoining approximately 73 acre portion of the property was sold by NWNG in 1962 and is currently the site of the Wacker Siltronics Corporation manufacturing facility. The former GASCO facility produced oil gas and lampblack briquettes. Other materials produced by the plant for sale included light oils, tar and electrode grade coke. Wastes generated at the facility included tar, wastewater containing dissolved and suspended hydrocarbons, and spent oxide. Many of these wastes were disposed of in on-site tar ponds. In 1971 the largest remaining tar pond was estimated to contain 6 million gallons of tar and tar/water emulsion. This tar pond was subsequently filled in with spent oxide material and rubble and spread out over the southeastern portion of the site. NWNG currently operates a liquified natural gas (LNG) plant at the site and leases portions of the former GASCO facility to Pacific Northern Oil Company (Pacific Northern) and Koppers Industries, Incorporated (Koppers).

D. Investigations conducted to date indicate that petroleum hydrocarbons, volatile aromatic hydrocarbons and polycyclic aromatic hydrocarbons (PAHs) are present in subsurface soils and groundwater on the NWNG property. A total PAH concentration of 926 mg/l was detected in a 1984 sample collected from a monitoring well installed on the property leased from NWNG by Koppers. Ethylbenzene and xylene were detected in the same monitoring well at 380 mg/l and 2600 mg/l respectively. Analysis of a 1984 sediment sample collected from the NWNG LNG containment basin detected 300 mg/kg of total PAHs. Analysis of a 1993 water sample collected from the NWNG LNG containment basin detected 8.3 mg/l of benzene and 1.4 mg/l of total PAHs.

The substances described in this section are "hazardous substances" under ORS 465.200(9). The presence of hazardous substances in soil and groundwater at the facility constitutes a "release" or "threat of release" into the environment under ORS 465.200(14).

E. NWNG requested DEQ oversight of its investigation and cleanup activities and executed a voluntary Letter Agreement with DEQ on January 3, 1994. NWNG provided a $5,000 advance deposit to cover initial DEQ oversight costs.

F. DEQ considers the activities required by this Agreement to be necessary to protect public health, safety, and welfare and the environment.

II. AGREEMENT

The parties agree as follows:

A. Work

1. Remedial Investigation and Feasibility Study.

NWNG shall perform a remedial investigation and feasibility study (RI/FS) satisfying OAR 340-122-070 and OAR 340-122-080, the terms and schedule of a DEQ-approved work plan developed by NWNG, and applicable elements of the general Scope of Work contained in Attachment B to this Agreement. NWNG may specify, in the proposed work plan, elements of the Scope of Work that NWNG considers inapplicable or unnecessary to the RI/FS for the facility. NWNG may propose to perform the work in phases or operable units.

2. Review

DEQ shall provide review, approvals/disapprovals, and oversight in accordance with the schedule set forth in the Scope of Work, or as soon as thereafter practicable in the event staff resources or workload prevent compliance with the schedule. Any DEQ delay shall correspondingly extend NWNG's schedule for a related deliverable or activity.

3. Additional Measures

NWNG may elect at any time during the term of this Agreement to undertake measures other than those required under this Agreement necessary to address a release or threatened release of hazardous substances at the facility which is the subject of this Agreement. Such other measures shall be subject to prior approval by DEQ, which approval shall be granted if DEQ determines that the additional measures will not compromise the validity of the RI/FS and will not threaten human health or the environment.

B. Public Participation

Upon execution of this Agreement, DEQ will provide public notice of this Agreement through issuance of a press release, at a minimum to a local newspaper of general circulation, describing the measures required under this Agreement. Copies of the Agreement will be made available to the public. DEQ shall provide NWNG a draft of such press release and consider any comments by NWNG on the draft press release, before publication.

C. DEQ Access and Oversight

1. DEQ shall use its best efforts, but not be obligated, to provide reasonable advance notice before entering the

facility. NWNG shall allow DEQ to enter and move freely about all portions of the facility at all reasonable times for the purposes, among other things, of inspecting records relating to work under this Agreement; observing NWNG's progress in implementing this Agreement; conducting such tests and taking such samples as DEQ deems necessary; verifying data submitted to DEQ by NWNG; and, using camera, sound recording, or other recording equipment for purposes relating to work under this Agreement.

2. NWNG shall permit DEQ to inspect and copy all records, files, photographs, documents, and data relating to work under this Agreement, except that NWNG shall not be required to permit DEQ inspection or copying of items subject to attorney-client or attorney work product privilege. DEQ shall use its best efforts, but not be obligated, to provide reasonable advance notice before records inspection and copying requests.

3. Attorney-client and work product privileges may not be asserted with respect to any records required under Section II.G.1 and II.G.2 of this Agreement. NWNG shall identify to DEQ, by addressor-addressee, date, general subject matter, and distribution, any document, record, or item withheld from DEQ on the basis of attorney-client or attorney work product privilege. DEQ reserves its rights under law to obtain documents DEQ asserts are improperly withheld by NWNG.

D. Project Managers

1. To the extent possible, all reports, notices, and other communications required under or relating to this Agreement shall be directed to:

DEQ Project Manager:	NWNG Project Manager:
Eric Blischke Department of Environmental Quality Northwest Region 2020 S.W. Fourth Avenue, Suite 400 Portland, OR 97201 (503) 229-6802	Sandra Hart Northwest Natural Gas Company 220 S.W. Second Avenue Portland, OR 97209 (503) 226-4211

2. NWNG's and DEQ's Project Managers shall be available and have the authority to make day-to-day decisions necessary to complete the scope of work under this Agreement.

E. Notice and Samples

NWNG shall make every reasonable attempt to notify DEQ of any excavation, drilling, or sampling to be conducted under this Agreement at least five (5) working days before such activity but in no event less than twenty-four (24) hours before such activity. Upon DEQ's verbal request, NWNG shall make available to DEQ a

split or duplicate of any sample taken pursuant to this Agreement. DEQ shall make every effort to complete analysis of any split or duplicate sample on a schedule consistent with NWNG's schedule for related activities.

F. Quality Assurance

NWNG shall conduct all sampling, sample transport, and sample analysis in accordance with the Quality Assurance/ Quality Control (QA/QC) provisions approved by DEQ as part of the work plan. All plans prepared and work conducted as part of this Agreement shall be consistent with DEQ's "Quality Assurance Policy No. 760.00". NWNG shall ensure that each laboratory used by NWNG for analysis performs such analyses in accordance with such provisions.

G. Records

1. In addition to those technical reports and documents specifically required under this Agreement, NWNG shall provide to DEQ within ten (10) days of DEQ's written request copies of existing documents relating to work required under this Agreement, including QA/QC memoranda and audits, final plans, final reports, task memoranda, field notes, and laboratory analytical data that have undergone data quality validation.

2. If DEQ determines that review of raw data or preliminary laboratory reports is necessary in order to ensure protection of public health, safety, and welfare and the environment, that information will be provided by NWNG immediately upon DEQ's written request. When such information is requested, DEQ will fully inform NWNG of the reasons making the request necessary.

3. Except for preliminary drafts which have been superseded, NWNG and DEQ shall preserve all records and documents in possession or control of NWNG and DEQ, respectively, or their employees, agents, or contractors that relate in any way to activities under this Agreement for at least five (5) years after termination under Section II.R. of this Agreement; provided that after such 5-year period, NWNG and DEQ shall provide the other sixty (60) days notice before destruction or other disposal of such records and make them available for inspection and copying.

4. NWNG may assert a claim of confidentiality regarding any documents or records submitted to or copied by DEQ pursuant to this Agreement. DEQ shall treat documents and records for which a claim of confidentiality has been made in accordance with ORS 192.410 through 192.505. If NWNG does not make a claim of confidentiality at the time the documents or records are submitted to or copied by DEQ, the documents or records may be made available to the public without notice to NWNG.

H. Progress Reports

During each month of this Agreement, NWNG shall deliver to DEQ on or before the tenth (10th) day of each month two (2) copies of a progress report containing the following items. DEQ anticipates that the progress report will not exceed 2 pages in length.

1. Actions taken under this Agreement during the previous month;

2. Actions scheduled to be taken in the next month;

3. Sampling, test results, and any other data generated by NWNG during the previous month; and

4. A description of any problems experienced during the previous month and the actions taken to resolve them.

I. Other Applicable Laws

All actions under this Agreement shall be performed in accordance with all applicable federal, state, and local laws and regulations; except that, in accordance with ORS 465.315(2), DEQ in its discretion may exempt the on-site portion of any removal or remedial action from applicable requirements of ORS 466.005 to 466.385, ORS Chapter 459, or ORS Chapter 468 (1989).

J. Reimbursement of DEQ Oversight Costs

1. DEQ shall submit to NWNG a monthly statement of costs actually and reasonably incurred after issuance of this Agreement by DEQ or the State of Oregon in connection with any activities related to the facility or oversight of NWNG's implementation of this Agreement. Each invoice will include a summary of costs billed to date. DEQ will also include a direct labor summary showing the person charging the time, the number of hours and the nature of the work performed.

2. DEQ or State of Oregon oversight costs payable by NWNG shall include both direct and indirect costs. Direct costs include site-specific expenses, DEQ contractor costs, and DEQ legal costs. Indirect costs are those general management and support costs of the DEQ and of the Waste Management and Cleanup Division allocable to DEQ oversight of this Agreement and not charged as direct, site-specific costs. Indirect costs are based on a percentage of direct personal services costs. DEQ shall maintain work logs, payroll records, receipts and other documents to document work performed and expenses incurred under this Agreement and, upon request, shall make such records available to Respondent for inspection during the time of this Agreement and for at least one year thereafter.

3. Within thirty (30) days of receipt of the monthly statement, NWNG shall pay the amount of costs billed by check made payable to the "State of Oregon, Hazardous Substance Remedial Action Fund".

K. Force Majeure

1. If any event occurs that is beyond NWNG's reasonable control and that causes or might cause a delay or deviation in performance of the requirements of this Agreement, NWNG shall promptly notify DEQ's Project Manager verbally of the cause of the delay or deviation and its anticipated duration, the measures that have been or will be taken to prevent or minimize the delay or deviation, and the timetable by which NWNG proposes to carry out such measures. NWNG shall confirm in writing this information within five (5) working days of the verbal notification.

2. If NWNG demonstrates to DEQ's satisfaction that the delay or deviation has been or will be caused by circumstances beyond the control and despite the due diligence of NWNG, DEQ shall extend times for performance of related activities under this Agreement as appropriate. Circumstances or events beyond NWNG's control might include but are not limited to acts of God, unforeseen strikes or work stoppages, fire, explosion, riot, sabotage, or war. Increased cost of performance or changed business or economic circumstances shall be presumed not to be circumstances beyond NWNG's control.

L. Prior Approval

Where DEQ review and approval is required for any plan or activity under this Agreement, NWNG shall not proceed to implement the plan or activity until DEQ approval is received. Any DEQ delay in granting or denying approval shall correspondingly extend the time for completion by NWNG. Prior approval shall not be required in emergencies or in instances where NWNG believes a delay in undertaking a particular action will threaten human health, safety or the environment; provided NWNG shall notify DEQ immediately after the emergency or activity and evaluate its impact on the RI/FS.

M. Dispute Resolution

In the event of disagreement between NWNG and DEQ regarding implementation of this Agreement, NWNG and DEQ shall, in the following order: 1) make a good faith effort to resolve the dispute between Project Managers; 2) if necessary, refer the dispute for resolution by the immediate supervisors of the Project Managers; and 3) if necessary, provide each other their respective positions in writing and refer the dispute for resolution by DEQ's Administrator of the Waste Management and Cleanup Division or the appropriate Region Administrator and NWNG's Chief Executive

Officer. DEQ's final decision after such dialogue shall be enforceable under this Agreement. If NWNG refuses or fails to follow DEQ's final decision, the parties shall be entitled to such rights and remedies, including but not limited to, judicial review and subject to such limitation as provided by applicable law.

N. Enforcement of Agreement and Reservation of Rights

1. In the event of NWNG's failure to comply with this Agreement (including any failure to reimburse oversight costs), DEQ may enforce this Agreement under ORS 465.260(5) or may terminate this Agreement after thirty (30) days written notice to NWNG.

2. In the event of DEQ's failure to provide oversight in accordance with this Agreement, NWNG may terminate this Agreement after thirty (30) days written notice to DEQ. Costs incurred or obligated by DEQ before the effective date of any termination of this Agreement shall be owed under the Agreement notwithstanding such termination.

3. NWNG does not admit any liability or violation of law by virtue of entering this Agreement.

4. Nothing in this Agreement shall prevent NWNG from exercising any rights of contribution or indemnification NWNG might have against any person regarding activities under this Agreement; provided, NWNG waives any right it might have under ORS 465.260(7) to seek reimbursement from the Hazardous Substance Remedial Action Fund for costs incurred under this Agreement.

5. NWNG agrees not to litigate, in any proceeding brought by DEQ to enforce this Agreement, any issue other than NWNG's compliance with this Agreement.

O. Hold Harmless

1. NWNG shall save and hold harmless the State of Oregon and its commissions, agencies, officers, employees, contractors, and agents, and indemnify the foregoing, from and against any and all claims arising from acts or omissions related to this Agreement of NWNG or its officers, employees, contractors, agents, receivers, trustees, or assigns. The State of Oregon shall notify NWNG of any such claims or actions as soon as practicable after receiving notice that such a claim or action is threatened or has been filed. NWNG shall have the right to participate fully at its own expense in the defense or settlement of such claims, including the right to promptly receive related correspondence with the claimant and the opportunity to participate in related meetings and telephone conferences with the claimant. The state will confer with NWNG regarding litigation and settlement strategy and, to the extent practicable, will allow NWNG to review ad comment on

pleadings and settlement documents before they are filed with the court or sent to the claimant. NWNG shall have no obligations under this subsection with respect to any claim settled or otherwise compromised without NWNG's having been provided the opportunity to participate in accordance with this subsection. Subject to Article XI, Section 7 of the Oregon constitution and the Oregon Tort Claims Act, DEQ and the State of Oregon shall be responsible for the acts and omissions of their own employees and agents, except for DEQ acts approving or omissions constituting approval of NWNG's activities under this Agreement. DEQ shall not be considered a party to any contract made by NWNG or its agents in carrying out activities under this Agreement.

2. To the extent permitted by Article XI, Section 7, or the Oregon Constitution and by the Oregon Tort Claims Act, the State of Oregon shall save and hold harmless NWNG and its officers, employees, contractors, and agents, and indemnify the foregoing, from and against any and all claims arising from acts or omissions related to this Agreement of the State of Oregon or its commissions, agencies, officers, employees, contractors, or agents (except for acts approving or omissions constituting approval of any activity of NWNG under this Agreement). NWNG shall not be considered a party to any contract made by DEQ or its agents in carrying out activities under this Agreement.

P. Parties Bound

This Agreement shall be binding on the parties and their respective successors, agents, and assigns. The undersigned representative of each party certifies that he or she is fully authorized to execute and bind such party to this Agreement. No change in ownership or corporate or partnership status relating to the facility shall in any way alter NWNG's obligations under this Agreement, unless otherwise approved in writing by DEQ.

Q. Modification

DEQ and NWNG may modify this Agreement by mutual written agreement.

R. Duration and Termination

Upon completion of work under this Agreement, NWNG shall submit to DEQ a written notice of completion. This Agreement shall be deemed satisfied and terminated upon payment of all oversight cost owed and upon DEQ's issuance of a letter acknowledging satisfactory completion of activities in accordance with this Agreement. Such letter shall be issued within sixty (60) days of receipt of notice of completion and payment of outstanding DEQ oversight costs, or as soon thereafter as is reasonably practicable.

NORTHWEST NATURAL GAS COMPANY

By: _____ Date: _____
(Name)

Sr V. P.
(Title)

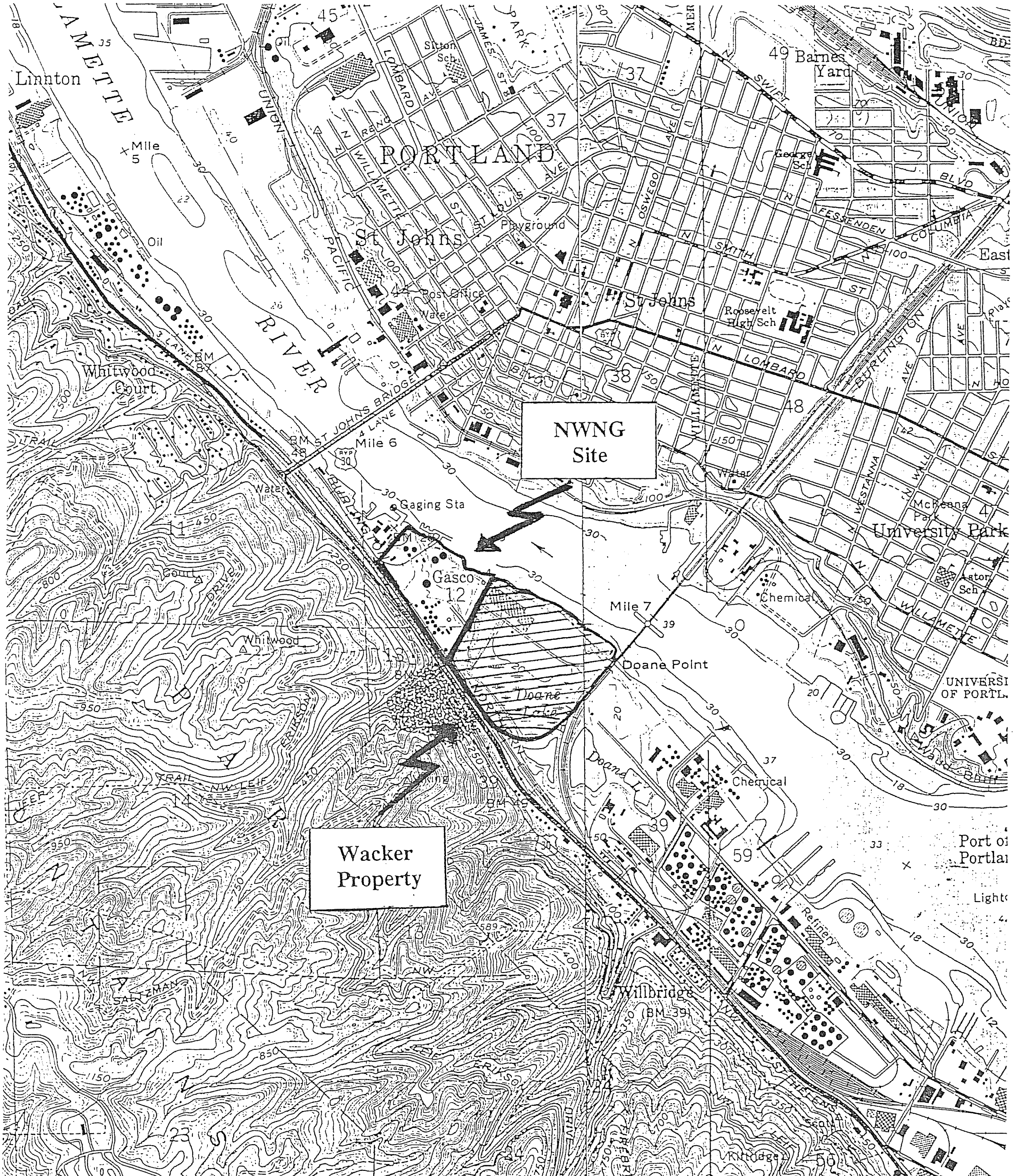
STATE OF OREGON
DEPARTMENT OF ENVIRONMENTAL QUALITY

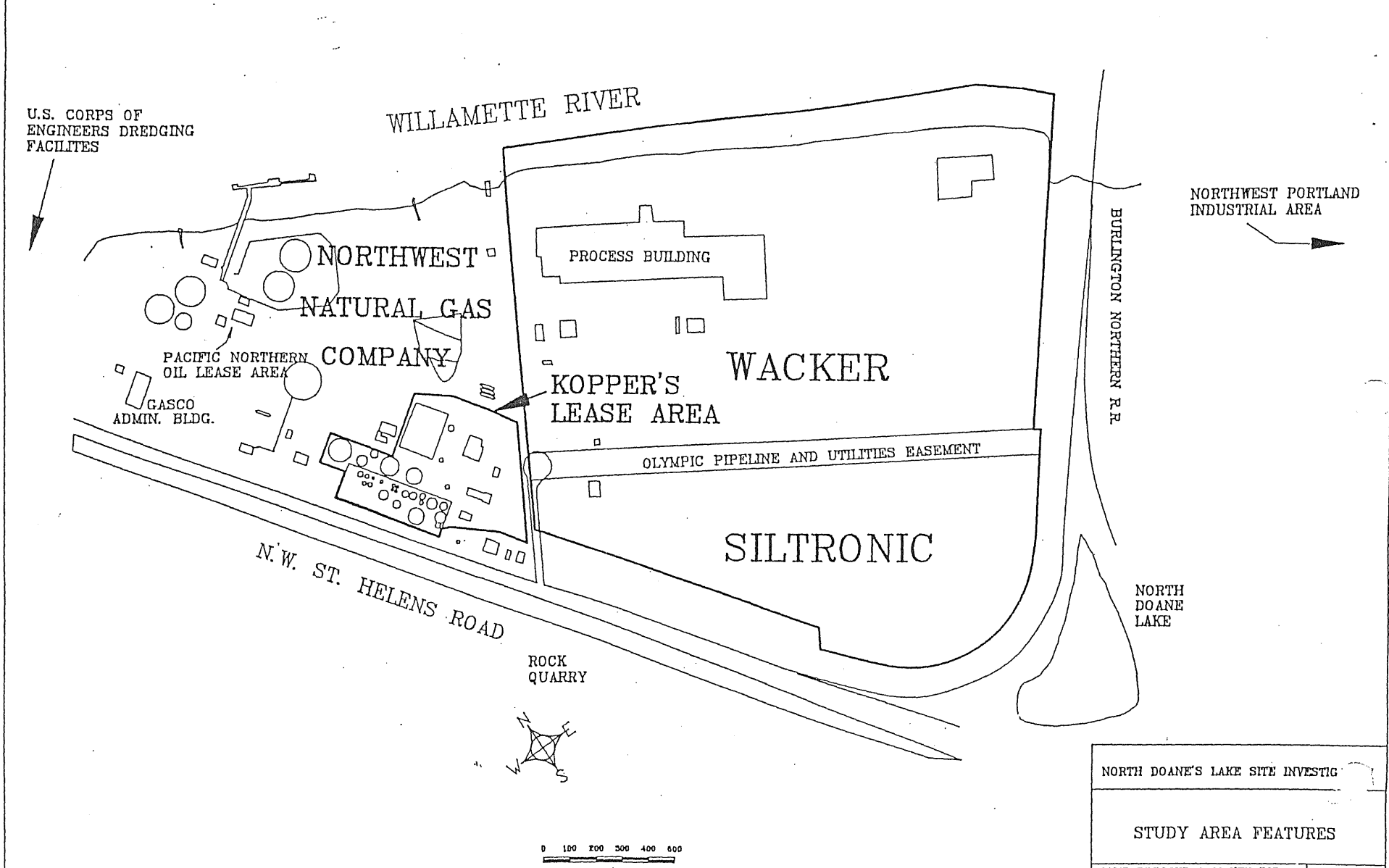
By: _____ Date: AUG 8 1994
(Name)

_____
(Title)

ATTACHMENT A

VICINITY AND SITE MAPS


NWNG
Site
Wacker
Property
PORTLAND
St Johns
Linnton
WILLAMETTE
RIVER
ST JOHNS BRIDGE
Gasco
Doane Point
Doane Lake
Gaging Sta
Mile 5
Mile 6
Mile 7
Whitwood Court
University Park
Willbridge
Roosevelt High Sch
Chemical
Refinery
Port of Portland



NORTH DOANE'S LAKE SITE INVESTIG

STUDY AREA FEATURES

CAMP DRESSER & McKEE INC
2300 15th STREET
SUITE 400
DENVER, COLORADO 80202
CDM

SHEET NO. 2-2

CDM 8455-110

ATTACHMENT B

SCOPE OF WORK

RI/FS Proposal	Provide to DEQ within 30 days of issuance of this agreement.
Meeting to discuss RI/FS Proposal	Between DEQ and NWNG within 15 days of DEQ's receipt of the RI/FS proposal; DEQ and NWNG will meet, if necessary, to review the proposal, concur on the RI/FS approach, and discuss the content and format of deliverables.
DEQ approval of RI/FS Proposal	To NWNG within 10 days of meeting or within 15 days of receipt of RI/FS Proposal if meeting not held.
Draft RI/FS Work Plan	To DEQ within 45 days of receipt of DEQ's approval of the RI/FS Proposal; the Draft RI/FS Work Plan shall include the draft Sampling and Analysis Plan (SAP), Health and Safety Plan (HASP), Quality Assurance Project Plan (QAPP), Endangerment Assessment Work Plan (EAWP) and Feasibility Study Work Plan (FSWP).
DEQ review and comments	To NWNG within 30 days of receipt of the Draft RI/FS Work Plan.
Revised Draft RI/FS Work Plan	To DEQ within 15 days of receipt of DEQ comments; the revised RI/FS Work Plan shall include a revised SAP, HASP, QAPP, EAWP and FSWP as necessary, addressing DEQ comments.
DEQ review and approval	To NWNG within 15 days of receipt of an approvable RI/FS Work Plan.
Implementation of RI	Within 15 days of receipt of DEQ approval; NWNG shall complete work according to the schedule specified in the approved Work Plan.
RI Letter Report	To DEQ within 30 days of completion of RI and receipt of laboratory data. Data shall be validated and any unusable data identified. Shall include a recommendation whether additional phases are required; format to be mutually agreed upon by DEQ and NWNG.
DEQ review and comments	To NWNG within 15 days of receipt.
Subsequent Phase Work Plan Addenda	If it is mutually determined by DEQ and NWNG that additional phases are required, NWNG shall submit a **Work Plan Addendum** according to a format and schedule agreed upon between the parties prior to starting each phase of the Remedial Investigation, the Endangerment Assessment and the Feasibility Study.
DEQ review and comment	To NWNG within 21 days of receipt of each Work Plan Addendum.

ATTACHMENT B

VOLUNTARY CLEANUP PROGRAM
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
SCOPE OF WORK

I. OBJECTIVES AND SCHEDULE

A. OBJECTIVES

1. Work performed under this Agreement shall complement and incorporate existing site information with the following specific objectives:

   i. Determine the magnitude, nature and extent of contamination at the Northwest Natural Gas Company (NWNG) site located at 7540 N.W. St. Helens Road. The investigation and cleanup, if required, shall include properties leased to Pacific Northern Oil Company and Koppers Industries, Incorporated. The investigation shall focus on, but not be limited to, petroleum related contaminants such as volatile aromatic compounds and polycyclic aromatic hydrocarbons (PAHs) and inorganic contaminants such as metals, cyanide and hydrogen sulfide.

2. Work performed under this Agreement shall complement and incorporate existing site information with the following overall objectives:

   i. Identify the hazardous substances which have been released to the environment,

   ii. Determine the full nature and extent of hazardous substances in affected media on and off-site,

   iii. Determine the distribution of hazardous substance concentrations,

   iv. Determine the direction and rate of migration of hazardous substances,

   v. Identify migration pathways,

   vi. Identify the environmental impact and risk to human health and/or the environment,

   vii. Develop the information necessary to select a remedial action.

B. SCHEDULE

The Remedial Investigation/Feasibility Study (RI/FS) described in this Scope of Work may be completed in phases if that approach will better enable NWNG to meet the objectives listed above. All work under this Agreement will proceed in accordance with the schedule below, which assumes a phased approach and is measured in calendar days:

Subsequent Phase RI Letter Reports	Within 30 days of completion of subsequent phases of the RI work, NWNG shall issue additional **Phase __ RI Letter Reports** which summarize the RI work to date and include a recommendation whether additional phases are required.
DEQ review and comment	To NWNG within 15 days of receipt of the Letter report for each phase of the RI.
Draft RI Report Outline	To DEQ within 30 days of receipt of DEQ's comments on the final phase of the RI work and receipt of all laboratory data; the outline will provide a table of contents and a list of figures and tables.
DEQ Review and Comment	To NWNG within 15 days of receipt.
Draft RI Report	To DEQ within 60 days of receipt of DEQ's comments; the draft RI report will include a draft Endangerment Assessment, summarize all RI work to date and respond to all DEQ comments to-date.
DEQ review and comments	To NWNG within 45 days of receipt of the Draft RI Report.
Final RI Report	To DEQ within 30 days of receipt of DEQ comments.
Review and approval	To NWNG within 30 days of receipt of an approvable RI Report.
Draft FS Report	To DEQ within 60 days of DEQ approval of the Final RI Report
DEQ review and comments	To NWNG within 45 days of receipt of the Draft FS report
Final FS Report	To DEQ within 30 days of receipt of DEQ's comments
DEQ review and approval	To NWNG within 30 days of receipt of an approvable FS Report

II. RI/FS PROPOSAL

The RI/FS Proposal will be a brief discussion of NWNG's proposed approach to the RI/FS, addressing soil, groundwater, surface water, sediments, and air. The proposal will provide the framework for the RI/FS Work Plan and will include the following, assuming a phased approach:

A. A summary of site-specific issues and a review of the results of previously completed work;

B. A general description of each proposed phase, including the goals and objectives of each;

C. Phase I sample locations, depths, proposed analytical methods, and the rationale for each (include map); and

D. The estimated schedule for implementation of Phase I and subsequent phases if necessary.

III. REMEDIAL INVESTIGATION WORK PLAN

The RI Work Plan shall be based on the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, OSWER Directive 9355.3-01, 1988, and developed in accordance with OAR 340-122-080.

The Work Plan shall include, but not be limited to the following items:

A. PROJECT MANAGEMENT PLAN

1. A proposed schedule for submittals and implementation of all proposed activities.

2. A description of the personnel involved in the project, including their qualifications to do the proposed work.

B. SITE DESCRIPTION

A description of facility operations shall include, but not be limited to, the following:

1. A list of chemical products used on-site currently and historically.

2. The estimated volume of waste disposed of on-site and/or discharged off-site.

3. Time and volume of known spills.

4. A description of past and present waste treatment/disposal practices and areas.

5. The location of past and present raw material and finished product storage areas.

6. The approximate time periods for past operational, treatment, storage, disposal, and/or discharge practices where hazardous substances were involved relative to this investigation.

C. SITE CHARACTERIZATION PLAN

1. Soils

Objective: To identify releases of hazardous substances to soils and to assess the nature and extent of soil contamination.

Scope: The plan shall address all areas which could potentially have received spills, leaks from tanks or piping, been used for waste treatment, storage, or disposal, or have been affected by contaminated surface water or storm water runoff, and all other areas where soil contamination is known or suspected, to the extent necessary for DEQ to select a remedy for the site.

Procedures: The sampling program shall supplement previous soil

sampling at the facility. At a minimum, the plan shall include, but not be limited to, the following:

a. The proposed location of soil borings including;

   i. Depth of borings

   ii. Sampling interval

   iii. Sample collection methods

   iv. Analytical parameters

   v. Method to determine background concentrations for each parameter

   vi. Rationale for each of the above

b. Provisions for describing soil boring samples, to include:

   i. The soil type according to the ASTM D 2487-85, Classification of Soils for Engineering Purposes, and

   ii. Soil color, structure, texture, mineral composition, moisture, and percent recovery according to ASTM D 2488-84, Description and Identification of Soils (Visual-Manual Procedures)

   iii. Other relevant characteristics such as visual identification of contamination, odor, and detection of vapors by use of field screening instruments such as HNU, OVA or other equivalent type equipment, and as described by a qualified geologist or geotechnical engineer.

2. Groundwater

Objective: To identify releases of hazardous substances and characterize the lateral and vertical extent of these releases to groundwater

Scope: The plan shall supplement previous investigations at the facility and shall identify releases of hazardous substances to groundwater, and shall also characterize the vertical and lateral extent of groundwater contamination, both on-site and migrating off-site to the extent necessary for DEQ to select a remedy for the site.

Procedures: The sampling program shall supplement previous groundwater sampling at the facility. At a minimum, the plan shall include, but not be limited to, the following:

a. Well installation plan to include:

   i. Proposed well locations.

ii. Proposed well depths.

iii. Length of proposed screened intervals.

iv. Proposed drilling methods.

v. Proposed construction materials and installation methods.

vi. Proposed well development and completion methods.

vii. Proposed sample collection methods

viii. Proposed analytical parameters

ix. Proposed method to determine background concentrations of each parameter

x. Proposed schedule for sampling all monitoring wells

b. Hydrologic characterization proposal to include:

i. Provisions to collect and describe formation materials during drilling. NWNG may consider obtaining continuous cores and using borehole geophysics to supplement coring.

ii. A plan to characterize the hydrogeology including a description of:

(a) stratigraphy
(b) structural geology
(c) depositional history
(d) regional ground-water flow patterns

iii. A plan to describe the hydrogeologic properties of affected hydrogeologic units found at the site, and additional units as necessary to complete the RI/FS, including:

(a) hydraulic conductivity
(b) porosity
(c) lithology
(d) hydraulic interconnections between saturated zones

iv. Plans to identify the following for each affected aquifer, and additional aquifers as necessary to complete the RI/FS:

(a) A description of ground-water flow direction.
(b) Identification of vertical and horizontal gradient(s).
(c) Interpretation of the flow system including the rate (horizontal and vertical) of groundwater flow, and including seasonal variations.

v. A plan to describe surface and subsurface features, characteristics, and interrelationships with a potential to influence groundwater flow patterns at the site, including:

(a) Identification of pumping groundwater wells, past and present.
(b) Influences of rivers, streams, and ditches.
(c) Influences of ponds and lakes.
(d) Identification of areas of recharge/discharge.

c. A plan to conduct a well inventory to identify all active and inactive water wells within a one-mile radius of the facility, to include, as necessary:

i. Identification of all wells listed with the Oregon Water Resources Department and field confirmation of their location

ii. A door-to-door field survey to identify wells for which no logs are on file

iii. For all located wells, to the extent practicable, identify:

(a) Owner
(b) Address
(c) Map location
(d) Driller
(e) Date drilled
(f) Depth
(g) Casing and screen material, depths and intervals
(h) Seal types, depths and intervals
(i) Static water levels
(j) Approximate land surface elevation
(k) Reported water quality and use of well

iv. A plan to sample those private wells identified above which, based on the available hydrogeological information, may be at greatest risk of contamination.

3. Surface Water and Sediments

Objective: The Work Plan shall include a plan to identify and evaluate releases of hazardous substances to surface water, including their sediments.

Scope: The plan shall supplement previous investigations at the facility and shall identify all past, existing, and potential impacts to surface waters from the identified release to the extent necessary for DEQ to select a remedy for the site.

Procedures: The sampling program shall supplement previous surface water and sediment sampling at the facility. At a minimum, the plan shall include but not be limited to,

the following:

a. A delineation of past and present surface drainage patterns at the site.

b. Proposed sampling points in past and current surface drainages.

c. Proposed sample collection methodology.

d. Proposed analytical parameters

e. Proposed method for determining background values for all parameters.

f. A rationale for each of the above.

4. Air

Objective: To identify and characterize the release of hazardous substances to the air from unregulated sources at the facility.

Scope: The air assessment plan shall supplement previous investigations at the facility and shall be designed to determine if unregulated air emissions from the site threaten human health or the environment.

Procedures: The sampling plan shall supplement previous air sampling at the facility. At a minimum, the plan shall include, but not be limited to, the following:

a. Proposed sample locations

b. Proposed analytical parameters

c. Proposed sample collection methods

d. Methodology for determining background values for each parameter

e. Rationale for each of the above

D. SAMPLING AND ANALYSIS PLAN (SAP)

Objective: To adequately document all sampling and analysis procedures.

Scope: The SAP shall be sufficiently detailed to function as a manual for field staff. In preparation of the SAP, the following guidance documents shall be utilized: Data Quality Objectives for Remedial Response Activities, EPA/540/G-87/004 (OSWER Directive 9355.0-7B), March, 1987; Test Methods for Evaluating Solid Waste, SW-846; and A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001 (OSWER Directive 9355.0-14), December, 1987. The SAP shall address all topics listed in Policy #760.000, Quality Assurance Policy.

Procedures: The Work Plan shall include a SAP for all sampling activities. The SAP shall include, at a minimum:

1. Proposed analytical parameters and rationale.

2. Description of sample collection methods, sampling equipment, and sample handling procedures.

3. Quality assurance and quality control procedures for both field and lab procedures, including a data quality objectives plan.

4. Chain of custody procedures.

5. Analytical methods for each parameter.

6. A methodology for determining background concentrations for all detected contaminants.

7. A methodology for determining statistically significant increases in concentrations for the sampling parameters.

E. HEALTH AND SAFETY PLAN (HASP)

The Health and Safety Plan shall:

1. Describe the known hazards and risks.

2. Identifying levels of protective clothing and equipment to be worn.

3. Describe decontamination procedures.

4. Identify any special requirements or training needs.

5. Provide a contingency plan for emergencies.

An existing Health and Safety Plan can be included by reference, if it adequately includes the above items.

F. ENDANGERMENT ASSESSMENT WORK PLAN

The Endangerment Assessment portion of the Work Plan shall be developed based on the *Risk Assessment Guidance for Superfund - Human Health Evaluation Manual Part A*, United States Environmental Protection Agency, Interim Final, July 1989, (RAGS-HHEM); *Risk Assessment Guidance for Superfund Volume II - Environmental Evaluation Manual* (EEM), United States Environmental Protection Agency, Interim Final, March 1989; *EPA Region 10, Supplemental Risk Assessment Guidance for Superfund*, United States Environmental Protection Agency, August 1991, (SRAGS); and, *Human Health Evaluation Manual, Supplemental Guidance:"Standard Default Exposure Factors"*, United States Environmental Protection Agency, March 1991,(HHE-SG).

1. Human Health Evaluation

Objective: The human health evaluation (HHE) is an analysis of the potential adverse health effects caused by hazardous substance release(s) from a site in the absence of any actions to control or mitigate these releases (i.e., under an assumption of no action). It is used to document the magnitude of the potential risk at a site and to evaluate the cause(s) of that risk. It is also

used to support risk management decisions, and to set remediation goals, if necessary.

Scope: This section shall describe the different tasks involved in preparing the HHE portion of the endangerment assessment. A suggested outline for the human health evaluation is given in Exhibit 9-1 of the RAGS-HHEM. The Work Plan should use this outline as a framework for discussing the methodologies and assumptions to be used in assessing the potential human health risks at the site.

The HHE shall include an estimate of the reasonable maximum exposure (RME) expected to occur under both current and future land use conditions. Guidance on quantifying the RME is given in Chapter 6 of the RAGS-HHEM, SRAGS, and HHE-SG. Quantifying the potential risks associated with the RME shall be the overall goal of the Endangerment Assessment.

The Work Plan should include, but not be limited to the following:

a. A conceptual site model for the site. This model should be an iterative flow chart based on available site information showing contaminant sources, release mechanisms, transport routes and media, potential receptors, and other important information as appropriate. Iterations of this model shall be carried through the work plan and the endangerment assessment as additional information is generated. Exhibit 4-1 of the RAGS-HHEM presents an example of a conceptual site model.

b. The exposure parameters for the RME based on both current and future land use scenarios.

c. A list of all chemicals identified at the site (by media).

d. The analytical methods used during the site investigation, and the method detection limits that were used for all analytes. In addition, an explanation of how non-detect values and qualified data will be used to estimate exposure point concentrations should be provided.

e. The rationale for selecting chemicals that will be carried through the HHE.

f. A discussion of how the fate and transport of site-related chemicals will be evaluated. In addition, a description of the fate and transport model that will be used to estimate the potential infiltration (or contribution) of chemicals in soil to ground water should be included.

g. A summary table of the chemicals found, and their respective critical toxicity values (reference doses - RfDs), slope factors, and other relevant critical toxicity factors) and citations for these values; data on absorption factors that will be used (e.g., dermal absorption factors) should also be included.

h. The exposure points and exposure point concentrations to be used in the HHE (and/or how they will be estimated). A description of the model(s) that will be to estimate exposure point concentrations should be provided, if necessary.

i. An explanation of how the uncertainty analysis will be conducted.

2. Environmental Evaluation

Objective: The environmental evaluation (EE) provides an assessment of the potential threat to ecological populations, communities or ecosystems in the absence of any remedial action. It can provide a basis for determining whether or not remedial action is necessary, and can also be used to support risk management decisions.

Scope: The EE and the HHE are parallel activities used in the evaluation of hazardous substance sites. Much of the data and analyses relating to the nature, fate, and transport of a site's contaminants can be used for both evaluations. Available data (from the HHE or previous investigations) can be utilized, whenever appropriate, and additional data should be generated whenever necessary in order to conduct the ecological assessment.

The EE shall follow the organization presented in Chapter 6 of the EEM, as applicable. The Work Plan shall discuss the different tasks involved in evaluating whether or not the potential ecological impacts of the contaminants at a site warrant remedial action.

The Work Plan should include, but not be limited to the following:

a. A list of all chemicals identified at the site (by media). The HHE can be referenced, if appropriate.

b. The rationale for selecting chemicals that will be carried through the EE.

c. A description of the site and study area. A description of how the EE will account for the ecosystems and populations potentially exposed to chemicals at the site (e.g., a description of the habitat and lists of species either collected or observed), and how they will be evaluated should be included.

d. A discussion of how the fate and transport of site-related chemicals will be evaluated (through both physical and biological means). The HHE can be referenced, if and/or where appropriate.

e. The exposure points and exposure point concentrations that will be used in the EE (and/or how they will be estimated). A discussion of actual or potential exposure pathways (and the media involved) should also be included.

f. A description of how the potential environmental impacts or threats will be characterized. This should include

a description of the ecological endpoints that will be considered measurements of potential impact or probability of potential impact (e.g., Water Quality Criteria).

g. An explanation of how the uncertainty analysis will be conducted.

G. FEASIBILITY STUDY WORK PLAN

The Feasibility Study portion of the Work Plan shall be developed in accordance with OAR 340-122-080 and Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, OSWER Directive 9355.3-01, 1988. The Feasibility Study shall develop an appropriate range of alternatives which meet the standards listed in OAR 340-122-040, and 340-122-090. The Feasibility Study shall be developed in parallel with Remedial Investigation activities.

Objective: To present an outline of the Feasibility Study process and identify potential remedial alternatives in order to obtain sufficient analytical data during the RI.

Scope: The purpose of the Feasibility Study is to develop and evaluate remedial alternatives for each contaminated medium, and recommend remedial actions to be taken at the facility

Procedures: A Work Plan shall be submitted which will include, but not be limited to the following:

1. A description of any interim remediation activities which have been implemented to date and the relationship of the interim measures to the ultimate corrective action.

2. The remedial action objectives.

3. A discussion of how volumes or areas of media to which response actions may be applied will be identified.

4. A discussion of how screening criteria will be developed to identify and select treatment technologies and process options.

5. A description of how process options will be evaluated.

6. The criteria for and selection of remedial action alternatives.

7. A preliminary screening of remedial technologies and alternatives based on available data.

H. MAPS

The Work Plan shall include maps of the facility which clearly show:

1. Site topography and surface drainage.

2. On-site structures, including tanks, sumps, catch basins, utilities, and pipelines.

3. The location of past spills, disposal areas, and all other waste and product management areas.

4. All pertinent structures adjacent to or nearby the site such as drainage ditches, pipelines, roadways, wells and utility corridors.

5. The location of all existing and proposed surface soil sample points, soil borings, monitoring wells, surface drainage, sediment, surface water, and air sample points.

6. The locations of hydrogeologic cross-sections.

7. The drawing date, orientation, and scale.

IV. REPORTS

A. **MONTHLY REPORTS:** Monthly reports shall be submitted to DEQ by the 10th day of the month following the reporting period. These reports shall include, but shall not be limited to, the following:

1. Activities that occurred during the past month.

2. Description of data results collected during the past month.

3. Description of any problems or difficulties experienced during the past month.

4. Description of activities planned for the coming month.

B. **LETTER REPORTS:** Letter Reports are to be submitted to DEQ within 30 days following the completion of each phase of the remedial investigation. These reports shall include, but shall not be limited to, the following:

1. Introduction.

2. Summary of work completed to date.

3. A presentation of all data collected during the investigation.

4. Conclusions and recommendations.

C. **REMEDIAL INVESTIGATION REPORT:** The results of the Remedial Investigation shall be submitted to the DEQ as draft and final report in accordance with the following format:

1. Executive Summary

2. Introduction

   a. Purpose

   b. Report Organization

3. Site Background

   a. Site Description

      i. Location

ii. Physical features such as building, roads, utilities, wells, etc., include map

iii. Site History

b. Facility Operations

i. Past production processes, waste identification, location of hazardous materials handling and storage areas

ii. Location, time, volume of releases of hazardous substances, include map

iii. Past and present waste treatment/disposal practices and areas

c. Site Setting

i. Regional land use and history

ii. Geology

iii. Hydrogeology

iv. Surface water

v. Climatology

d. Previous Investigations

i. Summary of previous investigations

ii. List of reports referenced

4. Study Area Investigation

a. Soil

i. A map and description of the location of soil borings or surface samples including depth of borings, sampling interval, sampling methods, analytical parameters, analytical methods, as well as quality assurance and quality control procedures

ii. Description of soil samples; all boring and lithologic logs

iii. A map showing the locations of hydrogeologic cross-sections

iv. An evaluation and analysis of all data submitted; use tabular and graphic presentation; include discussion of data limitations

b. Groundwater

i. The well installation plan including well locations (provide map), well depth, length of

screened intervals, drilling methods, construction materials, and installation methods, well development and completion methods

ii. All boring and lithologic logs; including well construction diagrams with surveyed location, elevation of top of casing, size and depth of well, screened interval

iii. A characterization of the hydrogeology including a description of formation materials, the hydrogeology, and hydrogeologic properties of each pertinent aquifer

iv. A description of the hydraulic influence from groundwater wells, and surface water bodies

v. All areas of recharge/discharge

vi. Results of the well inventory to identify all active and inactive water wells within a one-mile radius of the facility

vii. Results and data analysis including data limitations; tabular and graphic presentations

c. Surface Water and Sediments

i. A map with all relevant surface water bodies within 2 miles of the site

ii. A map with past and present surface drainage patterns and the stormwater collection system

iii. A map with all sample locations

iv. Results and data analysis including data limitations; tabular and graphic presentations

d. Air

i. A wind rose and discussion of predominant wind direction

ii. A map indicating all sample locations and elevations of sample points

iii. Results and data analysis including data limitations; tabular and graphic presentations

5. Summary and Conclusions

a. A discussion of the nature and extent of contamination; discuss the data limitations

b. A discussion of the fate and transport of the contaminants of concern

c. Recommendations for further action

As part of the Remedial Investigation Report to DEQ, NWNG may incorporate existing data, reports or information, including data from any investigation activity conducted prior to the effective date of this Agreement, to the extent that such data is consistent with the procedures and quality assurance/quality control criteria approved by DEQ.

C. **ENDANGERMENT ASSESSMENT REPORT:** The results of the Endangerment Assessment shall include the Human Health Evaluation and the Environmental Evaluation and shall follow the report formats described in the references cited in IV.F. of this Scope of Work. Any data limitations shall be noted in the report. If information is presented in sections of the RI Report, these may be referenced.

D. **FEASIBILITY STUDY REPORT:** The results of the Feasibility Study shall be submitted to DEQ in a report which, at a minimum, includes a full evaluation of remedial action alternatives, giving a workable number of options which each appear to adequately address site problems and remedial action objectives. These alternatives shall include a no action option, at least one option which will achieve background, and at least one option which will achieve protection of public health, safety, and welfare and the environment. The report shall present the following for each alternative:

1. Description of the remedial action alternative, estimated cost, and rationale for selection.

2. Performance expectation (i.e., reductions in contaminant concentration levels), reliability, and ability to implement.

3. Design criteria and rationale.

4. General operation and maintenance requirements.

5. Monitoring program to assure both short-term and long-term performance of the alternative.

6. Financial assurance mechanism to assure performance.

7. Estimated time for implementation.

8. Evaluation of the short-term and long-term effectiveness and risks of the alternative.

9. Recommendation and justification of the remedial action selected from the developed alternatives.

10. A schedule for implementation of the proposed remedial action.

FIRST ADDENDUM
TO
VOLUNTARY AGREEMENT
FOR
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
DEQ NO. WMCVC-NWR-94-13

The Oregon Department of Environmental Quality (DEQ) and NW Natural (NWN) agree to amend Voluntary Agreement No. WMCVC-NWR-94-13 dated August 8, 1994 (Agreement), as follows. All other terms of the Agreement remain in effect and apply to this First Addendum.

1. Recital I.B is amended, to read:

"The NWN Site is a "facility" within the meaning of ORS 465.200(13). The NWN Site includes property located at 7540 N.W. St. Helens Road, Portland, Oregon, currently owned by NWN (NWN Property), as well as adjacent property located at 7200 N.W. Front Avenue, Portland, Oregon, currently owned by Siltronic Corporation (Siltronic Property), to the extent the Siltronic Property is the location of or otherwise affected by wastes associated with manufactured gas process (MGP) operations on the NWN Site. This facility is generally referred to in this First Addendum as the "NWN Site". The general location of the NWN Site is shown on Attachment AA to the First Addendum."

2. Recital I.C is amended, to add:

"Waste management areas extended onto the northern portion of what is now the Siltronic Property, in areas of low elevation prone to flooding. The tar ponds at the NWN Property were periodically excavated and redeposited onto what is now the Siltronic Property. MGP operations ceased in 1956. NWN's predecessor sold the Siltronic Property to Victor Rosenfeld and H.A. Anderson in 1962. Thereafter, wastes associated with the MGP operations within the northern Siltronic Property area may have been redistributed across portions of the Siltronic Property when that property was filled between 1966 and 1975. Wastes within tar ponds on the NWN Property were used as fill or redistributed on the NWN Property when the eastern corner of the NWN Property was filled during the 1972/1973 time-frame."

3. Recital I.D is amended, to add:

"Investigations conducted to date on the Siltronic Property indicate that MGP waste (e.g., tar and oil, lampblack, and spent oxide) are present in subsurface soil and groundwater across the Siltronic Property, with the primary accumulation located on the northern portion of the property in the area of the former Gasco waste effluent ponds and the adjacent lowland. Dense nonaqueous phase liquid (DNAPL) in the vicinity of the former waste effluent ponds has been observed in four groundwater

monitoring wells on the Siltronic Property. Observed thicknesses ranged from two feet in monitoring well WS-10-27 to 12.5 feet in monitoring well WS-15-85. Approximately three to four feet of DNAPL is present in monitoring wells located adjacent to the Willamette River (WS-11-125 and WS-14-125). The location of the referenced monitoring wells is identified on Attachment BB to the First Addendum. Up to 25,000 ug/L benzene, 495,000 ug/L naphthalene, and 4,441 ug/L cyanide have been detected in groundwater at the Siltronic Property. Concentrations in soil have been detected up to: 35,432 mg/kg total PAH; 230 mg/kg dibenzofuran; 218 mg/kg benzene; and 15,000 mg/kg cyanide.

Investigations at the Siltronic Property have further identified elevated concentrations of chlorinated solvents in soil and groundwater. The chlorinated solvent contamination is being addressed by Siltronic Corporation and is outside the scope of this Agreement."

4. A new Recital I.G is added, reading:

"The NWN Site is located within or adjacent to the Portland Harbor Superfund Site, which site was placed on the federal National Priorities List by the U.S. Environmental Protection Agency (EPA) in December 2000. By memorandum of understanding, EPA is the lead agency for implementing investigation and cleanup of in-water sediments contamination in the Willamette River in the Portland Harbor Superfund Site, and DEQ is the lead agency for implementing investigations and source control at upland facilities. This Agreement as amended is consistent with DEQ's responsibilities at the Portland Harbor Superfund Site. Evaluation of the portions of the NWN Site located on the Siltronic Property as a potential source of contaminants to the Portland Harbor Superfund Site is also the subject of DEQ Order No. ECVC-NWR-00-27 issued by DEQ to NWN and Wacker Siltronic Corporation on October 4, 2000. DEQ separately issued Order No. VC-NWR-03-16 to Wacker Siltronic Corporation on February 5, 2004. This Agreement as amended does not supersede or affect obligations imposed under DEQ Orders No. ECVC-NWR-00-27 and VC-NWR-03-16."

5. A new Recital I. H is added, reading:

"By entering into this First Addendum, NWN does not admit liability or responsibility for conditions that may be present at the NWN Site, including hazardous substance releases at or to the Siltronic Property resulting from or exacerbated by the acts or omissions of parties other than NWN."

6. Section II.A.2 is deleted, and replaced with:

"2. <u>DEQ Review and Approval</u>

(a) Where DEQ review and approval is required for any plan or activity under the Agreement as amended, NWN may not proceed to implement the plan or activity until

DEQ approval is received. Any DEQ delay in granting or denying approval correspondingly extends the time for completion by NWN. For purposes of the Agreement as amended, "day" means calendar day unless otherwise specified.

(b) After review of any plan, report, or other item required to be submitted for DEQ approval under the Agreement as amended, DEQ shall in writing: (1) approve the deliverable in whole or in part; or (2) disapprove the deliverable in whole or in part and notify NWN of deficiencies and/or request modifications to cure the deficiencies.

(c) DEQ approvals, rejections, modifications, or identification of deficiencies shall be given as soon as practicable and state DEQ's reasons with reasonable specificity.

(d) In the event of DEQ disapproval or request for modification, NWN shall correct the deficiencies and resubmit the revised report or other item for approval within 30 days of receipt of the DEQ notice or within such other time as specified in the DEQ notice.

(e) In the event a deficiency identified by DEQ is not addressed by NWN in the revised deliverable, DEQ may modify the deliverable to cure the deficiency.

(f) In the event of approval or modification of the deliverable by DEQ, NWN shall implement the action required by the plan, report, or other item, as so approved or modified, or, as to any DEQ modifications, invoke dispute resolution under Section II.M of the Agreement."

7. Section II.A.3 is deleted, and replaced with:

"3. Additional Measures

(a) NWN may elect at any time during the term of the Agreement as amended to undertake measures, beyond those required under the Agreement and the SOW, necessary to address the release or threatened release of hazardous substances at the facility. Such additional measures (including but not limited to engineering or institutional controls and other removal or remedial measures) are subject to prior approval by DEQ, which approval shall be granted if DEQ determines that the additional measures will not compromise the validity of the RI/FS, will not threaten human health or the environment, and will comply with applicable laws.

(b) DEQ may determine that, in addition to work specified in the SOW or an approved work plan, additional work is necessary to complete the RI/FS in satisfaction of the SOW and OAR Chapter 340 Division 122, or is necessary to address unanticipated threats to human health or the environment. DEQ may require that such additional work be incorporated into the applicable work plan by modification or be performed in accordance with a DEQ-specified schedule. NWN shall modify the work plan or implement the additional work in accordance with DEQ's directions and schedule, or invoke dispute resolution under Section II.M of the Agreement within 14 days of receipt of DEQ's directions."

8. A new Section II.A.4 is added, reading:

"4. Source Control Measures

For any unpermitted discharge or release of hazardous substances at the NWN Property to the Willamette River or river sediments identified in the remedial investigation, NWN shall identify and evaluate source control measures in accordance with the SOW and the terms and schedule of a DEQ-approved work plan. DEQ will review and approve source control measures pursuant to OAR 340-122-0070 and in consultation with EPA. Upon DEQ approval of a source control measure, NWN shall develop a source control work plan in accordance with DEQ's directions and, upon DEQ approval, implement the work plan."

9. Section II. D is amended to update the current DEQ and NWN project managers:

DEQ Project Manager
[To Be Determined]
Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201

NW Natural Project Manager
Robert J. Wyatt
NW Natural
220 N.W. Second Avenue
Portland, Oregon 97209
(503) 226-4211 Ext. 5425

10. Section II.N.3. is amended, to add:

"Except as expressly provided in this Agreement, NWN reserves all rights, claims, and defenses relating to the NWN Site."

11. A new Section II.S is added, reading:

"S. Stipulated Penalties

1. Subject to Sections II.K and M, upon any violation by NWN of any requirement of this Agreement as amended, and upon NWN's receipt from DEQ of written notice of violation, NWN shall pay the stipulated penalties set forth in the following schedule:

(a) Up to $5,000 for the first week of violation or delay and up to $ 2,500 per day of violation or delay thereafter, for failure to provide access or records in accordance with Section II.C or G.

(b) Up to $ 2,500 for the first week of violation or delay and up to $ 1,000 per day of violation or delay thereafter, for:

(i) failure to submit a final work plan, addressing DEQ's comments on the draft work plan or incorporating DEQ modifications to the work plan, in accordance with the SOW's schedule and terms;

(ii) failure to perform work in accordance with an approved work plan's schedule and terms;

(iii) failure to perform additional work required by DEQ under Section II.A.3; or

(iv) failure to submit a final report, addressing DEQ's comments on the draft report or incorporating DEQ modifications to the report, in accordance with an approved work plan's schedule and terms.

(c) Up to $500 for the first week of violation or delay and up to $500 per day of violation or delay thereafter, for:

(i) failure to submit a draft work plan in accordance with the SOW's schedule and terms;

(ii) failure to submit progress reports in accordance with Section II.H; or

(iii) any other violation of the Agreement as amended, SOW, or an approved work plan.

2. Within 30 days of receipt of DEQ's written notice of violation, NWN either shall pay the amount of such stipulated penalty assessed, by check made payable to the "State of Oregon, Hazardous Substance Remedial Action Fund", or request a contested case regarding the penalty assessment in accordance with Section II.T.3. NWN shall pay simple interest of 9% per annum on the unpaid balance of any stipulated penalties, which interest shall begin to accrue at the end of the 30-day payment period. Any unpaid amounts that are not the subject of a pending contested case, or that have been determined owing after a contested case, are a liquidated debt collectible under ORS 293.250 and other applicable law.

3. In assessing a penalty under this subsection, the Director may consider the factors set forth in OAR 340-12-045. NWN may request a contested case hearing regarding the penalty assessment in accordance with OAR Chapter 340 Division 11. The scope of any such hearing must be consistent with the stipulations set forth in Section 2 of the Agreement, must be limited to the occurrence or non-occurrence of the alleged violation, and may not review the amount of the penalty assessed. Penalties may not accrue pending any contested case regarding the alleged violation. Violations arising out of the same facts or circumstances or based on the same deadline are considered as one violation per day."

12. The Scope of Work (Attachment B to the Agreement) is amended in Section I.A.1.i., by revising the first sentence to read:

"Determine the magnitude, nature, and extent of apparent MGP waste-related contamination at the NW Natural (NWN) Site."

13. The Scope of Work is amended in Section I.A.2, by adding the following objective:

"viii. Identify hot spots of contamination, if any, at the facility."

14. The Scope of Work is amended in Section I.B, by adding:

"This schedule is applicable to the RI/FS for the portion of the NWN Site on the Siltronic Property. NWN shall compile and evaluate existing data on MGP-related constituents and provide to DEQ an outline of data needs to complete the remedial investigation for the portion of the NWN Site on the Siltronic Property including an RI proposal and schedule for the RI, within 120 days of execution of the First Addendum."

15. The Scope of Work is amended in Section I.B, by adding:

"NWN shall provide DEQ with a work plan to identify and evaluate source control measures at the NWN Property. The work described in the work plan shall be consistent with the source control approach described in the December 2005 Portland Harbor Joint Source Control Strategy".

16. For deliverables submitted after the date of execution of this First Addendum, the Scope of Work is amended in Section III.F, by deleting the entire section and replacing it with:

"F. Endangerment Assessment Work Plan

1. HUMAN HEALTH RISK ASSESSMENT PLAN

Objective: To evaluate the collective demographic, geographic, physical, chemical, and biological factors at the site, for the purposes of characterizing current and reasonably likely future risks to human health as a result of a threatened or actual release(s) of a hazardous substance. To document the magnitude of the potential risk at the site; support risk management decisions; and establish remedial action goals, if necessary.

Scope: The Human Health Risk Assessment shall evaluate risk in the context of current and reasonably likely future land and water uses, and in the absence of any actions to control or mitigate these risks (i.e., under an assumption of no action). The human health risk assessment portion of the work plan shall be developed based on the requirements specified in OAR 340-122-0084; DEQ guidance; and, as appropriate, the Risk Assessment Guidance for Superfund - Human Health Evaluation Manual Part A, United States Environmental Protection Agency (EPA), Interim Final, July 1989, (RAGS-HHEM); Human Health Evaluation Manual, Supplemental Guidance:

"Standard Default Exposure Factors", EPA, March 1991,(HHE-SG); and the Exposure Factors Handbook, EPA, 1996. A suggested outline for the human health evaluation is given in Exhibit 9-1 of the RAGS-HHEM. The work plan shall use this outline as a framework for discussing the methodologies and assumptions to be used in assessing the potential human health risks at the site.

Procedure: The work plan shall describe the different tasks involved in preparing the Human Health Risk Assessment. The Human Health Risk Assessment can be completed using either deterministic or probabilistic methodologies. If probabilistic methodologies are to be used, NWN shall discuss risk protocol with DEQ before the commencement of a probabilistic risk assessment. If deterministic methodologies will be used, then the Human Health Risk Assessment shall include an estimate of both the central tendency exposure (CTE) and the reasonable maximum exposure (RME) expected to occur under both current and future land use conditions. In general, RME exposures shall be based on the 90th percentile exposure case. Additional guidance on quantifying the RME is given in Chapter 6 of the RAGS-HHEM, SRAGS, and HHE-SG. Quantifying the potential risks associated with the RME shall be the overall goal of the risk assessment.

2. ECOLOGICAL RISK ASSESSMENT PLAN

Objective: To evaluate the collective demographic, geographic, physical, chemical, and biological factors at the site, for the purposes of characterizing current and reasonably likely future risks to the environment as a result of a threatened or actual release(s) of a hazardous substance; document the magnitude of the potential risk at a site; support risk management decisions; and establish remedial action goals, if necessary.

Scope: The Ecological Risk Assessment shall evaluate risk in the context of current and reasonably likely future land and water uses in the absence of any actions to control or mitigate these risks (i.e., under an assumption of no action). The Ecological Risk Assessment shall use a tiered approach (with four levels) to produce a focused and cost-effective assessment of risk. The Ecological Risk Assessment Work Plan shall be developed based on the requirements specified in OAR 340-122-0084; DEQ guidance; and, as appropriate, Proposed Guidelines for Ecological Risk Assessment, EPA, September 1996; Framework for Ecological Risk Assessment, EPA, February 1992; and Risk Assessment Guidance for Superfund, Volume II, Environmental Evaluation Manual, Interim Final, EPA, March 1989 (RAGS-EEM).

Procedure: The plan shall describe the different tasks involved in preparing the ecological risk assessment. Ecological risk assessments may include a Level I Scoping plan; a Level II Screening plan; and a Level III Baseline plan or Level IV Field Baseline plan. The Level III and Level IV baseline plans shall include an exposure analysis, an ecological response analysis, a risk characterization and an uncertainty analysis as required by OAR 340-122-0084(3). The ecological risk assessment can be completed using either deterministic or probabilistic methodologies. If probabilistic methodologies are to be used, NWN shall discuss risk protocol with DEQ before the

commencement of a probabilistic risk assessment. If deterministic methodologies are to be used, then the ecological risk assessment shall include an estimate of both the central tendency exposure (CTE) and the reasonable maximum exposure (RME) expected to occur. Estimating the potential risks associated with the RME shall be the overall goal of the risk assessment."

STIPULATED, AGREED, AND APPROVED FOR ISSUANCE:

NW Natural

By: Sandra K. Hart Date: 9-13-06
(Signature)

Sandra K. Hart
(Name)

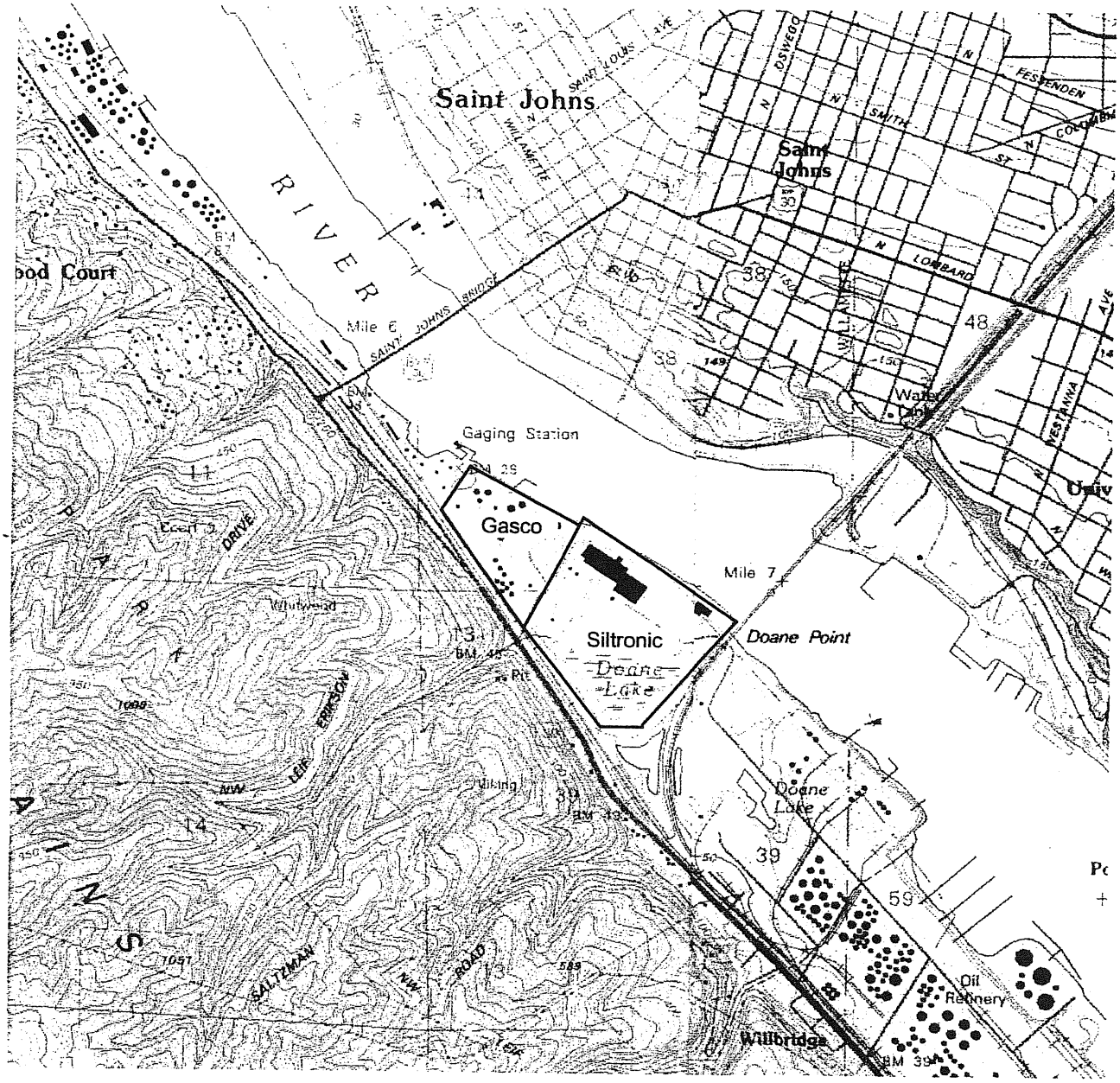
Director Risk Environment & Land
(Title)

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

By: Dick Pedersen Date: 7/19/06
(Signature)

Dick Pedersen
(Name)

Regional Admin. Stator
(Title)



Note: Base Map from Linnton (1990) and Portland (1990), Oregon, USGS 7.5-Minute Quadrangles

N

0 2,000 4,000

Approximate Scale in Feet
Contour Interval = 10 feet

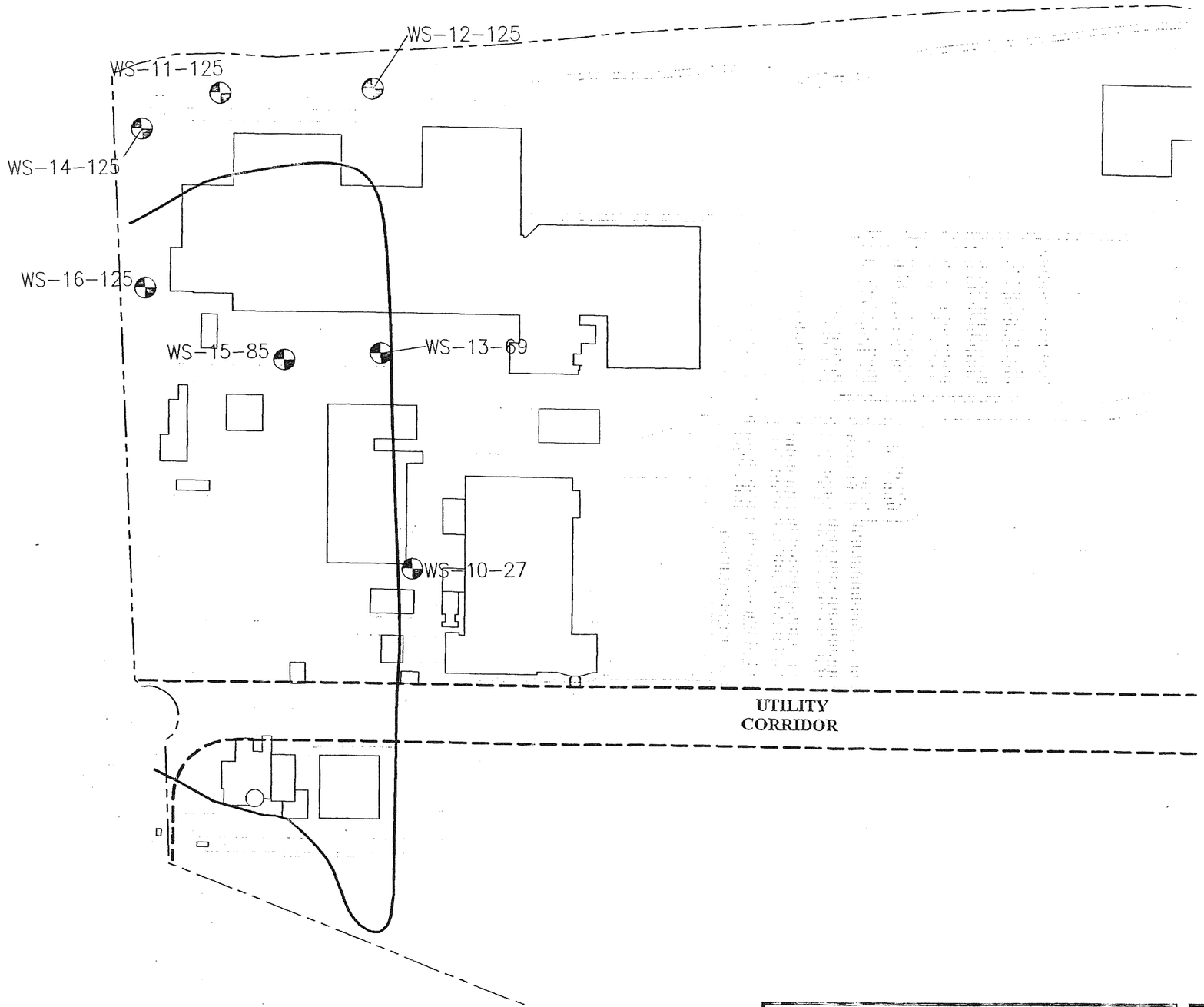
Attachment AA

NW Natural Site Location Map

Site Includes

NW Natural Gasco Facility
7540 N.W. St. Helens Road

Siltronic Corporation Property
7200 N.W. Front Avenue
Portland, Oregon



LEGEND:
- PROPERTY BOUNDARY
- MONITORING WELL LOCATION
- FORMER WASTE DISPOSAL LAGOON
- OLYMPIC PIPELINE RIGHT OF WAY

PLANT NORTH

TRUE NORTH

0 200 400

FEET

Vancouver: (360) 694-2691
Portland: (971) 544-2139

MAUL FOSTER ALONGI INC.

DATE 09/29/05
DWN. DLG
APPR. JGP
REVIS.
PROJECT NO. 8128.01.08

Attachment BB
Monitoring Well Location Map
Siltronic Corporation Property

File: G:\8128.01 SILTRONIC CORPORATION\08_MGP DNAPL\FIG 02_FORMER DISPOSAL AND MW.DWG Last edited: OCT. 04, 2005 @ 4:50 p.m. by: dglantz Xref's:

LAYOUT: 1

SECOND ADDENDUM
TO
VOLUNTARY AGREEMENT
FOR
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
DEQ NO. WMCVC-NWR-94-13

The Oregon Department of Environmental Quality (DEQ) and NW Natural (NWN) agree to amend Voluntary Agreement No. WMCVC-NWR-94-13 dated August 8, 1994, as amended August 8, 2006 (Agreement), as follows. All other terms of the Agreement remain in effect and apply to this Second Addendum.

1. Recital I.B is amended, to read:

   "The NWN Site is a "facility" within the meaning of ORS 465.200(13). The NWN Site includes property located at 7540 N.W. St. Helens Road, Portland, Oregon, currently owned by NWN (NWN Property), as well as adjacent property located at 7200 N.W. Front Avenue, Portland, Oregon and currently owned by Siltronic Corporation (Siltronic Property, or Siltronic Site). This facility is generally referred to in this Second Addendum as the "NWN Site". The general location of the NWN Site is shown on Attachment AA to the First Addendum."

2. Recital I.C is amended, to read:

   "From 1913 until 1956, NWN, then known as the Portland Gas and Coke Company (GASCO) owned and operated an oil manufactured gas plant (MGP) on the NWN Property. GASCO's property included approximately 40-acres of adjoining property known as the "Allen Tract" that is currently the northern portion of the Siltronic Property. The GASCO MGP produced oil gas. Byproducts of the GASCO MGP operation included lampblack briquettes, light oils, tars and electrode grade coke. Wastes generated at the facility included tar, lampblack, wastewater containing dissolved and suspended hydrocarbons, and spent oxide. These wastes were disposed of on the NWN Property in piles and "tar ponds."

   Spent oxide piles and tar ponds also extended onto the northern portion of the Allen Tract in areas of low elevation prone to flooding. The tar ponds at the NWN Property were periodically excavated and redeposited onto portions of the Allen Tract. GASCO MGP operations ceased in 1956. GASCO sold the Allen Tract to Mr. Victor Rosenfeld, Mr. H.A. Anderson, and Mr. Gilbert Schnitzer in 1962. Thereafter, wastes associated with the GASCO MGP operations within the Allen Tract were redistributed across portions of the current Siltronic Site when that property was filled between 1966 and 1975. Wastes within tar ponds on the NWN Property were used as fill or redistributed on the NWN Property when the southeastern corner of the NWN Property was filled during the 1972/1973 time-frame.

NWN currently operates a liquefied natural gas (LNG) plant on the NWN Property and currently leases portions of the former GASCO MGP to Pacific Terminal Services, Inc. and Koppers Industries Incorporated (Koppers)."

3. The second paragraph of Recital I.D, as shown in Addendum #1 to the agreement, is replaced by:

   "In addition to contamination associated with historic MGP operations, investigations completed by Siltronic within the former Allen Tract have identified soil and groundwater contamination due to releases of chlorinated solvents from their former operations. Trichloroethene (TCE) was used by Siltronic for manufacturing purposes and that use ceased in 1988. Historic releases of TCE occurred in the northern Siltronic Site from a former solvent underground storage tank system and from an unknown source beneath the Central Facilities Building. Site investigations confirm that releases of TCE and its breakdown products and TCE DNAPL are commingled with MGP contamination and DNAPL in the Allen Tract. Furthermore, investigations by Rhone Poulenc of the Siltronic Site have detected hazardous substances (e.g., pesticides) in groundwater."

4. Recital I.G is amended to read:

   "The NWN Site is located within or adjacent to the Portland Harbor Superfund Site, which site was placed on the federal National Priorities List by the U.S. Environmental Protection Agency (EPA) in December 2000. By memorandum of understanding, EPA is the lead agency for implementing investigation and cleanup of in-water sediments contamination in the Willamette River in the Portland Harbor Superfund Site, and DEQ is the lead agency for implementing investigations and source control at upland facilities. This Agreement as amended is consistent with DEQ's responsibilities at the Portland Harbor Superfund Site. Evaluation of the portions of the NWN Site located on the Siltronic Property as a potential source of contaminants to the Portland Harbor Superfund Site is also the subject of DEQ Order No. ECVC-NWR-00-27 (i.e., the "Joint Order) issued by DEQ to NWN and Wacker Siltronic Corporation on October 4, 2000. In situations where potential conflicts arise between this Agreement and the Joint Order, this Agreement takes precedence.

5. A new Recital I.I is added, reading:

   "On November 20, 2015, DEQ determined that, in order to expedite remedial action planning of the most contaminated portions of the Siltronic Site, NWN will be responsible for completing integrated RI/FS work for the area of the Siltronic Site historically used by GASCO for MGP operations.

   The Former Gasco MGP Operable Unit (i.e., "Gasco OU") within the NWN Site is defined to include the NWN Property, the approximately 40-acre portion of the current Siltronic Property formerly known as the Allen Tract, and the adjacent area of Doane Creek extending west to St. Helens Road from the southern boundary of the former Allen Tract. The location of the Gasco OU is shown on Attachment CC to

this Second Addendum. The Gasco OU does not include groundwater contamination not originating on the NWN Property or the Siltronic Property or the segment of Doane Creek extending beyond the southern Allen Tract boundary..

This Agreement defines the work NWN will perform within the Gasco OU. Except as expressly provided herein, nothing in this Agreement requires NWN to perform work beyond the boundaries of the Gasco OU. As used in this agreement, the "site" refers to the Gasco OU."

6. Section II.A.1 is deleted, and replaced with:

"1. Remedial Investigation and Feasibility Study

(a) NWN shall complete a remedial investigation and feasibility study (RI/FS) for the Gasco OU satisfying OAR 340-122-080, the terms and schedule of DEQ approved work plans, and applicable elements of the general Scope of Work contained in Attachment B to this Agreement. NWN may propose in draft work plans, elements of the Scope of Work that NWN considers inapplicable or unnecessary to the RI/FS for the facility.

(b) As described in DEQ's November 20, 2015 letter to NWN and Siltronic, NWN will complete an RI and human health and ecological risk assessment (HERA) for the Gasco OU. The RI and HERA for the portion of the Gasco OU beyond the NWN Property will be completed as an addendum to the approved *Remedial Investigation Report, NW Natural – Gasco Facility* (April 11, 2011) and *Human Health and Ecological Assessment Report – NW Natural Gasco Site* (December 2014 [as revised by DEQ's letter dated May 22, 2015]) for the NWN Property. The results of the RI and HERA will be integrated into a single FS for the Gasco OU.

(c) NWN will submit to DEQ electronic data and backup laboratory reports for investigations on the Siltronic Property beyond the boundaries of the Gasco OU completed subsequent NWN's submittal of the *Remedial Investigation Data Summary Report, Historical Manufactured Gas Plant Activities, Siltronic Corporation Property* (March 31, 2011)."

7. Section II.A.2(f) is amended to read:

"(f) In the event of approval or modification of the following deliverables by DEQ, NWN shall implement the action required by the deliverable, as so approved or modified, or, as to any DEQ conditions of approval or modification, invoke dispute resolution within 14-days under Section II.M of the Agreement:

- RI/HERA Addendum report
- FS Work Plan
- FS Report
- Other deliverables identified in advance and included as 'Independent Deliverables' on the Project Schedule established under Section 1.B."

8. Section II.A.4 is amended to read:

"4. Source Control Measures

(a) For any unpermitted discharge or release of hazardous substances from the Gasco OU to the Willamette River or river sediments identified in the RI, NWN shall identify and evaluate source control measures in accordance with the SOW and the terms and schedule of a DEQ-approved work plan. DEQ will review and approve source control measures pursuant to OAR 340-122-0070 and in consultation with EPA. Upon DEQ approval of a source control measure, NWN shall develop a source control work plan in accordance with DEQ's directions and, upon DEQ approval, implement the work plan.

(b) NWN shall continue operation of the hydraulic containment and control system for the Gasco OU as an interim source control measure.

(c) NWN shall complete the ongoing source control evaluation for Doane Creek. Nothing in this Agreement or in DEQ Order No. ECVC-NWR-00-27 shall obligate NWN to implement source control measures for Doane Creek."

9. Section II. D is amended to update the current DEQ and NWN project managers:

DEQ Project Manager	NW Natural Project Manager
Dana Bayuk	Robert J. Wyatt
Department of Environmental Quality	NW Natural
Northwest Region	220 N.W. Second Avenue
700 NE Multnomah Street	Portland, Oregon 97209
Portland, Oregon 97232	(503) 226-4211 Ext. 5425

10. The Scope of Work (Attachment B to the Agreement) is amended in Section I.A.1.i. by revising the first sentence to:

"Determine the magnitude, nature, and extent of contamination at the Gasco OU."

11. The Scope of Work is amended by revising the last paragraph of Section I.B. to:

"NWN shall propose for DEQ approval a schedule for the Gasco OU RI/FS (the "Project Schedule"). The Project Schedule may be modified by agreement of the parties.

STIPULATED, AGREED, AND APPROVED FOR ISSUANCE:

NW Natural

By: _____ Date: 7 October 2016
(Signature)

Thomas Imeson
(Name)

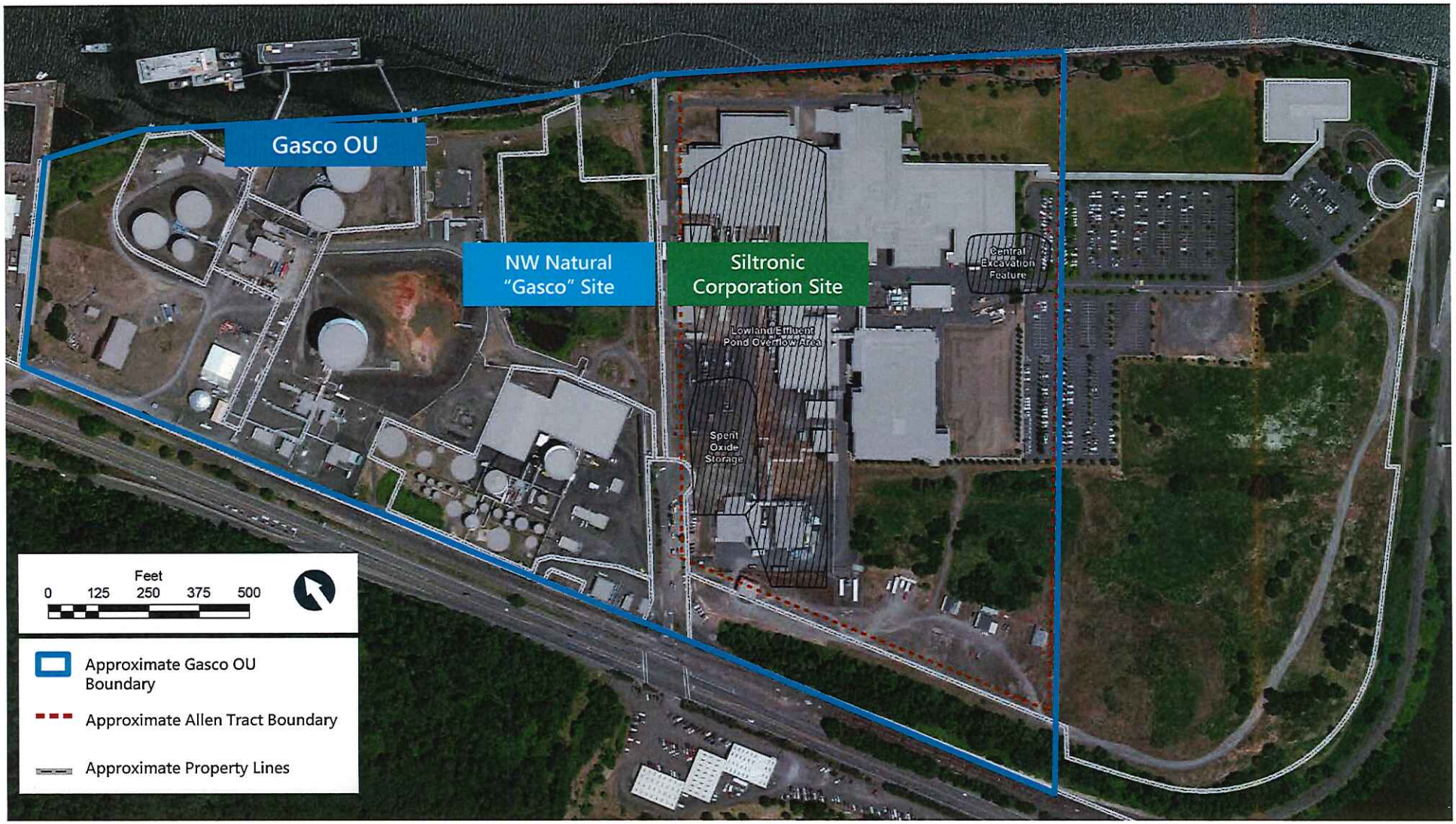
Vice President
(Title)

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

By: _____ Date: 11 October 2016
(Signature)

Nina DeConcini
(Name)

NW Region Administrator
(Title)



ATTACHMENT CC

Former Gasco Manufactured Gas Plant Operable Unit (Gasco OU)

DEQ No. WMCVC-NWR-94-13

ATTACHMENT CC

Former Gasco Manufactured Gas Plant Operable Unit (Gasco OU)

DEQ No. WMCVC-NWR-94-13