6720 South Macadam Avenue, Suite 125
Portland, Oregon 97219
503.670.1108

ANCHOR QEA

April 6, 2023

Mr. Hank Stukey

Terra Hydr, Inc.
11670 SW Waldo Way
Sherwood, Oregon 97140

Re: Intent to Dispose of Non-Hazardous Soils Generated During the Upland Feasibility Study DNAPL Data Gaps Investigation, NW Natural Gasco and Siltronic Corporation Properties, 7900 NW St. Helens Road (Gasco Site) and 7200 NW Front Avenue, Portland, Oregon 97210 (Siltronic Site)

Dear Mr. Stukey,

NW Natural requests transport and disposal of twenty-four 55-gallon drums and one 5-cubic yard drop box containing petroleum-impacted soil (no free liquids) to Waste Management, Inc.'s, Hillsboro (Subtitle D) Landfill. The drums and drop box are currently stored at the NW Natural Gasco site.

During the first and second quarters of 2022, soil borings were installed within the Gasco Operable Unit (OU) to obtain supplemental data needed to support the upland feasibility study. All work was performed in accordance with the approved *Revised Upland Feasibility Study DNAPL Data Gaps Investigation Work Plan*.[1] Excess soil sampling investigation-derived wastes (IDW) were generated as part of this work.

On July 21 and 22, 2022, Anchor QEA, LLC, collected three composite soil samples from the 24 drums. Each composite sample was composed of a subsample collected from eight drums. A five-point composite soil sample was collected from the 5-cubic yard drop box.

The composite samples were submitted to Apex Laboratories, LLC, for analysis of the following:

- Total cyanide (U.S. Environmental Protection Agency [EPA] 9013M/9012)
- Free liquids (EPA 9095B)
- Total solids (SM 2540G)
- Corrosivity (EPA 9045D)
- Ignitability (EPA 1010M)
- Total petroleum hydrocarbons: diesel- and oil-range (NWTPH-Dx) and gasoline-range (NWTPH-Gx)

[1] Anchor QEA, LLC, 2021. *Revised Upland Feasibility Study DNAPL Data Gaps Investigation Work Plan*. Prepared for NW Natural. December 8, 2021.

- Total metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver (EPA 6020B)
- Volatile organic compounds (EPA 5035A/8260D)
- Semivolatile organic compounds (EPA 8270E)

The analytical results for the composite samples are provided in Table 1, including method detection limits (MDLs) for non-detect constituents. Total constituent concentrations and MDLs were screened against EPA toxicity characteristic (TC) regulatory threshold levels multiplied by 20 to account for the maximum leachable concentrations that could be attained based on the 20:1 liquid-to-solid ration employed in a toxicity characteristic leaching procedure (TCLP) test (the 20x rule). With the exception of 2,4-dinitrotoluene, none of the reported concentrations nor the MDLs for these constituents exceed the 20x rule values, indicating that TCLP testing is not needed for waste characterization purposes.

Due to laboratory dilution of the soil samples, the MDL for 2,4-dinitrotoluene, which was not detected in any sample, was elevated to a concentration greater than the 20x TC regulatory threshold value. Based on generator knowledge of site history, supported by results of site-wide remedial investigation activities as overseen by the Oregon Department of Environmental Quality (DEQ), 2,4-dinitrotoluene is not expected to be present in site soils, and therefore further evaluation related to the elevated MDL for this constituent is not necessary. Based on the preceding, screening of all data (Table 1) indicates that total constituent concentrations would not leach at levels in excess of Resource Conservation Recovery Act (RCRA) TC regulatory threshold levels and therefore are not a RCRA hazardous waste due to TC.

The drums contain soil that may be contaminated with Siltronic spent trichloroethene (TCE) wastes. Impacted environmental media that may be contaminated with Siltronic spent TCE wastes require contaminant data be screened to determine whether the material would require disposal as a RCRA spent halogenated solvent waste code F002-listed hazardous waste (spent TCE halogenated solvent). If soil wastes are impacted by Siltronic spent TCE or TCE-related compounds at concentrations greater than the threshold values provided in the following table, then the waste soil would require management as F002-listed hazardous waste. If soil wastes have concentrations of TCE-related compounds equal to or less than the threshold values provided in the following table, then a No Longer Contained-In Determination would be appropriate, such that the waste would not require management as an F002-listed hazardous waste.

Analyte	May 2018 DEQ RBCs (µg/kg)
1,1-dichloroethylene (DCE)	29,000,000
cis-1,2-DCE	2,300,000
trans-1,2-DCE	23,000,000
TCE	51,000
Vinyl Chloride	4,400

Notes:
µg/kg: micrograms per kilogram
DEQ: Oregon Department of Environmental Quality
RBC: risk-based concentration

2022 Data Gaps IDW Sample Results

As summarized in the following table, TCE was detected in one of the four IDW characterization soil samples (DG-IDW-072222-03) at an estimated concentration of 30.5 micrograms per kilogram (µg/kg). Additionally, cis-1,2-DCE was detected at an estimated concentration of 17.3 µg/kg in the same sample. The detected estimated concentration of cis-1,2-DCE is the same as the MDL for this sample.

Analyte	20x TCLP Limit (µg/kg)	F002 Contained-In Threshold Screening Values (µg/kg)	Results (µg/kg)	Qualifier
TCE	10,000	51,000	**30.5**	**J**
cis-1,2-DCE	--	2,300,000	**17.3**	**J**
trans-1,2-DCE	--	23,000,000	17.3	U
1,1-DCE	14,000	29,000,000	17.3	U
Vinyl chloride	4,000	4,400	17.3	U

Notes:
Bold: detected analyte
J: estimated concentration
U: Analyte is not detected above the MDL
--: no 20x TCLP limit established

These detected concentrations are well below DEQ May 2018 risk-based concentrations (RBCs) for Occupational Exposure by Ingestion, Dermal Contact, and Inhalation used for evaluating the applicability of an F002 waste code for soil IDW. Results of analytical data are provided in Table 1.

Conclusions

TCE and cis-1,2-DCE were detected at low levels, well below the F002 hazardous waste screening levels. The remaining breakdown products of TCE (trans-1,2-DCE, 1,1-DCE, and vinyl chloride) were not detected above the laboratory MDLs. MDLs of all F002 constituents reported by the laboratory were below the DEQ May 2018 RBCs for Occupational Exposure by Ingestion, Dermal Contact, and

Inhalation. Based on review of analytical data and generator knowledge, the following characterizations were made to the waste:

- The waste is not ignitable, corrosive, or reactive.
- Concentrations of detected constituents are below TC levels.
- The F002-listed constituents detected in the IDW do not pose an unacceptable risk under an occupational scenario, and other F002-listed constituents were not detected.

Based on the preceding, the IDW does not exhibit the characteristics of hazardous waste and detected TCE and TCE breakdown products are well below DEQ's occupational RBCs. The IDW meets the criteria for no longer containing listed waste, and a No Longer Contained-In Determination was issued by DEQ for this waste on February 8, 2023, which confirms the classification of this IDW as non-hazardous waste (Attachment A).

It is concluded that the drums of soil IDW described herein are acceptable for disposal as petroleum-impacted soil at a RCRA Subtitle D non-hazardous waste disposal facility. Upon acceptance of the attached profile, the waste will be transported off site and disposed of at Waste Management's Hillsboro Landfill.

A summary of analytical results (Table 1), completed Waste Management disposal profile (Attachment B), and Apex Laboratories analytical report (Attachment C) are also enclosed.

In response to the EZ Profile Addendum No. D.7, which requests documentation of the state-mandated cleanup, NW Natural's Voluntary Agreement with DEQ, No. WMCVC-NWR-94-13, is attached to this package (Attachment D). The Voluntary Agreement is dated August 8, 1994, with two addendums dated July 19, 2006, and October 11, 2016, respectively.

Please contact me if you have any questions.

Thank you,

Benjamin A. Uhl

Ben Uhl, RG
Senior Geologist

cc: Robert Wyatt (NW Natural); Patty Dost (Pearl Legal Group); Jen Mott and Tim Stone (Anchor QEA, LLC); Rob Ede (Hahn and Associates, Inc.); Traci Parker (Siltronic Corporation); and Wesley Thomas (Oregon Department of Environmental Quality)

Attachments

Table 1	Analytical Results
Attachment A	DEQ – No Longer Contained-In Determination Letter
Attachment B	Waste Management, Inc., Disposal Profile
Attachment C	Apex Laboratory Report No. A2G0645
Attachment D	Voluntary Agreement No. WMCVC-NWR-94-13, August 8, 1994, as Amended by the First Addendum, Dated July 19, 2006, and the Second Addendum, Dated October 11, 2016

Table

Table 1
Soil Testing Analytical Results

Analyte	20-Times TCLP Limit	RCRA TCLP Regulatory Level[1]	F002 Threshold Screening Values[2]	Sample Number: DG-IDW-072122-01		Sample Number: DG-IDW-072222-02		Sample Number: DG-IDW-072222-03		Sample Number: DG-IDW-072222-DB559	
				Result		Result		Result		Result	
Conventionals											
Total Cyanide (mg/kg)	--	--	--	**31.2**	**Q-42**	**25.5**	**--**	**14.8**	**--**	2.48	U
Free liquid (mL)	--	--	--	0	U	0	U	0	U	0	U
Total Solids (% by weight)	--	--	--	**77.1**	**--**	**80.1**	**--**	**77.1**	**--**	**80.2**	**--**
Soil pH	--	--	--	**6.8**	**pH_S**	**6.6**	**pH_S**	**6.9**	**pH_S**	**8.0**	**pH_S**
pH Temperature (°C)	--	--	--	**21.3**	**pH_S**	**21**	**pH_S**	**20.8**	**pH_S**	**20.7**	**pH_S**
Flash Point (°F)	--	--	--	> 150	--	> 150	--	> 150	--	> 150	--
Total Metals (mg/kg)[3]											
Arsenic	100	5	--	**2.13**	**--**	**2.26**	**--**	**2.54**	**--**	**1.57**	**--**
Barium	2,000	100	--	**76.6**	**--**	**90.4**	**--**	**91.7**	**--**	**88.7**	**--**
Cadmium	20	1	--	**0.407**	**--**	**0.315**	**--**	**0.229**	**J**	0.132	U
Chromium	100	5	--	**9.66**	**--**	**9.7**	**--**	**14.2**	**--**	**8.96**	**--**
Lead	100	5	--	**26.5**	**--**	**22**	**--**	**15.9**	**--**	**6.94**	**--**
Mercury	4	0.2	--	0.05	U	**0.0864**	**J**	0.0507	U	0.0529	U
Selenium	20	1	--	0.625	U	0.68	U	0.633	U	0.662	U
Silver	100	5	--	0.125	U	0.136	U	0.127	U	0.132	U
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	--	--	--	**1,680**	**F-17, Q-42**	**210**	**F-17**	**652**	**F-17**	**26.2**	**--**
Gasoline Range	--	--	--	**19.9**	**--**	**23.4**	**--**	**171**	**--**	2.87	U
Oil Range	--	--	--	**1,870**	**F-17, Q-42**	**286**	**F-17**	**356**	**F-17**	**104**	**--**
Volatile Organic Compounds (µg/kg)[4]											
Acetone	--	--	--	1,400	U, ICV-02	1,130	U, ICV-02	1,390	U, ICV-02	1,150	U, ICV-02
Acrylonitrile	--	--	--	69.9	U	56.3	U	69.3	U	57.4	U
Benzene	10,000	500	--	**16.8**	**--**	**22.5**	**--**	**175**	**--**	5.74	U
Bromobenzene	--	--	--	17.5	U	14.1	U	17.3	U	14.4	U
Bromochloromethane	--	--	--	35	U	28.1	U	34.6	U	28.7	U
Bromodichloromethane	--	--	--	35	U	28.1	U	34.6	U	28.7	U
Bromoform	--	--	--	69.9	U	56.3	U	69.3	U	57.4	U
Bromomethane	--	--	--	699	U	563	U	693	U	574	U
2-Butanone (MEK)	4,000,000	200,000	--	699	U, ICV-02	563	U, ICV-02	693	U, ICV-02	574	U, ICV-02
n-Butylbenzene	--	--	--	35	U	28.1	U	34.6	U	28.7	U
sec-Butylbenzene	--	--	--	35	U	28.1	U	**54.7**	**J**	28.7	U
tert-Butylbenzene	--	--	--	35	U	28.1	U	34.6	U	28.7	U
Carbon disulfide	--	--	--	350	U	281	U	346	U	287	U
Carbon tetrachloride	10,000	500	--	35	U	28.1	U	34.6	U	28.7	U
Chlorobenzene	2,000,000	100,000	--	17.5	U	14.1	U	17.3	U	14.4	U
Chloroethane	--	--	--	350	U	281	U	346	U	574	U
Chloroform	120,000	6,000	--	35	U	28.1	U	34.6	U	28.7	U
Chloromethane	--	--	--	175	U	141	U	173	U	144	U
2-Chlorotoluene	--	--	--	35	U	28.1	U	34.6	U	28.7	U
4-Chlorotoluene	--	--	--	35	U	28.1	U	34.6	U	28.7	U
Dibromochloromethane	--	--	--	69.9	U	56.3	U	69.3	U	57.4	U
1,2-Dibromo-3-chloropropane	--	--	--	175	U	141	U	173	U	144	U
1,2-Dibromoethane (EDB)	--	--	--	35	U	28.1	U	34.6	U	28.7	U
Dibromomethane	--	--	--	35	U	28.1	U	34.6	U	28.7	U
1,2-Dichlorobenzene	--	--	--	17.5	U	14.1	U	17.3	U	14.4	U
1,3-Dichlorobenzene	--	--	--	17.5	U	14.1	U	17.3	U	14.4	U
1,4-Dichlorobenzene	150,000	7,500	--	17.5	U	14.1	U	17.3	U	14.4	U
Dichlorodifluoromethane	--	--	--	69.9	U	56.3	U	69.3	U	57.4	U
1,1-Dichloroethane	--	--	--	17.5	U	14.1	U	17.3	U	14.4	U
1,2-Dichloroethane (EDC)	10,000	500	--	17.5	U	14.1	U	17.3	U	14.4	U
1,1-Dichloroethene	14,000	700	29,000,000	17.5	U	14.1	U	17.3	U	14.4	U
cis-1,2-Dichloroethene	--	--	2,300,000	17.5	U	14.1	U	**17.3**	**J**	14.4	U
trans-1,2-Dichloroethene	--	--	23,000,000	17.5	U	14.1	U	17.3	U	14.4	U
1,2-Dichloropropane	--	--	--	17.5	U	14.1	U	17.3	U	14.4	U
1,3-Dichloropropane	--	--	--	35	U	28.1	U	34.6	U	28.7	U
2,2-Dichloropropane	--	--	--	35	U	28.1	U	34.6	U	28.7	U
1,1-Dichloropropene	--	--	--	35	U	28.1	U	34.6	U	28.7	U
cis-1,3-Dichloropropene	--	--	--	35	U	28.1	U	34.6	U	28.7	U
trans-1,3-Dichloropropene	--	--	--	35	U	28.1	U	34.6	U	28.7	U
Ethylbenzene	--	--	--	**37.1**	**--**	**43.9**	**--**	**281**	**--**	14.4	U
Hexachlorobutadiene	10,000	500	--	69.9	U	56.3	U	69.3	U	57.4	U
2-Hexanone	--	--	--	699	U	563	U	693	U	287	U
Isopropylbenzene	--	--	--	35	U	28.1	U	**51.3**	**J**	28.7	U
4-Isopropyltoluene	--	--	--	35	U	28.1	U	**57.5**	**J**	28.7	U
Methylene chloride	--	--	--	350	U	281	U	346	U	287	U
4-Methyl-2-pentanone (MiBK)	--	--	--	350	U	281	U	346	U	287	U
Methyl tert-butyl ether (MTBE)	--	--	--	35	U	28.1	U	34.6	U	28.7	U
Naphthalene	--	--	--	**5,850**	**--**	**7,190**	**--**	**58,000**	**--**	**129**	**--**
n-Propylbenzene	--	--	--	17.5	U	14.1	U	**43**	**--**	14.4	U
Styrene	--	--	--	35	U	28.1	U	34.6	U	28.7	U

Table 1
Soil Testing Analytical Results

Analyte	20-Times TCLP Limit	RCRA TCLP Regulatory Level[1]	F002 Threshold Screening Values[2]	Sample Number: DG-IDW-072122-01		Sample Number: DG-IDW-072222-02		Sample Number: DG-IDW-072222-03		Sample Number: DG-IDW-072222-DB559	
				Result		Result		Result		Result	
1,1,1,2-Tetrachloroethane	--	--	--	17.5	U	14.1	U	17.3	U	14.4	U
1,1,2,2-Tetrachloroethane	--	--	--	35	U	28.1	U	34.6	U	28.7	U
Tetrachloroethene (PCE)	14,000	700	--	17.5	U	14.1	U	17.3	U	14.4	U
Toluene	--	--	--	35	U	28.1	U	**132**	**--**	28.7	U
1,2,3-Trichlorobenzene	--	--	--	175	U	141	U	173	U	144	U
1,2,4-Trichlorobenzene	--	--	--	175	U	141	U	173	U	144	U
1,1,1-Trichloroethane	--	--	--	17.5	U	14.1	U	17.3	U	14.4	U
1,1,2-Trichloroethane	--	--	--	17.5	U	14.1	U	17.3	U	14.4	U
Trichloroethene (TCE)	10,000	500	51,000	17.5	U	14.1	U	**30.5**	**J**	14.4	U
Trichlorofluoromethane	--	--	--	69.9	U	56.3	U	69.3	U	57.4	U
1,2,3-Trichloropropane	--	--	--	35	U	28.1	U	34.6	U	28.7	U
1,2,4-Trimethylbenzene	--	--	--	**48.3**	**J**	**59.1**	**--**	**545**	**--**	28.7	U
1,3,5-Trimethylbenzene	--	--	--	35	U	28.1	U	**200**	**--**	28.7	U
Vinyl chloride	4,000	4,400	4,400	17.5	U	14.1	U	17.3	U	14.4	U
m,p-Xylene	--	--	--	35	U	28.1	U	**363**	**--**	28.7	U
o-Xylene	--	--	--	17.5	U	14.1	U	**170**	**--**	14.4	U
Semivolatile Organic Compounds (µg/kg)[4]											
Acenaphthene	--	--	--	**3,730**	**--**	**2,540**	**--**	**9,600**	**--**	396	U
Acenaphthylene	--	--	--	**683**	**J**	**846**	**--**	**3,590**	**--**	396	U
Anthracene	--	--	--	**3,150**	**--**	**2,890**	**--**	**8,130**	**--**	396	U
Benz(a)anthracene	--	--	--	**2,370**	**--**	**4,240**	**--**	**5,250**	**--**	**551**	**J**
Benzo(a)pyrene	--	--	--	**3,220**	**--**	**6,800**	**--**	**6,840**	**--**	**1,280**	**--**
Benzo(b)fluoranthene	--	--	--	**2,880**	**--**	**6,060**	**--**	**5,480**	**--**	**1,030**	**J**
Benzo(k)fluoranthene	--	--	--	**1,150**	**J**	**2,070**	**M-05**	**2,300**	**M-05**	596	U
Benzo(g,h,i)perylene	--	--	--	**2,770**	**--**	**5,670**	**--**	**5,240**	**--**	**1,090**	**--**
Chrysene	--	--	--	**3,110**	**--**	**5,400**	**--**	**6,870**	**--**	**717**	**J**
Dibenz(a,h)anthracene	--	--	--	428	U	**634**	**J**	**616**	**J**	396	U
Fluoranthene	--	--	--	**9,000**	**--**	**12,000**	**--**	**21,500**	**--**	**655**	**J**
Fluorene	--	--	--	**2,340**	**--**	**1,650**	**--**	**7,670**	**--**	396	U
Indeno(1,2,3-cd)pyrene	--	--	--	**2,480**	**--**	**4,910**	**--**	**4,430**	**--**	**958**	**--**
1-Methylnaphthalene	--	--	--	**1,680**	**J**	**881**	**J**	**9,260**	**--**	795	U
2-Methylnaphthalene	--	--	--	**1,230**	**J**	823	U	**13,700**	**--**	795	U
Naphthalene	--	--	--	**5,600**	**--**	**3,930**	**--**	**46,100**	**--**	795	U
Phenanthrene	--	--	--	**14,900**	**--**	**12,700**	**--**	**41,500**	**--**	396	U
Pyrene	--	--	--	**11,300**	**--**	**14,600**	**--**	**26,700**	**--**	**1,020**	**--**
Carbazole	--	--	--	644	U	**716**	**J**	**2,940**	**--**	596	U
Dibenzofuran	--	--	--	428	U	410	U	**1,390**	**--**	396	U
2-Chlorophenol	--	--	--	2,150	U	2,060	U	2,120	U	1,990	U
4-Chloro-3-methylphenol	--	--	--	4,280	U	4,100	U	4,220	U	3,960	U
2,4-Dichlorophenol	--	--	--	2,150	U	2,060	U	2,120	U	1,990	U
2,4-Dimethylphenol	--	--	--	2,150	U	2,060	U	2,120	U	1,990	U
2,4-Dinitrophenol	--	--	--	10,700	U	10,300	U	10,600	U	9,920	U
4,6-Dinitro-2-methylphenol	--	--	--	10,700	U	10,300	U	10,600	U	9,920	U
2-Methylphenol	4,000,000	200,000	--	1,070	U	1,030	U	1,060	U	992	U
3+4-Methylphenol(s)	--	--	--	1,070	U	1,030	U	1,060	U	992	U
2-Nitrophenol	--	--	--	4,280	U	4,100	U	4,220	U	3,960	U
4-Nitrophenol	--	--	--	4,280	U	4,100	U	4,220	U	3,960	U
Pentachlorophenol (PCP)	2,000,000	100,000	--	4,280	U	4,100	U	4,220	U	3,960	U
Phenol	--	--	--	860	U	823	U	848	U	795	U
2,3,4,6-Tetrachlorophenol	--	--	--	2,150	U	2,060	U	2,120	U	1,990	U
2,3,5,6-Tetrachlorophenol	--	--	--	2,150	U	2,060	U	2,120	U	1,990	U
2,4,5-Trichlorophenol	8,000,000	400,000	--	2,150	U	2,060	U	2,120	U	1,990	U
Nitrobenzene	40,000	2,000	--	4,280	U	4,100	U	4,220	U	3,960	U
2,4,6-Trichlorophenol	40,000	2,000	--	2,150	U	2,060	U	2,120	U	1,990	U
Bis(2-ethylhexyl) phthalate	--	--	--	6,440	U	6,170	U	6,350	U	5,960	U
Butyl benzyl phthalate	--	--	--	4,280	U	4,100	U	4,220	U	3,960	U
Diethylphthalate	--	--	--	4,280	U	4,100	U	4,220	U	3,960	U
Dimethylphthalate	--	--	--	4,280	U	4,100	U	4,220	U	3,960	U
Di-n-butylphthalate	--	--	--	4,280	U	4,100	U	4,220	U	3,960	U
Di-n-octyl phthalate	--	--	--	4,280	U	4,100	U	4,220	U	3,960	U
N-Nitrosodimethylamine	--	--	--	1,070	U	1,030	U	1,060	U	992	U
N-Nitroso-di-n-propylamine	--	--	--	1,070	U	1,030	U	1,060	U	992	U
N-Nitrosodiphenylamine	--	--	--	1,070	U	1,030	U	1,060	U	992	U
Bis(2-Chloroethoxy) methane	--	--	--	1,070	U	1,030	U	1,060	U	992	U
Bis(2-Chloroethyl) ether	--	--	--	1,070	U	1,030	U	1,060	U	992	U
2,2'-Oxybis(1-Chloropropane)	--	--	--	1,070	U	1,030	U	1,060	U	992	U
Hexachlorobenzene	2,600	130	--	428	U	410	U	422	U	396	U
Hexachlorobutadiene	10,000	500	--	1,070	U	1,030	U	1,060	U	992	U
Hexachlorocyclopentadiene	--	--	--	2,150	U	2,060	U	2,120	U	1,990	U
Hexachloroethane	60,000	3,000	--	1,070	U	1,030	U	1,060	U	992	U
2-Chloronaphthalene	--	--	--	428	U	410	U	422	U	396	U

Table 1
Soil Testing Analytical Results

Analyte	20-Times TCLP Limit	RCRA TCLP Regulatory Level[1]	F002 Threshold Screening Values[2]	Sample Number: DG-IDW-072122-01		Sample Number: DG-IDW-072222-02		Sample Number: DG-IDW-072222-03		Sample Number: DG-IDW-072222-DB559	
				Result		Result		Result		Result	
1,2,4-Trichlorobenzene	--	--	--	1,070	U	1,030	U	1,060	U	992	U
4-Bromophenyl phenyl ether	--	--	--	1,070	U	1,030	U	1,060	U	992	U
4-Chlorophenyl phenyl ether	--	--	--	1,070	U	1,030	U	1,060	U	992	U
Aniline	--	--	--	2,150	U	2,060	U	2,120	U	1,990	U
4-Chloroaniline	--	--	--	1,070	U	1,030	U	1,060	U	992	U
2-Nitroaniline	--	--	--	8,600	U	8,230	U	8,480	U	7,950	U
3-Nitroaniline	--	--	--	8,600	U	8,230	U	8,480	U	7,950	U
4-Nitroaniline	--	--	--	8,600	U	8,230	U	8,480	U	7,950	U
2,4-Dinitrotoluene	2,600	130	--	4,280	U	4,100	U	4,220	U	3,960	U
2,6-Dinitrotoluene	--	--	--	4,280	U	4,100	U	4,220	U	3,960	U
Benzoic acid	--	--	--	53,800	U	51,500	U	53,000	U	49,800	U
Benzyl alcohol	--	--	--	2,150	U	2,060	U	2,120	U	1,990	U
Isophorone	--	--	--	1,070	U	1,030	U	1,060	U	992	U
Azobenzene (1,2-DPH)	--	--	--	1,070	U	1,030	U	1,060	U	992	U
Bis(2-Ethylhexyl) adipate	--	--	--	10,700	U	10,300	U	10,600	U	9,920	U
3,3'-Dichlorobenzidine	--	--	--	8,600	U	8,230	U, Q-52	8,480	U, Q-52	7,950	U, Q-52
1,2-Dinitrobenzene	--	--	--	10,700	U	10,300	U	10,600	U	9,920	U
1,3-Dinitrobenzene	--	--	--	10,700	U	10,300	U	10,600	U	9,920	U
1,4-Dinitrobenzene	--	--	--	10,700	U	10,300	U	10,600	U	9,920	U
Pyridine	100,000	5,000	--	2,150	U	2,060	U	2,120	U	1,990	U
1,2-Dichlorobenzene	--	--	--	1,070	U	1,030	U	1,060	U	992	U
1,3-Dichlorobenzene	--	--	--	1,070	U	1,030	U	1,060	U	992	U
1,4-Dichlorobenzene	150,000	7,500	--	1,070	U	1,030	U	1,060	U	992	U

Notes:
Bold: detected analyte
1 = Screening levels found in Title 40 CFR 261 Subpart C.
2 = F002 Oregon DEQ Risk-Based Concentrations (RBCs) for Occupational Exposure by Ingestion, Dermal Contact, and Inhalation, May 2018
3 = Units for RCRA TCLP Regulatory Levels for metals are in mg/L.
4 = Units for RCRA TCLP Regulatory Levels for volatile and semivolatile organic compounds are in µg/L.
-- = not applicable
µg/kg = micrograms per kilogram
C = Celsius
DEQ = Oregon Department of Environmental Quality
F = Fahrenheit
F-17 = No fuel pattern detected. The Diesel result represents carbon range C12 to C24, and the Oil result represents >C24 to C40.
ICV-02 = Estimated Result. Initial Calibration Verification (ICV) failed low.
J = Estimated result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-05 = Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
mg/kg = milligrams per kilogram
mL = milliliter
PAH = polycyclic aromatic hydrocarbon
pH_S = Method recommends preparation as soon as possible. See Sample Preparation Information section of Apex laboratory report for details.
Q-42 = Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits.
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.
SVOC = semivolatile organic compound
TCLP = toxicity characteristic leaching procedure
TPH = total petroleum hydrocarbons
U = Analyte is not detected above the method detection limit.
VOC = volatile organic compound

Attachment A
DEQ – No Longer Contained-In Determination Letter

Oregon DEQ No Longer Contained-In Determination
Approval Signoff Sheet

Site Name: Gasco Operable Unit (ECSI #0084 and #0183)
Location: 7900 NW St. Helens Road, Portland, Oregon 97210
Media: Upland Soil Investigation Derived Waste
Approved Disposal: Soil: Permitted Subtitle C or Subtitle D Landfill

DEQ Project Manager: Wesley A. Thomas Date: 2/8/2023
Wesley A. Thomas

DEQ HW Staff: Date: 2/9/2023
Zeb Bates

DEQ HSW Program Manager: Audrey O'Brien Date: 2/9/2023
Audrey O'Brien

DEQ Cleanup Program Manager: Paul Seidel Date: 2/9/2023
Paul Seidel

State of Oregon
Department of Environmental Quality Memorandum

To:	**Gasco Former MGP Operable Unit File, ECSI #0084** **Siltronic Corporation File, ECSI 0183**	**Date:**	**2/8/2023**
From:	**Wesley Thomas, Project Manager, Northwest Region Cleanup Program**		
Through:	**Zeb Bates, HW Inspector, Northwest Region HW Program**		
Approved:	**Audrey O'Brien, Manager, Northwest Region HW Program** **Paul Seidel, Manager, Northwest Region Cleanup Program**		
Subject:	**No Longer Contained-In Determination** **Gasco Operable Unit** **Portland, Oregon**		

The DEQ's Northwest Region Environmental Cleanup, Hazardous Waste and Solid Waste Programs have prepared this No Longer Contained-In Determination (NLCI) for excess soil sampling investigation derived waste (IDW) generated during the Upland Feasibility Study (FS) Dense Non Aqueous Phase Liquid (DNAPL) Data Gaps Investigation field activities at the Gasco Operable Unit, which includes a portion of the Siltronic Corporation (Siltronic) property, in accordance with the DEQ-approved Revised Upland Feasibility Study DNAPL Data Gaps Investigation Work Plan. The IDW subject to this no longer contained-in determination is currently staged in eight drums on the Gasco Site (ECSI #0084).

Background Information

The Portland Gas & Coke Company (PG&C) constructed an oil-manufactured gas plant (MGP), known as the Gasco facility, on the current NW Natural property in 1912 and 1913. The Gasco facility was operated as an MGP by from 1913 to 1956. The northern portion of the current Siltronic property (within the Gasco OU) was used for MGP residuals management during a portion of this time frame. PG&C sold the property now occupied by Siltronic in 1960. Siltronic constructed a silicon wafer manufacturing plant on the property in 1978 with plant operations commencing in March 1980 and formerly used trichloroethene (TCE) in its production of silicon wafers.

Based on the operational history of the Gasco OU, the following is the typical suite of contaminants as evaluated within the Gasco OU:

- **MGP/Hydrocarbon Wastes:** Cyanide; total petroleum hydrocarbons; polycyclic aromatic hydrocarbons (PAHs); volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, and xylenes (BTEX); and metals.
- **Siltronic Spent Trichloroethene Wastes:** TCE and TCE breakdown products: cis-1,2-dichloroethene (cis 1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), 1,1-dichloroethene (1,1-DCE), and vinyl chloride (VC).

Contamination classified as "MGP/Hydrocarbon Wastes" generally resulted from former MGP operations or hydrocarbon-related sources. Toxicity characteristic (TC) regulatory levels have been determined by the U.S. Environmental Protection Agency (EPA) and DEQ as not applicable to MGP wastes. As such, TC waste codes (D004 through D043) are not applied to environmental media assumed to be impacted solely by MGP-related contaminants. Although the toxicity characteristic leaching procedure (TCLP)

analytical method does not apply to the regulatory classification of MGP waste materials, NW Natural may still elect to use TCLP testing for characterization purposes. Alternatively, total concentrations reported by the laboratory may be screened against the TC concentrations multiplied by 20 to account for attenuation by leaching. Consistent with the Gasco OU draft Contaminated Media Management Plan (CMMP), if environmental media removed from the Gasco OU exceeds the TC criteria by TCLP methodology or the 20x TC criteria using total concentrations, NW Natural will dispose of the media at a Subtitle C facility as non-hazardous industrial waste. Non-hazardous wastes disposed at a Resource Conservation and Recovery Act (RCRA) Subtitle C facility will receive an Oregon "State-Only" waste code of X004 (non-hazardous industrial waste).

Per the draft CMMP, environmental media contaminated with "Siltronic Spent TCE Wastes" are laboratory-tested, and contaminant concentration data are screened to determine whether the material would require disposal as a RCRA spent halogenated solvent waste code F002 (F002)-listed hazardous waste (spent TCE halogenated solvent). For these materials, a "no longer contained-in" determination must be made based on a comparison to the DEQ risk-based concentrations (RBCs) for the Occupational Receptor Scenario of the Soil Ingestion, Dermal Contact, and Inhalation exposure pathway for the five TCE-related compounds (DEQ 2018a [or current version]). If soil impacted with Siltronic spent TCE wastes has concentrations of the TCE-related compounds greater than the threshold values provided in the table below, the soil or sediment requires management as F002-listed hazardous waste. If these materials have concentrations of TCE-related compounds equal to or less than the threshold values provided in the table below, DEQ can make a no-longer contained in determination, such that the waste will not require management as an F002-listed hazardous waste.

F002 Constituent	Contained-In Threshold Value (µg/kg)
TCE	51,000
Cis-1,2-DCE	2,300,000
Trans-1,2-DCE	23,000,000
1,1-DCE	29,000,000
VC	4,400

Gasco OU Soil IDW Characteristics

Excess soil IDW generated during the upland FS DNAPL Data Gaps Investigation field activities were containerized in 24 55-gallon drums and one 5-cubic yard drop box. On July 21 and 22, 2022, Anchor QEA, on behalf of NW Natural, collected three composite samples from the 55-gallon drums for laboratory analysis. Each composite sample comprises approximately equal aliquots of soil from 8 drums. In addition, one five-point composite sample was collected from the 5-cubic yard drop box.

The IDW soil samples were submitted for analytical testing for:

- Total cyanide (EPA 9013M/9012)
- Free liquids (EPA 9095B)
- Total solids (SM 2540G)
- Ignitability (EPA 1010M)
- Corrosivity (EPA 9045D)
- Total petroleum hydrocarbons: diesel range- and oil-range (NWTPH-Dx) and gasoline range (NWTPH-Gx)

- RCRA eight total metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver (EPA 6020B)
- Volatile organic compounds (EPA 5035A/8260D)
- Semivolatile organic compounds (EPA 8270E)

Based on the sampling results, the IDW does not exhibit a characteristic of hazardous waste. In general, the results contain detections of the typical suite of contaminants associated with "MGP/Hydrocarbon Wastes." One composite sample representing eight 55-gallon drums contained trace concentrations of TCE and cis-1,2-DCE. Based on these results, NW Natural requested a no-longer contained in determination to classify the IDW containing trace concentrations of F002 constituents as non-hazardous waste.

No Longer Contained-In Determination

A No Longer Contained-In Determination is needed to show that concentrations of F002-listed hazardous waste constituents detected in one of the IDW waste characterization samples are below protective levels. The table below shows the relevant sample result compared to the applicable DEQ risk-based concentrations (RBCs).

Analyte	20-Times TCLP Limit	F002 Contained-In Threshold Screening Values	Sample Number: DG-IDW-072222-03	
			Result	Qualifier
TCE	10,000	51,000	**30.5**	J
cis-1,2-DCE	--	2,300,000	**17.3**	J

Notes:
Bold: detected analyte
J: estimated concentration
--: no 20x TCLP limit established

To demonstrate that the IDW no longer "contains" hazardous waste, the following conditions must be met:

1. The IDW must not exhibit a characteristic of hazardous waste (must not be reactive or toxic). The potential for soil containing waste to exhibit a toxicity characteristic is evaluated through a comparison of constituent concentrations in leachate, extracted from the waste using the Toxicity Characteristic Leaching Procedure (TCLP), with the limits specified in Title 40 Part 261.24 of the Code of Federal Regulations (40 CFR 261.24). Representative (total) chemical concentrations for the soil are compared to a value of 20 times the TCLP limit (to account for the 20 to 1 dilution inherent in the TCLP analysis method) to determine if the limits could potentially be exceeded. If the 20 times TCLP limit for any chemical is exceeded, then the waste may be a characteristic hazardous waste. As noted above, none of the IDW sample results exhibited a characteristic of hazardous waste.
2. Detected concentrations of TCE and TCE breakdown products in environmental media from this site would be considered by DEQ to contain a listed hazardous waste (F002). Concentrations of hazardous constituents from listed waste must be below human health risk-based levels. Currently, it is DEQ policy that if no longer contained-in-approved media is to be taken to a lined permitted Subtitle C or D facility then concentrations of hazardous constituents should be below the DEQ "Occupational" Risk-Based Concentration (RBC) for direct contact. Applicable RBCs are provided in the table above. The concentrations of TCE and cis-1,2-DCE are several orders of magnitude below their respective RBCs for direct contact with soil under an occupational exposure scenario. Based on these results the soil would be acceptable for disposal at a permitted Subtitle C or D landfill.

3. RCRA Land Disposal Restrictions do not apply because the IDW was not removed from the Area of Contamination before this determination.

Underlying constituents of TCE or its breakdown products might be present in the IDW at concentrations below the minimum reporting levels (MRLs) shown in the laboratory data. Using the MRL concentrations and knowledge of process, we can assume the following about the IDW:

- It is not ignitable, corrosive, or reactive;
- Concentrations of underlying constituents would be below Toxicity Characteristic levels; and
- Concentrations of underlying constituents would be below DEQ Occupational RBCs.

Based on our review of the data and the above findings, DEQ has determined that the IDW does not exhibit characteristics of hazardous waste. Detected concentrations of TCE and TCE breakdown products are well below the DEQ's occupational RBCs. The IDW does not pose an unacceptable risk under an occupational scenario, and thus meets the criteria for no longer containing listed waste. MGP waste streams are not covered in this NLCI evaluation or approval.

IDW may be disposed of at a permitted Subtitle C or Subtitle D landfill. DEQ has previously allowed IDW to be disposed of at the Hillsboro landfill following chemical characterization, determination by the generator that the IDW is not a Hazardous Waste or a Special Waste, DEQ approval of the disposal, and acceptance of the material by the landfill and extends these provisions to the soil IDW generated during the upland FS DNAPL Data Gaps Investigation field activities. NW Natural should contact the applicable landfill facility(ies) to verify that they are willing to accept these wastes. If the IDW is not managed and disposed of following these conditions of approval, this no longer contained-in determination does not apply, the waste remains hazardous waste, and must be managed and disposed of in compliance with applicable hazardous waste laws.

Attachment B
Waste Management, Inc., Disposal Profile

EZ Profile™

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

A. GENERATOR INFORMATION (MATERIAL ORIGIN)

1. Generator Name: NW Natural - Gasco
2. Generator Site Address: 7900 NW St. Helens Rd.
   (City, State, ZIP) Portland, Oregon 97210
3. County: Multnomah
4. Contact Name: Tim Stone
5. Email: tstone@anchorqea.com
6. Phone: (503)-924-6174 7. Fax: _____
8. Generator EPA ID: OR 0000204701 ❑ N/A
9. State ID: _____ ☑ N/A

B. BILLING INFORMATION ❑ SAME AS GENERATOR

1. Billing Name: Terra Hydr, Inc.
2. Billing Address: 11670 SW Waldo Way
   (City, State, ZIP) Sherwood, OR, 97140
3. Contact Name: Hank Stukey
4. Email: corporate@terrahydr.com
5. Phone: (503)-720-6590 6. Fax: _____
7. WM Hauled? ❑ Yes ☑ No
8. P.O. Number: _____
9. Payment Method: ❑ Credit Account ❑ Cash ❑ Credit Card

C. MATERIAL INFORMATION

1. Common Name: Investigative-Derived Waste
   Describe Process(es) Generating Material: ❑ See Attached

   The 24 drums and 1 drop box contain soil that was generated during the installation of DNAPL investigation soil borings.

2. Material Composition and Contaminants: ❑ See Attached

1. Soil	90-95
2. Plastic, wood, fabric, asphalt, concrete	5-10
3.	
4.	
Total comp. must be equal to or greater than 100%	≥100%

3. State Waste Codes: _____ ☑ N/A
4. Color: Brown and gray
5. Physical State at 70˚F: ☑ Solid ❑ Liquid ❑ Other: _____
6. Free Liquid Range Percentage: _____ to _____ ☑ N/A
7. pH: 6.6 to 6.8 ❑ N/A
8. Strong Odor: ☑ Yes ❑ No Describe: Petroleum-like
9. Flash Point: ❑ <140˚F ❑ 140˚–199˚F ☑ ≥200˚ ❑ N/A

D. REGULATORY INFORMATION

1. EPA Hazardous Waste? ❑ Yes* ☑ No
   Code: _____
2. State Hazardous Waste? ❑ Yes ☑ No
   Code: _____
3. Is this material non-hazardous due to Treatment, Delisting, or an Exclusion? ❑ Yes* ☑ No
4. Contains Underlying Hazardous Constituents? ❑ Yes* ☑ No
5. From an industry regulated under Benzene NESHAP? ❑ Yes* ☑ No
6. Facility remediation subject to 40 CFR 63 GGGGG? ❑ Yes* ☑ No
7. CERCLA or State-mandated clean-up? ☑ Yes* ❑ No
8. NRC or State-regulated radioactive or NORM waste? ❑ Yes* ☑ No

***If Yes, see Addendum (page 2) for additional questions and space.**

9. Contains PCBs? → If Yes, answer a, b and c. ❑ Yes ☑ No
   a. Regulated by 40 CFR 761? ❑ Yes ☑ No
   b. Remediation under 40 CFR 761.61 (a)? ❑ Yes ☑ No
   c. Were PCB imported into the US? ❑ Yes ☑ No
10. Regulated and/or Untreated Medical/Infectious Waste? ❑ Yes ☑ No
11. Contains Asbestos? ❑ Yes ☑ No
    → If Yes: ❑ Non-Friable ❑ Non-Friable – Regulated ❑ Friable

E. ANALYTICAL AND OTHER REPRESENTATIVE INFORMATION

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

   Apex Labs report number A2G0645. Sample numbers DG-IDW-072122-01, DG-IDW-072222-02, DG-IDW-072222-03, and DG-IDW-072222-DB559.

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

F. SHIPPING AND DOT INFORMATION

1. ☑ One-Time Event ❑ Repeat Event/Ongoing Business
2. Estimated Quantity/Unit of Measure: 17
   ❑ Tons ☑ Yards ❑ Drums ❑ Gallons ❑ Other: _____
3. Container Type and Size: (24) drums and (1) drop box
4. USDOT Proper Shipping Name: ☑ N/A

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

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

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

Name (Print): Robert Wyatt Date: 4/6/2023
Title: Director, Legacy Environmental Program
Company: NW Natural

Certification Signature

Generator Name NW Natural Profile Number

Waste Name Investigative Derived Waste Generated During DNAPL Investigation Borings

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 Wyatt

Title Director, Legacy Environmental Program

Company NW Natural

Date 4/6/2023

Certification Signature

Attachment C
Apex Laboratory Report No. A2G0645

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

ANALYTICAL REPORT

Monday, August 15, 2022

Ben Uhl
Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

RE: A2G0645 - Gasco Data Gaps - 000029-02.78(03.003D)

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 A2G0645, which was received by the laboratory on 7/22/2022 at 1:50:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	2.3 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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DG-IDW-072122-01	A2G0645-01	Soil	07/21/22 14:30	07/22/22 13:50
DG-IDW-072222-02	A2G0645-02	Soil	07/22/22 10:30	07/22/22 13:50
DG-IDW-072222-03	A2G0645-03	Soil	07/22/22 10:50	07/22/22 13:50
DG-IDW-072222-DB559	A2G0645-04	Soil	07/22/22 11:30	07/22/22 13:50

Apex Laboratories

Darwin Thomas, Business Development Director

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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
DG-IDW-072122-01 (A2G0645-01RE1)				**Matrix: Soil**		**Batch: 22H0141**		
Diesel	**1680**	63.8	128	mg/kg dry	5	08/04/22 11:35	NWTPH-Dx	**F-17, Q-42**
Oil	**1870**	128	255	mg/kg dry	5	08/04/22 11:35	NWTPH-Dx	**Q-42, F-17**
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*		*Limits: 50-150 %*	*5*	*08/04/22 11:35*	*NWTPH-Dx*	*S-05*
DG-IDW-072222-02 (A2G0645-02RE1)				**Matrix: Soil**		**Batch: 22H0141**		
Diesel	**210**	60.8	122	mg/kg dry	5	08/04/22 12:58	NWTPH-Dx	**F-17**
Oil	**286**	122	243	mg/kg dry	5	08/04/22 12:58	NWTPH-Dx	**F-17**
Surrogate: o-Terphenyl (Surr)		*Recovery: 89 %*		*Limits: 50-150 %*	*5*	*08/04/22 12:58*	*NWTPH-Dx*	*S-05*
DG-IDW-072222-03 (A2G0645-03RE1)				**Matrix: Soil**		**Batch: 22H0141**		
Diesel	**652**	61.1	122	mg/kg dry	5	08/04/22 13:39	NWTPH-Dx	**F-17**
Oil	**356**	122	244	mg/kg dry	5	08/04/22 13:39	NWTPH-Dx	**F-17**
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*		*Limits: 50-150 %*	*5*	*08/04/22 13:39*	*NWTPH-Dx*	*S-05*
DG-IDW-072222-DB559 (A2G0645-04RE2)				**Matrix: Soil**		**Batch: 22H0141**		
Diesel	**26.2**	11.6	25.0	mg/kg dry	1	08/04/22 14:51	NWTPH-Dx	
Oil	**104**	23.1	50.0	mg/kg dry	1	08/04/22 14:51	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*		*Limits: 50-150 %*	*1*	*08/04/22 14:51*	*NWTPH-Dx*	

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**		**Batch: 22H0024**		
Gasoline Range Organics	**19.9**	3.50	6.99	mg/kg dry	50	08/01/22 13:57	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*	*Limits: 50-150 %*		*1*	*08/01/22 13:57*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*102 %*	*50-150 %*	*1*	*08/01/22 13:57*	*NWTPH-Gx (MS)*	
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**		**Batch: 22H0024**		
Gasoline Range Organics	**23.4**	2.81	5.63	mg/kg dry	50	08/01/22 14:51	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 105 %*	*Limits: 50-150 %*		*1*	*08/01/22 14:51*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*102 %*	*50-150 %*	*1*	*08/01/22 14:51*	*NWTPH-Gx (MS)*	
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**		**Batch: 22H0024**		
Gasoline Range Organics	**171**	3.46	6.93	mg/kg dry	50	08/01/22 15:18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 103 %*	*Limits: 50-150 %*		*1*	*08/01/22 15:18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*102 %*	*50-150 %*	*1*	*08/01/22 15:18*	*NWTPH-Gx (MS)*	
DG-IDW-072222-DB559 (A2G0645-04RE1)				**Matrix: Soil**		**Batch: 22H0080**		
Gasoline Range Organics	ND	2.87	5.74	mg/kg dry	50	08/02/22 15:46	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 103 %*	*Limits: 50-150 %*		*1*	*08/02/22 15:46*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*105 %*	*50-150 %*	*1*	*08/02/22 15:46*	*NWTPH-Gx (MS)*	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**		**Batch: 22H0024**		
Acetone	ND	1400	1400	ug/kg dry	50	08/01/22 13:57	5035A/8260D	ICV-02
Acrylonitrile	ND	69.9	140	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Benzene	**16.8**	6.99	14.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Bromobenzene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Bromochloromethane	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Bromodichloromethane	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Bromoform	ND	69.9	140	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Bromomethane	ND	699	699	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
2-Butanone (MEK)	ND	699	699	ug/kg dry	50	08/01/22 13:57	5035A/8260D	ICV-02
n-Butylbenzene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
sec-Butylbenzene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
tert-Butylbenzene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Carbon disulfide	ND	350	699	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Carbon tetrachloride	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Chlorobenzene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Chloroethane	ND	350	699	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Chloroform	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Chloromethane	ND	175	350	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
2-Chlorotoluene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
4-Chlorotoluene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Dibromochloromethane	ND	69.9	140	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	175	350	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Dibromomethane	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,2-Dichlorobenzene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,3-Dichlorobenzene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,4-Dichlorobenzene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Dichlorodifluoromethane	ND	69.9	140	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,1-Dichloroethane	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,1-Dichloroethene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
cis-1,2-Dichloroethene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
trans-1,2-Dichloroethene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**		**Batch: 22H0024**		
1,2-Dichloropropane	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,3-Dichloropropane	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
2,2-Dichloropropane	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,1-Dichloropropene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
cis-1,3-Dichloropropene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
trans-1,3-Dichloropropene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Ethylbenzene	**37.1**	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Hexachlorobutadiene	ND	69.9	140	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
2-Hexanone	ND	699	699	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Isopropylbenzene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
4-Isopropyltoluene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Methylene chloride	ND	350	699	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	350	699	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Naphthalene	**5850**	69.9	140	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
n-Propylbenzene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Styrene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Tetrachloroethene (PCE)	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Toluene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,2,3-Trichlorobenzene	ND	175	350	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,2,4-Trichlorobenzene	ND	175	350	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,1,1-Trichloroethane	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,1,2-Trichloroethane	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Trichloroethene (TCE)	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Trichlorofluoromethane	ND	69.9	140	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,2,3-Trichloropropane	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
1,2,4-Trimethylbenzene	**48.3**	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	**J**
1,3,5-Trimethylbenzene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
Vinyl chloride	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
m,p-Xylene	ND	35.0	69.9	ug/kg dry	50	08/01/22 13:57	5035A/8260D	
o-Xylene	ND	17.5	35.0	ug/kg dry	50	08/01/22 13:57	5035A/8260D	

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**		**Batch: 22H0024**		
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*	*1*	*08/01/22 13:57*	*5035A/8260D*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/01/22 13:57*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*96 %*	*79-120 %*	*1*	*08/01/22 13:57*	*5035A/8260D*	
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**		**Batch: 22H0024**		
Acetone	ND	1130	1130	ug/kg dry	50	08/01/22 14:51	5035A/8260D	ICV-02
Acrylonitrile	ND	56.3	113	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Benzene	**22.5**	5.63	11.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Bromobenzene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Bromochloromethane	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Bromodichloromethane	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Bromoform	ND	56.3	113	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Bromomethane	ND	563	563	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
2-Butanone (MEK)	ND	563	563	ug/kg dry	50	08/01/22 14:51	5035A/8260D	ICV-02
n-Butylbenzene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
sec-Butylbenzene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
tert-Butylbenzene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Carbon disulfide	ND	281	563	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Carbon tetrachloride	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Chlorobenzene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Chloroethane	ND	281	563	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Chloroform	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Chloromethane	ND	141	281	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
2-Chlorotoluene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
4-Chlorotoluene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Dibromochloromethane	ND	56.3	113	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	141	281	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Dibromomethane	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,2-Dichlorobenzene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,3-Dichlorobenzene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,4-Dichlorobenzene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Dichlorodifluoromethane	ND	56.3	113	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,1-Dichloroethane	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**		**Batch: 22H0024**		
1,2-Dichloroethane (EDC)	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,1-Dichloroethene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
cis-1,2-Dichloroethene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
trans-1,2-Dichloroethene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,2-Dichloropropane	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,3-Dichloropropane	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
2,2-Dichloropropane	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,1-Dichloropropene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
cis-1,3-Dichloropropene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
trans-1,3-Dichloropropene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Ethylbenzene	**43.9**	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Hexachlorobutadiene	ND	56.3	113	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
2-Hexanone	ND	563	563	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Isopropylbenzene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
4-Isopropyltoluene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Methylene chloride	ND	281	563	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	281	563	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Naphthalene	**7190**	56.3	113	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
n-Propylbenzene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Styrene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Tetrachloroethene (PCE)	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Toluene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,2,3-Trichlorobenzene	ND	141	281	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,2,4-Trichlorobenzene	ND	141	281	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,1,1-Trichloroethane	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,1,2-Trichloroethane	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Trichloroethene (TCE)	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Trichlorofluoromethane	ND	56.3	113	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,2,3-Trichloropropane	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
1,2,4-Trimethylbenzene	**59.1**	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**		**Batch: 22H0024**		
1,3,5-Trimethylbenzene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Vinyl chloride	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
m,p-Xylene	ND	28.1	56.3	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
o-Xylene	ND	14.1	28.1	ug/kg dry	50	08/01/22 14:51	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits: 80-120 %*	*1*	*08/01/22 14:51*	*5035A/8260D*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/01/22 14:51*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*97 %*	*79-120 %*	*1*	*08/01/22 14:51*	*5035A/8260D*	
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**		**Batch: 22H0024**		
Acetone	ND	1390	1390	ug/kg dry	50	08/01/22 15:18	5035A/8260D	ICV-02
Acrylonitrile	ND	69.3	139	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Benzene	**175**	6.93	13.9	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Bromobenzene	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Bromochloromethane	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Bromodichloromethane	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Bromoform	ND	69.3	139	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Bromomethane	ND	693	693	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
2-Butanone (MEK)	ND	693	693	ug/kg dry	50	08/01/22 15:18	5035A/8260D	ICV-02
n-Butylbenzene	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
sec-Butylbenzene	**54.7**	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	**J**
tert-Butylbenzene	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Carbon disulfide	ND	346	693	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Carbon tetrachloride	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Chlorobenzene	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Chloroethane	ND	346	693	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Chloroform	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Chloromethane	ND	173	346	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
2-Chlorotoluene	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
4-Chlorotoluene	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Dibromochloromethane	ND	69.3	139	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	173	346	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Dibromomethane	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,2-Dichlorobenzene	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**		**Batch: 22H0024**		
1,3-Dichlorobenzene	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,4-Dichlorobenzene	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Dichlorodifluoromethane	ND	69.3	139	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,1-Dichloroethane	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,1-Dichloroethene	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
cis-1,2-Dichloroethene	**17.3**	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	**J**
trans-1,2-Dichloroethene	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,2-Dichloropropane	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,3-Dichloropropane	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
2,2-Dichloropropane	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,1-Dichloropropene	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
cis-1,3-Dichloropropene	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
trans-1,3-Dichloropropene	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Ethylbenzene	**281**	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Hexachlorobutadiene	ND	69.3	139	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
2-Hexanone	ND	693	693	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Isopropylbenzene	**51.3**	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	**J**
4-Isopropyltoluene	**57.5**	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	**J**
Methylene chloride	ND	346	693	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	346	693	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
n-Propylbenzene	**43.0**	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Styrene	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Tetrachloroethene (PCE)	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Toluene	**132**	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,2,3-Trichlorobenzene	ND	173	346	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,2,4-Trichlorobenzene	ND	173	346	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,1,1-Trichloroethane	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,1,2-Trichloroethane	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Trichloroethene (TCE)	**30.5**	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	**J**

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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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**		**Batch: 22H0024**		
Trichlorofluoromethane	ND	69.3	139	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,2,3-Trichloropropane	ND	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,2,4-Trimethylbenzene	**545**	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
1,3,5-Trimethylbenzene	**200**	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Vinyl chloride	ND	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
m,p-Xylene	**363**	34.6	69.3	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
o-Xylene	**170**	17.3	34.6	ug/kg dry	50	08/01/22 15:18	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*08/01/22 15:18*	*5035A/8260D*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/01/22 15:18*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*98 %*	*79-120 %*	*1*	*08/01/22 15:18*	*5035A/8260D*	
DG-IDW-072222-03 (A2G0645-03RE1)				**Matrix: Soil**		**Batch: 22H0080**		
Naphthalene	**58000**	1390	2770	ug/kg dry	1000	08/02/22 16:40	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits: 80-120 %*	*1*	*08/02/22 16:40*	*5035A/8260D*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*08/02/22 16:40*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*95 %*	*79-120 %*	*1*	*08/02/22 16:40*	*5035A/8260D*	
DG-IDW-072222-DB559 (A2G0645-04RE1)				**Matrix: Soil**		**Batch: 22H0080**		
Acetone	ND	1150	1150	ug/kg dry	50	08/02/22 15:46	5035A/8260D	ICV-02
Acrylonitrile	ND	57.4	115	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Benzene	ND	5.74	11.5	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Bromobenzene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Bromochloromethane	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Bromodichloromethane	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Bromoform	ND	57.4	115	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Bromomethane	ND	574	574	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
2-Butanone (MEK)	ND	574	574	ug/kg dry	50	08/02/22 15:46	5035A/8260D	ICV-02
n-Butylbenzene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
sec-Butylbenzene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
tert-Butylbenzene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Carbon disulfide	ND	287	574	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Carbon tetrachloride	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Chlorobenzene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Chloroethane	ND	574	574	ug/kg dry	50	08/02/22 15:46	5035A/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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-DB559 (A2G0645-04RE1)				**Matrix: Soil**		**Batch: 22H0080**		
Chloroform	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Chloromethane	ND	144	287	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
2-Chlorotoluene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
4-Chlorotoluene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Dibromochloromethane	ND	57.4	115	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	144	287	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Dibromomethane	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,2-Dichlorobenzene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,3-Dichlorobenzene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,4-Dichlorobenzene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Dichlorodifluoromethane	ND	57.4	115	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,1-Dichloroethane	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,1-Dichloroethene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
cis-1,2-Dichloroethene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
trans-1,2-Dichloroethene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,2-Dichloropropane	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,3-Dichloropropane	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
2,2-Dichloropropane	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,1-Dichloropropene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
cis-1,3-Dichloropropene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
trans-1,3-Dichloropropene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Ethylbenzene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Hexachlorobutadiene	ND	57.4	115	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
2-Hexanone	ND	287	574	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Isopropylbenzene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
4-Isopropyltoluene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Methylene chloride	ND	287	574	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	287	574	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Naphthalene	**129**	57.4	115	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
n-Propylbenzene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	

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Darwin Thomas, Business Development Director

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-DB559 (A2G0645-04RE1)				**Matrix: Soil**		**Batch: 22H0080**		
Styrene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Tetrachloroethene (PCE)	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Toluene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,2,3-Trichlorobenzene	ND	144	287	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,2,4-Trichlorobenzene	ND	144	287	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,1,1-Trichloroethane	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,1,2-Trichloroethane	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Trichloroethene (TCE)	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Trichlorofluoromethane	ND	57.4	115	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,2,3-Trichloropropane	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,2,4-Trimethylbenzene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
1,3,5-Trimethylbenzene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Vinyl chloride	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
m,p-Xylene	ND	28.7	57.4	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
o-Xylene	ND	14.4	28.7	ug/kg dry	50	08/02/22 15:46	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*08/02/22 15:46*	*5035A/8260D*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*08/02/22 15:46*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*95 %*	*79-120 %*	*1*	*08/02/22 15:46*	*5035A/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

Anchor QEA, LLC	Project: Gasco Data Gaps	
6720 SW Macadam Ave. Suite 125	Project Number: 000029-02.78(03.003D)	Report ID:
Portland, OR 97219	Project Manager: Ben Uhl	A2G0645 - 08 15 22 1808

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**		**Batch: 22H0086**		
Acenaphthene	**3730**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Acenaphthylene	**683**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	**J**
Anthracene	**3150**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Benz(a)anthracene	**2370**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Benzo(a)pyrene	**3220**	644	1290	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Benzo(b)fluoranthene	**2880**	644	1290	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Benzo(k)fluoranthene	**1150**	644	1290	ug/kg dry	100	08/02/22 17:58	EPA 8270E	**J**
Benzo(g,h,i)perylene	**2770**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Chrysene	**3110**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Dibenz(a,h)anthracene	ND	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Fluoranthene	**9000**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Fluorene	**2340**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**2480**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
1-Methylnaphthalene	**1680**	860	1720	ug/kg dry	100	08/02/22 17:58	EPA 8270E	**J**
2-Methylnaphthalene	**1230**	860	1720	ug/kg dry	100	08/02/22 17:58	EPA 8270E	**J**
Naphthalene	**5600**	860	1720	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Phenanthrene	**14900**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Pyrene	**11300**	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Carbazole	ND	644	1290	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Dibenzofuran	ND	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2-Chlorophenol	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
4-Chloro-3-methylphenol	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2,4-Dichlorophenol	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2,4-Dimethylphenol	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2,4-Dinitrophenol	ND	10700	21500	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	10700	21500	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2-Methylphenol	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
3+4-Methylphenol(s)	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2-Nitrophenol	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
4-Nitrophenol	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Pentachlorophenol (PCP)	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Phenol	ND	860	1720	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	

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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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**		**Batch: 22H0086**		
2,3,5,6-Tetrachlorophenol	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2,4,5-Trichlorophenol	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Nitrobenzene	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2,4,6-Trichlorophenol	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	6440	12900	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Butyl benzyl phthalate	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Diethylphthalate	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Dimethylphthalate	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Di-n-butylphthalate	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Di-n-octyl phthalate	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
N-Nitrosodimethylamine	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
N-Nitrosodiphenylamine	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Hexachlorobenzene	ND	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Hexachlorobutadiene	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Hexachlorocyclopentadiene	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Hexachloroethane	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2-Chloronaphthalene	ND	428	860	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
1,2,4-Trichlorobenzene	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
4-Bromophenyl phenyl ether	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Aniline	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
4-Chloroaniline	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2-Nitroaniline	ND	8600	17200	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
3-Nitroaniline	ND	8600	17200	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
4-Nitroaniline	ND	8600	17200	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2,4-Dinitrotoluene	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
2,6-Dinitrotoluene	ND	4280	8600	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Benzoic acid	ND	53800	107000	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Benzyl alcohol	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	

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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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**		**Batch: 22H0086**		
Isophorone	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Azobenzene (1,2-DPH)	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	10700	21500	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
3,3'-Dichlorobenzidine	ND	8600	17200	ug/kg dry	100	08/02/22 17:58	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	10700	21500	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
1,3-Dinitrobenzene	ND	10700	21500	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
1,4-Dinitrobenzene	ND	10700	21500	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Pyridine	ND	2150	4280	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
1,2-Dichlorobenzene	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
1,3-Dichlorobenzene	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
1,4-Dichlorobenzene	ND	1070	2150	ug/kg dry	100	08/02/22 17:58	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*66 %*	*Limits: 37-122 %*	*100*	*08/02/22 17:58*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*76 %*	*44-120 %*	*100*	*08/02/22 17:58*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*81 %*	*33-122 %*	*100*	*08/02/22 17:58*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*94 %*	*54-127 %*	*100*	*08/02/22 17:58*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*45 %*	*35-120 %*	*100*	*08/02/22 17:58*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*33 %*	*39-132 %*	*100*	*08/02/22 17:58*	*EPA 8270E*	*S-05*
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**		**Batch: 22H0086**		
Acenaphthene	**2540**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Acenaphthylene	**846**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Anthracene	**2890**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Benz(a)anthracene	**4240**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Benzo(a)pyrene	**6800**	617	1230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Benzo(b)fluoranthene	**6060**	617	1230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Benzo(k)fluoranthene	**2070**	617	1230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**5670**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Chrysene	**5400**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Dibenz(a,h)anthracene	**634**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	**J**
Fluoranthene	**12000**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Fluorene	**1650**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**4910**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
1-Methylnaphthalene	**881**	823	1640	ug/kg dry	100	08/02/22 18:32	EPA 8270E	**J**
2-Methylnaphthalene	ND	823	1640	ug/kg dry	100	08/02/22 18:32	EPA 8270E	

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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**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**		**Batch: 22H0086**		
Naphthalene	**3930**	823	1640	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Phenanthrene	**12700**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Pyrene	**14600**	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Carbazole	**716**	617	1230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	**J**
Dibenzofuran	ND	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2-Chlorophenol	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
4-Chloro-3-methylphenol	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2,4-Dichlorophenol	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2,4-Dimethylphenol	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2,4-Dinitrophenol	ND	10300	20600	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	10300	20600	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2-Methylphenol	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
3+4-Methylphenol(s)	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2-Nitrophenol	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
4-Nitrophenol	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Pentachlorophenol (PCP)	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Phenol	ND	823	1640	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2,4,5-Trichlorophenol	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Nitrobenzene	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2,4,6-Trichlorophenol	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	6170	12300	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Butyl benzyl phthalate	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Diethylphthalate	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Dimethylphthalate	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Di-n-butylphthalate	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Di-n-octyl phthalate	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
N-Nitrosodimethylamine	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
N-Nitrosodiphenylamine	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	

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ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**		**Batch: 22H0086**		
2,2'-Oxybis(1-Chloropropane)	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Hexachlorobenzene	ND	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Hexachlorobutadiene	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Hexachlorocyclopentadiene	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Hexachloroethane	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2-Chloronaphthalene	ND	410	823	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
1,2,4-Trichlorobenzene	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
4-Bromophenyl phenyl ether	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Aniline	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
4-Chloroaniline	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2-Nitroaniline	ND	8230	16400	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
3-Nitroaniline	ND	8230	16400	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
4-Nitroaniline	ND	8230	16400	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2,4-Dinitrotoluene	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
2,6-Dinitrotoluene	ND	4100	8230	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Benzoic acid	ND	51500	103000	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Benzyl alcohol	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Isophorone	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Azobenzene (1,2-DPH)	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	10300	20600	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
3,3'-Dichlorobenzidine	ND	8230	16400	ug/kg dry	100	08/02/22 18:32	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	10300	20600	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
1,3-Dinitrobenzene	ND	10300	20600	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
1,4-Dinitrobenzene	ND	10300	20600	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Pyridine	ND	2060	4100	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
1,2-Dichlorobenzene	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
1,3-Dichlorobenzene	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
1,4-Dichlorobenzene	ND	1030	2060	ug/kg dry	100	08/02/22 18:32	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*62 %*	*Limits: 37-122 %*	*100*	*08/02/22 18:32*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*53 %*	*44-120 %*	*100*	*08/02/22 18:32*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*78 %*	*33-122 %*	*100*	*08/02/22 18:32*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*80 %*	*54-127 %*	*100*	*08/02/22 18:32*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*47 %*	*35-120 %*	*100*	*08/02/22 18:32*	*EPA 8270E*	*S-05*

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Darwin Thomas, Business Development Director

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APEX LABORATORIES

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**		**Batch: 22H0086**		
Surrogate: 2,4,6-Tribromophenol (Surr)		*Recovery: 27 %*		*Limits: 39-132 %*	*100*	*08/02/22 18:32*	*EPA 8270E*	*S-05*
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**		**Batch: 22H0086**		
Acenaphthene	**9600**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Acenaphthylene	**3590**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Anthracene	**8130**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Benz(a)anthracene	**5250**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Benzo(a)pyrene	**6840**	635	1270	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Benzo(b)fluoranthene	**5480**	635	1270	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Benzo(k)fluoranthene	**2300**	635	1270	ug/kg dry	100	08/02/22 19:06	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**5240**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Chrysene	**6870**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Dibenz(a,h)anthracene	**616**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	**J**
Fluoranthene	**21500**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Fluorene	**7670**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**4430**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
1-Methylnaphthalene	**9260**	848	1690	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2-Methylnaphthalene	**13700**	848	1690	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Naphthalene	**46100**	848	1690	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Phenanthrene	**41500**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Pyrene	**26700**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Carbazole	**2940**	635	1270	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Dibenzofuran	**1390**	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2-Chlorophenol	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
4-Chloro-3-methylphenol	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2,4-Dichlorophenol	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2,4-Dimethylphenol	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2,4-Dinitrophenol	ND	10600	21200	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	10600	21200	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2-Methylphenol	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
3+4-Methylphenol(s)	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2-Nitrophenol	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
4-Nitrophenol	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	

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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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**		**Batch: 22H0086**		
Pentachlorophenol (PCP)	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Phenol	ND	848	1690	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2,4,5-Trichlorophenol	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Nitrobenzene	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2,4,6-Trichlorophenol	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	6350	12700	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Butyl benzyl phthalate	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Diethylphthalate	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Dimethylphthalate	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Di-n-butylphthalate	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Di-n-octyl phthalate	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
N-Nitrosodimethylamine	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
N-Nitrosodiphenylamine	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Hexachlorobenzene	ND	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Hexachlorobutadiene	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Hexachlorocyclopentadiene	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Hexachloroethane	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2-Chloronaphthalene	ND	422	848	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
1,2,4-Trichlorobenzene	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
4-Bromophenyl phenyl ether	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Aniline	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
4-Chloroaniline	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2-Nitroaniline	ND	8480	16900	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
3-Nitroaniline	ND	8480	16900	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
4-Nitroaniline	ND	8480	16900	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
2,4-Dinitrotoluene	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	

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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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**		**Batch: 22H0086**		
2,6-Dinitrotoluene	ND	4220	8480	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Benzoic acid	ND	53000	106000	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Benzyl alcohol	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Isophorone	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Azobenzene (1,2-DPH)	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	10600	21200	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
3,3'-Dichlorobenzidine	ND	8480	16900	ug/kg dry	100	08/02/22 19:06	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	10600	21200	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
1,3-Dinitrobenzene	ND	10600	21200	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
1,4-Dinitrobenzene	ND	10600	21200	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Pyridine	ND	2120	4220	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
1,2-Dichlorobenzene	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
1,3-Dichlorobenzene	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
1,4-Dichlorobenzene	ND	1060	2120	ug/kg dry	100	08/02/22 19:06	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*69 %*	*Limits: 37-122 %*	*100*	*08/02/22 19:06*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*67 %*	*44-120 %*	*100*	*08/02/22 19:06*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*96 %*	*33-122 %*	*100*	*08/02/22 19:06*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*86 %*	*54-127 %*	*100*	*08/02/22 19:06*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*49 %*	*35-120 %*	*100*	*08/02/22 19:06*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*43 %*	*39-132 %*	*100*	*08/02/22 19:06*	*EPA 8270E*	*S-05*
DG-IDW-072222-DB559 (A2G0645-04)				**Matrix: Soil**		**Batch: 22H0086**		
Acenaphthene	ND	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Acenaphthylene	ND	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Anthracene	ND	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Benz(a)anthracene	**551**	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	**J**
Benzo(a)pyrene	**1280**	596	1190	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Benzo(b)fluoranthene	**1030**	596	1190	ug/kg dry	100	08/02/22 19:41	EPA 8270E	**J**
Benzo(k)fluoranthene	ND	596	1190	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Benzo(g,h,i)perylene	**1090**	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Chrysene	**717**	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	**J**
Dibenz(a,h)anthracene	ND	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Fluoranthene	**655**	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	**J**
Fluorene	ND	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	

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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

Anchor QEA, LLC	Project: Gasco Data Gaps	
6720 SW Macadam Ave. Suite 125	Project Number: 000029-02.78(03.003D)	Report ID:
Portland, OR 97219	Project Manager: Ben Uhl	A2G0645 - 08 15 22 1808

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-DB559 (A2G0645-04)				**Matrix: Soil**		**Batch: 22H0086**		
Indeno(1,2,3-cd)pyrene	**958**	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
1-Methylnaphthalene	ND	795	1590	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2-Methylnaphthalene	ND	795	1590	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Naphthalene	ND	795	1590	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Phenanthrene	ND	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Pyrene	**1020**	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Carbazole	ND	596	1190	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Dibenzofuran	ND	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2-Chlorophenol	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
4-Chloro-3-methylphenol	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,4-Dichlorophenol	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,4-Dimethylphenol	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,4-Dinitrophenol	ND	9920	19900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	9920	19900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2-Methylphenol	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
3+4-Methylphenol(s)	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2-Nitrophenol	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
4-Nitrophenol	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Pentachlorophenol (PCP)	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Phenol	ND	795	1590	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,4,5-Trichlorophenol	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Nitrobenzene	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,4,6-Trichlorophenol	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	5960	11900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Butyl benzyl phthalate	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Diethylphthalate	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Dimethylphthalate	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Di-n-butylphthalate	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Di-n-octyl phthalate	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
N-Nitrosodimethylamine	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	

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Darwin Thomas, Business Development Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: Gasco Data Gaps	
6720 SW Macadam Ave. Suite 125	Project Number: 000029-02.78(03.003D)	Report ID:
Portland, OR 97219	Project Manager: Ben Uhl	A2G0645 - 08 15 22 1808

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-DB559 (A2G0645-04)				**Matrix: Soil**		**Batch: 22H0086**		
N-Nitrosodiphenylamine	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Hexachlorobenzene	ND	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Hexachlorobutadiene	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Hexachlorocyclopentadiene	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Hexachloroethane	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2-Chloronaphthalene	ND	396	795	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
1,2,4-Trichlorobenzene	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
4-Bromophenyl phenyl ether	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Aniline	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
4-Chloroaniline	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2-Nitroaniline	ND	7950	15900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
3-Nitroaniline	ND	7950	15900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
4-Nitroaniline	ND	7950	15900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,4-Dinitrotoluene	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
2,6-Dinitrotoluene	ND	3960	7950	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Benzoic acid	ND	49800	99200	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Benzyl alcohol	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Isophorone	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Azobenzene (1,2-DPH)	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	9920	19900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
3,3'-Dichlorobenzidine	ND	7950	15900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	9920	19900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
1,3-Dinitrobenzene	ND	9920	19900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
1,4-Dinitrobenzene	ND	9920	19900	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Pyridine	ND	1990	3960	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
1,2-Dichlorobenzene	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
1,3-Dichlorobenzene	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
1,4-Dichlorobenzene	ND	992	1990	ug/kg dry	100	08/02/22 19:41	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 48 %*		*Limits: 37-122 %*	*100*	*08/02/22 19:41*	*EPA 8270E*	*S-05*

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-DB559 (A2G0645-04)				**Matrix: Soil**		**Batch: 22H0086**		
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*48 %*	*Limits: 44-120 %*	*100*	*08/02/22 19:41*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*69 %*	*33-122 %*	*100*	*08/02/22 19:41*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*75 %*	*54-127 %*	*100*	*08/02/22 19:41*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*30 %*	*35-120 %*	*100*	*08/02/22 19:41*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*22 %*	*39-132 %*	*100*	*08/02/22 19:41*	*EPA 8270E*	*S-05*

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Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**				
Batch: 22G1023								
Arsenic	**2.13**	0.625	1.25	mg/kg dry	10	07/29/22 22:03	EPA 6020B	
Barium	**76.6**	0.625	1.25	mg/kg dry	10	07/29/22 22:03	EPA 6020B	
Cadmium	**0.407**	0.125	0.250	mg/kg dry	10	07/29/22 22:03	EPA 6020B	
Chromium	**9.66**	0.625	1.25	mg/kg dry	10	07/29/22 22:03	EPA 6020B	
Lead	**26.5**	0.125	0.250	mg/kg dry	10	07/29/22 22:03	EPA 6020B	
Mercury	ND	0.0500	0.100	mg/kg dry	10	07/29/22 22:03	EPA 6020B	
Selenium	ND	0.625	1.25	mg/kg dry	10	07/29/22 22:03	EPA 6020B	
Silver	ND	0.125	0.250	mg/kg dry	10	07/29/22 22:03	EPA 6020B	
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**				
Batch: 22G1023								
Arsenic	**2.26**	0.680	1.36	mg/kg dry	10	07/29/22 22:08	EPA 6020B	
Barium	**90.4**	0.680	1.36	mg/kg dry	10	07/29/22 22:08	EPA 6020B	
Cadmium	**0.315**	0.136	0.272	mg/kg dry	10	07/29/22 22:08	EPA 6020B	
Chromium	**9.70**	0.680	1.36	mg/kg dry	10	07/29/22 22:08	EPA 6020B	
Lead	**22.0**	0.136	0.272	mg/kg dry	10	07/29/22 22:08	EPA 6020B	
Mercury	**0.0864**	0.0544	0.109	mg/kg dry	10	07/29/22 22:08	EPA 6020B	**J**
Selenium	ND	0.680	1.36	mg/kg dry	10	07/29/22 22:08	EPA 6020B	
Silver	ND	0.136	0.272	mg/kg dry	10	07/29/22 22:08	EPA 6020B	
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**				
Batch: 22G1023								
Arsenic	**2.54**	0.633	1.27	mg/kg dry	10	07/29/22 22:13	EPA 6020B	
Barium	**91.7**	0.633	1.27	mg/kg dry	10	07/29/22 22:13	EPA 6020B	
Cadmium	**0.229**	0.127	0.253	mg/kg dry	10	07/29/22 22:13	EPA 6020B	**J**
Chromium	**14.2**	0.633	1.27	mg/kg dry	10	07/29/22 22:13	EPA 6020B	
Lead	**15.9**	0.127	0.253	mg/kg dry	10	07/29/22 22:13	EPA 6020B	
Mercury	ND	0.0507	0.101	mg/kg dry	10	07/29/22 22:13	EPA 6020B	
Selenium	ND	0.633	1.27	mg/kg dry	10	07/29/22 22:13	EPA 6020B	
Silver	ND	0.127	0.253	mg/kg dry	10	07/29/22 22:13	EPA 6020B	
DG-IDW-072222-DB559 (A2G0645-04)				**Matrix: Soil**				
Batch: 22G1023								

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6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072222-DB559 (A2G0645-04)				**Matrix: Soil**				
Arsenic	**1.57**	0.662	1.32	mg/kg dry	10	07/29/22 22:18	EPA 6020B	
Barium	**88.7**	0.662	1.32	mg/kg dry	10	07/29/22 22:18	EPA 6020B	
Cadmium	ND	0.132	0.265	mg/kg dry	10	07/29/22 22:18	EPA 6020B	
Chromium	**8.96**	0.662	1.32	mg/kg dry	10	07/29/22 22:18	EPA 6020B	
Lead	**6.94**	0.132	0.265	mg/kg dry	10	07/29/22 22:18	EPA 6020B	
Mercury	ND	0.0529	0.106	mg/kg dry	10	07/29/22 22:18	EPA 6020B	
Selenium	ND	0.662	1.32	mg/kg dry	10	07/29/22 22:18	EPA 6020B	
Silver	ND	0.132	0.265	mg/kg dry	10	07/29/22 22:18	EPA 6020B	

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ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01RE1)				**Matrix: Soil**		**Batch: 22G0830**		
Total Cyanide	**31.2**	2.59	2.59	mg/kg dry	20	07/26/22 17:15	EPA 9013M/9012	**Q-42**
DG-IDW-072222-02 (A2G0645-02RE1)				**Matrix: Soil**		**Batch: 22G0830**		
Total Cyanide	**25.5**	2.49	2.49	mg/kg dry	20	07/26/22 17:21	EPA 9013M/9012	
DG-IDW-072222-03 (A2G0645-03RE1)				**Matrix: Soil**		**Batch: 22G0830**		
Total Cyanide	**14.8**	0.258	0.258	mg/kg dry	2	07/26/22 17:23	EPA 9013M/9012	
DG-IDW-072222-DB559 (A2G0645-04RE4)				**Matrix: Soil**		**Batch: 22H0107**		
Total Cyanide	ND	2.48	2.48	mg/kg dry	1	08/03/22 16:19	EPA 9013M/9012	

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ANALYTICAL SAMPLE RESULTS

Solid and Moisture Determinations

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**				
Batch: 22G0803								
Total Solids	**77.1**	1.00	1.00	%	1	07/25/22 15:35	SM 2540 G	
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**				
Batch: 22G0803								
Total Solids	**80.1**	1.00	1.00	%	1	07/25/22 15:35	SM 2540 G	
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**				
Batch: 22G0803								
Total Solids	**77.1**	1.00	1.00	%	1	07/25/22 15:35	SM 2540 G	
DG-IDW-072222-DB559 (A2G0645-04)				**Matrix: Soil**				
Batch: 22G0803								
Total Solids	**80.2**	1.00	1.00	%	1	07/25/22 15:35	SM 2540 G	

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ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DG-IDW-072122-01 (A2G0645-01)				**Matrix: Soil**				
Batch: 22G0760								
Soil/Solid pH (measured in H2O)	**6.8**			pH Units	1	07/22/22 18:50	EPA 9045D	**pH_S**
pH Temperature (deg C)	**21.3**			pH Units	1	07/22/22 18:50	EPA 9045D	**pH_S**
Batch: 22G0903								
Flash Point (Ignitability)	>150° F	70.0	70.0	degF	1	07/27/22 15:14	EPA 1010M	
Batch: 22G0973								
Free Liquid	ND	0.00	0.00	mL	1	07/28/22 16:06	EPA 9095B	
DG-IDW-072222-02 (A2G0645-02)				**Matrix: Soil**				
Batch: 22G0760								
Soil/Solid pH (measured in H2O)	**6.6**			pH Units	1	07/22/22 18:52	EPA 9045D	**pH_S**
pH Temperature (deg C)	**21.0**			pH Units	1	07/22/22 18:52	EPA 9045D	**pH_S**
Batch: 22G0903								
Flash Point (Ignitability)	>150° F	70.0	70.0	degF	1	07/27/22 15:45	EPA 1010M	
Batch: 22G0973								
Free Liquid	ND	0.00	0.00	mL	1	07/28/22 16:12	EPA 9095B	
DG-IDW-072222-03 (A2G0645-03)				**Matrix: Soil**				
Batch: 22G0760								
Soil/Solid pH (measured in H2O)	**6.9**			pH Units	1	07/22/22 18:56	EPA 9045D	**pH_S**
pH Temperature (deg C)	**20.8**			pH Units	1	07/22/22 18:56	EPA 9045D	**pH_S**
Batch: 22G0903								
Flash Point (Ignitability)	>150° F	70.0	70.0	degF	1	07/27/22 16:08	EPA 1010M	
Batch: 22G0973								
Free Liquid	ND	0.00	0.00	mL	1	07/28/22 16:17	EPA 9095B	
DG-IDW-072222-DB559 (A2G0645-04)				**Matrix: Soil**				
Batch: 22G0760								
Soil/Solid pH (measured in H2O)	**8.0**			pH Units	1	07/22/22 18:58	EPA 9045D	**pH_S**
pH Temperature (deg C)	**20.7**			pH Units	1	07/22/22 18:58	EPA 9045D	**pH_S**
Batch: 22G0903								
Flash Point (Ignitability)	>150° F	70.0	70.0	degF	1	07/27/22 16:34	EPA 1010M	
Batch: 22G0973								
Free Liquid	ND	0.00	0.00	mL	1	07/28/22 16:22	EPA 9095B	

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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 22H0141 - EPA 3546 (Fuels)							**Soil**					
Blank (22H0141-BLK1)			Prepared: 08/03/22 12:46		Analyzed: 08/03/22 20:53							
NWTPH-Dx												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 96 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS (22H0141-BS1)			Prepared: 08/03/22 12:46		Analyzed: 08/03/22 21:14							
NWTPH-Dx												
Diesel	98.2	10.0	20.0	mg/kg wet	1	125	---	79	38-132%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 96 %*		*Limits: 50-150 %*		*Dilution: 1x*					
Duplicate (22H0141-DUP2)			Prepared: 08/03/22 17:55		Analyzed: 08/04/22 00:01							
QC Source Sample: Non-SDG (A2H0116-02)												
Diesel	**46.9**	12.7	25.3	mg/kg dry	1	---	40.4	---	---	15	30%	F-11
Oil	ND	25.3	50.7	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 73 %*		*Limits: 50-150 %*		*Dilution: 1x*					
Duplicate (22H0141-DUP3)			Prepared: 08/03/22 12:46		Analyzed: 08/04/22 12:16							**Q-17**
QC Source Sample: DG-IDW-072122-01 (A2G0645-01RE1)												
NWTPH-Dx												
Diesel	**309**	64.5	129	mg/kg dry	5	---	1680	---	---	**138**	**30%**	
Oil	**291**	129	258	mg/kg dry	5	---	1870	---	---	**146**	**30%**	
Surr: o-Terphenyl (Surr)			*Recovery: 94 %*		*Limits: 50-150 %*		*Dilution: 5x*					

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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 22H0024 - EPA 5035A							**Soil**					
Blank (22H0024-BLK1)			Prepared: 08/01/22 07:11		Analyzed: 08/01/22 13:03							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	1.67	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*		*Limits: 50-150 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*102 %*		*50-150 %*		*"*					
LCS (22H0024-BS2)			Prepared: 08/01/22 07:11		Analyzed: 08/01/22 12:36							
NWTPH-Gx (MS)												
Gasoline Range Organics	27.0	2.50	5.00	mg/kg wet	50	25.0	---	108	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*		*Limits: 50-150 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*102 %*		*50-150 %*		*"*					
Duplicate (22H0024-DUP1)			Prepared: 07/21/22 14:30		Analyzed: 08/01/22 14:24							
QC Source Sample: DG-IDW-072122-01 (A2G0645-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	**19.6**	3.50	6.99	mg/kg dry	50	---	19.9	---	---	2	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 105 %*		*Limits: 50-150 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*103 %*		*50-150 %*		*"*					

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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 22H0080 - EPA 5035A							**Soil**					
Blank (22H0080-BLK1)			Prepared: 08/02/22 08:00 Analyzed: 08/02/22 14:25									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	1.67	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*104 %*	*50-150 %*			*"*					
LCS (22H0080-BS2)			Prepared: 08/02/22 08:00 Analyzed: 08/02/22 12:37									
NWTPH-Gx (MS)												
Gasoline Range Organics	25.9	2.50	5.00	mg/kg wet	50	25.0	---	104	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*103 %*	*50-150 %*			*"*					
Duplicate (22H0080-DUP1)			Prepared: 08/01/22 09:29 Analyzed: 08/02/22 15:19									
QC Source Sample: Non-SDG (A2H0032-01)												
Gasoline Range Organics	ND	10.2	20.3	mg/kg dry	200	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 108 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*113 %*	*50-150 %*			*"*					
Duplicate (22H0080-DUP2)			Prepared: 08/01/22 19:20 Analyzed: 08/02/22 21:37									V-15
QC Source Sample: Non-SDG (A2H0031-04)												
Gasoline Range Organics	ND	13.1	13.1	mg/kg dry	100	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*102 %*	*50-150 %*			*"*					

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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**

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0024 - EPA 5035A							**Soil**					
Blank (22H0024-BLK1)			Prepared: 08/01/22 07:11		Analyzed: 08/01/22 13:03							
5035A/8260D												
Acetone	ND	667	667	ug/kg wet	50	---	---	---	---	---	---	ICV-02
Acrylonitrile	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	3.33	6.67	ug/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	333	333	ug/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	333	333	ug/kg wet	50	---	---	---	---	---	---	ICV-02
n-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	

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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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0024 - EPA 5035A							**Soil**					
Blank (22H0024-BLK1)			Prepared: 08/01/22 07:11 Analyzed: 08/01/22 13:03									
1,2-Dichloropropane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	333	333	ug/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 101 %* *Limits: 80-120 %* *Dilution: 1x*

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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**

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0024 - EPA 5035A							**Soil**					
Blank (22H0024-BLK1)				Prepared: 08/01/22 07:11 Analyzed: 08/01/22 13:03								
Surr: Toluene-d8 (Surr)			*Recovery: 98 %*	*Limits: 80-120 %*			*Dilution: 1x*					
4-Bromofluorobenzene (Surr)			*96 %*	*79-120 %*			*"*					
LCS (22H0024-BS1)				Prepared: 08/01/22 07:11 Analyzed: 08/01/22 12:09								
5035A/8260D												
Acetone	1500	1000	1000	ug/kg wet	50	2000	---	**75**	**80-120%**	---	---	Q-55, ICV-02
Acrylonitrile	932	50.0	100	ug/kg wet	50	1000	---	93	80-120%	---	---	
Benzene	988	5.00	10.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
Bromobenzene	966	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Bromochloromethane	935	25.0	50.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
Bromodichloromethane	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
Bromoform	917	50.0	100	ug/kg wet	50	1000	---	92	80-120%	---	---	
Bromomethane	1280	500	500	ug/kg wet	50	1000	---	**128**	**80-120%**	---	---	ICV-01, Q-56
2-Butanone (MEK)	1500	500	500	ug/kg wet	50	2000	---	**75**	**80-120%**	---	---	ICV-02, Q-55
n-Butylbenzene	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
sec-Butylbenzene	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
tert-Butylbenzene	968	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Carbon disulfide	856	250	500	ug/kg wet	50	1000	---	86	80-120%	---	---	
Carbon tetrachloride	1190	25.0	50.0	ug/kg wet	50	1000	---	119	80-120%	---	---	
Chlorobenzene	980	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Chloroethane	876	250	500	ug/kg wet	50	1000	---	88	80-120%	---	---	
Chloroform	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Chloromethane	891	125	250	ug/kg wet	50	1000	---	89	80-120%	---	---	
2-Chlorotoluene	984	25.0	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
4-Chlorotoluene	960	25.0	50.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Dibromochloromethane	962	50.0	100	ug/kg wet	50	1000	---	96	80-120%	---	---	
1,2-Dibromo-3-chloropropane	832	125	250	ug/kg wet	50	1000	---	83	80-120%	---	---	
1,2-Dibromoethane (EDB)	1020	25.0	50.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
Dibromomethane	1000	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,2-Dichlorobenzene	980	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,3-Dichlorobenzene	980	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,4-Dichlorobenzene	968	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Dichlorodifluoromethane	1280	50.0	100	ug/kg wet	50	1000	---	**128**	**80-120%**	---	---	Q-56
1,1-Dichloroethane	947	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0024 - EPA 5035A							**Soil**					
LCS (22H0024-BS1)			Prepared: 08/01/22 07:11 Analyzed: 08/01/22 12:09									
1,2-Dichloroethane (EDC)	995	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,1-Dichloroethene	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
cis-1,2-Dichloroethene	966	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
trans-1,2-Dichloroethene	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
1,2-Dichloropropane	982	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,3-Dichloropropane	992	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
2,2-Dichloropropane	972	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,1-Dichloropropene	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
cis-1,3-Dichloropropene	971	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
trans-1,3-Dichloropropene	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Ethylbenzene	965	12.5	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Hexachlorobutadiene	986	50.0	100	ug/kg wet	50	1000	---	99	80-120%	---	---	
2-Hexanone	1490	500	500	ug/kg wet	50	2000	---	**74**	**80-120%**	---	---	Q-55
Isopropylbenzene	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
4-Isopropyltoluene	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Methylene chloride	1040	250	500	ug/kg wet	50	1000	---	104	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	1660	250	500	ug/kg wet	50	2000	---	83	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	954	25.0	50.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
Naphthalene	923	50.0	100	ug/kg wet	50	1000	---	92	80-120%	---	---	
n-Propylbenzene	992	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
Styrene	956	25.0	50.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1160	12.5	25.0	ug/kg wet	50	1000	---	116	80-120%	---	---	
1,1,2,2-Tetrachloroethane	994	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
Tetrachloroethene (PCE)	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Toluene	932	25.0	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
1,2,3-Trichlorobenzene	930	125	250	ug/kg wet	50	1000	---	93	80-120%	---	---	
1,2,4-Trichlorobenzene	910	125	250	ug/kg wet	50	1000	---	91	80-120%	---	---	
1,1,1-Trichloroethane	1070	12.5	25.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
1,1,2-Trichloroethane	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Trichloroethene (TCE)	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Trichlorofluoromethane	1190	50.0	100	ug/kg wet	50	1000	---	119	80-120%	---	---	
1,2,3-Trichloropropane	996	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,2,4-Trimethylbenzene	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
1,3,5-Trimethylbenzene	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	

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Tigard, OR 97223
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0024 - EPA 5035A							**Soil**					
LCS (22H0024-BS1)			Prepared: 08/01/22 07:11 Analyzed: 08/01/22 12:09									
Vinyl chloride	1150	12.5	25.0	ug/kg wet	50	1000	---	115	80-120%	---	---	
m,p-Xylene	1960	25.0	50.0	ug/kg wet	50	2000	---	98	80-120%	---	---	
o-Xylene	946	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*98 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*96 %*		*79-120 %*				*"*			
Duplicate (22H0024-DUP1)			Prepared: 07/21/22 14:30 Analyzed: 08/01/22 14:24									
QC Source Sample: DG-IDW-072122-01 (A2G0645-01)												
5035A/8260D												
Acetone	ND	1400	1400	ug/kg dry	50	---	ND	---	---	---	30%	ICV-02
Acrylonitrile	ND	69.9	140	ug/kg dry	50	---	ND	---	---	---	30%	
Benzene	**16.1**	6.99	14.0	ug/kg dry	50	---	16.8	---	---	4	30%	
Bromobenzene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	69.9	140	ug/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	699	699	ug/kg dry	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	699	699	ug/kg dry	50	---	ND	---	---	---	30%	ICV-02
n-Butylbenzene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	350	699	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	350	699	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Chloromethane	ND	175	350	ug/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	69.9	140	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	175	350	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	

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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**

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0024 - EPA 5035A							**Soil**					
Duplicate (22H0024-DUP1)			Prepared: 07/21/22 14:30 Analyzed: 08/01/22 14:24									
QC Source Sample: DG-IDW-072122-01 (A2G0645-01)												
1,2-Dichlorobenzene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	69.9	140	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	**39.2**	17.5	35.0	ug/kg dry	50	---	37.1	---	---	6	30%	
Hexachlorobutadiene	ND	69.9	140	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	699	699	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	350	699	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	350	699	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	**5340**	69.9	140	ug/kg dry	50	---	5850	---	---	9	30%	
n-Propylbenzene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	175	350	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	175	350	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: Gasco Data Gaps	
6720 SW Macadam Ave. Suite 125	Project Number: 000029-02.78(03.003D)	Report ID:
Portland, OR 97219	Project Manager: Ben Uhl	A2G0645 - 08 15 22 1808

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 22H0024 - EPA 5035A							Soil					
Duplicate (22H0024-DUP1)			Prepared: 07/21/22 14:30 Analyzed: 08/01/22 14:24									
QC Source Sample: DG-IDW-072122-01 (A2G0645-01)												
1,1,2-Trichloroethane	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	69.9	140	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	**49.7**	35.0	69.9	ug/kg dry	50	---	48.3	---	---	3	30%	J
1,3,5-Trimethylbenzene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	35.0	69.9	ug/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	17.5	35.0	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*96 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*97 %*	*79-120 %*			*"*					
Matrix Spike (22H0024-MS1)			Prepared: 07/29/22 11:43 Analyzed: 08/01/22 19:47									V-15
QC Source Sample: Non-SDG (A2G0823-01)												
5035A/8260D												
Acetone	2180	1490	1490	ug/kg dry	50	2980	ND	73	36-164%	---	---	ICV-02, Q-54e
Acrylonitrile	1300	74.3	149	ug/kg dry	50	1490	ND	87	65-134%	---	---	
Benzene	1570	7.43	14.9	ug/kg dry	50	1490	ND	106	77-121%	---	---	
Bromobenzene	1490	18.6	37.2	ug/kg dry	50	1490	ND	100	78-121%	---	---	
Bromochloromethane	1420	37.2	74.3	ug/kg dry	50	1490	ND	95	78-125%	---	---	
Bromodichloromethane	1690	37.2	74.3	ug/kg dry	50	1490	ND	113	75-127%	---	---	
Bromoform	1430	74.3	149	ug/kg dry	50	1490	ND	96	67-132%	---	---	
Bromomethane	2360	743	743	ug/kg dry	50	1490	ND	**158**	**53-143%**	---	---	ICV-01, Q-54c
2-Butanone (MEK)	1900	743	743	ug/kg dry	50	2980	ND	64	51-148%	---	---	ICV-02, Q-54e
n-Butylbenzene	1620	37.2	74.3	ug/kg dry	50	1490	ND	109	70-128%	---	---	
sec-Butylbenzene	1640	37.2	74.3	ug/kg dry	50	1490	ND	110	73-126%	---	---	
tert-Butylbenzene	1500	37.2	74.3	ug/kg dry	50	1490	ND	101	73-125%	---	---	
Carbon disulfide	1310	372	743	ug/kg dry	50	1490	ND	88	63-132%	---	---	
Carbon tetrachloride	1930	37.2	74.3	ug/kg dry	50	1490	ND	130	70-135%	---	---	
Chlorobenzene	1510	18.6	37.2	ug/kg dry	50	1490	ND	102	79-120%	---	---	

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Darwin Thomas, Business Development Director

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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0024 - EPA 5035A							**Soil**					
Matrix Spike (22H0024-MS1)			Prepared: 07/29/22 11:43		Analyzed: 08/01/22 19:47							**V-15**
QC Source Sample: Non-SDG (A2G0823-01)												
Chloroethane	2310	372	743	ug/kg dry	50	1490	ND	**155**	**59-139%**	---	---	Q-01
Chloroform	1580	37.2	74.3	ug/kg dry	50	1490	ND	106	78-123%	---	---	
Chloromethane	1410	186	372	ug/kg dry	50	1490	ND	95	50-136%	---	---	
2-Chlorotoluene	1540	37.2	74.3	ug/kg dry	50	1490	ND	103	75-122%	---	---	
4-Chlorotoluene	1480	37.2	74.3	ug/kg dry	50	1490	ND	100	72-124%	---	---	
Dibromochloromethane	1480	74.3	149	ug/kg dry	50	1490	ND	100	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1220	186	372	ug/kg dry	50	1490	ND	82	61-132%	---	---	
1,2-Dibromoethane (EDB)	1550	37.2	74.3	ug/kg dry	50	1490	ND	104	78-122%	---	---	
Dibromomethane	1500	37.2	74.3	ug/kg dry	50	1490	ND	101	78-125%	---	---	
1,2-Dichlorobenzene	1490	18.6	37.2	ug/kg dry	50	1490	ND	100	78-121%	---	---	
1,3-Dichlorobenzene	1510	18.6	37.2	ug/kg dry	50	1490	ND	101	77-121%	---	---	
1,4-Dichlorobenzene	1490	18.6	37.2	ug/kg dry	50	1490	ND	100	75-120%	---	---	
Dichlorodifluoromethane	2040	74.3	149	ug/kg dry	50	1490	ND	137	29-149%	---	---	Q-54c
1,1-Dichloroethane	1610	18.6	37.2	ug/kg dry	50	1490	ND	108	76-125%	---	---	
1,2-Dichloroethane (EDC)	1500	18.6	37.2	ug/kg dry	50	1490	ND	100	73-128%	---	---	
1,1-Dichloroethene	1630	18.6	37.2	ug/kg dry	50	1490	ND	109	70-131%	---	---	
cis-1,2-Dichloroethene	1560	18.6	37.2	ug/kg dry	50	1490	ND	105	77-123%	---	---	
trans-1,2-Dichloroethene	1570	18.6	37.2	ug/kg dry	50	1490	ND	105	74-125%	---	---	
1,2-Dichloropropane	1530	18.6	37.2	ug/kg dry	50	1490	ND	103	76-123%	---	---	
1,3-Dichloropropane	1520	37.2	74.3	ug/kg dry	50	1490	ND	102	77-121%	---	---	
2,2-Dichloropropane	1400	37.2	74.3	ug/kg dry	50	1490	ND	94	67-133%	---	---	
1,1-Dichloropropene	1760	37.2	74.3	ug/kg dry	50	1490	ND	118	76-125%	---	---	
cis-1,3-Dichloropropene	1470	37.2	74.3	ug/kg dry	50	1490	ND	99	74-126%	---	---	
trans-1,3-Dichloropropene	1570	37.2	74.3	ug/kg dry	50	1490	ND	105	71-130%	---	---	
Ethylbenzene	1500	18.6	37.2	ug/kg dry	50	1490	ND	101	76-122%	---	---	
Hexachlorobutadiene	1620	74.3	149	ug/kg dry	50	1490	ND	109	61-135%	---	---	
2-Hexanone	2120	743	743	ug/kg dry	50	2980	ND	71	53-145%	---	---	Q-54f
Isopropylbenzene	1580	37.2	74.3	ug/kg dry	50	1490	ND	106	68-134%	---	---	
4-Isopropyltoluene	1600	37.2	74.3	ug/kg dry	50	1490	ND	107	73-127%	---	---	
Methylene chloride	1470	372	743	ug/kg dry	50	1490	ND	99	70-128%	---	---	
4-Methyl-2-pentanone (MiBK)	2940	372	743	ug/kg dry	50	2980	443	84	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1460	37.2	74.3	ug/kg dry	50	1490	ND	98	73-125%	---	---	
Naphthalene	1370	74.3	149	ug/kg dry	50	1490	ND	92	62-129%	---	---	

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APEX LABORATORIES

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6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0024 - EPA 5035A							**Soil**					
Matrix Spike (22H0024-MS1)			Prepared: 07/29/22 11:43		Analyzed: 08/01/22 19:47							**V-15**
QC Source Sample: Non-SDG (A2G0823-01)												
n-Propylbenzene	1520	18.6	37.2	ug/kg dry	50	1490	ND	102	73-125%	---	---	
Styrene	1500	37.2	74.3	ug/kg dry	50	1490	ND	101	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1810	18.6	37.2	ug/kg dry	50	1490	ND	122	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1450	37.2	74.3	ug/kg dry	50	1490	ND	98	70-124%	---	---	
Tetrachloroethene (PCE)	1650	18.6	37.2	ug/kg dry	50	1490	ND	111	73-128%	---	---	
Toluene	1450	37.2	74.3	ug/kg dry	50	1490	ND	97	77-121%	---	---	
1,2,3-Trichlorobenzene	1370	186	372	ug/kg dry	50	1490	ND	92	66-130%	---	---	
1,2,4-Trichlorobenzene	1350	186	372	ug/kg dry	50	1490	ND	91	67-129%	---	---	
1,1,1-Trichloroethane	1730	18.6	37.2	ug/kg dry	50	1490	ND	116	73-130%	---	---	
1,1,2-Trichloroethane	1530	18.6	37.2	ug/kg dry	50	1490	ND	103	78-121%	---	---	
Trichloroethene (TCE)	1670	18.6	37.2	ug/kg dry	50	1490	ND	112	77-123%	---	---	
Trichlorofluoromethane	2850	74.3	149	ug/kg dry	50	1490	ND	**191**	**62-140%**	---	---	Q-01
1,2,3-Trichloropropane	1480	37.2	74.3	ug/kg dry	50	1490	ND	100	73-125%	---	---	
1,2,4-Trimethylbenzene	1600	37.2	74.3	ug/kg dry	50	1490	ND	107	75-123%	---	---	
1,3,5-Trimethylbenzene	1590	37.2	74.3	ug/kg dry	50	1490	ND	107	73-124%	---	---	
Vinyl chloride	1670	18.6	37.2	ug/kg dry	50	1490	ND	112	56-135%	---	---	
m,p-Xylene	3010	37.2	74.3	ug/kg dry	50	2980	ND	101	77-124%	---	---	
o-Xylene	1480	18.6	37.2	ug/kg dry	50	1490	ND	99	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*96 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*79-120 %*			*"*				

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Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
Blank (22H0080-BLK1)			Prepared: 08/02/22 08:00 Analyzed: 08/02/22 14:25									
5035A/8260D												
Acetone	ND	667	667	ug/kg wet	50	---	---	---	---	---	---	ICV-02
Acrylonitrile	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	3.33	6.67	ug/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	333	333	ug/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	333	333	ug/kg wet	50	---	---	---	---	---	---	ICV-02
n-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	333	333	ug/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	

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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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
Blank (22H0080-BLK1)			Prepared: 08/02/22 08:00 Analyzed: 08/02/22 14:25									
1,2-Dichloropropane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 101 %* *Limits: 80-120 %* *Dilution: 1x*

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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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
Blank (22H0080-BLK1)				Prepared: 08/02/22 08:00 Analyzed: 08/02/22 14:25								
Surr: Toluene-d8 (Surr)			*Recovery: 98 %*	*Limits: 80-120 %*				*Dilution: 1x*				
4-Bromofluorobenzene (Surr)			*97 %*	*79-120 %*				*"*				
LCS (22H0080-BS1)				Prepared: 08/02/22 08:00 Analyzed: 08/02/22 12:10								
5035A/8260D												
Acetone	2290	1000	1000	ug/kg wet	50	2000	---	114	80-120%	---	---	ICV-02
Acrylonitrile	968	50.0	100	ug/kg wet	50	1000	---	97	80-120%	---	---	
Benzene	982	5.00	10.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Bromobenzene	945	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
Bromochloromethane	928	25.0	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
Bromodichloromethane	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Bromoform	882	50.0	100	ug/kg wet	50	1000	---	88	80-120%	---	---	
Bromomethane	1250	500	500	ug/kg wet	50	1000	---	**125**	**80-120%**	---	---	Q-56, ICV-01
2-Butanone (MEK)	1930	500	500	ug/kg wet	50	2000	---	96	80-120%	---	---	ICV-02
n-Butylbenzene	1020	25.0	50.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
sec-Butylbenzene	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
tert-Butylbenzene	928	25.0	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
Carbon disulfide	806	250	500	ug/kg wet	50	1000	---	81	80-120%	---	---	
Carbon tetrachloride	1160	25.0	50.0	ug/kg wet	50	1000	---	116	80-120%	---	---	
Chlorobenzene	954	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
Chloroethane	777	500	500	ug/kg wet	50	1000	---	**78**	**80-120%**	---	---	Q-55
Chloroform	996	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Chloromethane	870	125	250	ug/kg wet	50	1000	---	87	80-120%	---	---	
2-Chlorotoluene	972	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
4-Chlorotoluene	944	25.0	50.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
Dibromochloromethane	929	50.0	100	ug/kg wet	50	1000	---	93	80-120%	---	---	
1,2-Dibromo-3-chloropropane	814	125	250	ug/kg wet	50	1000	---	81	80-120%	---	---	
1,2-Dibromoethane (EDB)	986	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
Dibromomethane	1000	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,2-Dichlorobenzene	952	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
1,3-Dichlorobenzene	956	12.5	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
1,4-Dichlorobenzene	944	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
Dichlorodifluoromethane	1230	50.0	100	ug/kg wet	50	1000	---	**123**	**80-120%**	---	---	Q-56
1,1-Dichloroethane	937	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	

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Darwin Thomas, Business Development Director

APEX LABORATORIES

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
LCS (22H0080-BS1)			Prepared: 08/02/22 08:00 Analyzed: 08/02/22 12:10									
1,2-Dichloroethane (EDC)	987	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,1-Dichloroethene	966	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
cis-1,2-Dichloroethene	954	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
trans-1,2-Dichloroethene	986	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,2-Dichloropropane	978	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,3-Dichloropropane	973	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
2,2-Dichloropropane	942	25.0	50.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
1,1-Dichloropropene	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
cis-1,3-Dichloropropene	930	25.0	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
trans-1,3-Dichloropropene	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Ethylbenzene	943	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
Hexachlorobutadiene	922	50.0	100	ug/kg wet	50	1000	---	92	80-120%	---	---	
2-Hexanone	1740	250	500	ug/kg wet	50	2000	---	87	80-120%	---	---	
Isopropylbenzene	983	25.0	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
4-Isopropyltoluene	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Methylene chloride	1010	250	500	ug/kg wet	50	1000	---	101	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	1660	250	500	ug/kg wet	50	2000	---	83	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	935	25.0	50.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
Naphthalene	895	50.0	100	ug/kg wet	50	1000	---	90	80-120%	---	---	
n-Propylbenzene	971	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Styrene	930	25.0	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1130	12.5	25.0	ug/kg wet	50	1000	---	113	80-120%	---	---	
1,1,2,2-Tetrachloroethane	972	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Tetrachloroethene (PCE)	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Toluene	908	25.0	50.0	ug/kg wet	50	1000	---	91	80-120%	---	---	
1,2,3-Trichlorobenzene	914	125	250	ug/kg wet	50	1000	---	91	80-120%	---	---	
1,2,4-Trichlorobenzene	870	125	250	ug/kg wet	50	1000	---	87	80-120%	---	---	
1,1,1-Trichloroethane	1050	12.5	25.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
1,1,2-Trichloroethane	996	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Trichloroethene (TCE)	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Trichlorofluoromethane	1220	50.0	100	ug/kg wet	50	1000	---	**122**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	968	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,2,4-Trimethylbenzene	1000	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,3,5-Trimethylbenzene	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
LCS (22H0080-BS1)			Prepared: 08/02/22 08:00		Analyzed: 08/02/22 12:10							
Vinyl chloride	1280	12.5	25.0	ug/kg wet	50	1000	---	**128**	**80-120%**	---	---	Q-56
m,p-Xylene	1920	25.0	50.0	ug/kg wet	50	2000	---	96	80-120%	---	---	
o-Xylene	936	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 102 %*		*Limits: 80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*96 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*95 %*		*79-120 %*		*"*					
Duplicate (22H0080-DUP1)			Prepared: 08/01/22 09:29		Analyzed: 08/02/22 15:19							
QC Source Sample: Non-SDG (A2H0032-01)												
Acetone	ND	4070	4070	ug/kg dry	200	---	ND	---	---	---	30%	ICV-02
Acrylonitrile	ND	203	407	ug/kg dry	200	---	ND	---	---	---	30%	
Benzene	ND	20.3	40.7	ug/kg dry	200	---	ND	---	---	---	30%	
Bromobenzene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
Bromochloromethane	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Bromodichloromethane	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Bromoform	ND	203	407	ug/kg dry	200	---	ND	---	---	---	30%	
Bromomethane	ND	2030	2030	ug/kg dry	200	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	2030	2030	ug/kg dry	200	---	ND	---	---	---	30%	ICV-02
n-Butylbenzene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Carbon disulfide	ND	1020	2030	ug/kg dry	200	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Chlorobenzene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
Chloroethane	ND	2030	2030	ug/kg dry	200	---	ND	---	---	---	30%	
Chloroform	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Chloromethane	ND	509	1020	ug/kg dry	200	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Dibromochloromethane	ND	203	407	ug/kg dry	200	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	509	1020	ug/kg dry	200	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Dibromomethane	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
Duplicate (22H0080-DUP1)			Prepared: 08/01/22 09:29 Analyzed: 08/02/22 15:19									
QC Source Sample: Non-SDG (A2H0032-01)												
1,3-Dichlorobenzene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	203	407	ug/kg dry	200	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Ethylbenzene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	203	407	ug/kg dry	200	---	ND	---	---	---	30%	
2-Hexanone	ND	1020	2030	ug/kg dry	200	---	ND	---	---	---	30%	
Isopropylbenzene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Methylene chloride	ND	1020	2030	ug/kg dry	200	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	1020	2030	ug/kg dry	200	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Naphthalene	ND	203	407	ug/kg dry	200	---	ND	---	---	---	30%	
n-Propylbenzene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
Styrene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
Toluene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	509	1020	ug/kg dry	200	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	509	1020	ug/kg dry	200	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	

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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
Duplicate (22H0080-DUP1)			Prepared: 08/01/22 09:29 Analyzed: 08/02/22 15:19									
QC Source Sample: Non-SDG (A2H0032-01)												
Trichloroethene (TCE)	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	203	407	ug/kg dry	200	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
Vinyl chloride	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
m,p-Xylene	ND	102	203	ug/kg dry	200	---	ND	---	---	---	30%	
o-Xylene	ND	50.9	102	ug/kg dry	200	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 109 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*97 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*96 %*	*79-120 %*			*"*					
Duplicate (22H0080-DUP2)			Prepared: 08/01/22 19:20 Analyzed: 08/02/22 21:37									**V-15**
QC Source Sample: Non-SDG (A2H0031-04)												
Acetone	ND	2610	2610	ug/kg dry	100	---	ND	---	---	---	30%	ICV-02
Acrylonitrile	ND	131	261	ug/kg dry	100	---	ND	---	---	---	30%	
Benzene	ND	13.1	26.1	ug/kg dry	100	---	ND	---	---	---	30%	
Bromobenzene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
Bromochloromethane	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Bromodichloromethane	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Bromoform	ND	131	261	ug/kg dry	100	---	ND	---	---	---	30%	
Bromomethane	ND	1310	1310	ug/kg dry	100	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	1310	1310	ug/kg dry	100	---	ND	---	---	---	30%	ICV-02
n-Butylbenzene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Carbon disulfide	ND	653	1310	ug/kg dry	100	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Chlorobenzene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
Chloroethane	ND	1310	1310	ug/kg dry	100	---	ND	---	---	---	30%	
Chloroform	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Chloromethane	ND	327	653	ug/kg dry	100	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	

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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**

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
Duplicate (22H0080-DUP2)			Prepared: 08/01/22 19:20 Analyzed: 08/02/22 21:37									**V-15**
QC Source Sample: Non-SDG (A2H0031-04)												
4-Chlorotoluene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Dibromochloromethane	ND	131	261	ug/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	327	653	ug/kg dry	100	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Dibromomethane	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	131	261	ug/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Ethylbenzene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	131	261	ug/kg dry	100	---	ND	---	---	---	30%	
2-Hexanone	ND	653	1310	ug/kg dry	100	---	ND	---	---	---	30%	
Isopropylbenzene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Methylene chloride	ND	653	1310	ug/kg dry	100	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	653	1310	ug/kg dry	100	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Naphthalene	ND	131	261	ug/kg dry	100	---	ND	---	---	---	30%	
n-Propylbenzene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
Styrene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	

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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**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
Duplicate (22H0080-DUP2)			Prepared: 08/01/22 19:20 Analyzed: 08/02/22 21:37									**V-15**
QC Source Sample: Non-SDG (A2H0031-04)												
Tetrachloroethene (PCE)	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
Toluene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	327	653	ug/kg dry	100	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	327	653	ug/kg dry	100	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	131	261	ug/kg dry	100	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
Vinyl chloride	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
m,p-Xylene	ND	65.3	131	ug/kg dry	100	---	ND	---	---	---	30%	
o-Xylene	ND	32.7	65.3	ug/kg dry	100	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 103 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*97 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*97 %*	*79-120 %*			*"*					
Matrix Spike (22H0080-MS1)			Prepared: 08/01/22 11:05 Analyzed: 08/02/22 23:52									
QC Source Sample: Non-SDG (A2H0014-02)												
5035A/8260D												
Acetone	15700	12400	12400	ug/kg dry	500	24700	ND	64	36-164%	---	---	ICV-02
Acrylonitrile	11100	618	1240	ug/kg dry	500	12400	ND	89	65-134%	---	---	
Benzene	13100	61.8	124	ug/kg dry	500	12400	ND	106	77-121%	---	---	
Bromobenzene	12600	155	309	ug/kg dry	500	12400	ND	102	78-121%	---	---	
Bromochloromethane	11000	309	618	ug/kg dry	500	12400	ND	89	78-125%	---	---	
Bromodichloromethane	14200	309	618	ug/kg dry	500	12400	ND	115	75-127%	---	---	
Bromoform	12300	618	1240	ug/kg dry	500	12400	ND	99	67-132%	---	---	
Bromomethane	19500	6180	6180	ug/kg dry	500	12400	ND	**158**	**53-143%**	---	---	ICV-01, Q-54b
2-Butanone (MEK)	16700	6180	6180	ug/kg dry	500	24700	ND	68	51-148%	---	---	ICV-02
n-Butylbenzene	13500	309	618	ug/kg dry	500	12400	ND	110	70-128%	---	---	
sec-Butylbenzene	14100	309	618	ug/kg dry	500	12400	ND	114	73-126%	---	---	

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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**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
Matrix Spike (22H0080-MS1)			Prepared: 08/01/22 11:05		Analyzed: 08/02/22 23:52							
QC Source Sample: Non-SDG (A2H0014-02)												
tert-Butylbenzene	12700	309	618	ug/kg dry	500	12400	ND	103	73-125%	---	---	
Carbon disulfide	11000	3090	6180	ug/kg dry	500	12400	ND	89	63-132%	---	---	
Carbon tetrachloride	16200	309	618	ug/kg dry	500	12400	ND	131	70-135%	---	---	
Chlorobenzene	12900	155	309	ug/kg dry	500	12400	ND	104	79-120%	---	---	
Chloroethane	11000	6180	6180	ug/kg dry	500	12400	ND	89	59-139%	---	---	Q-54d
Chloroform	13100	309	618	ug/kg dry	500	12400	ND	106	78-123%	---	---	
Chloromethane	12900	1550	3090	ug/kg dry	500	12400	ND	104	50-136%	---	---	
2-Chlorotoluene	13200	309	618	ug/kg dry	500	12400	ND	107	75-122%	---	---	
4-Chlorotoluene	12400	309	618	ug/kg dry	500	12400	ND	100	72-124%	---	---	
Dibromochloromethane	12700	618	1240	ug/kg dry	500	12400	ND	103	74-126%	---	---	
1,2-Dibromo-3-chloropropane	10500	1550	3090	ug/kg dry	500	12400	ND	85	61-132%	---	---	
1,2-Dibromoethane (EDB)	13300	309	618	ug/kg dry	500	12400	ND	107	78-122%	---	---	
Dibromomethane	13000	309	618	ug/kg dry	500	12400	ND	105	78-125%	---	---	
1,2-Dichlorobenzene	12600	155	309	ug/kg dry	500	12400	ND	102	78-121%	---	---	
1,3-Dichlorobenzene	12700	155	309	ug/kg dry	500	12400	ND	103	77-121%	---	---	
1,4-Dichlorobenzene	12400	155	309	ug/kg dry	500	12400	ND	100	75-120%	---	---	
Dichlorodifluoromethane	18700	618	1240	ug/kg dry	500	12400	ND	**152**	**29-149%**	---	---	Q-54a
1,1-Dichloroethane	12000	155	309	ug/kg dry	500	12400	ND	97	76-125%	---	---	
1,2-Dichloroethane (EDC)	12200	155	309	ug/kg dry	500	12400	ND	98	73-128%	---	---	
1,1-Dichloroethene	12700	155	309	ug/kg dry	500	12400	ND	103	70-131%	---	---	
cis-1,2-Dichloroethene	12100	155	309	ug/kg dry	500	12400	ND	98	77-123%	---	---	
trans-1,2-Dichloroethene	12700	155	309	ug/kg dry	500	12400	ND	103	74-125%	---	---	
1,2-Dichloropropane	12600	155	309	ug/kg dry	500	12400	ND	102	76-123%	---	---	
1,3-Dichloropropane	12500	309	618	ug/kg dry	500	12400	ND	101	77-121%	---	---	
2,2-Dichloropropane	10400	309	618	ug/kg dry	500	12400	ND	84	67-133%	---	---	
1,1-Dichloropropene	14500	309	618	ug/kg dry	500	12400	ND	117	76-125%	---	---	
cis-1,3-Dichloropropene	12000	309	618	ug/kg dry	500	12400	ND	97	74-126%	---	---	
trans-1,3-Dichloropropene	12600	309	618	ug/kg dry	500	12400	ND	102	71-130%	---	---	
Ethylbenzene	12800	155	309	ug/kg dry	500	12400	ND	103	76-122%	---	---	
Hexachlorobutadiene	12700	618	1240	ug/kg dry	500	12400	ND	103	61-135%	---	---	
2-Hexanone	17000	3090	6180	ug/kg dry	500	24700	ND	69	53-145%	---	---	
Isopropylbenzene	13900	309	618	ug/kg dry	500	12400	ND	112	68-134%	---	---	
4-Isopropyltoluene	13700	309	618	ug/kg dry	500	12400	ND	111	73-127%	---	---	

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0080 - EPA 5035A							**Soil**					
Matrix Spike (22H0080-MS1)			Prepared: 08/01/22 11:05		Analyzed: 08/02/22 23:52							
QC Source Sample: Non-SDG (A2H0014-02)												
Methylene chloride	12300	3090	6180	ug/kg dry	500	12400	ND	100	70-128%	---	---	
4-Methyl-2-pentanone (MiBK)	18600	3090	6180	ug/kg dry	500	24700	ND	75	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	12100	309	618	ug/kg dry	500	12400	ND	98	73-125%	---	---	
Naphthalene	12200	618	1240	ug/kg dry	500	12400	ND	99	62-129%	---	---	
n-Propylbenzene	13100	155	309	ug/kg dry	500	12400	ND	106	73-125%	---	---	
Styrene	12900	309	618	ug/kg dry	500	12400	ND	105	76-124%	---	---	
1,1,1,2-Tetrachloroethane	15500	155	309	ug/kg dry	500	12400	ND	125	78-125%	---	---	
1,1,2,2-Tetrachloroethane	12400	309	618	ug/kg dry	500	12400	ND	100	70-124%	---	---	
Tetrachloroethene (PCE)	13800	155	309	ug/kg dry	500	12400	ND	112	73-128%	---	---	
Toluene	11900	309	618	ug/kg dry	500	12400	ND	96	77-121%	---	---	
1,2,3-Trichlorobenzene	12100	1550	3090	ug/kg dry	500	12400	ND	98	66-130%	---	---	
1,2,4-Trichlorobenzene	11700	1550	3090	ug/kg dry	500	12400	ND	95	67-129%	---	---	
1,1,1-Trichloroethane	14500	155	309	ug/kg dry	500	12400	ND	117	73-130%	---	---	
1,1,2-Trichloroethane	12900	155	309	ug/kg dry	500	12400	ND	104	78-121%	---	---	
Trichloroethene (TCE)	14300	155	309	ug/kg dry	500	12400	ND	116	77-123%	---	---	
Trichlorofluoromethane	17400	618	1240	ug/kg dry	500	12400	ND	**141**	**62-140%**	---	---	Q-54
1,2,3-Trichloropropane	12500	309	618	ug/kg dry	500	12400	ND	101	73-125%	---	---	
1,2,4-Trimethylbenzene	13900	309	618	ug/kg dry	500	12400	ND	113	75-123%	---	---	
1,3,5-Trimethylbenzene	13700	309	618	ug/kg dry	500	12400	ND	111	73-124%	---	---	
Vinyl chloride	17200	155	309	ug/kg dry	500	12400	ND	**139**	**56-135%**	---	---	Q-54c
m,p-Xylene	25600	309	618	ug/kg dry	500	24700	ND	104	77-124%	---	---	
o-Xylene	12800	155	309	ug/kg dry	500	12400	ND	103	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 103 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*79-120 %*			*"*				

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0086 - EPA 3546							**Soil**					
Blank (22H0086-BLK2)			Prepared: 08/02/22 11:18		Analyzed: 08/02/22 15:41							
EPA 8270E												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0086 - EPA 3546							**Soil**					
Blank (22H0086-BLK2)			Prepared: 08/02/22 11:18 Analyzed: 08/02/22 15:41									
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	ug/kg wet	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Benzoic acid	ND	157	312	ug/kg wet	1	---	---	---	---	---	---	
Benzyl alcohol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Isophorone	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0086 - EPA 3546							**Soil**					
Blank (22H0086-BLK2)			Prepared: 08/02/22 11:18 Analyzed: 08/02/22 15:41									
Azobenzene (1,2-DPH)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 87 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*74 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*71 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*81 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*71 %*	*35-120 %*			*"*					
2,4,6-Tribromophenol (Surr)			*81 %*	*39-132 %*			*"*					
LCS (22H0086-BS2)			Prepared: 08/02/22 11:18 Analyzed: 08/02/22 16:15									
EPA 8270E												
Acenaphthene	445	5.32	10.7	ug/kg wet	4	533	---	83	40-123%	---	---	
Acenaphthylene	457	5.32	10.7	ug/kg wet	4	533	---	86	32-132%	---	---	
Anthracene	470	5.32	10.7	ug/kg wet	4	533	---	88	47-123%	---	---	
Benz(a)anthracene	479	5.32	10.7	ug/kg wet	4	533	---	90	49-126%	---	---	
Benzo(a)pyrene	496	8.00	16.0	ug/kg wet	4	533	---	93	45-129%	---	---	
Benzo(b)fluoranthene	487	8.00	16.0	ug/kg wet	4	533	---	91	45-132%	---	---	
Benzo(k)fluoranthene	489	8.00	16.0	ug/kg wet	4	533	---	92	47-132%	---	---	
Benzo(g,h,i)perylene	473	5.32	10.7	ug/kg wet	4	533	---	89	43-134%	---	---	
Chrysene	470	5.32	10.7	ug/kg wet	4	533	---	88	50-124%	---	---	
Dibenz(a,h)anthracene	476	5.32	10.7	ug/kg wet	4	533	---	89	45-134%	---	---	
Fluoranthene	473	5.32	10.7	ug/kg wet	4	533	---	89	50-127%	---	---	
Fluorene	419	5.32	10.7	ug/kg wet	4	533	---	78	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	474	5.32	10.7	ug/kg wet	4	533	---	89	45-133%	---	---	
1-Methylnaphthalene	444	10.7	21.3	ug/kg wet	4	533	---	83	40-120%	---	---	
2-Methylnaphthalene	454	10.7	21.3	ug/kg wet	4	533	---	85	38-122%	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0086 - EPA 3546							**Soil**					
LCS (22H0086-BS2)			Prepared: 08/02/22 11:18		Analyzed: 08/02/22 16:15							
Naphthalene	429	10.7	21.3	ug/kg wet	4	533	---	80	35-123%	---	---	
Phenanthrene	454	5.32	10.7	ug/kg wet	4	533	---	85	50-121%	---	---	
Pyrene	477	5.32	10.7	ug/kg wet	4	533	---	90	47-127%	---	---	
Carbazole	465	8.00	16.0	ug/kg wet	4	533	---	87	50-123%	---	---	
Dibenzofuran	435	5.32	10.7	ug/kg wet	4	533	---	82	44-120%	---	---	
2-Chlorophenol	417	26.7	53.2	ug/kg wet	4	533	---	78	34-121%	---	---	
4-Chloro-3-methylphenol	454	53.2	107	ug/kg wet	4	533	---	85	45-122%	---	---	
2,4-Dichlorophenol	406	26.7	53.2	ug/kg wet	4	533	---	76	40-122%	---	---	
2,4-Dimethylphenol	467	26.7	53.2	ug/kg wet	4	533	---	88	30-127%	---	---	
2,4-Dinitrophenol	271	133	267	ug/kg wet	4	533	---	51	10-137%	---	---	
4,6-Dinitro-2-methylphenol	350	133	267	ug/kg wet	4	533	---	66	29-132%	---	---	
2-Methylphenol	441	13.3	26.7	ug/kg wet	4	533	---	83	32-122%	---	---	
3+4-Methylphenol(s)	463	13.3	26.7	ug/kg wet	4	533	---	87	34-120%	---	---	
2-Nitrophenol	485	53.2	107	ug/kg wet	4	533	---	91	36-123%	---	---	Q-41
4-Nitrophenol	394	53.2	107	ug/kg wet	4	533	---	74	30-132%	---	---	
Pentachlorophenol (PCP)	359	53.2	107	ug/kg wet	4	533	---	67	25-133%	---	---	
Phenol	395	10.7	21.3	ug/kg wet	4	533	---	74	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	432	26.7	53.2	ug/kg wet	4	533	---	81	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	416	26.7	53.2	ug/kg wet	4	533	---	78	40-120%	---	---	
2,4,5-Trichlorophenol	431	26.7	53.2	ug/kg wet	4	533	---	81	41-124%	---	---	
Nitrobenzene	416	53.2	107	ug/kg wet	4	533	---	78	34-122%	---	---	
2,4,6-Trichlorophenol	412	26.7	53.2	ug/kg wet	4	533	---	77	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	480	80.0	160	ug/kg wet	4	533	---	90	51-133%	---	---	
Butyl benzyl phthalate	482	53.2	107	ug/kg wet	4	533	---	90	48-132%	---	---	
Diethylphthalate	430	53.2	107	ug/kg wet	4	533	---	81	50-124%	---	---	
Dimethylphthalate	447	53.2	107	ug/kg wet	4	533	---	84	48-124%	---	---	
Di-n-butylphthalate	503	53.2	107	ug/kg wet	4	533	---	94	51-128%	---	---	
Di-n-octyl phthalate	509	53.2	107	ug/kg wet	4	533	---	96	45-140%	---	---	
N-Nitrosodimethylamine	407	13.3	26.7	ug/kg wet	4	533	---	76	23-120%	---	---	
N-Nitroso-di-n-propylamine	448	13.3	26.7	ug/kg wet	4	533	---	84	36-120%	---	---	
N-Nitrosodiphenylamine	468	13.3	26.7	ug/kg wet	4	533	---	88	38-127%	---	---	
Bis(2-Chloroethoxy) methane	445	13.3	26.7	ug/kg wet	4	533	---	83	36-121%	---	---	
Bis(2-Chloroethyl) ether	356	13.3	26.7	ug/kg wet	4	533	---	67	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	446	13.3	26.7	ug/kg wet	4	533	---	84	39-120%	---	---	

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Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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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 22H0086 - EPA 3546							**Soil**					
LCS (22H0086-BS2)			Prepared: 08/02/22 11:18		Analyzed: 08/02/22 16:15							
Hexachlorobenzene	448	5.32	10.7	ug/kg wet	4	533	---	84	45-122%	---	---	
Hexachlorobutadiene	406	13.3	26.7	ug/kg wet	4	533	---	76	32-123%	---	---	
Hexachlorocyclopentadiene	223	26.7	53.2	ug/kg wet	4	533	---	42	10-140%	---	---	
Hexachloroethane	396	13.3	26.7	ug/kg wet	4	533	---	74	28-120%	---	---	
2-Chloronaphthalene	447	5.32	10.7	ug/kg wet	4	533	---	84	41-120%	---	---	
1,2,4-Trichlorobenzene	419	13.3	26.7	ug/kg wet	4	533	---	78	34-120%	---	---	
4-Bromophenyl phenyl ether	448	13.3	26.7	ug/kg wet	4	533	---	84	46-124%	---	---	
4-Chlorophenyl phenyl ether	431	13.3	26.7	ug/kg wet	4	533	---	81	45-121%	---	---	
Aniline	243	26.7	53.2	ug/kg wet	4	533	---	46	10-120%	---	---	
4-Chloroaniline	263	13.3	26.7	ug/kg wet	4	533	---	49	17-120%	---	---	
2-Nitroaniline	466	107	213	ug/kg wet	4	533	---	87	44-127%	---	---	
3-Nitroaniline	404	107	213	ug/kg wet	4	533	---	76	33-120%	---	---	
4-Nitroaniline	451	107	213	ug/kg wet	4	533	---	85	51-125%	---	---	
2,4-Dinitrotoluene	458	53.2	107	ug/kg wet	4	533	---	86	48-126%	---	---	
2,6-Dinitrotoluene	458	53.2	107	ug/kg wet	4	533	---	86	46-124%	---	---	
Benzoic acid	797	668	668	ug/kg wet	4	1070	---	75	10-140%	---	---	
Benzyl alcohol	397	26.7	53.2	ug/kg wet	4	533	---	74	29-122%	---	---	
Isophorone	419	13.3	26.7	ug/kg wet	4	533	---	79	30-122%	---	---	
Azobenzene (1,2-DPH)	490	13.3	26.7	ug/kg wet	4	533	---	92	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	470	133	267	ug/kg wet	4	533	---	88	61-121%	---	---	
3,3'-Dichlorobenzidine	2450	107	213	ug/kg wet	4	1070	---	**230**	**22-121%**	---	---	Q-29
1,2-Dinitrobenzene	437	133	267	ug/kg wet	4	533	---	82	44-120%	---	---	
1,3-Dinitrobenzene	443	133	267	ug/kg wet	4	533	---	83	43-127%	---	---	
1,4-Dinitrobenzene	396	133	267	ug/kg wet	4	533	---	74	37-132%	---	---	
Pyridine	324	26.7	53.2	ug/kg wet	4	533	---	61	10-120%	---	---	
1,2-Dichlorobenzene	408	13.3	26.7	ug/kg wet	4	533	---	76	33-120%	---	---	
1,3-Dichlorobenzene	393	13.3	26.7	ug/kg wet	4	533	---	74	30-120%	---	---	
1,4-Dichlorobenzene	404	13.3	26.7	ug/kg wet	4	533	---	76	31-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 79 %*	*Limits: 37-122 %*	*Dilution: 4x*
2-Fluorobiphenyl (Surr)	*81 %*	*44-120 %*	*"*
Phenol-d6 (Surr)	*75 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*99 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*73 %*	*35-120 %*	*"*
2,4,6-Tribromophenol (Surr)	*87 %*	*39-132 %*	*"*

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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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0086 - EPA 3546							**Soil**					
Duplicate (22H0086-DUP3)			Prepared: 08/02/22 11:18		Analyzed: 08/03/22 11:17							
QC Source Sample: Non-SDG (A2G0778-01RE1)												
Acenaphthene	**63.4**	33.5	67.2	ug/kg dry	10	---	85.3	---	---	30	30%	J
Acenaphthylene	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
Anthracene	**98.8**	33.5	67.2	ug/kg dry	10	---	127	---	---	25	30%	
Benz(a)anthracene	**695**	33.5	67.2	ug/kg dry	10	---	898	---	---	26	30%	
Benzo(a)pyrene	**1200**	50.4	101	ug/kg dry	10	---	1530	---	---	24	30%	
Benzo(b)fluoranthene	**1340**	50.4	101	ug/kg dry	10	---	1680	---	---	22	30%	
Benzo(k)fluoranthene	**446**	50.4	101	ug/kg dry	10	---	616	---	---	**32**	**30%**	Q-04
Benzo(g,h,i)perylene	**962**	33.5	67.2	ug/kg dry	10	---	1160	---	---	19	30%	
Chrysene	**884**	33.5	67.2	ug/kg dry	10	---	1120	---	---	23	30%	
Dibenz(a,h)anthracene	**157**	33.5	67.2	ug/kg dry	10	---	201	---	---	25	30%	
Fluoranthene	**1240**	33.5	67.2	ug/kg dry	10	---	1550	---	---	22	30%	
Fluorene	ND	33.5	67.2	ug/kg dry	10	---	37.6	---	---	***	**30%**	Q-04
Indeno(1,2,3-cd)pyrene	**920**	33.5	67.2	ug/kg dry	10	---	1150	---	---	23	30%	
1-Methylnaphthalene	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
Naphthalene	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
Phenanthrene	**519**	33.5	67.2	ug/kg dry	10	---	651	---	---	22	30%	
Pyrene	**1360**	33.5	67.2	ug/kg dry	10	---	1630	---	---	18	30%	
Carbazole	**74.4**	50.4	101	ug/kg dry	10	---	91.1	---	---	20	30%	J
Dibenzofuran	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
2-Chlorophenol	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	839	1680	ug/kg dry	10	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	839	1680	ug/kg dry	10	---	ND	---	---	---	30%	
2-Methylphenol	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
2-Nitrophenol	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
4-Nitrophenol	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
Phenol	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	

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

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0086 - EPA 3546							**Soil**					
Duplicate (22H0086-DUP3)			Prepared: 08/02/22 11:18		Analyzed: 08/03/22 11:17							
QC Source Sample: Non-SDG (A2G0778-01RE1)												
2,3,4,6-Tetrachlorophenol	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
Nitrobenzene	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	504	1010	ug/kg dry	10	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
Diethylphthalate	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
Dimethylphthalate	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
2,2'-Oxybis(1-Chloropropane)	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
Hexachloroethane	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
Aniline	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
4-Chloroaniline	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
2-Nitroaniline	ND	672	1340	ug/kg dry	10	---	ND	---	---	---	30%	
3-Nitroaniline	ND	672	1340	ug/kg dry	10	---	ND	---	---	---	30%	
4-Nitroaniline	ND	672	1340	ug/kg dry	10	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
Benzoic acid	ND	4210	8390	ug/kg dry	10	---	ND	---	---	---	30%	

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

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0086 - EPA 3546							**Soil**					
Duplicate (22H0086-DUP3)			Prepared: 08/02/22 11:18 Analyzed: 08/03/22 11:17									
QC Source Sample: Non-SDG (A2G0778-01RE1)												
Benzyl alcohol	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
Isophorone	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	839	1680	ug/kg dry	10	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	672	1340	ug/kg dry	10	---	ND	---	---	---	30%	Q-52
1,2-Dinitrobenzene	ND	839	1680	ug/kg dry	10	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	839	1680	ug/kg dry	10	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	839	1680	ug/kg dry	10	---	ND	---	---	---	30%	
Pyridine	ND	168	335	ug/kg dry	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	83.9	168	ug/kg dry	10	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 51 %*	*Limits: 37-122 %*			*Dilution: 10x*					
2-Fluorobiphenyl (Surr)			*48 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*38 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*64 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*42 %*	*35-120 %*			*"*					
2,4,6-Tribromophenol (Surr)			*31 %*	*39-132 %*			*"*					S-03
Matrix Spike (22H0086-MS1)			Prepared: 08/02/22 11:18 Analyzed: 08/03/22 11:52									
QC Source Sample: Non-SDG (A2G0778-01RE1)												
EPA 8270E												
Acenaphthene	1700	34.6	69.5	ug/kg dry	10	555	85.3	**291**	**40-123%**	---	---	Q-01
Acenaphthylene	829	34.6	69.5	ug/kg dry	10	555	ND	**149**	**32-132%**	---	---	Q-01
Anthracene	2040	34.6	69.5	ug/kg dry	10	555	127	**345**	**47-123%**	---	---	Q-01
Benz(a)anthracene	9660	34.6	69.5	ug/kg dry	10	555	898	**1580**	**49-126%**	---	---	Q-03
Benzo(a)pyrene	15200	52.1	104	ug/kg dry	10	555	1530	**2470**	**45-129%**	---	---	Q-03
Benzo(b)fluoranthene	14300	52.1	104	ug/kg dry	10	555	1680	**2280**	**45-132%**	---	---	Q-03
Benzo(k)fluoranthene	4590	52.1	104	ug/kg dry	10	555	616	**715**	**47-132%**	---	---	Q-03
Benzo(g,h,i)perylene	12200	34.6	69.5	ug/kg dry	10	555	1160	**1980**	**43-134%**	---	---	Q-03
Chrysene	11700	34.6	69.5	ug/kg dry	10	555	1120	**1910**	**50-124%**	---	---	Q-03
Dibenz(a,h)anthracene	2270	34.6	69.5	ug/kg dry	10	555	201	**372**	**45-134%**	---	---	Q-01
Fluoranthene	13400	34.6	69.5	ug/kg dry	10	555	1550	**2130**	**50-127%**	---	---	Q-03

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

Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

Project: **Gasco Data Gaps**
Project Number: **000029-02.78(03.003D)**
Project Manager: **Ben Uhl**

Report ID:
A2G0645 - 08 15 22 1808

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 22H0086 - EPA 3546							**Soil**					
Matrix Spike (22H0086-MS1)			Prepared: 08/02/22 11:18		Analyzed: 08/03/22 11:52							
QC Source Sample: Non-SDG (A2G0778-01RE1)												
Fluorene	934	34.6	69.5	ug/kg dry	10	555	37.6	**161**	**43-125%**	---	---	Q-01
Indeno(1,2,3-cd)pyrene	10900	34.6	69.5	ug/kg dry	10	555	1150	**1760**	**45-133%**	---	---	Q-03
1-Methylnaphthalene	567	69.5	139	ug/kg dry	10	555	ND	102	40-120%	---	---	
2-Methylnaphthalene	644	69.5	139	ug/kg dry	10	555	ND	116	38-122%	---	---	
Naphthalene	982	69.5	139	ug/kg dry	10	555	ND	**177**	**35-123%**	---	---	Q-01
Phenanthrene	8020	34.6	69.5	ug/kg dry	10	555	651	**1330**	**50-121%**	---	---	Q-03
Pyrene	15100	34.6	69.5	ug/kg dry	10	555	1630	**2430**	**47-127%**	---	---	Q-03
Carbazole	1370	52.1	104	ug/kg dry	10	555	91.1	**230**	**50-123%**	---	---	Q-01
Dibenzofuran	612	34.6	69.5	ug/kg dry	10	555	ND	110	44-120%	---	---	
2-Chlorophenol	395	174	346	ug/kg dry	10	555	ND	71	34-121%	---	---	
4-Chloro-3-methylphenol	ND	346	695	ug/kg dry	10	555	ND		**45-122%**	---	---	Q-01
2,4-Dichlorophenol	342	174	346	ug/kg dry	10	555	ND	62	40-122%	---	---	J
2,4-Dimethylphenol	325	174	346	ug/kg dry	10	555	ND	59	30-127%	---	---	J
2,4-Dinitrophenol	ND	867	1740	ug/kg dry	10	555	ND		**10-137%**	---	---	Q-11, Q-31
4,6-Dinitro-2-methylphenol	ND	867	1740	ug/kg dry	10	555	ND		**29-132%**	---	---	Q-11
2-Methylphenol	383	86.7	174	ug/kg dry	10	555	ND	69	32-122%	---	---	
3+4-Methylphenol(s)	362	86.7	174	ug/kg dry	10	555	ND	65	34-120%	---	---	
2-Nitrophenol	348	346	695	ug/kg dry	10	555	ND	63	36-123%	---	---	J
4-Nitrophenol	ND	346	695	ug/kg dry	10	555	ND		**30-132%**	---	---	Q-01
Pentachlorophenol (PCP)	428	346	695	ug/kg dry	10	555	ND	77	25-133%	---	---	J
Phenol	364	69.5	139	ug/kg dry	10	555	ND	65	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	392	174	346	ug/kg dry	10	555	ND	71	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	365	174	346	ug/kg dry	10	555	ND	66	40-120%	---	---	
2,4,5-Trichlorophenol	425	174	346	ug/kg dry	10	555	ND	76	41-124%	---	---	
Nitrobenzene	427	346	695	ug/kg dry	10	555	ND	77	34-122%	---	---	J
2,4,6-Trichlorophenol	383	174	346	ug/kg dry	10	555	ND	69	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	ND	521	1040	ug/kg dry	10	555	ND		**51-133%**	---	---	Q-01
Butyl benzyl phthalate	546	346	695	ug/kg dry	10	555	ND	98	48-132%	---	---	J
Diethylphthalate	427	346	695	ug/kg dry	10	555	ND	77	50-124%	---	---	J
Dimethylphthalate	427	346	695	ug/kg dry	10	555	ND	77	48-124%	---	---	J
Di-n-butylphthalate	460	346	695	ug/kg dry	10	555	ND	83	51-128%	---	---	J
Di-n-octyl phthalate	651	346	695	ug/kg dry	10	555	ND	117	45-140%	---	---	J
N-Nitrosodimethylamine	346	86.7	174	ug/kg dry	10	555	ND	62	23-120%	---	---	

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6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0086 - EPA 3546							**Soil**					
Matrix Spike (22H0086-MS1)				Prepared: 08/02/22 11:18		Analyzed: 08/03/22 11:52						
QC Source Sample: Non-SDG (A2G0778-01RE1)												
N-Nitroso-di-n-propylamine	452	86.7	174	ug/kg dry	10	555	ND	81	36-120%	---	---	
N-Nitrosodiphenylamine	502	86.7	174	ug/kg dry	10	555	ND	90	38-127%	---	---	
Bis(2-Chloroethoxy) methane	425	86.7	174	ug/kg dry	10	555	ND	77	36-121%	---	---	
Bis(2-Chloroethyl) ether	344	86.7	174	ug/kg dry	10	555	ND	62	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	472	86.7	174	ug/kg dry	10	555	ND	85	39-120%	---	---	
Hexachlorobenzene	450	34.6	69.5	ug/kg dry	10	555	ND	81	45-122%	---	---	
Hexachlorobutadiene	405	86.7	174	ug/kg dry	10	555	ND	73	32-123%	---	---	
Hexachlorocyclopentadiene	328	174	346	ug/kg dry	10	555	ND	59	10-140%	---	---	J
Hexachloroethane	390	86.7	174	ug/kg dry	10	555	ND	70	28-120%	---	---	
2-Chloronaphthalene	431	34.6	69.5	ug/kg dry	10	555	ND	78	41-120%	---	---	
1,2,4-Trichlorobenzene	425	86.7	174	ug/kg dry	10	555	ND	77	34-120%	---	---	
4-Bromophenyl phenyl ether	436	86.7	174	ug/kg dry	10	555	ND	78	46-124%	---	---	
4-Chlorophenyl phenyl ether	440	86.7	174	ug/kg dry	10	555	ND	79	45-121%	---	---	
Aniline	195	174	346	ug/kg dry	10	555	ND	35	10-120%	---	---	J
4-Chloroaniline	140	86.7	174	ug/kg dry	10	555	ND	25	17-120%	---	---	J
2-Nitroaniline	ND	695	1390	ug/kg dry	10	555	ND		**44-127%**	---	---	Q-11
3-Nitroaniline	ND	695	1390	ug/kg dry	10	555	ND		**33-120%**	---	---	Q-11
4-Nitroaniline	ND	695	1390	ug/kg dry	10	555	ND		**51-125%**	---	---	Q-11
2,4-Dinitrotoluene	372	346	695	ug/kg dry	10	555	ND	67	48-126%	---	---	J
2,6-Dinitrotoluene	373	346	695	ug/kg dry	10	555	ND	67	46-124%	---	---	J
Benzoic acid	ND	4350	8670	ug/kg dry	10	1110	ND		**10-140%**	---	---	Q-11
Benzyl alcohol	346	174	346	ug/kg dry	10	555	ND	62	29-122%	---	---	
Isophorone	389	86.7	174	ug/kg dry	10	555	ND	70	30-122%	---	---	
Azobenzene (1,2-DPH)	496	86.7	174	ug/kg dry	10	555	ND	89	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	ND	867	1740	ug/kg dry	10	555	ND		**61-121%**	---	---	Q-11
3,3'-Dichlorobenzidine	903	695	1390	ug/kg dry	10	1110	ND	81	22-121%	---	---	J
1,2-Dinitrobenzene	ND	867	1740	ug/kg dry	10	555	ND		**44-120%**	---	---	Q-11
1,3-Dinitrobenzene	ND	867	1740	ug/kg dry	10	555	ND		**43-127%**	---	---	Q-11
1,4-Dinitrobenzene	ND	867	1740	ug/kg dry	10	555	ND		**37-132%**	---	---	Q-11
Pyridine	ND	174	346	ug/kg dry	10	555	ND		**10-120%**	---	---	Q-01
1,2-Dichlorobenzene	406	86.7	174	ug/kg dry	10	555	ND	73	33-120%	---	---	
1,3-Dichlorobenzene	381	86.7	174	ug/kg dry	10	555	ND	69	30-120%	---	---	
1,4-Dichlorobenzene	406	86.7	174	ug/kg dry	10	555	ND	73	31-120%	---	---	

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ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Gasco Data Gaps**	
6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22H0086 - EPA 3546												**Soil**
Matrix Spike (22H0086-MS1)					Prepared: 08/02/22 11:18		Analyzed: 08/03/22 11:52					
QC Source Sample: Non-SDG (A2G0778-01RE1)												
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 73 %*		*Limits: 37-122 %*		*Dilution: 10x*					
2-Fluorobiphenyl (Surr)			*71 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*74 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*88 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*59 %*		*35-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*67 %*		*39-132 %*		*"*					

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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 22G1023 - EPA 3051A							**Soil**					
Blank (22G1023-BLK1)			Prepared: 07/29/22 13:12 Analyzed: 07/29/22 21:14									
EPA 6020B												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	0.0385	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
LCS (22G1023-BS1)			Prepared: 07/29/22 13:12 Analyzed: 07/29/22 21:24									
EPA 6020B												
Arsenic	47.8	0.500	1.00	mg/kg wet	10	50.0	---	96	80-120%	---	---	
Barium	49.0	0.500	1.00	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Cadmium	49.5	0.100	0.200	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Chromium	48.8	0.500	1.00	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Lead	49.2	0.100	0.200	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Mercury	0.960	0.0400	0.0800	mg/kg wet	10	1.00	---	96	80-120%	---	---	
Selenium	23.8	0.500	1.00	mg/kg wet	10	25.0	---	95	80-120%	---	---	
Silver	24.7	0.100	0.200	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Duplicate (22G1023-DUP1)			Prepared: 07/29/22 13:12 Analyzed: 07/29/22 21:49									
QC Source Sample: Non-SDG (A2G0596-04)												
Arsenic	**5.49**	0.556	1.11	mg/kg dry	10	---	5.41	---	---	1	20%	PRO
Barium	**205**	0.556	1.11	mg/kg dry	10	---	210	---	---	3	20%	PRO
Cadmium	**0.355**	0.111	0.222	mg/kg dry	10	---	0.391	---	---	9	20%	PRO
Chromium	**37.5**	0.556	1.11	mg/kg dry	10	---	41.3	---	---	10	20%	PRO
Lead	**326**	0.111	0.222	mg/kg dry	10	---	321	---	---	2	20%	PRO
Mercury	**0.0904**	0.0444	0.0889	mg/kg dry	10	---	0.0863	---	---	5	20%	PRO
Selenium	ND	0.556	1.11	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Silver	**0.116**	0.111	0.222	mg/kg dry	10	---	0.115	---	---	0.6	20%	PRO,J
Matrix Spike (22G1023-MS1)			Prepared: 07/29/22 13:12 Analyzed: 07/29/22 21:53									

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6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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 22G1023 - EPA 3051A							**Soil**					
Matrix Spike (22G1023-MS1)			Prepared: 07/29/22 13:12		Analyzed: 07/29/22 21:53							
QC Source Sample: Non-SDG (A2G0596-04)												
EPA 6020B												
Arsenic	53.3	0.512	1.02	mg/kg dry	10	51.2	5.41	94	75-125%	---	---	PRO
Barium	252	0.512	1.02	mg/kg dry	10	51.2	210	82	75-125%	---	---	PRO
Cadmium	50.9	0.102	0.205	mg/kg dry	10	51.2	0.391	99	75-125%	---	---	PRO
Chromium	80.0	0.512	1.02	mg/kg dry	10	51.2	41.3	76	75-125%	---	---	PRO
Lead	373	0.102	0.205	mg/kg dry	10	51.2	321	101	75-125%	---	---	PRO
Mercury	1.00	0.0410	0.0819	mg/kg dry	10	1.02	0.0863	89	75-125%	---	---	PRO
Selenium	23.3	0.512	1.02	mg/kg dry	10	25.6	ND	91	75-125%	---	---	PRO
Silver	24.9	0.102	0.205	mg/kg dry	10	25.6	0.115	97	75-125%	---	---	PRO

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22G0830 - DI Leach							**Soil**					
Blank (22G0830-BLK1)			Prepared: 07/26/22 08:30		Analyzed: 07/26/22 16:49							
EPA 9013M/9012												
Total Cyanide	ND	0.100	0.100	mg/kg wet	1	---	---	---	---	---	---	
LCS (22G0830-BS1)			Prepared: 07/26/22 08:30		Analyzed: 07/26/22 16:51							
EPA 9013M/9012												
Total Cyanide	4.24	0.100	0.100	mg/kg wet	1	4.00	---	106	76-120%	---	---	
Duplicate (22G0830-DUP2)			Prepared: 07/26/22 08:30		Analyzed: 07/26/22 17:17							
QC Source Sample: DG-IDW-072122-01 (A2G0645-01RE1)												
EPA 9013M/9012												
Total Cyanide	**28.2**	2.59	2.59	mg/kg dry	20	---	31.2	---	---	10	20%	Q-16
Matrix Spike (22G0830-MS2)			Prepared: 07/26/22 08:30		Analyzed: 07/26/22 17:19							
QC Source Sample: DG-IDW-072122-01 (A2G0645-01RE1)												
EPA 9013M/9012												
Total Cyanide	35.3	2.59	2.59	mg/kg dry	20	5.18	31.2	79	76-120%	---	---	Q-11, Q-16

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22H0107 - DI Leach							**Soil**					
Blank (22H0107-BLK2)			Prepared: 08/02/22 14:58		Analyzed: 08/03/22 16:15							
EPA 9013M/9012												
Total Cyanide	ND	2.00	2.00	mg/kg wet	1	---	---	---	---	---	---	Q-16
LCS (22H0107-BS2)			Prepared: 08/02/22 14:58		Analyzed: 08/03/22 16:17							
EPA 9013M/9012												
Total Cyanide	5.45	2.00	2.00	mg/kg wet	1	4.00	---	**136**	**76-120%**	---	---	Q-16, Q-29
Duplicate (22H0107-DUP1)			Prepared: 08/02/22 14:58		Analyzed: 08/03/22 16:21							
QC Source Sample: DG-IDW-072222-DB559 (A2G0645-04RE4)												
EPA 9013M/9012												
Total Cyanide	ND	2.49	2.49	mg/kg dry	1	---	ND	---	---	---	20%	
Matrix Spike (22H0107-MS1)			Prepared: 08/02/22 14:58		Analyzed: 08/03/22 16:23							
QC Source Sample: DG-IDW-072222-DB559 (A2G0645-04RE4)												
EPA 9013M/9012												
Total Cyanide	5.14	2.49	2.49	mg/kg dry	1	4.98	ND	103	76-120%	---	---	Q-29

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QUALITY CONTROL (QC) SAMPLE RESULTS

Solid and Moisture Determinations

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22G0803 - Total Solids (SM2540G/PSEP)							**Soil**					
Duplicate (22G0803-DUP1)			Prepared: 07/25/22 15:35		Analyzed: 07/25/22 15:35							
QC Source Sample: Non-SDG (A2G0478-01)												
Total Solids	**41.0**	1.00	1.00	%	1	---	42.1	---	---	2.61	10%	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22G0760 - DI Leach							**Soil**					
Duplicate (22G0760-DUP1)			Prepared: 07/22/22 17:27		Analyzed: 07/22/22 18:54							
QC Source Sample: DG-IDW-072222-02 (A2G0645-02)												
EPA 9045D												
Soil/Solid pH (measured in H2O)	**6.5**			pH Units	1	---	6.6	---	---	1	5%	pH_S
pH Temperature (deg C)	**20.9**			pH Units	1	---	21.0	---	---	0.5	30%	pH_S
Reference (22G0760-SRM1)			Prepared: 07/22/22 17:27		Analyzed: 07/22/22 18:40							
EPA 9045D												
Soil/Solid pH (measured in H2O)	5.9			pH Units	1	6.00		99	98-102%	---	---	
pH Temperature (deg C)	20.8			pH Units	1	20.0		104	50-200%	---	---	
Reference (22G0760-SRM2)			Prepared: 07/22/22 17:27		Analyzed: 07/22/22 19:02							
EPA 9045D												
Soil/Solid pH (measured in H2O)	8.0			pH Units	1	8.00		100	99-101%	---	---	
pH Temperature (deg C)	20.9			pH Units	1	20.0		104	50-200%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22G0903 - Flashpoint								**Water**				
LCS (22G0903-BS1)			Prepared: 07/27/22 11:00		Analyzed: 07/27/22 11:05							
EPA 1010M												
Flash Point (Ignitability)	141			degF	1	145	---	97	95-105%	---	---	
Duplicate (22G0903-DUP1)			Prepared: 07/27/22 11:00		Analyzed: 07/27/22 12:10							
QC Source Sample: Non-SDG (A2G0594-01)												
Flash Point (Ignitability)	**99.0**	70.0	70.0	degF	1	---	105	---	---	6	10%	
Duplicate (22G0903-DUP2)			Prepared: 07/27/22 11:00		Analyzed: 07/27/22 13:33							
QC Source Sample: Non-SDG (A2G0601-01)												
Flash Point (Ignitability)	**127**	70.0	70.0	degF	1	---	129	---	---	2	10%	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22G0973 - Paint Filter							**Sediment**					
Duplicate (22G0973-DUP1)			Prepared: 07/28/22 15:45		Analyzed: 07/28/22 16:34							
QC Source Sample: Non-SDG (A2G0778-01)												
Free Liquid	ND	0.00	0.00	mL	1	---	ND	---	---	---	20%	

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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: 22H0141							
A2G0645-01RE1	Soil	NWTPH-Dx	07/21/22 14:30	08/03/22 12:46	10.16g/5mL	10g/5mL	0.98
A2G0645-02RE1	Soil	NWTPH-Dx	07/22/22 10:30	08/03/22 12:46	10.27g/5mL	10g/5mL	0.97
A2G0645-03RE1	Soil	NWTPH-Dx	07/22/22 10:50	08/03/22 12:46	10.62g/5mL	10g/5mL	0.94
A2G0645-04RE2	Soil	NWTPH-Dx	07/22/22 11:30	08/03/22 12:46	10.77g/5mL	10g/5mL	0.93

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: 22H0024							
A2G0645-01	Soil	NWTPH-Gx (MS)	07/21/22 14:30	07/21/22 14:30	5.89g/5mL	5g/5mL	0.85
A2G0645-02	Soil	NWTPH-Gx (MS)	07/22/22 10:30	07/22/22 10:30	7.11g/5mL	5g/5mL	0.70
A2G0645-03	Soil	NWTPH-Gx (MS)	07/22/22 10:50	07/22/22 10:50	5.96g/5mL	5g/5mL	0.84
Batch: 22H0080							
A2G0645-04RE1	Soil	NWTPH-Gx (MS)	07/22/22 11:30	07/22/22 11:30	6.91g/5mL	5g/5mL	0.72

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: 22H0024							
A2G0645-01	Soil	5035A/8260D	07/21/22 14:30	07/21/22 14:30	5.89g/5mL	5g/5mL	0.85
A2G0645-02	Soil	5035A/8260D	07/22/22 10:30	07/22/22 10:30	7.11g/5mL	5g/5mL	0.70
A2G0645-03	Soil	5035A/8260D	07/22/22 10:50	07/22/22 10:50	5.96g/5mL	5g/5mL	0.84
Batch: 22H0080							
A2G0645-03RE1	Soil	5035A/8260D	07/22/22 10:50	07/22/22 10:50	5.96g/5mL	5g/5mL	0.84
A2G0645-04RE1	Soil	5035A/8260D	07/22/22 11:30	07/22/22 11:30	6.91g/5mL	5g/5mL	0.72

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: 22H0086							
A2G0645-01	Soil	EPA 8270E	07/21/22 14:30	08/02/22 11:18	15.11g/5mL	15g/2mL	2.48
A2G0645-02	Soil	EPA 8270E	07/22/22 10:30	08/02/22 11:18	15.18g/5mL	15g/2mL	2.47

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SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A2G0645-03	Soil	EPA 8270E	07/22/22 10:50	08/02/22 11:18	15.32g/5mL	15g/2mL	2.45
A2G0645-04	Soil	EPA 8270E	07/22/22 11:30	08/02/22 11:18	15.69g/5mL	15g/2mL	2.39

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: 22G1023							
A2G0645-01	Soil	EPA 6020B	07/21/22 14:30	07/29/22 13:12	0.519g/50mL	0.5g/50mL	0.96
A2G0645-02	Soil	EPA 6020B	07/22/22 10:30	07/29/22 13:12	0.459g/50mL	0.5g/50mL	1.09
A2G0645-03	Soil	EPA 6020B	07/22/22 10:50	07/29/22 13:12	0.512g/50mL	0.5g/50mL	0.98
A2G0645-04	Soil	EPA 6020B	07/22/22 11:30	07/29/22 13:12	0.471g/50mL	0.5g/50mL	1.06

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

Prep: DI Leach

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22G0830							
A2G0645-01RE1	Soil	EPA 9013M/9012	07/21/22 14:30	07/26/22 08:30	2.5025g/50mL	2.5g/50mL	1.00
A2G0645-02RE1	Soil	EPA 9013M/9012	07/22/22 10:30	07/26/22 08:30	2.5075g/50mL	2.5g/50mL	1.00
A2G0645-03RE1	Soil	EPA 9013M/9012	07/22/22 10:50	07/26/22 08:30	2.51g/50mL	2.5g/50mL	1.00
Batch: 22H0107							
A2G0645-04RE4	Soil	EPA 9013M/9012	07/22/22 11:30	08/02/22 14:58	2.5091g/50mL	6g/6mL	19.90

Solid and Moisture Determinations

Prep: Total Solids (SM2540G/PSEP)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22G0803							
A2G0645-01	Soil	SM 2540 G	07/21/22 14:30	07/25/22 15:35			NA
A2G0645-02	Soil	SM 2540 G	07/22/22 10:30	07/25/22 15:35			NA
A2G0645-03	Soil	SM 2540 G	07/22/22 10:50	07/25/22 15:35			NA
A2G0645-04	Soil	SM 2540 G	07/22/22 11:30	07/25/22 15:35			NA

Conventional Chemistry Parameters

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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

Anchor QEA, LLC	Project: Gasco Data Gaps	
6720 SW Macadam Ave. Suite 125	Project Number: 000029-02.78(03.003D)	Report ID:
Portland, OR 97219	Project Manager: Ben Uhl	A2G0645 - 08 15 22 1808

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Prep: DI Leach

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22G0760							
A2G0645-01	Soil	EPA 9045D	07/21/22 14:30	07/22/22 17:27	20.0321g/20mL	20g/20mL	NA
A2G0645-02	Soil	EPA 9045D	07/22/22 10:30	07/22/22 17:27	20.5072g/20mL	20g/20mL	NA
A2G0645-03	Soil	EPA 9045D	07/22/22 10:50	07/22/22 17:27	20.3605g/20mL	20g/20mL	NA
A2G0645-04	Soil	EPA 9045D	07/22/22 11:30	07/22/22 17:27	20.3062g/20mL	20g/20mL	NA

Prep: Flashpoint

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22G0903							
A2G0645-01	Soil	EPA 1010M	07/21/22 14:30	07/27/22 11:00			NA
A2G0645-02	Soil	EPA 1010M	07/22/22 10:30	07/27/22 11:00			NA
A2G0645-03	Soil	EPA 1010M	07/22/22 10:50	07/27/22 11:00			NA
A2G0645-04	Soil	EPA 1010M	07/22/22 11:30	07/27/22 11:00			NA

Prep: Paint Filter

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22G0973							
A2G0645-01	Soil	EPA 9095B	07/21/22 14:30	07/28/22 15:45			NA
A2G0645-02	Soil	EPA 9095B	07/22/22 10:30	07/28/22 15:45			NA
A2G0645-03	Soil	EPA 9095B	07/22/22 10:50	07/28/22 15:45			NA
A2G0645-04	Soil	EPA 9095B	07/22/22 11:30	07/28/22 15:45			NA

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ANALYTICAL REPORT

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6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

QUALIFIER DEFINITIONS

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

Apex Laboratories

F-11	The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
F-17	No fuel pattern detected. The Diesel result represents carbon range C12 to C24, and the Oil result represents >C24 to C40.
ICV-01	Estimated Result. Initial Calibration Verification (ICV) failed high. There is no effect on non-detect results.
ICV-02	Estimated Result. Initial Calibration Verification (ICV) failed low.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-05	Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
pH_S	Method recommends preparation 'as soon as possible'. See Sample Preparation Information section of report for details. Consult regulator or permit manager to determine the usability of data for intended purpose.
PRO	Sample has undergone sample processing prior to extraction and analysis.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-11	Spike recovery cannot be accurately quantified due to sample dilution required for high analyte concentration and/or matrix interference.
Q-16	Reanalysis of an original Batch QC sample.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
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 +2%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +3%. 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 +5%. The results are reported as Estimated Values.

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Q-54c	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +8%. 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 -2%. The results are reported as Estimated Values.
Q-54e	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -5%. The results are reported as Estimated Values.
Q-54f	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -6%. 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.
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-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
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'.

QC Source:

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

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

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

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

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

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

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

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

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

Soil and Sediment Samples:

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

Sampling and Preservation Notes:

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

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

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

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

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Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

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:

Apex Laboratories

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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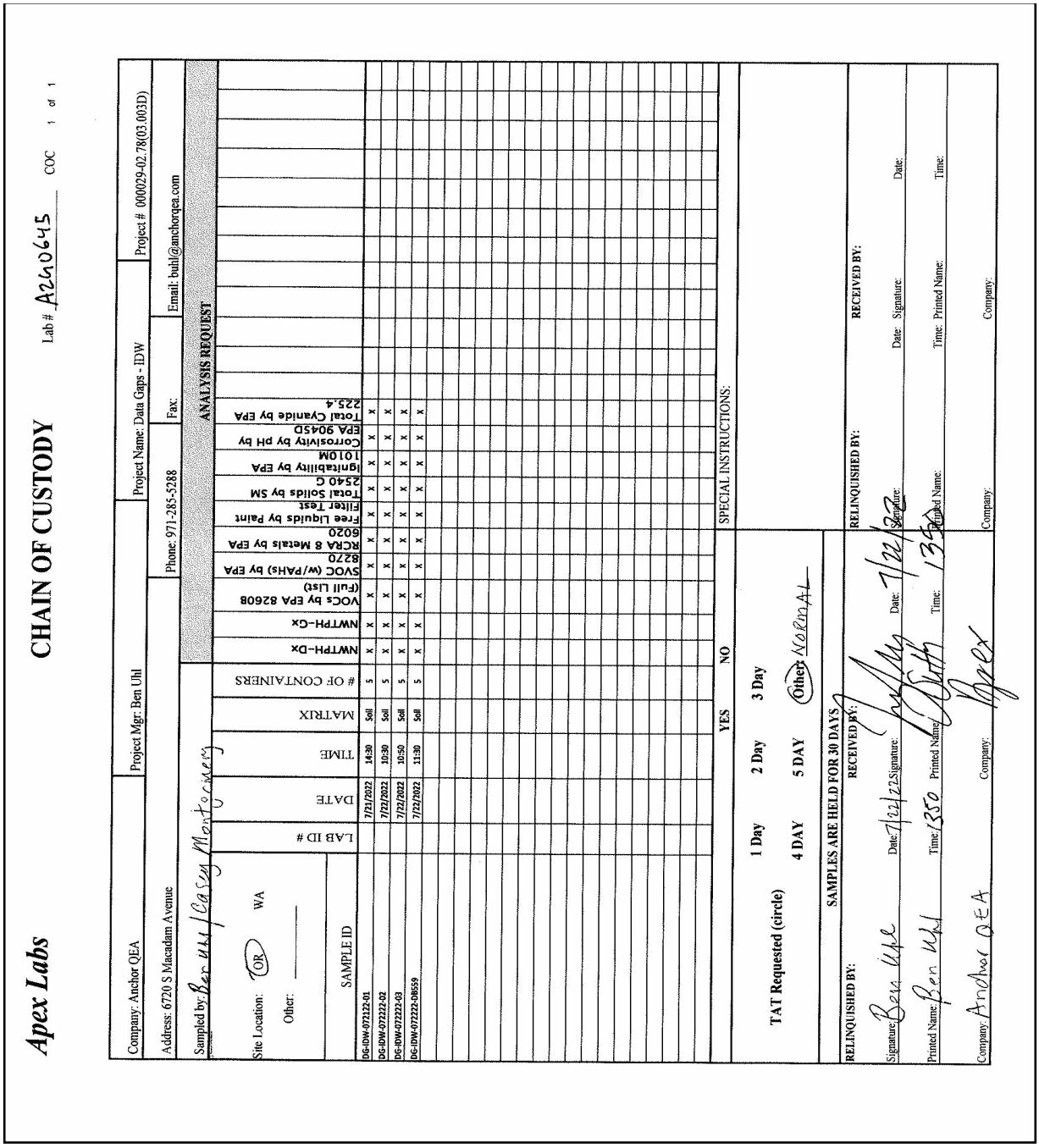

Apex Labs

CHAIN OF CUSTODY

Lab # A2G0645 COC 1 of 1

Company: Anchor QEA | Project Mgr: Ben Uhl | Project Name: Data Gaps - IDW | Project # 000029-02.78(03.003D)

Address: 6720 S Macadam Avenue | Phone: 971-285-5288 | Fax: | Email: buhl@anchorqea.com

Sampled by: Ben Uhl / Casey Montgomery

Site Location: (OR) WA

Other: _____

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-Dx	NWTPH-Gx	VOCs by EPA 8260B (Full List)	SVOC (w/PAHs) by EPA 8270	RCRA 8 Metals by EPA 6020	Free Liquids by Paint Filter Test	Total Solids by SM 2540 G	Ignitability by EPA 1010M	Corrosivity by pH by EPA 9045D	Total Cyanide by EPA 335.4
DS-IDW-072122-01		7/21/2022	14:30	Soil	5	X	X	X	X	X	X	X	X	X	X
DS-IDW-072222-02		7/22/2022	10:30	Soil	5	X	X	X	X	X	X	X	X	X	X
DS-IDW-072222-03		7/22/2022	10:50	Soil	5	X	X	X	X	X	X	X	X	X	X
DS-IDW-072222-DB559		7/22/2022	11:30	Soil	5	X	X	X	X	X	X	X	X	X	X

SPECIAL INSTRUCTIONS: YES NO

TAT Requested (circle)

1 Day 2 Day 3 Day

4 DAY 5 DAY Other Normal

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:

Signature: Ben Uhl Date: 7/22/22 Time: 1350

Printed Name: Ben Uhl Company: Anchor QEA

RECEIVED BY:

Signature: Date: 7/22/22 Time: 1350

Printed Name: Company: Apex

RELINQUISHED BY:

Signature: Date: Time:

Printed Name: Company:

RECEIVED BY:

Signature: Date: Time:

Printed Name: Company:

Apex Laboratories

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6720 SW Macadam Ave. Suite 125	Project Number: **000029-02.78(03.003D)**	**Report ID:**
Portland, OR 97219	Project Manager: **Ben Uhl**	**A2G0645 - 08 15 22 1808**

APEX LABS COOLER RECEIPT FORM

Client: Anchor QEA Element WO#: A2 G0645

Project/Project #: Data Gaps - IDW 000029-02.78(03.003D)

Delivery Info:

Date/time received: 7/22/22 @ ~~7/22/22~~ 1350 By: ~~1350~~ JS 7/22/22

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy ___ SDS___ Other_____

Cooler Inspection Date/time inspected: 7/22/22 @ 1351 By: JS

Chain of Custody included? Yes X No _____ Custody seals? Yes_____ No X

Signed/dated by client? Yes X No _____

Signed/dated by Apex? Yes X No _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.3						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition:	good						

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: 7-22-22 @ 1406 By: DSS

All samples intact? Yes X No ___ Comments:_____

Bottle labels/COCs agree? Yes X No ___ Comments: No time on 1/3 8oz jars for DG-IDW-072222-PB559.

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:	Witness:	Cooler Inspected by:
DSS	KAM	DSS

Apex Laboratories

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Attachment D
Voluntary Agreement No. WMCVC-NWR-94-13, August 8, 1994, as Amended by the First Addendum, Dated July 19, 2006, and the Second Addendum, Dated October 11, 2016

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)

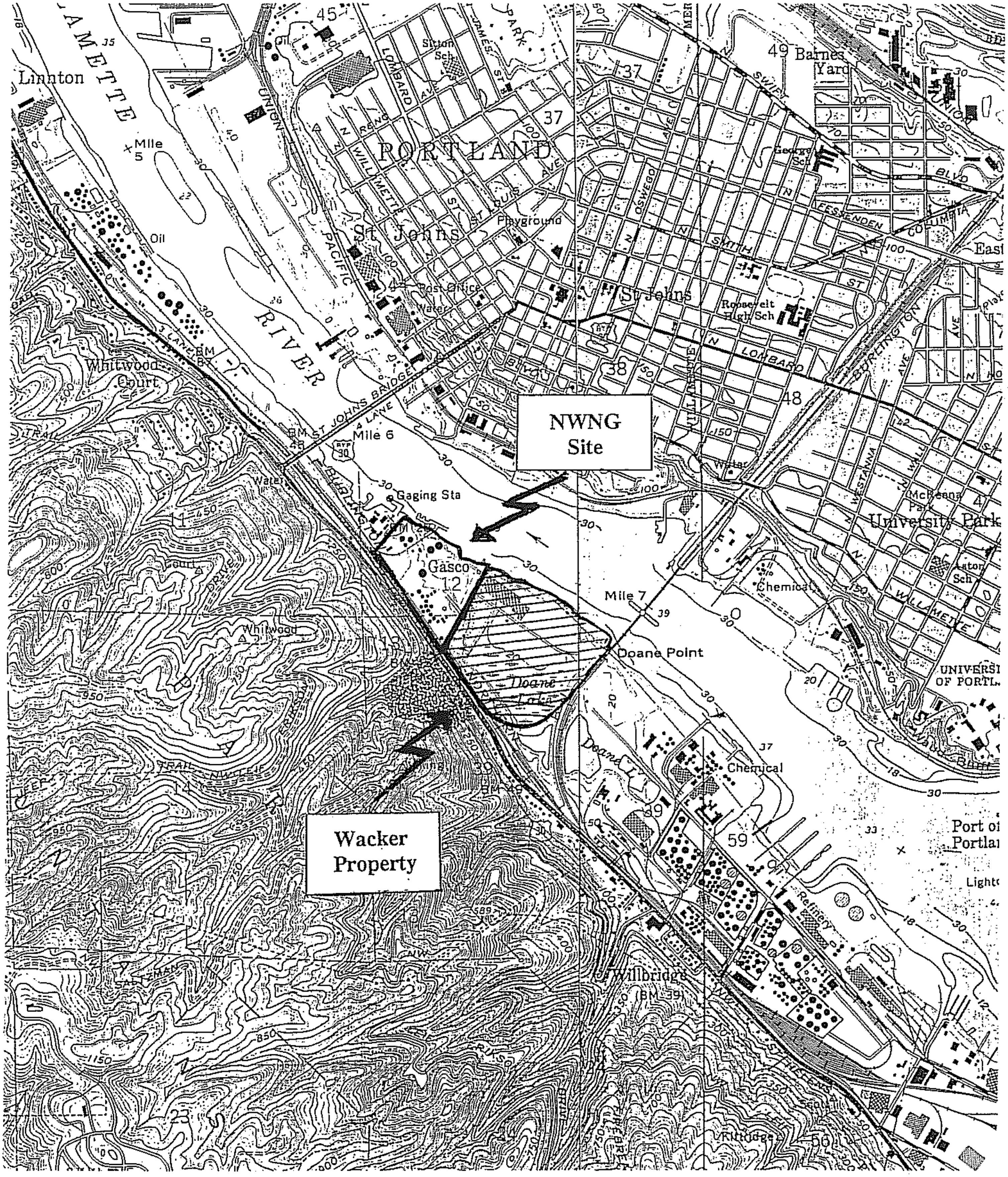
STATE OF OREGON
DEPARTMENT OF ENVIRONMENTAL QUALITY

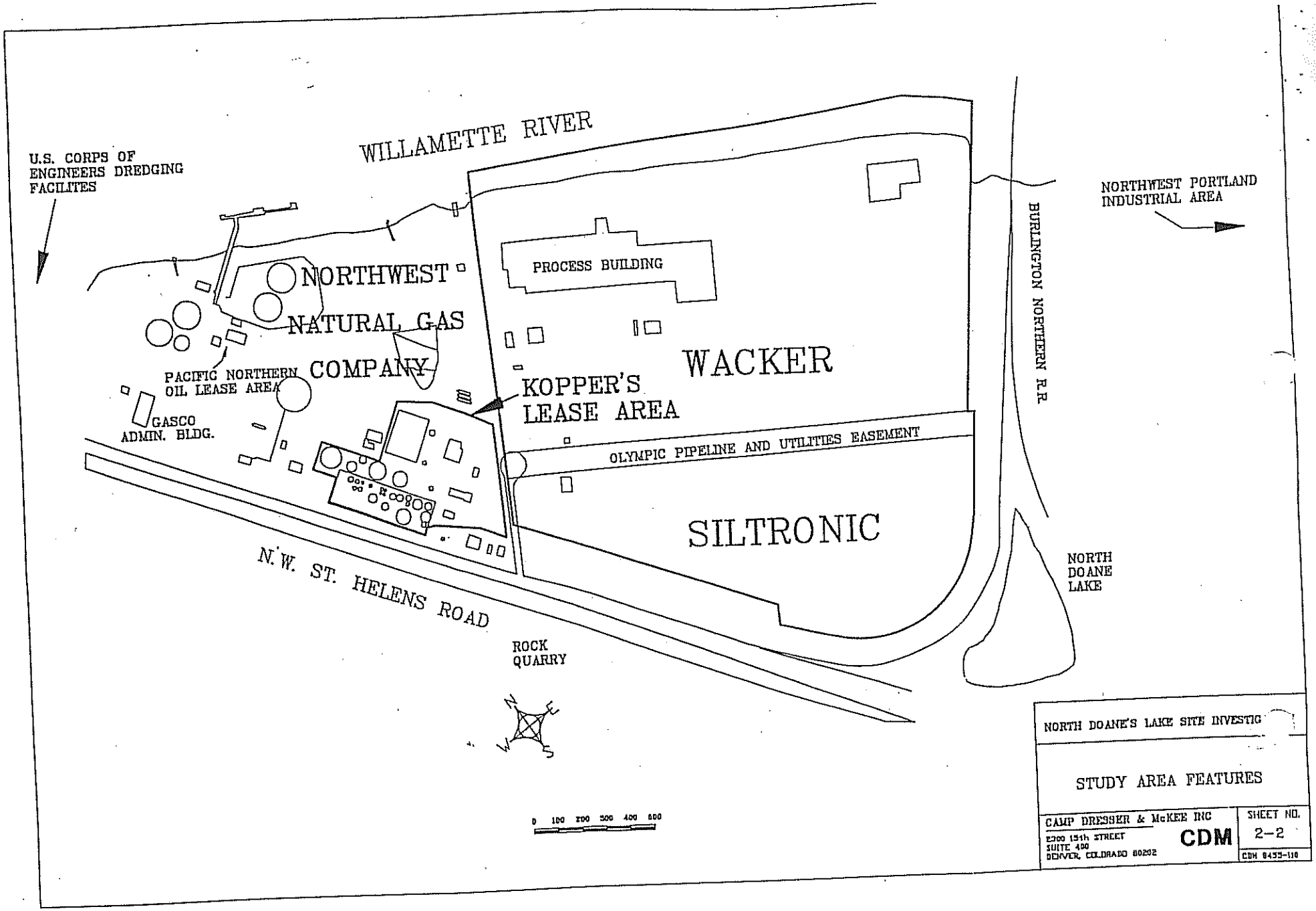
By: _____ Date: AUG 8 1994
(Name)

_____
(Title)

ATTACHMENT A

VICINITY AND SITE MAPS


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


WILLAMETTE RIVER
U.S. CORPS OF ENGINEERS DREDGING FACILITES
NORTHWEST PORTLAND INDUSTRIAL AREA
BURLINGTON NORTHERN R.R.
PROCESS BUILDING
NORTHWEST NATURAL GAS COMPANY
WACKER
PACIFIC NORTHERN OIL LEASE AREA
KOPPER'S LEASE AREA
GASCO ADMIN. BLDG.
OLYMPIC PIPELINE AND UTILITIES EASEMENT
SILTRONIC
NORTH DOANE LAKE
N.W. ST. HELENS ROAD
ROCK QUARRY
N
E
W
S
0 100 200 300 400 600
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

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:

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.

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.

RECEIVED

AUG 08 2006

Schwabe, Williamson & Wyatt

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. DEQ Review and Approval

(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 (Signature) Date: 1-13-06

Sandra K. Hart
(Name)

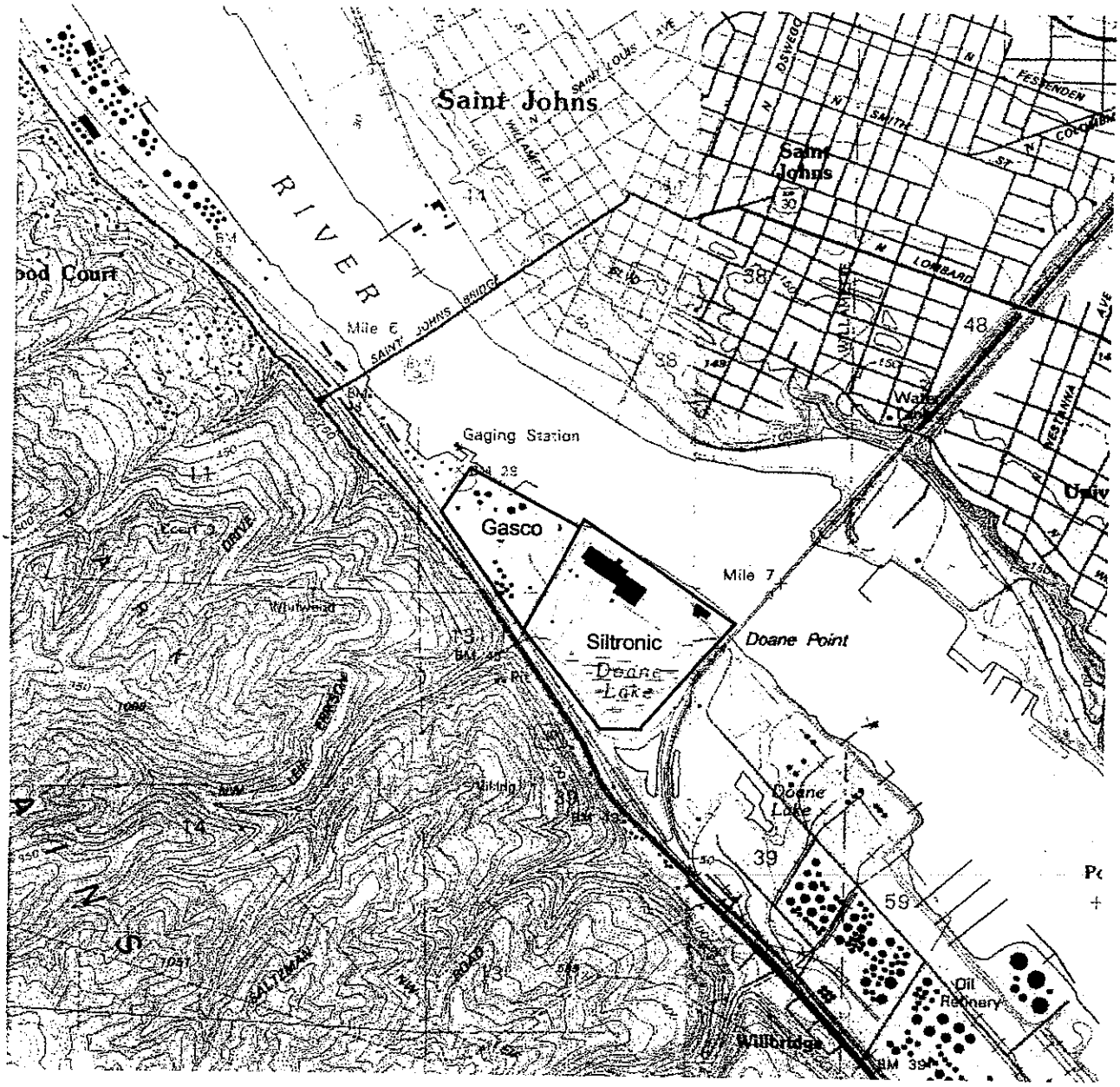
Director Risk Environment & Land
(Title)

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

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

Dick Pedersen
(Name)

Regional Admin. Stator
(Title)



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

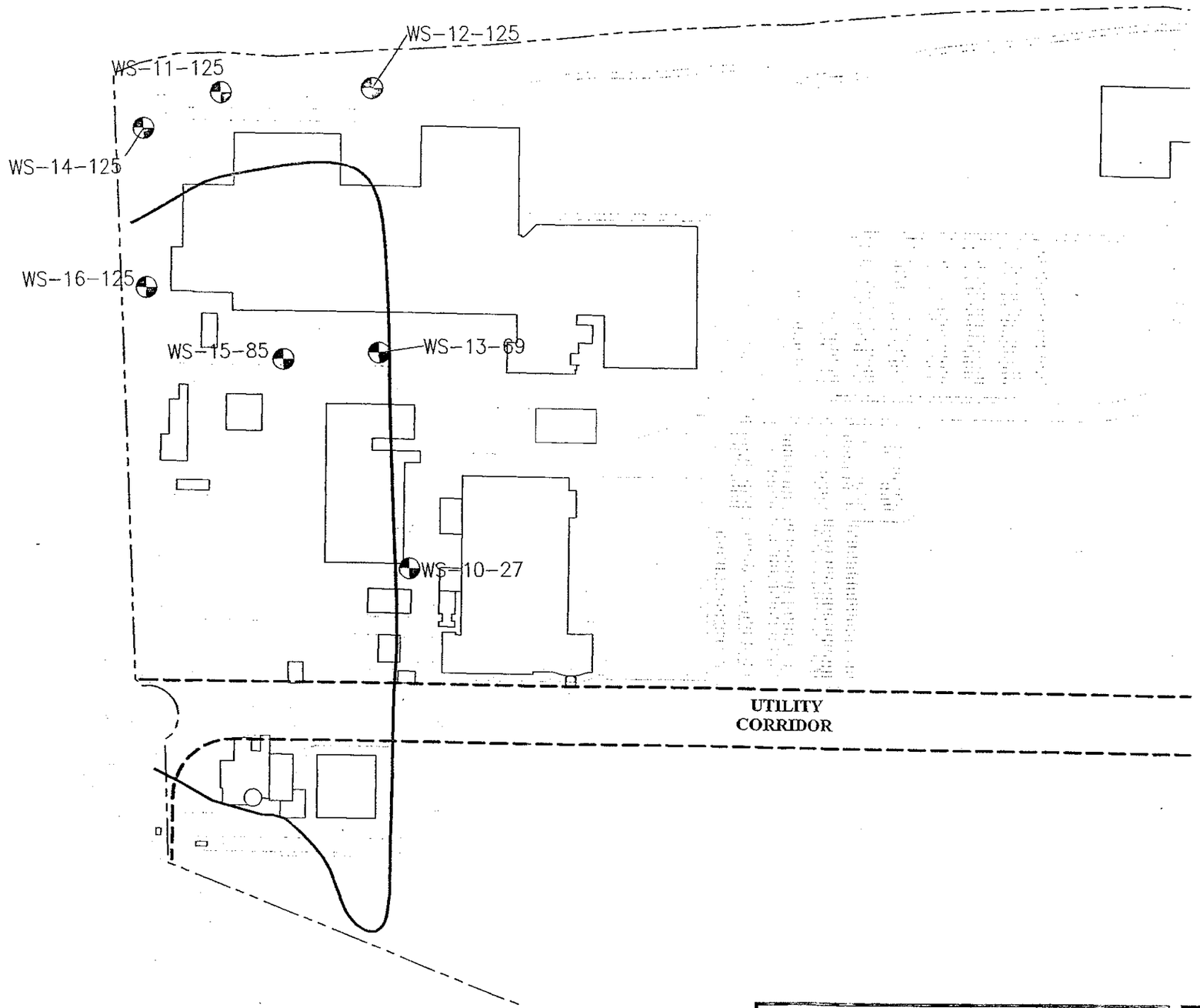
Attachment AA

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: dglaus Xrefs:

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)

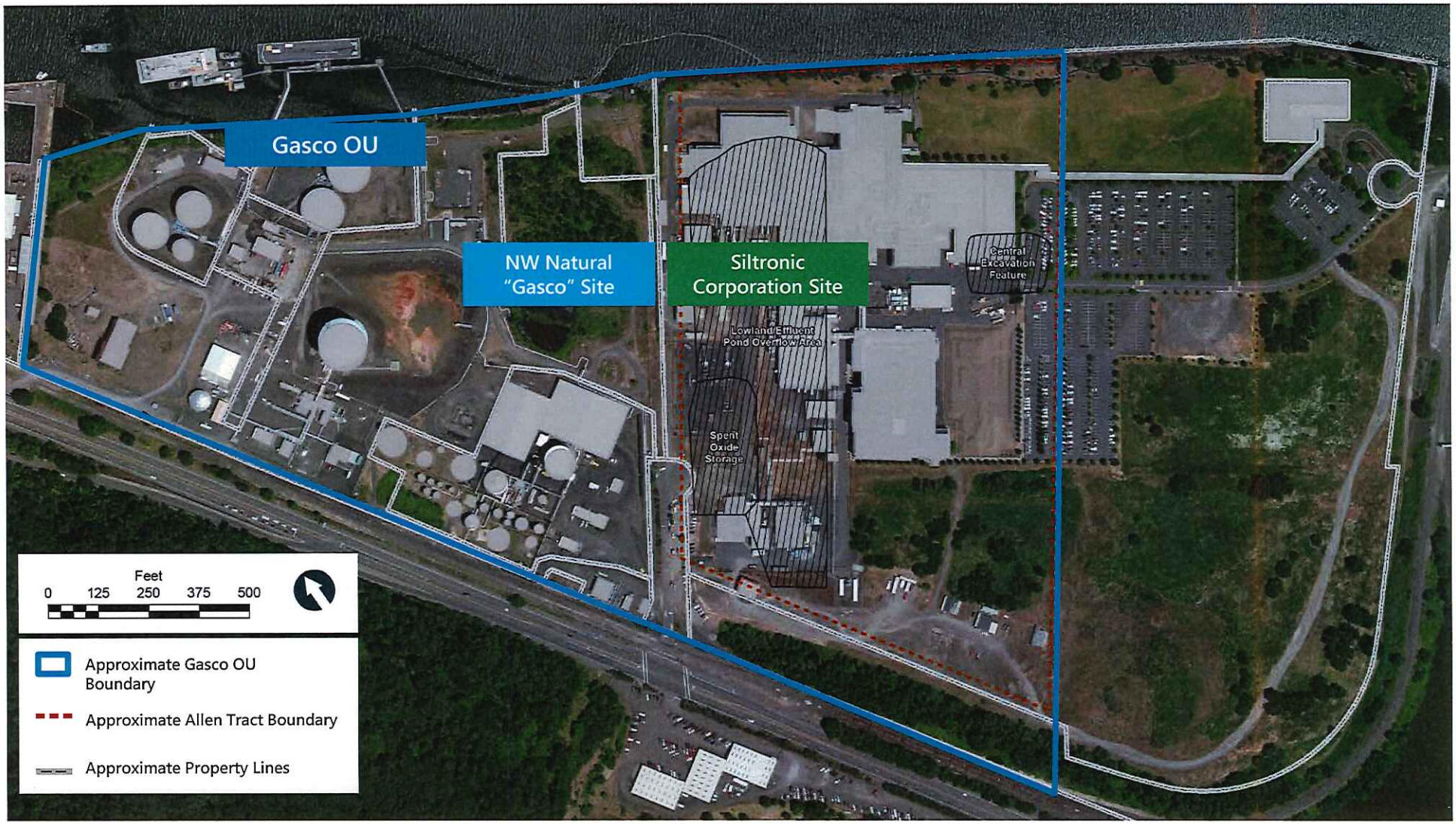
Vice President
(Title)

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