April 17, 2013

Ms. Donna Drogos
Alameda County Environmental Health
1131 Harbor Parkway, Suite 250
Oakland, CA 94502-6577

Subject: APCD Application
Shore Acres Gas
403 East 12th Street, Oakland, Alameda County, California
RO #0002931
ECG # GHA.19009

Dear Ms. Drogos:

Enclosed please find a copy of the April 17, 2013 *APCD Application* for the above referenced site prepared by our consultant Environmental Compliance Group, LLC.

I declare, under penalty and perjury, that the information and/or recommendations contained in this report are true and correct to the best of my knowledge.

Respectfully,

Rashid Ghafoor

Environmental Compliance Group, LLC

270 Vintage Drive
Turlock, CA 95382
P: 209.664.1035
F: 209.664.1040

April 17, 2013

Bay Area AQMD
Engineering Division
939 Ellis Street
San Francisco, CA 94109

Subject: **Application for New Authority to Construct**
403 East 12th Street, Oakland, Alameda County
ECG Project #GHA.19009

Dear Sir or Madam:

Environmental Compliance Group, LLC (ECG) has been authorized by Mr. Rashid Ghafoor to submit this application for an authority to construct at the above facility (Figures 1 and 2). The proposed remediation system will consist of a DPE system with a catalytic oxidizer, air stripper, and liquid carbon adsorption vessels.

This application includes:

- Figures depicting site and equipment locations
- Tables documenting historical groundwater soil vapor concentrations
- Regulatory correspondence (Appendix A)
- BAAQMD permit application forms (Appendix B)
- Equipment manufacturer's specification sheets (Appendix C)
- ECG standard operating procedures (Appendix D)
- Laboratory analytical data reports (Appendix E)

DUAL PHASE EXTRACTION SYSTEM

Equipment

Groundwater and soil vapor will be extracted from the subsurface through extraction wells. The system will utilize a 400 standard cubic feet per minute (scfm) blower, a liquid/vapor separator, an air stripper, and a thermal/catalytic oxidizer for treating extracted vapor prior to discharge through an exhaust stack. Extracted groundwater is run through the air stripper and pumped through carbon adsorption vessels prior to discharge to the sanitary sewer. ECG will use the onsite 400 LR T/CAT manufactured by Solleco Industries. The proposed equipment location is shown on Figure 3 and the process and flow diagram for the equipment is shown on Figure 4.

Operation

Operation and maintenance visits will occur at least twice per month and will include influent and effluent vapor monitoring with a MiniRae portable photoionization detector (PID). Two vapor samples will be collected monthly into Tedlar bags and submitted under chain of custody documentation (COC) to Kiff Analytical Laboratory in Davis, California, a State of California certified laboratory (ELAN #2236). The samples will be analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethyl benzene, total xylenes (BTEX), and methyl tertiary butyl ether (MTBE). Sampling will be performed in accordance with ECG's standard operating procedures contained in Appendix D.

Calculations

Source 1:

The contaminants measured during the DPE pilot test in 2011 at the site are used for process loading. The highest contaminant level of TPHg, benzene, and MTBE were 11,000 parts per million by volume (ppmv), 140 ppmv, and 9.2 ppmv, respectively. The SVE system will operate 24 hours per day, 7 days per week, 52 weeks per year. The SVE equipment has a maximum flow rate of 400 scfm. Full operation of the equipment (1,440 minutes per day), maximum contaminant levels, 98% destruction efficiency from the equipment manufacturer, and molecular weight for TPHg, benzene, and MTBE of 90 pounds mass per pound mole (lb/lbmole), 78.11 lb/lbmole, and 88.15 lb/lbmole, respectively are used below:

$$Emission = Flowrate(Q)*InitialConc(Ci)*MWi*(1-A)$$

$$E_{TPHg} = 400\ SCFM * \frac{11{,}000\ ft^3}{1*10^6\ ft^3} * \frac{90lb}{lbmol} * (1-0.98) * \frac{1{,}440min}{day} * \frac{lbmol}{359\ ft^3} = \frac{31.8lb}{day}$$

$$E_{Benzene} = 400\ SCFM * \frac{140\ ft^3}{1*10^6\ ft^3} * \frac{78.11lb}{lbmol} * (1-0.98) * \frac{1{,}440min}{day} * \frac{lbmol}{359\ ft^3} = \frac{0.35lb}{day}$$

$$E_{MTBE} = 400\ SCFM * \frac{9.2\ ft^3}{1*10^6\ ft^3} * \frac{88.15lb}{lbmol} * (1-0.98) * \frac{1{,}440min}{day} * \frac{lbmol}{359\ ft^3} = \frac{0.026lb}{day}$$

Source 2:

The air stripper is capable of producing flow rates of 10 gallons per minute. Contaminants measured during the DPE pilot test performed at the site in 2011 are used for process loading. The highest contaminant level of TPHg, benzene, and MTBE were 33,000 micrograms per liter (ug/L), 3,100 ug/L, and 13,000 ug/L, respectively. Assuming a minimum abatement efficiency of 98% and that 100% of the contaminants are stripped from the water, emissions are shown below:

$$Emission = Flowrate(Q)*InitialConc(Ci)*(1-A)$$

$$E_{TPHg} = \frac{10\ gal}{min} * \frac{3.7\ L}{gal} * \frac{11{,}000\ ug}{L} * \frac{g}{1*10^6\ ug} * (1-0.98) * \frac{1{,}440min}{day} * \frac{lb}{454\ g} = \frac{0.08lb}{day}$$

$$E_{Benzene} = \frac{10\ gal}{min} * \frac{3.7\ L}{gal} * \frac{3{,}100\ ug}{L} * \frac{g}{1*10^6\ ug} * (1\text{-}0.98) * \frac{1{,}440 min}{day} * \frac{lb}{454\ g} = \frac{0.007 lb}{day}$$

$$E_{MTBE} = \frac{10\ gal}{min} * \frac{3.7\ L}{gal} * \frac{13{,}000\ ug}{L} * \frac{g}{1*10^6\ ug} * (1\text{-}0.98) * \frac{1{,}440 min}{day} * \frac{lb}{454\ g} = \frac{0.03 lb}{day}$$

The maximum effluent emissions are calculated by summing the emissions from the two sources. The maximum emissions for TPHg, benzene, and MTBE are 31.9 pounds per day (ppd), 0.36 ppd, and 0.06 ppd.

Abatement 1:
The secondary pollutants for the thermal/catalytic abatement oxidizer (0.51MMBTU/hr) are calculated on a yearly basis by the following equation:

$$Emission(lb/yr) = EmissionFactor(lb/MMBTU) * FiringRate_{max}(MMBTU/hr) * 8760(hrs/yr)$$

Emission factors in the AQMD permit handbook for NO_X, CO, PM10, SO_2, and POC as 0.2, 0.8, 0.075, 0.006, and 0.0054 pounds per MMBTU, respectively. Based on the emission factors the yearly emissions for NO_X, CO, PM10, SO_2, and POC are calculated as 898, 3,592, 337, 2.6, and 24 pounds per year, respectively.

If you have any questions, please contact Environmental Compliance Group, LLC at (209) 664-1035.

Respectfully,

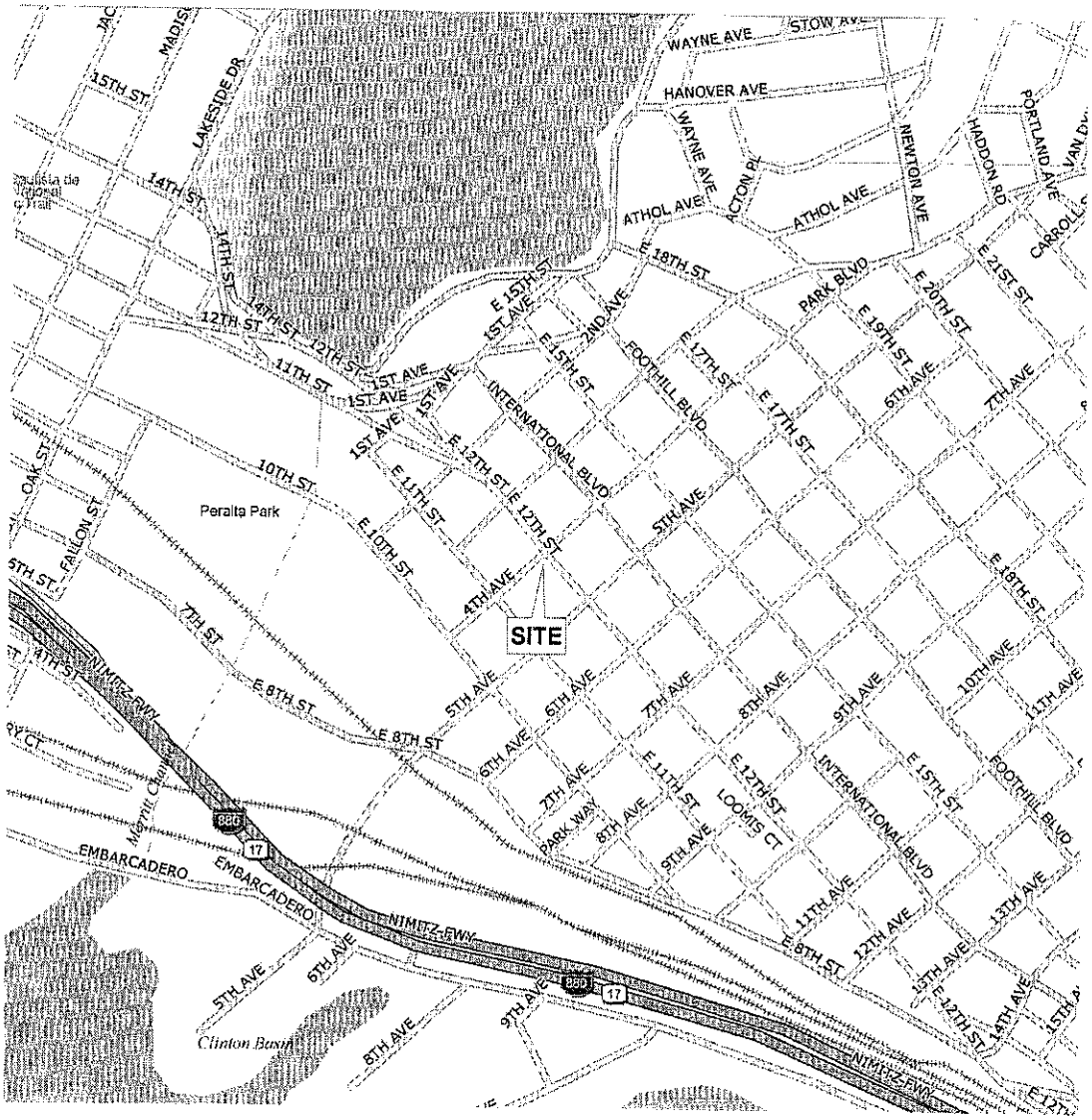
Drew Van Allen
Senior Project Manager

Michael S. Sgourakis
Principal Geologist
CA P.G. No. 7194

cc Rashid Ghafoor
Barbara Jakub, ACEHD

REGISTERED GEOLOGIST
MICHAEL S. SGOURAKIS
No. 7194
STATE OF CALIFORNIA

FIGURES



NORTH

0 1,000 2,000

Approximate Scale In Feet
1 inch = 1,000 Feet

FIGURE 1	**SITE LOCATION MAP**	**Environmental Compliance Group, LLC**
Project Number: GHA.19009	Shore Acre Gas 403 East 12th Street Oakland, California	270 Vintage Drive, Turlock, CA 95382 Phone: (209) 664-1035
Date: February 9, 2011		

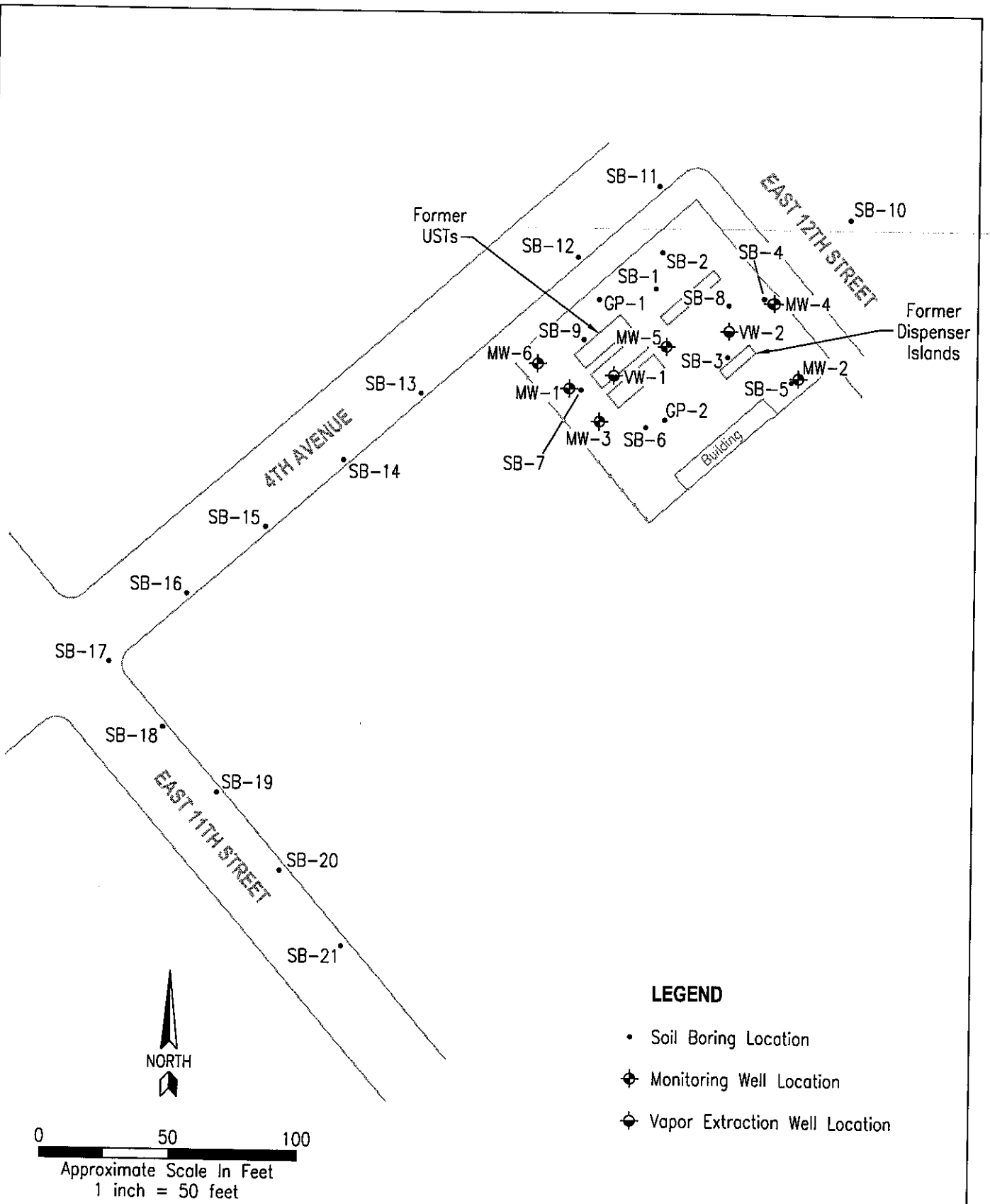


FIGURE 2	**SITE MAP**	Environmental Compliance Group, LLC
Project Number: GHA.19009	Shore Acre Gas 403 East 12th Street Oakland, California	270 Vintage Drive, Turlock, CA 95382 Phone: (209) 664-1035
Date: January 4, 2012		

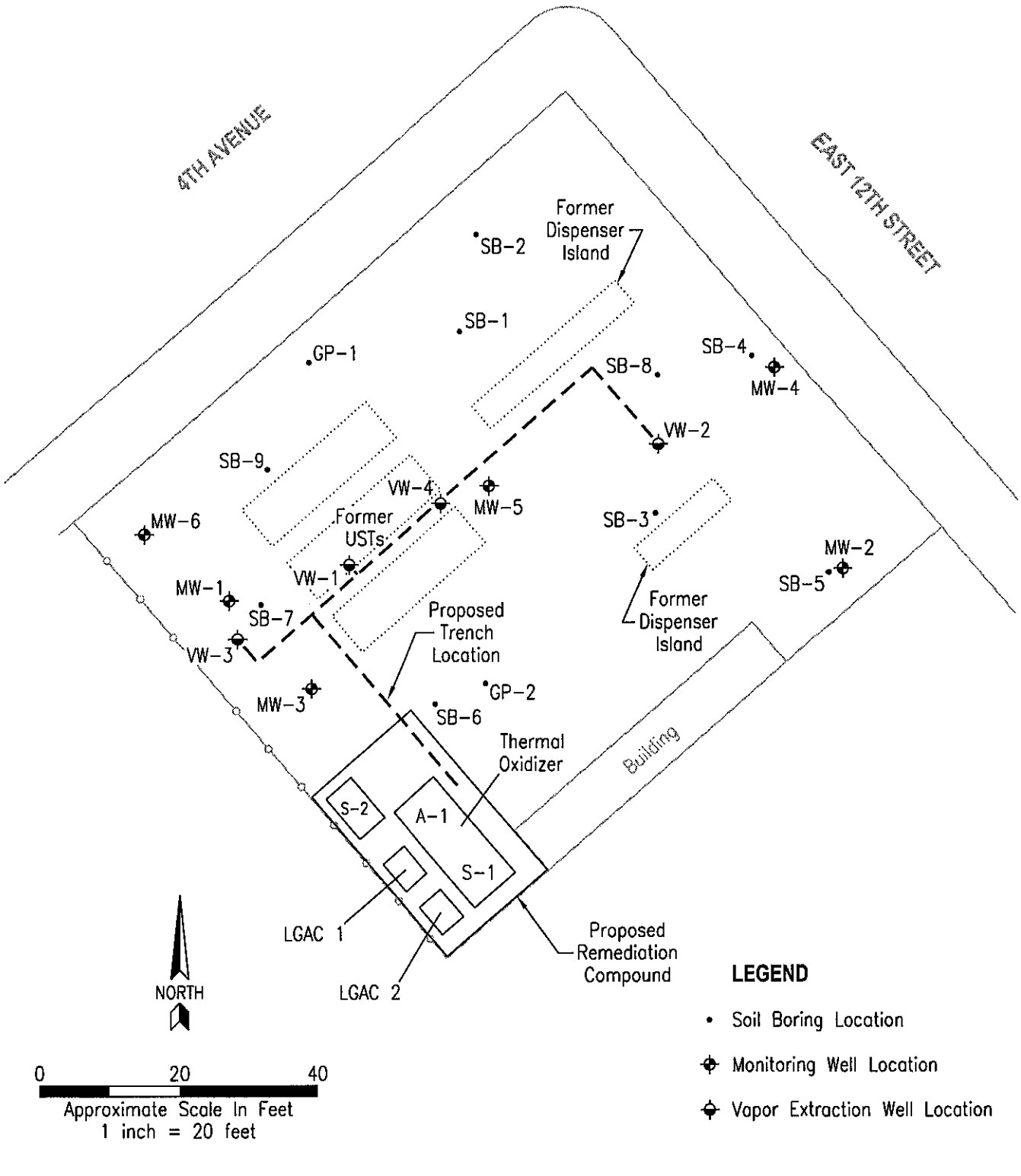


FIGURE 3 **Project Number:** GHA.19009 **Date:** April 19, 2013	**PROPOSED EXTRACTION WELL TRENCH AND REMEDIATION COMPOUND LOCATION MAP** Shore Acre Gas 403 East 12th Street Oakland, California	**Environmental Compliance Group, LLC** 270 Vintage Drive, Turlock, CA 95382 Phone: (209) 664-1035

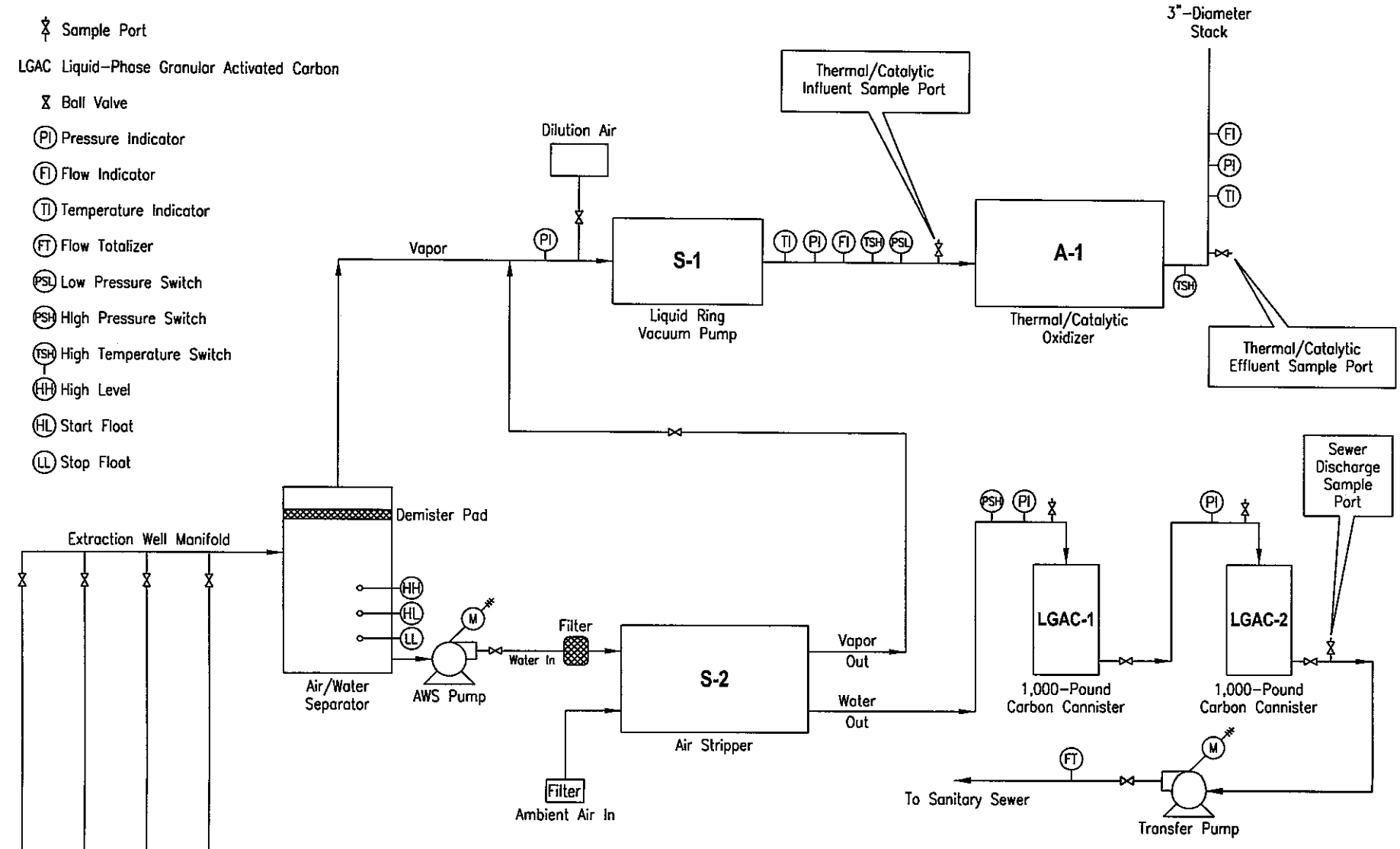


FIGURE 9	PROCESS FLOW DIAGRAM	Environmental Compliance Group, LLC
Project Number: GHA.19009	Shore Acre Gas 403 East 12th Street Oakland, California	270 Vintage Drive, Turlock, CA 95382 Phone: (209) 664-1035
Date: April 18, 2013		

TABLES

Table 3a
Grab Groundwater Sample Results
TPH and BTEX
Shore Acres Gas
403 East 12th Street
Oakland, California

Sample ID	Collection Date	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)
Excavation							
Pit Sample 1	August 2009	**21,000**	**21,000**	**3,800**	**1,000**	**1,200**	**3,700**
Direct Push Grab Groundwater Samples							
SB-1	April 2010	---	**60**	**2.9**	**6.7**	**2.1**	**9.7**
SB-2		---	<50	<0.5	<0.5	<0.5	<1.0
SB-3		---	**170**	**1.5**	**11**	**4.8**	**27**
SB-4		---	**6,500**	**78**	**440**	**190**	**960**
SB-5		---	<50	<0.5	<0.5	<0.5	<1.0
SB-6		---	**440**	<20	<20	<20	<40
SB-7		---	**270**	<12	<12	<12	<25
SB-8		---	<50	**0.6**	**1.3**	**0.6**	**3.3**
SB-9		---	<50	<10	<10	<10	<20
SB-10	December 2011	---	<50	<0.5	<0.5	<0.5	<1.0
SB-11		---	**2,300**	**83**	**1.9**	**140**	**43**
SB-12		---	**4,700**	**620**	**290**	**84**	**400**
SB-13		---	**400**	**51**	**2.4**	**4.2**	**9.7**
SB-14		---	<50	**1.7**	<0.5	**2.1**	<1.0
SB-15		---	**320**	**32**	**0.7**	**33**	**25**
SB-16		---	**4,800**	**1,600**	**10**	**49**	<20
SB-17		---	**990**	**290**	**7.2**	**27**	**4.3**
SB-18		---	**560**	**8.7**	**4.9**	**23**	**83**
SB-19		---	**260**	**7.1**	<0.5	**16**	**7.0**
SB-21		---	<50	<0.5	<0.5	<0.5	<1.0

Notes:

TPHd - denotes total petroleum hydrocarbons as diesel

TPHg - denotes total petroleum hydrocarbons as gasoline

ug/L - denotes micrograms per liter

< - denotes less than the detection limit

--- - denotes not analyzed/applicable

Table 3b
Grab Groundwater Sample Results
Oxygenates and Lead Scavengers
Shore Acres Gas
403 East 12th Street
Oakland, California

Sample ID	Collection Date	DIPE (ug/L)	ETBE (ug/L)	MTBE (ug/L)	TAME (ug/L)	TBA (ug/L)	1,2-DCA (ug/L)	EDB (ug/L)
Excavation								
Water	February 2000	<10	<10	**15,000**	**39**	**17,000**	<10	<10
Direct Push Grab Groundwater Samples								
SB-1	April 2010	<0.5	<0.5	**14**	<0.5	<5.0	<0.5	<0.5
SB-2		<0.5	<0.5	**45**	<0.5	<5.0	<0.5	<0.5
SB-3		<0.5	<0.5	**110**	<0.5	**32**	<0.5	<0.5
SB-4		<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0
SB-5		<0.5	<0.5	**0.6**	<0.5	<5.0	<0.5	<0.5
SB-6		<20	<20	**4,000**	<20	<200	<20	<20
SB-7		<12	<12	**2,500**	<12	<120	<12	<12
SB-8		<0.5	<0.5	**26**	<0.5	**98**	<0.5	<0.5
SB-9		<10	<10	**1,800**	<10	**5,300**	<10	<10
SB-10	December 2011	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-11		<1.0	<1.0	**22**	<1.0	**140**	<1.0	<1.0
SB-12		<5.0	<5.0	**100**	<5.0	**550**	<5.0	<5.0
SB-13		<2.0	<2.0	**39**	<2.0	**3,900**	<2.0	<2.0
SB-14		<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-15		<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-16		<10	<10	<10	<10	<100	<10	<10
SB-17		<2.0	<2.0	<2.0	<2.0	<20	<2.0	<2.0
SB-18		<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-19		<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-21		<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5

Notes:

ug/L - denotes micrograms per liter
< - denotes less than the detection limit
DCA - denotes dichloroethane
EDB - denotes ethylene dibromide
MTBE - denotes methyl tertiary butyl ether
DIPE - denotes di-isopropyl ether
ETBE - denotes ethyl tertiary butyl ether
TAME - denotes tertiary amyl ether
TBA - denotes tertiary butyl alcohol

Table 4a
Monitoring Well Data
Water Level, TPH, and BTEX
Shore Acres Gas
403 East 12th Street
Oakland, California

Well ID TOC	Date Measured	Depth to Groundwater (ft bgs)	Groundwater Elevation (ft amsl)	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)
Monitoring Wells									
MW-1	6/23/2011	10.46	20.35	<250	23,000	4,500	820	1,700	3,800
	9/22/2011	12.13	18.68	<50	21,000	4,000	1,500	980	3,000
	12/11/2011	11.69	19.12	---	23,000	2,900	1,000	720	3,000
	3/30/2012	Inaccessible							
	6/1/2012	11.04	19.77	---	**40,000**	**4,100**	**800**	**2,700**	**6,100**
MW-2	6/23/2011	10.70	20.59	<250	13,000	1,000	160	370	1,600
	9/22/2011	12.42	18.87	<50	12,000	300	130	470	1,400
	12/11/2011	11.98	19.31	---	8,300	170	120	450	1,500
	3/30/2012	8.55	22.74	<250	17,000	850	700	710	2,900
	6/1/2012	11.26	20.03	<250	**5,300**	**830**	**260**	**630**	**1,700**
MW-3	6/23/2011	10.79	20.51	<250	55,000	15,000	3,600	2,000	4,300
	9/22/2011	12.60	18.70	<250	77,000	15,000	3,900	1,700	4,900
	12/11/2011	12.13	19.17	---	64,000	12,000	3,100	1,600	4,500
	3/30/2012	7.90	23.40	<120	100,000	17,000	10,000	2,000	8,400
	6/1/2012	11.47	19.83	<120	**83,000**	**15,000**	**6,000**	**2,900**	**10,000**
MW-4	6/23/2011	10.62	20.59	<250	47,000	3,500	7,100	2,300	11,000
	9/22/2011	12.25	18.96	<250	46,000	2,000	2,400	1,100	5,300
	12/11/2011	11.89	19.32	---	46,000	2,100	3,400	1,800	7,000
	3/30/2012	8.51	22.70	<250	60,000	6,800	8,200	1,200	5,700
	6/1/2012	11.14	20.07	<250	**72,000**	**9,700**	**8,500**	**2,300**	**9,000**
MW-5	6/23/2011	10.12	21.23	<250	130,000	7,100	25,000	13,000	94,000
	9/22/2011	12.53	18.82	<250	120,000	6,900	7,600	3,800	17,000
	12/11/2011	12.09	19.26	---	110,000	7,800	14,000	4,200	20,000
	3/30/2012	8.06	23.29	Sheen - not sampled					
	6/1/2012	11.38	19.97	Sheen - not sampled					
MW-6	6/23/2011	10.43	20.36	<250	11,000	2,400	120	480	840
	9/22/2011	12.10	18.69	<50	15,000	1,500	270	880	2,500
	12/11/2011	11.69	19.10	---	13,000	660	190	610	1,500
	3/30/2012	7.50	23.29	<250	9,500	1,200	160	250	520
	6/1/2012	11.04	19.75	<250	**23,000**	**2,200**	**220**	**1,300**	**3,000**

Table 4a
Monitoring Well Data
Water Level, TPH, and BTEX
Shore Acres Gas
403 East 12th Street
Oakland, California

Well ID TOC	Date Measured	Depth to Groundwater (ft bgs)	Groundwater Elevation (ft amsl)	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)
DPE Wells									
VW-1	6/28/2011	---	---	---	20,000	2,000	490	1,000	2,400
	9/22/2011	12.55	18.71	<120	39,000	3,900	610	1,400	4,600
	12/11/2011	12.09	19.17	---	27,000	2,600	270	1,400	4,400
	3/30/2012	8.06	23.20	<120	21,000	3,100	160	910	2,300
	6/1/2012	11.42	19.84	<120	**21,000**	**2,800**	**100**	**1,200**	**3,100**
VW-2	6/28/2011	---	---	---	33,000	3,100	2,000	790	3,500
	9/22/2011	12.50	18.90	<250	66,000	2,400	4,500	2,000	11,000
	12/11/2011	12.12	19.28	---	70,000	2,800	6,900	2,700	13,000
	3/30/2012	8.48	22.92	<250	57,000	5,800	5,500	1,200	5,400
	6/1/2012	11.40	20.00	<250	**82,000**	**8,800**	**8,600**	**3,300**	**13,000**

Notes:

TOC - denotes top of casing elevation
TPHg - denotes total petroleum hydrocarbons as gasoline
TPHd - denotes total petroleum hydrocarbons as diesel
ft bgs - denotes feet below top of casing
ft amsl - denotes feet above mean sea level
ug/L - denotes micrograms per liter
< - denotes less than the detection limit
--- - denotes not available/applicable
FLH - denotes floating liquid hydrocarbons
* - denotes less than six inches of water and considered dry

Table 4b
Monitoring Well Data
Oxygenates and Lead Scavengers
Shore Acres Gas
403 East 12th Street
Oakland, California

Well ID TOC	Date Measured	DIPE (ug/L)	ETBE (ug/L)	MTBE (ug/L)	TAME (ug/L)	TBA (ug/L)	1,2-DCA (ug/L)	EDB (ug/L)
Monitoring Wells								
MW-1	6/23/2011	<25	<25	3,000	<25	3,900	<25	<25
	9/22/2011	<50	<50	2,600	<50	2,500	<50	<50
	12/11/2011	<20	<20	1,800	<20	1,600	<20	<20
	3/30/2012	Inaccessible						
	6/1/2012	<20	<20	**2,800**	<20	**1,300**	<20	<20
MW-2	6/23/2011	<10	<10	240	<10	640	<10	<10
	9/22/2011	<5.0	<5.0	110	<5.0	260	<5.0	<5.0
	12/11/2011	<2.5	<2.5	45	<2.5	110	<2.5	<2.5
	3/30/2012	<5.0	<5.0	140	<5.0	490	<5.0	<5.0
	6/1/2012	<5.0	<5.0	**180**	<5.0	**490**	<5.0	<5.0
MW-3	6/23/2011	<100	<100	8,200	<100	6,400	<100	<100
	9/22/2011	<100	<100	11,000	<100	2,800	<100	<100
	12/11/2011	<100	<100	7,400	<100	1,800	<100	<100
	3/30/2012	<100	<100	13,000	<100	<1,000	<100	<100
	6/1/2012	<50	<50	**12,000**	<50	<500	<50	<50
MW-4	6/23/2011	<50	<50	<50	<50	<500	<50	<50
	9/22/2011	<25	<25	<25	<25	<250	<25	<25
	12/11/2011	<25	<25	<25	<25	<250	<25	<25
	3/30/2012	<50	<50	56	<50	<500	<50	<50
	6/1/2012	<50	<50	**180**	<50	<500	<50	<50
MW-5	6/23/2011	<120	<120	440	<120	<1,200	<120	<120
	9/22/2011	<50	<50	670	<50	1,500	<50	<50
	12/11/2011	<120	<120	690	<120	1,600	<120	<120
	3/30/2012	Sheen - not sampled						
	6/1/2012	Sheen - not sampled						
MW-6	6/23/2011	<25	<25	1,100	<25	4,000	<25	<25
	9/22/2011	<12	<12	600	<12	2,800	<12	<12
	12/11/2011	<10	<10	290	<10	1,300	<10	<10
	3/30/2012	<10	<10	990	<10	3,500	<10	<10
	6/1/2012	<10	<10	**1,400**	<10	**2,200**	<10	<10

Table 4b
Monitoring Well Data
Oxygenates and Lead Scavengers
Shore Acres Gas
403 East 12th Street
Oakland, California

Well ID TOC	Date Measured	DIPE (ug/L)	ETBE (ug/L)	MTBE (ug/L)	TAME (ug/L)	TBA (ug/L)	1,2-DCA (ug/L)	EDB (ug/L)
DPE Wells								
VW-1	6/28/2011	<25	<25	1,500	<25	5,300	<25	<25
	9/22/2011	<50	<50	640	<50	1,800	<50	<50
	12/11/2011	<25	<25	490	<25	1,000	<25	<25
	3/30/2012	<20	<20	370	<20	1,100	<20	<20
	6/1/2012	<25	<25	**500**	<25	**1,700**	<25	<25
VW-2	6/28/2011	<25	<25	670	<25	4,100	<25	<25
	9/22/2011	<50	<50	740	<50	1,600	<50	<50
	12/11/2011	<50	<50	540	<50	880	<50	<50
	3/30/2012	<50	<50	1,800	<50	2,800	<50	<50
	6/1/2012	<50	<50	**2,600**	<50	**3,300**	<50	<50

Notes:

ug/L - denotes micrograms per liter
< - denotes less than the detection limit
DCA - denotes dichloroethane
EDB - denotes ethylene dibromide
MTBE - denotes methyl tertiary butyl ether
DIPE - denotes di-isopropyl ether
ETBE - denotes ethyl tertiary butyl ether
TAME - denotes tertiary amyl ether
TBA - denotes tertiary butyl alcohol
--- - denotes no data available

Table 6
Dual Phase Extraction Pilot Test
Vapor Analytical Results
Shore Acres Gas
403 East 12th Street
Oakland, California

Sample ID	Date Measured	TPHg (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethyl-benzene (ppmv)	Total Xylenes (ppmv)	MTBE (ppmv)
VW-1-INIT	6/24/2011	190	9.4	1.1	1.3	2.7	1.3
VW-1-DAY 2	6/25/2011	500	15	5.8	4.5	10	2.1
VW-1-END	6/26/2011	1,400	21	13	9.0	23	1.9
VW-2-INIT	6/26/2011	11,000	140	240	84	220	9.2
VW-2-DAY 2	6/27/2011	4,700	68	99	24	64	3.6
VW-2-END	6/28/2011	3,200	44	68	16	43	3.1

Notes:

TPHg - denotes total petroleum hydrocarbons as gasoline
MTBE - denotes methyl tertiary butyl ether
ppmv - parts per million by volume
< - denotes less than the detection limit

Table 7
Dual Phase Extraction Pilot Test
Vapor Extraction Summary
Shore Acres Gas
403 East 12th Street
Oakland, California

Well	Meter (hours)	Influent Flow Rate (scfm)	Influent Sample Results		Extraction Rates (lb/day)		Extraction Mass (lb/day)	
			TPHg (ppmv)	Benzene (ppmv)	TPHg (lb/day)	Benzene (lb/day)	TPHg (lb)	Benzene (lb)
VW-1-INIT	3	150	**190**	**9.4**	10.29	0.44	1.29	0.06
VW-1-DAY 2	15	150	**500**	**15**	27.08	0.00	13.54	0.00
VW-1-END	39	150	**1,400**	**21**	75.81	0.99	75.81	0.99
VW-2-INIT	3.0	50	**11,000**	**140**	198.55	2.19	24.82	0.27
VW-2-DAY 2	18.5	50	**4,700**	**68**	84.84	1.07	54.79	0.69
VW-2-END	42.5	50	**3,200**	**44**	57.76	0.69	57.76	0.69
Total							**228.0**	**2.69**

MW_{TPHg} = Molecular Weight of TPHg = 90

$MW_{Benzene}$ = Molecular Weight of Benzene = 78.11

MW_{MTBE} = Molecular Weight of Methyl tert-butyl ether = 88.15

ft^3 = cubic feet

min = minutes

lb/day = pounds per day

ppmv = parts per million by volume = ft^3 / $1x10^6$ ft^3

scfm = standard cubic feet per minute

NS = not sampled

NA = not analyzed

NC = not calculated

Extraction rate = (flow rate(ft^3/min) x concentration (ft^3 / $1x10^6$ ft^3) x MW_{TPHg}(lb/lb-mol) x 1440 min/day)/(359 ft^3/lb-mol*)

APPENDIX A

REGULATORY CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH DEPARTMENT
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

February 7, 2013

Rashid Ghafoor and Waseem Iqbal (Sent via e-mail to rashidz1@aol.com)
226 Havenwood Circle
Pittsburg, CA 94567

Subject: Revised Corrective Action Plan for Fuel Leak Case No. RO0002931 and GeoTracker Global ID T0600174667, Shore Acres Gas, 403 E 12th St., Oakland, CA 94606

Dear Messrs. Ghafoor and Iqbal:

Alameda County Environmental Health (ACEH) staff has reviewed the recently submitted document entitled, *Revised Corrective Action Plan* dated October 25, 2012, which was prepared by Environmental Compliance Group (ECG), LLC for the subject site. The Revised CAP presents an evaluation of three active remediation methods including costs with timeframes to reach clean-up levels. The selected remedial option is dual phase extraction (DPE) based on the time frame and lowest costs of cleanup.

The proposed scope of work to implement DPE is acceptable for public comment at this time. Therefore, we request that you distribute the Fact Sheet (attached) to the attached mailing list. Following distribution of the Fact Sheet, please provide personal verification by e-mail or uploaded letter that the Fact Sheet was distributed by U.S. Mail no later than January 20, 2012.

At the end of the 30-day public comment period, ACEH may request that you address the public comments received. If no public comments are received, ACEH may approve implementation of operation of the DPE provided that technical comment 1 below is incorporated during implementation of DPE. We request that you address the following comments, perform the requested work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Downgradient Extent of Groundwater Contamination** – Groundwater samples collected from off-site boring SB-16 contained 4,800 micrograms per liter (µg/L) total petroleum hydrocarbons as gasoline (TPHg) and 1,600 µg/L benzene, yet no off-site downgradient monitoring wells have been installed. Please present a work plan to install an appropriate groundwater monitoring and performance monitoring network along transects by the due date listed below. We anticipate that the transect(s) of wells be installed concurrently with system installation and sampled prior to system startup.

2. **Groundwater Monitoring** - Please implement quarterly monitoring for all monitoring wells and quarterly reporting once remediation begins.

3. **Soil Vapor Sampling** – An evaluation of vapor intrusion at the site and adjacent residential properties have not been performed. Please submit a work plan to evaluate soil vapor by the due date below.

4. **Landowner Notification** - Pursuant to Section 25297.15 (a), ACEH, the local agency, shall not consider cleanup or site closure proposals from the primary or active responsible party, issue a closure letter, or make a determination that no further action is required with respect to a site upon which there was an unauthorized release of hazardous substances from an underground storage tank subject to this chapter unless all current record owners of fee title to the site of the proposed action have been notified of the proposed action by the primary or active responsible party. ACEH is required to notify the primary or active responsible party of their requirement to certify in writing to the local agency that the notification requirement in the above-mentioned regulation has been satisfied and to provide the local agency with a complete mailing list of all record fee title owners.

   To satisfy the above-mentioned requirement, please complete the enclosed "List of Landowners Form," and mail it back to ACEH within thirty (30) days from the date of this letter.

5. **Baseline Environmental Project Schedule** The State Water Resources Control Board passed Resolution No. 2012-0062 on November 6, 2012 which requires development of a Path to Closure Plan by December 31, 2013 that addresses the impediments to closure for the site. The Path to Closure must have milestone dates to calendar quarter which will achieve site cleanup and case closure in a timely and efficient manner that minimizes the cost of corrective action. The Project Schedule should include, but not be limited to, the following key environmental elements and milestones as appropriate:

   - Preferential Pathway Study
   - Soil, Groundwater, and Soil Vapor Investigations
   - Initial, Updated, and Final/Validated SCMs
   - Interim Remedial Actions
   - Feasibility Study/Corrective Action Plan
   - Pilot Tests
   - Remedial Actions
   - Soil Vapor and Groundwater Monitoring Well Installation and Monitoring
   - Public Participation Program (Fact Sheet Preparation/Distribution/Public Comment Period, Community Meetings, etc.)
   - Case Closure Tasks (Request for closure documents, ACEH Case Closure Summary Preparation and Review, Site Management Plan, Institutional Controls, Public Participation, Landowner Notification, Well Decommissioning, Waste Removal, and Reporting.)

Please include time for regulatory and RP in house review, permitting, off-site access agreements, and utility connections, etc.

Please use a critical path methodology/tool to construct a schedule with sufficient detail to support a realistic and achievable Path to Closure Schedule. The schedule is to include at a minimum:

- Defined work breakdown structure including summary tasks required to accomplish the project objectives and required deliverables
- Summary task decomposition into smaller more manageable components that can be scheduled, monitored, and controlled
- Sequencing of activities to identify and document relationships among the project activities using logical relationships
- Identification of critical paths, linkages, predecessor and successor activities, leads and lags, and key milestones
- Identification of entity responsible for executing work
- Estimated activity durations (60-day ACEH review times are based on calendar days)

Please submit an electronic copy of the Path to Closure Schedule by the date listed below. ACEH will review the schedule to ensure that all key elements are included.

TECHNICAL REPORT REQUEST

Please submit technical reports to ACEH (Attention: Barbara Jakub), according to the following schedule:

- **February 19, 2013** – Send out Fact Sheet
- **February 25, 2013** – Verification that Fact Sheet was distributed to the attached mailing list and persons on cc list at the end of this correspondence and Landowner Notification Form
- **March 21, 2013** – Public Comment Period Ends
- **April 8, 2013** – Work Plan
  (File to be named WP_R_yyyy-mm-dd)
- **April 8, 2013** – Path to Closure and Schedule
  (File to be named PROJ_SCH_yyyy-mm-dd)
- **June 20, 2013** – Quarterly Monitoring Report (2nd Quarter 2013)
  (File to be named GWM_R_yyyy-mm-dd)

- **September 20, 2013** – Quarterly Monitoring Report (3rd Quarter 2013)
  (File to be named GWM_R_yyyy-mm-dd)

- **December 20, 2013** – Quarterly Monitoring Report (4th Quarter 2013)
  (File to be named GWM_R_yyyy-mm-dd)

Should you have any questions or concerns regarding this correspondence or your case, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Digitally signed by Barbara J. Jakub
DN: cn=Barbara J. Jakub, o, ou, email=barbara.jakub@acgov.org, c=US
Date: 2013.02.07 16:04:59 -08'00'

Barbara J. Jakub, P.G.
Hazardous Materials Specialist

Enclosure: Public Notification of Site Remediation
Mailing List for Fact Sheet
List of Landowners Form Responsible Party(ies) Legal Requirements/Obligations
ACEH Electronic Report Upload (ftp) Instructions

cc: Michael S. Sgourakis, Environmental Compliance Group, LLC, 270 Vintage Drive, Turlock, CA 95382 *(Sent via E-mail to: ecg.ust@gmail.com)*
Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (*Sent via E-mail to: lgriffin@oaklandnet.com*)
Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Barbara Jakub, ACEH (*Sent via E-mail to: barbara.jakub@acgov.org*)
GeoTracker, e-file

APPENDIX B

APPPLICATION FORMS

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, CA 94109
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form P-101B
Authority to Construct/
Permit to Operate

1. Application Information

BAAQMD Plant No. _____ Company Name Environmental Compliance Group, LLC

Equipment/Project Description SVE Thermal/catalytic Oxidizer

2. Plant Information

If you have not previously been assigned a Plant Number by the District or if you want to update any plant data that you have previously supplied to the District, please complete this section.

Equipment Location 403 E. 12th Street

City Oakland Zip Code 94606

Mail Address 270 Vintage Drive

City Turlock State CA Zip Code 95382

Plant Contact Drew Van Allen Title Principal

Telephone (209)664.1035 Fax (209)664.1040 Email ecg.ust@gmail.com

NAICS (North American Industry Classification System) see www.census.gov/epcd/naics02/naico602.htm

3. Proximity to a School (K-12)

The sources in this permit application (*check one*) ☒ Are ☐ Are not within 1,000 ft of the outer boundary of the nearest school.

4. Application Contact Information

All correspondence from the District regarding this application will be sent to the plant contact unless you wish to designate a different contact for this application.

Application Contact Drew Van Allen Title Principal

Mail Address 270 Vintage Drive

City Turlock State CA Zip Code 95382

Telephone (209)664 1035 Fax (209)664 1040 Email ecg.ust@gmail.com

5. Additional Information

The following additional information is required for all permit applications and should be included with your submittal. Failure to provide this information may delay the review of your application. Please indicate that each item has been addressed by checking the box. Contact the Engineering Division if you need assistance.

☒ If a new Plant, a local street map showing the location of your business

☒ A facility map, drawn roughly to scale, that locates the equipment and its emission points

☒ Completed data form(s) and a pollutant flow diagram for each piece of equipment.
(See www.baaqmd.gov/Forms/Engineering.aspx)

☒ Project/equipment description, manufacturer's data

☒ Discussion and/or calculations of the emissions of air pollutants from the equipment

6. Trade Secrets

Under the California Public Records Act, all information in your permit application will be considered a matter of public record and may be disclosed to a third party. If you wish to keep certain items separate as specified in Regulation 2, Rule 1, Section 202.7, please complete the following steps.

☐ Each page containing trade secret information must be labeled "trade secret" with the trade secret information clearly marked.

☐ A second copy, with trade secret information blanked out, marked "public copy" must be provided.

☐ For each item asserted to be trade secret, you must provide a statement which provides the basis for your claim.

7. Small Business Certification *You are entitled to a reduced permit fee if you qualify as a small business as defined in Regulation 3. In order to qualify, you must certify that your business meets all of the following criteria:*

☐ The business does not employ more than 10 persons and its gross annual income does not exceed $750,000.

☐ And the business is not an affiliate of a non-small business. (Note: a non-small business employs more than 10 persons and/or its gross income exceeds $750,000.)

8. Green Business Certification *You are entitled to a reduced permit fee if you qualify as a green business as defined in Regulation 3. In order to qualify, you must certify that your business meets all of the following criteria:*

☐ The business has been certified under the Bay Area Green Business Program coordinated by the Association of Bay Area Governments and implemented by participating counties.

☐ A copy of the certification is included.

9. Accelerated Permitting *The Accelerated Permitting Program entitles you to install and operate qualifying sources of air pollution and abatement equipment* ***without waiting for the District to issue a Permit to Operate****. To participate in this program you must certify that your project will meet all of the following criteria. Please acknowledge each item by checking each box.*

☐ Uncontrolled emissions of any single pollutant are each less than 10 lb/highest day, or the equipment has been precertified by the BAAQMD.

☐ Emissions of toxic compounds do not exceed the trigger levels identified in Table 2-5-1 (see Regulation 2, Rule 5).

☐ The source is not a diesel engine.

☐ The project is not subject to public notice requirements (the source is either more than 1000 ft. from the nearest school, or the source does not emit any toxic compound in Table 2-5-1).

☐ For replacement of abatement equipment, the new equipment must have an equal or greater overall abatement efficiency for all pollutants than the equipment being replaced.

☐ For alterations of existing sources, for all pollutants the alteration does not result in an increase in emissions.

☐ Payment of applicable fees (the minimum permit fee to install and operate each source). See Regulation 3 or contact the Engineering Division for help in determining your fees.

10. CEQA *Please answer the following questions pertaining to CEQA (California Environmental Quality Act).*

A. Has another public agency prepared, required preparation of, or issued a notice regarding preparation of a California Environmental Quality Act (CEQA) document (initial study, negative declaration, environmental impact report, or other CEQA document) that analyzes impacts of this project or another project of which it is a part or to which it is related? ☐YES ☒NO If no, go to section 10B.

Describe the document or notice, preparer, and date of document or expected date of completion:

B. List and describe any other permits or agency approvals required for this project by city, regional, state or federal agencies:

Alameda Co. Environmental Health - approval of DPE remediation
City of Oakland - building permits, sewer discharge permit

C. List and describe all other prior or current projects for which either of the following statements is true: (1) the project that is the subject of this application could not be undertaken without the project listed below, (2) the project listed below could not be undertaken without the project that is the subject of this application:

11. Certification *I hereby certify that all information contained herein is true and correct. (Please sign and date this form)*

Drew Van Allen	Principal	[signature]	4/15/13
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Send all application materials to the **BAAQMD Engineering Division, 939 Ellis Street, San Francisco, CA 94109.**

Data Form A
ABATEMENT DEVICE

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990 . . . FAX (415) 749-5030

for office use only

Abatement Device: Equipment/process whose primary purpose is to reduce the quantity of pollutant(s) emitted to the atmosphere.

1. Business Name: Environmental Compliance Group, LLC Plant No: _____ (If unknown, leave blank)
2. Name or Description Thermal/Catalytic Oxidizer Abatement Device No: A- 1
3. Make, Model, and Rated Capacity Solleo 400 LR T/CAT Oxidizer
4. Abatement Device Code (See table*) 4 Date of Initial Operation 7/1/13
5. With regard to air pollutant flow into this abatement device, what sources(s) and/or abatement device(s) are **immediately** upstream?

   S- 1 S- 2 S- _____ S- _____ S- _____
   S- _____ A- _____ A- _____ A- _____ A- _____ A- _____

6. Typical gas stream temperature at inlet: 200 °F

If this form is being submitted as part of an application for an ***Authority to Construct***, completion of the following table is mandatory. If not, and the Abatement Device is *already in operation,* completion of the table is requested but not required.

	Pollutant	Weight Percent Reduction (at typical operation)	Basis Codes *(See Table**)*
7.	Particulate		
8.	Organics		
9.	Nitrogen Oxides (as NO_2)		
10.	Sulfur Dioxide		
11.	Carbon Monoxide		
12.	Other: TPHg	95%	3
13.	Other: BTEX	95%	3

14. ☐ Check box if this Abatement Device burns fuel; complete lines 1, 2 and 15-36 on Form C (using the Abatement Device No. above for the Source No.) and attach to this form.
15. With regard to air pollutant flow from this abatement device, what sources(s), abatement device(s) and/or emission point(s) are ***immediately*** downstream?

    S- _____ A- _____ A- _____ A- _____ P- 1 P- _____

Person completing this form: Drew Van Allen Date: 4/15/13

*ABATEMENT DEVICE CODES

Code	DEVICE
	ADSORBER (See Vapor Recovery)
	AFTERBURNER
1	CO Boiler
2	Catalytic
3	Direct Flame
4	Flare
5	Furnace-firebox
6	Other
	BAGHOUSE (See Dry Filter)
	CYCLONE (See Dry Inertial Collector and Scrubber)
	DUST CONTROL
68	Water Spray
	DRY FILTER
7	Absolute
8	Baghouse, Pulse Jet
9	Baghouse, Reverse Air
10	Baghouse, Reverse Jet
11	Baghouse, Shaking
12	Baghouse, Simple
13	Baghouse, Other
14	Envelope
15	Moving Belt
16	Other
	DRY INERTIAL COLLECTOR
17	Cyclone, Dynamic
18	Cyclone, Multiple (12 inches dia. or more)
19	Cyclone, Multiple (less than 12 inches dia.)
20	Cyclone, Simple
21	Settling Chamber, Baffled/Louvered
22	Settling Chamber, Simple
23	Other
	ELECTROSTATIC PRECIPITATOR
24	Single Stage
25	Single Stage, Wet
26	Two Stage
27	Two Stage, Wet
28	Other
	INCINERATOR (See Afterburner)
	INTERNAL COMBUSTION ENGINE CONTROL
69	Catalyzed Diesel Particulate Filter
70	Non-Cat. Diesel Part. Filter w/ Active Regeneration
71	Diesel Oxidation Catalyst
72	Oxidation Catalyst
	KNOCK-OUT POT (See Liquid Separator)
	LIQUID SEPARATOR
29	Knock-out Pot
30	Mist Eliminator, Horizontal Pad, Dry
31	Mist Eliminator, Panel, Dry
32	Mist Eliminator, Spray/Irrigated
33	Mist Eliminator, Vertical Tube, Dry
34	Mist Eliminator, Other
35	Other
	NO_X CONTROL
66	Selective Catalytic Reduction (SCR)
67	Non-Selective Catalytic Reduction (NSCR)
73	Selective Non-Catalytic Reduction (SNCR)
	SCRUBBER
36	Baffle and Secondary Flow
37	Centrifugal
38	Cyclone, Irrigated
39	Fibrous Packed
40	Impingement Plate
41	Impingement and Entrainment
42	Mechanically Aided
43	Moving Bed
44	Packed Bed
45	Preformed Spray
46	Venturi
47	Other
	SETTLING CHAMBER (See Dry Inertial Collector)
	SULFUR DIOXIDE CONTROL
48	Absorption and Regeneration, for Sulfur Plant
49	Claus Solution Reaction, for Sulfur Plant
50	Dual Absorption, for H2S04 Plant
51	Flue Gas Desulfurization, for Fossil Fuel Combustion
52	Reduction and Solution Regeneration, for Sulfur Plant
53	Reduction and Stretford Process, for Sulfur Plant
54	Sodium Sulfite-Bisulfite Scrubber, for H2S04 Plant
55	Other
	VAPOR RECOVERY
56	Adsorption, Activated Carbon/Charcoal
57	Adsorption, Silica
58	Adsorption, Other
59	Balance
60	Compression/Condensation/Absorption
61	Compression/Refrigeration
62	Condenser, Water-Cooled
63	Condenser, Other
64	Other
	MISCELLANEOUS
74	Soil Vapor Extraction Abatement System
65	Not classified above

**BASIS CODES

Code	Method
0	Not applicable for this pollutant
1	Source testing or other measurement **by plant**
2	Source testing or other measurement **by BAAQMD**
3	Specifications from vendor
4	Material balance by plant using engineering expertise and knowledge of process
5	Material balance **by BAAQMD** using engineering expertise and knowledge of process
6	Taken from AP-42 ("Compilation of Air Pollutant Emission Factors," EPA)
7	Taken from literature, other than AP-42
8	Guess

(revised: 8/08)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990 . . . fax (415) 749-5030
Website: www.baaqmd.gov

Data Form C
FUEL COMBUSTION SOURCE

(for District use only)

New ☐ Modified ☐ Retro ☐

Form C is for all operations which burn fuel except for internal combustion engines (use Form ICE unless it is a gas turbine; for gas turbines use this form). If the operation also involves evaporation of any organic solvent, complete Form S and attach to this form. If the operation involves a process which generates any other air pollutants, complete Form G and attach to this form.

☒ Check box if this source has a secondary function as an abatement device for some other source(s); complete lines 1, 2, and 7-13 on Form A (using the source number below for the Abatement Device No.) and attach to this form.

(If unknown, leave blank)

1. Company Name: Environmental Compliance Group, LLC Plant No: Source No. A-1
2. Equipment Name & Number, or Description: Sollco 400 LR T/CAT Oxidizer
3. Make, Model : Maximum firing rate: Btu/hr
4. Date of modification or initial operation: _____ *(if unknown, leave blank)*
5. Primary use (check one): ☐ electrical generation ☐ space heat ☐ waste disposal ☐ testing ☐ abatement device ☐ cogeneration ☐ resource recovery ☐ other ☐ process heat; material heated _____
6. SIC Number _____ If unknown leave blank
7. Equipment type (check one)

Internal combustion Use Form ICE (Internal Combustion Engine) unless it is a gas turbine

☐ gas turbine _____hp
☐ other _____ _____hp

Incinerator ☐ salvage operation ☐ pathological waste Temperature _____°F
☐ liquid waste ☐ other _____ Residence time _____Sec

Others ☐ boiler ☐ dryer
☐ afterburner ☐ oven
☐ flare ☐ furnace Material dried, baked, or heated: _____
☐ open burning ☐ kiln
☐ other _____

8. Overfire air? ☐ yes ☐ no If yes, what percent _____%
9. Flue gas recirculation? ☐ yes ☐ no If yes, what percent _____%
10. Air preheat? ☐ yes ☐ no Temperature _____°F
11. Low NO_x burners? ☐ yes ☐ no Make, Model _____
12. Maximum flame temperature _____°F
13. Combustion products: Wet gas flowrate _____acfm at _____°F
Typical Oxygen Content _____ dry volume % or _____ wet volume % or _____ % excess air
14. Typical Use _____ hours/day _____ days/week _____ weeks/year
15. Typical % of annual total: Dec-Feb 25 % Mar-May 25 % Jun-Aug 25 % Sep-Nov 25 %
16. With regard to air pollutant flow, what source(s) or abatement device(s) are immediately UPSTREAM?
S 1 S 2 S _____ S _____ S _____ S _____ A _____ A _____ A _____
With regard to air pollutant flow, what source(s) or abatement device(s), and/or emission points are immediately DOWNSTREAM?
S _____ S _____ A _____ A _____ P 1 P _____

Person completing this form: Date:

(revised 5/11)

FUELS

INSTRUCTIONS: Complete one line in Section A for each fuel. Section B is OPTIONAL. Please use the units at the bottom of each table. N/A means "Not Applicable."

SECTION A: FUEL DATA

	Fuel Name	Fuel Code**	Total Annual Usage***	Maximum Possible Fuel Use Rate	Typical Heat Content	Sulfur Content	Nitrogen Content (optional)	Ash Content (optional)
1.	Natural Gas		44895	512,500	NA	NA	NA	NA
2.								
3.								
4.								
5.								

Use the appropriate units for each fuel							
	Natural Gas	therm*	Btu/hr	N/A	N/A	N/A	N/A
	Other Gas	MSCF*	MSCF/hr	Btu/MSCF	ppm	N/A	N/A
	Liquid	m gal*	m gal/hr	Btu/m gal	wt%	wt%	wt%
	Solid	ton	ton/hr	Btu/ton	wt%	wt%	wt%

SECTION B: EMISSION FACTORS (optional)

	Fuel Name	Fuel Code**	Particulates		NOx		CO	
			Emission Factor	**Basis Code	Emission Factor	**Basis Code	Emission Factor	**Basis Code
1.								
2.								
3.								
4.								

Use the appropriate units for each fuel: *Natural Gas = lb/therm**
*Other Gas = lb/MSCF**
*Liquid = lb/m gal**
Solid = lb/ton

Note: * MSCF = thousand standard cubic feet
* m gal = thousand gallons
* therm = 100,000 BTU
** See tables below for Fuel and Basis Codes
*** Total annual usage is: ~ Projected usage over next 12 months if equipment is new or modified.
~ Actual usage for last 12 months if equipment is existing and unchanged.

**Fuel Codes				**Basis Codes	
Code	Fuel	Code	Fuel	Code	Method
25	Anthracite coal	189	Natural Gas	0	Not applicable for this pollutant
33	Bagasse	234	Process gas - blast furnace	1	Source testing or other measurement by plant (attach copy)
35	Bark	235	Process gas - CO	2	Source testing or other measurement by BAAQMD (give date)
43	Bituminous coal	236	Process gas - coke oven gas	3	Specifications from vendor (attach copy)
47	Brown coal	238	Process gas - RMG	4	Material balance by plant using engineering expertise and knowledge of process
242	Bunker C fuel oil	237	Process gas - other	5	Material balance by BAAQMD
80	Coke	242	Residual oil	6	Taken from AP-42 (compilation of Air Pollutant Emission Factors, EPA)
89	Crude oil	495	Refuse derived fuel	7	Taken from literature, other than AP-42 (attach copy)
98	Diesel oil	511	Landfill gas	8	Guess
493	Digester gas	256	Solid propellant		
315	Distillate oil	466	Solid waste		
392	Fuel oil #2	304	Wood - hogged		
551	Gasoline	305	Wood - other		
158	Jet fuel	198	Other - gaseous fuels		
160	LPG	200	Other - liquid fuels		
165	Lignite	203	Other - solid fuels		
167	Liquid waste				
494	Municipal solid waste				

(revised: 6/01)

DATA FORM G
General Air Pollution Source

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street San Francisco, CA 94109 (415) 749-4990 FAX (415) 749-5030 www.baaqmd.gov

Form G is for general air pollution sources. Use specific forms when applicable. If this source burns fuel, then also complete Form C.

1. Business Name: Environmental Compliance Grp, LLC Plant No: _____ (if unknown, leave blank)
2. SIC No.: _____ Date of Initial Operation 7/1/13
3. Name or Description: SVE blower Source No.: S- 1
4. Make, Model, and Rated Capacity of Equipment: 25 hp Travioni TR04005 blower
5. Process Code[1] 8999 Material Code[2] 572 Usage Unit[2] ft³
6. Total throughput, last 12 mos. 21024000 usage units[2] Maximum operating rate: 24000 usage units[2] /hr
7. Typical % of total throughput: Dec-Feb 25 % Mar-May 25 % Jun-Aug 25 % Sep-Nov 25 %
8. Typical operating times: 24 hrs/day 7 days/week 52 weeks/year
9. For batch or cyclic processes: _____ minutes/cycle _____ minutes between cycles
10. Exhaust gases from source: *(at maximum operation)* Wet gas flowrate 400 cfm at 325 °F
    Approximate water vapor content 5 volume%

EMISSION FACTORS *(at maximum operating rate)*

If this form is being submitted as part of an application for an **authority to construct**, completion of the following table is mandatory. If not, and the Source is *already in operation*, completion of the table is requested but not required.

If this source also burns fuel, do not include those combustion products in the emission factors below; they are accounted for on Form C. If source test or other data are available for composite emissions only, estimate from those data the emissions attributable to just the general process and show below.

☐ Check box if factors apply to emissions ***after*** Abatement Device(s).

	Emission Factors lb/Usage Unit [2]	***Basis Code*** [3]
11. Particulate		
12. Organics		
13. Nitrogen Oxides (as NO_2)		
14. Sulfur Dioxide		
15. Carbon Monoxide		
16. Other: ROC (TPH, BTEX, MtBE)	32.2	3
17. Other:		

18. With regard to air pollutant flow from this source, what sources(s), abatement device(s) and/or emission point(s) are **immediately** downstream?

S- 2 S- _____ S- _____ A 1 A- _____ A- _____
P- _____ P- _____ P- _____ P- _____ P- _____

[1]See Tables G-1 through G-7 for code **[2]See Table G5 or the Material Codes Table (available upon request)**
[3]See Basis Code Table below

Person completing this form: Drew Van Allen Date: 4/15/13

Form G – 05/07

DATA FORM G
General Air Pollution Source

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street San Francisco, CA 94109 (415) 749-4990 FAX (415) 749-5030 www.baaqmd.gov

Form G is for general air pollution sources. Use specific forms when applicable. If this source burns fuel, then also complete Form C.

1. Business Name: Environmental Compliance Group, LLC Plant No: _____ (if unknown, leave blank)
2. SIC No.: _____ Date of Initial Operation 7/1/13
3. Name or Description: Air Stripper Source No.: S- 2
4. Make, Model, and Rated Capacity of Equipment: 5 Hp regenerative blower
5. Process Code[1] 0999 Material Code[2] 427 Usage Unit[2] thgal
6. Total throughput, last 12 mos. [redacted] 0 usage units[2] Maximum operating rate: [redacted] 10 usage units[2] /hr
7. Typical % of total throughput: Dec-Feb 25 % Mar-May 25 % Jun-Aug 25 % Sep-Nov 25 %
8. Typical operating times: 24 hrs/day 7 days/week 52 weeks/year
9. For batch or cyclic processes: _____ minutes/cycle _____ minutes between cycles
10. Exhaust gases from source: *(at maximum operation)* Wet gas flowrate 100 cfm at 325 °F
    Approximate water vapor content 5 volume%

EMISSION FACTORS *(at maximum operating rate)*

If this form is being submitted as part of an application for an **authority to construct**, completion of the following table is mandatory. If not, and the Source is *already in operation*, completion of the table is requested but not required.

If this source also burns fuel, do not include those combustion products in the emission factors below; they are accounted for on Form C. If source test or other data are available for composite emissions only, estimate from those data the emissions attributable to just the general process and show below.

☐ Check box if factors apply to emissions ***after*** Abatement Device(s).

	Emission Factors lb/Usage Unit [2]	***Basis Code*** [3]
11. Particulate		
12. Organics		
13. Nitrogen Oxides (as NO_2)		
14. Sulfur Dioxide		
15. Carbon Monoxide		
16. Other: ROC (TPHg/BTEX/MTBE)	0.12	3
17. Other:		

18. With regard to air pollutant flow from this source, what sources(s), abatement device(s) and/or emission point(s) are **immediately** downstream?

S- _____ S- _____ S- _____ A 1 A- _____ A- _____
P- _____ P- _____ P- _____ P- _____ P- _____

[1]**See Tables G-1 through G-7 for code** [2]**See Table G5 or the Material Codes Table (available upon request)**
[3]**See Basis Code Table below**

Person completing this form: Drew Van Alle Date: 4/15/13

Form G – 05/07

DATA FORM P
Emission Point

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street .. . San Francisco, CA . . . 94109. . . (415) 749-4990 . . . Fax (415) 749-5030

Form P is for well-defined emission points such as stacks or chimneys only; do not use for windows, room vents, etc.

Business Name: Environmental Compliance Group, LLC Plant No: _____

Emission Point No: P- 1

With regard to air pollutant flow into this emission point, what sources(s) and/or abatement device(s) are **immediately** upstream?

S-	_____	**S-**	_____	**S-**	_____	**S-**	_____	**S-**	_____
S-	_____	**A-**	1	**A-**	_____	**A-**	_____	**A-**	_____

Exit cross-section area: 1 sq. ft. Height above grade: 20 ft.

Effluent Flow from Stack

	Typical Operating Condition		*Maximum Operating Condition*	
Actual Wet Gas Flowrate	200	cfm	400	cfm
Percent Water Vapor	1	Vol %	5	Vol %
Temperature	250	°F	325	°F

If this stack is equipped to measure (monitor) the emission of any air pollutants,

Is monitoring continuous? ☐ yes ☒ no

What pollutants are monitored? TPHg, BTEX, MtBe

Person completing this form Drew VanAlle Date 4/15/13

Form HRSA

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990 . . . FAX (415) 749-5030 OR 4949
WEBSITE: WWW.BAAQMD.GOV

Health Risk Screening Analysis

IMPORTANT: For any permit application that requires a Health Risk Screening Analysis, fill out one form for each source that emits a Toxic Air Contaminant(s) [or for a group of sources that exhaust through a common stack]. Emissions can be from a discrete point source (with stack) or a source with fugitive emissions (area or volume source). You must provide a plot plan (drawn to scale, if possible) and a local map (aerial photos are recommended), which clearly demonstrate the location of your site, the source(s), property lines, and any surrounding buildings [see attached example]. Label streets, schools, residences, and other businesses. List major dimensions of all buildings surrounding the source in Section C.

Plant Name: _____ Plant No.: _____

Source Description: Thermal Catalytic Oxidizer with Air Stripper

Source No.: S- 1 and S-2 (if known) Emission Point No.: P- 1 (if known)

SECTION A *(Point Source)*

1. Does the source exhaust at clearly defined emission point; i.e., a stack or exhaust pipe? ☒ YES OR ☐ NO
   (If YES continue at #2, If NO, skip to Section B)
2. Does the stack (or exhaust pipe) stand alone or is it located on the roof of a building? ☒ alone OR ☐ on roof
   Important: If stack is on a roof, provide building dimensions on line B1 in Section C.
3. What is the height of the stack outlet above ground level? 20 feet OR _____ meters?
4. What is the inside diameter of the stack outlet? 16.9 inches OR _____ feet OR _____ meters
5. What is the direction of the exhaust from the stack outlet? ☐ horizontal OR ☒ vertical
6. Is the stack outlet: ☒ open or hinged rain flap OR ☐ rain capped (deflects exhaust downward or horizontally)
7. What is the exhaust flowrate during normal operation? 400 cfm (cubic feet/min) OR _____ meters^3/second
8. What is the typical temperature of the exhaust gas? 325 degrees Fahrenheit OR _____ degrees Celsius
   (Skip Section B and Go on to Section C)

SECTION B *(Area/Volume Source)*

This section applies to fugitive emissions that are NOT captured by a collection system nor directly emitted through a stack or other emission point. Volume sources have fugitive emissions generally released within a building or other defined space (e.g., dry cleaner, gasoline station canopy). Area sources are generally flat areas of release (e.g., landfill, quarry).

1. Is the emission source located within a building? ☐ YES (go to #2) OR ☐ NO (go to #3)
2. If YES (source inside building), provide building dimensions on line B1 in Section C
   a. Does the building have a ventilation system that is vented to the outside? ☐ YES OR ☐ NO
   b. If NO (ventilation), are the building's doors & windows kept open during hours of operation? ☐ YES OR ☐ NO
3. If NO (source not inside building), provide a description of the source, dimensions, & indicate location on plot plan.

_____

_____

(Go on to Section C)

SECTION C *(Building Dimensions)*

Provide building dimensions. Use Line B1 only for building with source/stack on the roof or with fugitive emissions inside building. Use Lines B2-B9 for buildings surrounding the source (within 300 feet). Distance and direction are optional if map and/or aerial photo are adequately labeled with locations of buildings. Check one for units: ☐ feet OR ☐ meters

B#	Building name or description	Height	Width	Length	Distance To Source	Direction To Source
B1	Building with source:				n/a	n/a
B2	Residence house	25	20	40		
B3	Heald College	25	20	60		
B4	Residence house	25	20	40		
B5	Your Auto center	25	20	40		
B6						
B7						
B8						
B9						

NOTE: Label buildings by B# on plot plan, map and/or aerial photo. Provide comments below for any details that need additional clarification (e.g., list buildings that are co-occupied by your employees and other workers, residents, students, etc).

(Go on to Section D)

SECTION D *(Receptor Locations)*

NOTE: Indicate on maps or aerial photos the residential and nonresidential areas surrounding your facility.

1. Indicate the area where the source is located (check one):
   - ☐ zoned for residential use
   - ☒ zoned for mixed residential and commercial/industrial use
   - ☐ zoned for commercial and/or industrial use
   - ☐ zoned for agricultural use
2. Distance from source (stack or building) to nearest facility property line = 10 feet OR _____ meters
3. Distance from source (stack or building) to the property line of the nearest residence = 10 feet OR _____ meters
4. Describe the nearest nonresidential property (check one): ☒ Industrial/Commercial OR ☐ Other _____
5. Distance from source (stack or building) to property line of nearest nonresidential site = 10 feet OR _____ meters
6. Distance from source to property line of nearest school* (or school site) = 390 feet OR ☒ Greater than 1,000 feet

   [Note: Helpful website with California Dept. of Education data: www.greatschools.net]

   Provide the names and addresses of all schools* that have property line(s) within 1,000 feet of the source:

   La Escuelita Elementary School, 1100 Third Ave, Oakland 94606

   Metwest High School, 314 E. 10th St. Oakland 94606

*K-12 and more than twelve children only

To see all the details that are visible on the screen, use the "Print" link next to the map.

Google

Los Esculita Elementary School

Proposed remediation system location

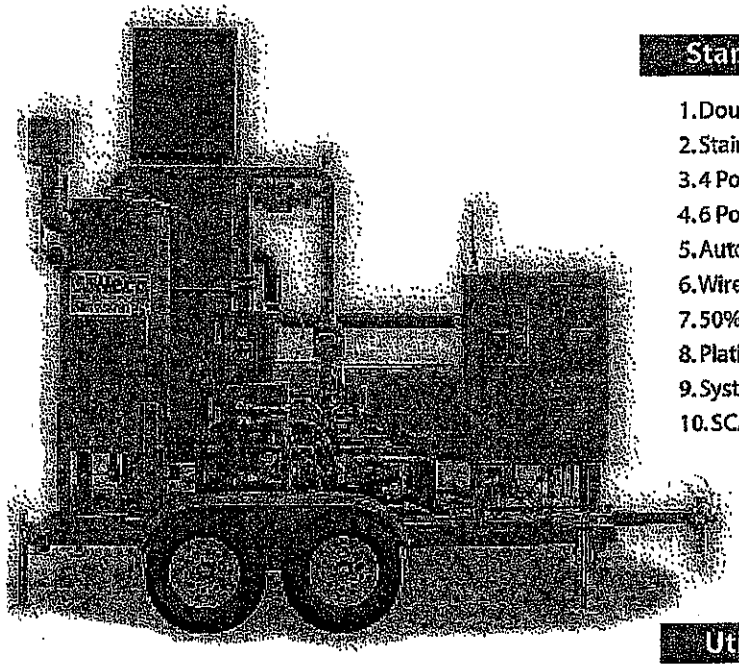
APPENDIX C

MANUFACTURER SPECIFICATION SHEETS

Solleco 400LR THERMAL CATALYTIC OXIDIZER

Standard Features

- Skid mounted system (84" x 120")
- 200 gallon entrained liquid separator
- Oil sealed liquid ring blower
- 400 CFM and up to 28" Hg.
- Oil cooler system with level switches
- 25 HP TEFC motor – 3 Phase
- A-36 steel oxidizer body with ceramic lining
- Excess air burner package
- NEMA 4 – NFPA Fuel train
- NEMA 4 electrical enclosure
- Digital temperature controller
- Digital dilution controller
- Digital high limit controller
- 2 Pen chart recorder
- DP Transmitter with pitot tube
- Analog hour meter



Standard Options

1. Double axle trailer with jack stands
2. Stainless steel auto drain pump
3. 4 Point chart recorder
4. 6 Point chart recorder
5. Auto dialer telemetry system
6. Wireless telemetry capability
7. 50% efficient heat exchanger
8. Platinum coated monolithic catalyst cell
9. System CSA certification
10. SCAQMD certified permit

Utility Requirements

208/230 Volt – 3 Phase – 100 Amps

500 scfh - 5 psi – LPG or Natural Gas

SOLLECO INC.
1270 NORTH RED GUM
ANAHEIM, CA 92806
(714) 575-0025 - FAX (714) 575-0026 - www.solleco.com

400 TCAT (LR) THERMAL / CATALYTIC OXIDIZER
TECHNICAL SPECIFICATIONS

Oxidizer Specifications:	
Chamber Length	10 feet
Chamber Retention Time	1 second
Stack Exit Velocity	10 feet / second
Throat Velocity	40 feet / second
Stack Discharge Height	13 feet
Skid Dimensions	7 feet wide / 12 feet long
Trailer Dimensions	9 feet wide / 12 feet long
Chamber Dimensions	40" round outside - 30" round inside
Chamber Internal Lining	Ceramic Fiber
Chamber Mixing Throat Diameter	15" Round
Burner Size	500,000 btu/hr. (Maximum)
Destruction Efficiency	98% +
Maximum VOC Influent (Thermal)	20,000 ppmv (BTEX / MTBE)
Operating Temperature (Thermal)	1400° F to 1650° F
Maximum VOC Influent (Catalytic)	3,500 ppmv (BTEX / MTBE)
Operating Temperature (Catalytic)	600° F to 1200° F
Normal VOC Effluent	< 50 ppmv

Blower Specifications:	
Blower Type	Travaini TRO400S
Volumetric Flow	450 CFM maximum
Vacuum Level	Up to 28" Mercury
Motor Type	25 HP TEFC

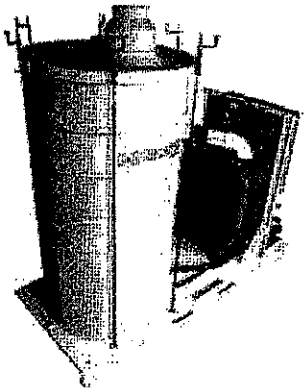
Catalyst Specifications:	
Catalyst Type	Platinum Coated Metal Monolithic
Catalyst Size	23" O.D. x 3.5" Height
Catalyst Volume	.75 ft^3
Destruction Efficiency	98% +
Maximum VOC Influent	3500 ppmv (BTEX / MTBE)
Normal VOC Effluent	<50 ppmv

Utility Specifications:	
Supplemental Fuel	Natural Gas or Propane
Fuel Pressure	2 to 5 psi (Maximum)
Fuel Volume	500 scfh (Maximum)
Electrical Requirements	208/230 Volt – 3 Phase - 100 Amps

QED Environmental Systems
Global (734) 995-2547
Toll-Free (800) 624-2026
Fax (734) 995-1170

EZ-Stacker Low Profile Air Stripper

Stackable high-efficiency air stripper for VOC removal



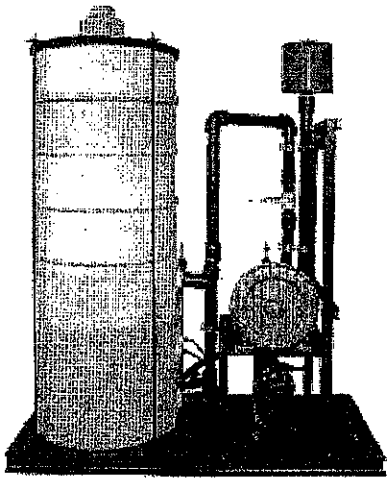
The EZ-Stacker is a low profile air stripper used to remove volatile organic compounds (VOC) from groundwater. The exclusive design of the EZ-Stacker stripper results in VOC removal rates up to 99%.

The unique E-Z Stacker configuration consists of a series of integrally-molded shell/tray modules. The multiple sieve tray design uses forced-draft air bubble generation to provide rapid, effective VOC removal (up to 99%).

Every element of the heavy-duty HDPE construction has been engineered for durable, reliable performance with a multi-step positive seal against leakage.

The EZ-Stacker air strippers are available in configurations with 4 or 6 trays, with maximum flow rates from 1 to 40 GPM (4 - 151 LPM).

Low Cost, Low Maintenance, Low Flow Performance



The innovative design of E-Z Stacker™ Air Strippers delivers many advantages to environmental consultants, remediation contractors, and end-users.

E-Z Stacker models are sized and priced to be the most economical choice for many low to moderate flow cleanup applications (up to 40 GPM). Low capital expense and low O & M requirements make the difference.

The unique E-Z Stacker configuration consists of a series of integrally-molded shell/tray modules. The multiple sieve tray design uses forced-draft air bubble generation to provide rapid, effective VOC removal (up to 99%).

Every element of the heavy-duty HDPE construction has been engineered for durable, reliable performance with a multi-step positive seal against leakage.

Easy disassembly cuts cleaning costs

Disassembly for routine cleaning is a quick, simple, one-person job. The whole stack (4 or 6 trays) can be taken apart by releasing just four connections. Trays have no loose parts when disassembled, and cannot be reassembled incorrectly.

Easy-access fittings allow units to be placed in corners or other tight spaces. Two sizes are available in four or six-tray versions, for maximum flow ranges from 1-25 GPM.

EZ-Stacker Advantages

connections

Specifications

Model	Flow (GPM)	Dry Weight*	Operation Weight*	Shell Diameter/Height	Nozzle Size and Weight	Active Area	Nominal Airflow	Drawings
EZ-2.4P	1-25 GPM (4-94.6 LPM)	103 lb (46.72 Kg)	483 lb (219 Kg)	27 x 83 in (68.6 x 210.8 cm)	4 x 16 lb (4 x 7.3 Kg)	2.6 sq. ft (0.24 m2)	140 cfm (3.96 m3/min)	
EZ-2.6P	1-25 GPM (4-94.6 LPM)	135 lb (61.3 Kg)	531 lb (240.9 Kg)	27 x 103 in (68.6 x 261.6 cm)	6 x 16 lb (6 x 7.3 Kg)	2.6 sq. ft (0.24 m2)	140 cfm (3.96 m3/min)	
EZ-4.4P	1-40 GPM (4-151.4 LPM)	155 lb (70.3 Kg)	1,004 lb (455.4 Kg)	37 x 83 in (94.0 x 210.8 cm)	4 x 24 lb (4 x 10.9 Kg)	5.8 sq. ft (0.54 m2)	210 cfm (5.95 m3/min)	
EZ-4.6P	1-40 GPM (4-151.4 LPM)	203 lb (92.1 Kg)	1,134 lb (514.4 Kg)	37 x 102 in (94.0 x 259.1 cm)	6 x 24 lb (6 x 10.9 Kg)	5.8 sq. ft (0.54 m2)	210 cfm (5.95 m3/min)	

* skid mounted

Complete EZ-Stacker Engineering Specifications

Materials of construction:	Trays, sump/cover, internals	HDPE	
	Piping	CPVC	
	Skid	Epoxy coated mild steel	
	Demister	Polypropylene	
Blower Options:	208-230/460 Volt,	3 Phase, TEFC, 3.5HP	
	115/208-230 Volt,	1 Phase, TEFC, 2.5HP	
	208-230/460 Volt,	3 Phase, EXP, 4HP	
	230 Volt,	1 Phase, EXP 3HP	
	All blowers supplied with blower piping and flow throttle		
Sound Rating:	70dB at 10', 74dB at 3' with 230V/1/TEFC blower and two 1/2HP transfer pumps operating		
Stripper Options:	Airflow meter	Sump low pressure switch	
	Sump high level switch	Sump high pressure switch	
	Stack support kit	Discharge pump level controls	

On Line Air Stripper Modeler

The exclusive QED On Line Air Stripper Modeler has been developed to assist you in selecting the most efficient air stripping package for your groundwater cleanup project.

Run the QED On Line Air Stripper Modeler Now

Print Friendly Version

•¥ QED Environmental Systems, Inc.

a part of Severn Trent Laboratories Inc.

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Tel (734) 995-2547 • Toll-Free in North America (800) 624-2026 • Fax (734) 995-1170

1133 Seventh Street • Oakland, CA 94607 USA
Tel (510) 891-0880 • Toll-Free in North America (800) 537-1767 • Fax (510) 444-6789

Siemens Water Technologies Corp. Environmental Services
11711 Reading Road
Red Bluff, CA 96080
Telephone (530) 527-2664
Facsimile (530) 527-8724

ASC1000

Specification Summary

ASC1000 Liquid Phase Adsorption Filter is designed to treat a wide range of contaminated process streams, ease of handling and economical usage. This adsorber is capable of maximum flow rate of 50 GPM.

Data Summary:

Dimensions	48" dia x 56" high
Maximum Working Pressure	25 psi.
Vessel Volume	45 cu-ft
Carbon Capacity	1000 lbs.
Carbon Bed Volume-Typical	34 Ft^3
Maximum Flow	50 GPM
Empty Bed Contact Time	5.1 MIN @ 50 GPM
Material	Carbon Steel
Lifting	Lugs & Fork/Skid
Interior Surface Coating	3M ScotchKote 134, 10-15 mil min dft
Exterior Surface Primer	Rust Preventative Epoxy 3 mil min dft
Exterior Surface Coating	High Solids Urethane 3mil min dft
Standard Color	White (Federal Standard 17925)

UNDERDRAIN:

Screen	4" x 36" PVC

WEIGHT:

Shipping	1890 lbs
Operating	4280 lbs

APPENDIX D

[redacted] STANDARD OPERATING PROCEDURES

ECG

ENVIRONMENTAL COMPLIANCE GROUP, LLC
STANDARD OPERATING AND SAFETY AND LOSS CONTROL PROCEDURES

1.0 SOIL BORING/DRILLING SAMPLE COLLECTION AND CLASSIFICATION PROCEDURES

ECG will prepare a site-specific Health and Safety Plan as required by the Occupational Health and Safety Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR.1910.120). The document will be reviewed and signed by all ECG personnel and subcontractors prior to performing work at the site.

Prior to conducting and subsurface work at the site, Underground Services Alert (USA) will be contacted to delineate subsurface utilities near the site with surface markings. In addition; the first five feet of every location will be hand cleared to a diameter larger than the diameter of the auger or probe as a further precaution against damaging underground utilities. Sites that are currently operated as gas stations will be cleared with a private utility locator prior to drilling activities.

Soil samples to be submitted for chemical analyses are collected into brass or stainless steel tubes. The tubes are placed in an 18-inch long split-barrel sampler. The split-barrel sampler is driven its entire length hydraulically or by 140-pound drop hammer. The split-barrel sampler is removed from the borehole and the tubes are removed. When the tubes are removed from the split-barrel sampler, the tubes are trimmed and capped with Teflon sheets and plastic caps or the soil is removed from the tubes and placed in other appropriate sample containers. The samples are sealed, labeled, and placed in ice under chain-of-custody to be delivered to the analytical laboratory. All samples will be kept refrigerated until their delivery to the analytical laboratory.

One soil sample collected from each split-barrel sampler is field screened with a photoionization detector (PID), flame ionization detector (FID), or other equivalent field screening meter. The soil sample is sealed in a plastic bag or other appropriate container to allow volatilization of volatile organic compounds (VOCs). The field meter is used to measure the VOC concentration in the container's headspace and is recorded on the boring logs at the appropriate depth interval.

Other soil samples collected from each split-barrel sampler are inspected and documented to identify the soil stratigraphy beneath the site and classify the soil types according to the United Soil Classification System. The soil types are recorded on boring logs with the appropriate depth interval and any pertinent field observations. Drilling and sampling equipment are steam cleaned or washed in solution and rinsed in deionized water prior to use, between sample collections and boreholes and after use.

2.0 SOIL EXCAVATION SAMPLE COLLECTION AND CLASSIFICATION PROCEDURES

Soil samples to be submitted for chemical analyses are collected into brass or stainless steel tubes or other appropriate containers. The samples are sealed, labeled, and placed in ice under chain-of-custody (COC) to be delivered to the analytical laboratory. All samples will be kept refrigerated until their delivery to the analytical laboratory.

Select soil samples are placed into a sealed plastic bag or other appropriate container and field screened using a PID, FID, or equivalent meter. Other soil samples collected are inspected and documented to identify the soil stratigraphy beneath the site and classify the soil types according to the United Soil Classification System. The soil types are recorded field notes with the appropriate depth interval and any pertinent field observations. Sampling equipment are steam cleaned or washed in solution and rinsed in deionized water prior to use, between sample collections, and after use. Soil cuttings and rinseate water are temporarily stored onsite pending laboratory analytical results and proper transport and disposal.

3.0 SAMPLE IDENTIFICATION AND COC PROCEDURES

Sample containers are labeled with job number, job name, sample collection time and date, sample collection point, and analyses requested. Sampling method, sampler's name, and any pertinent field observations are recorded on boring logs or excavation field notes. COC forms track the possession of the sample from the time of its collection until the time of its delivery to the analytical laboratory. During sample transfers, the person with custody of the samples will relinquish them to the next person by signing the COC and documenting the time and date. The analytical laboratory Quality Control/Quality Assurance (QA/QC) staff will document the receipt of the samples and confirm the analyses requested on the COC matches the sample containers and preservative used, if any. The analytical laboratory will assign unique log numbers for identification during the analyses and reporting. The log numbers will be added to the COC form and maintained in a log book maintained by the analytical laboratory.

4.0 ANALYTICAL LABORATORY QA/QC PROCEDURES

The analytical laboratory analyzes spikes, replicates, blanks, spiked blanks, and certified reference materials to verify analytical methods and results. The analytical laboratory QA/QC also includes:

Routine instrument calibration,
Complying with state and federal laboratory accreditation and certification programs,
Participation in U.S. EPA performance evaluation studies,
Standard operating procedures, and
Multiple review of raw data and client reports

5.0 HOLLOW STEM AUGER WELL INSTALLATION

Boreholes for wells are often drilled with a truck-mounted hollow stem auger drill rig. The borehole diameter is at least 4 inches wider than the outside diameter of the well casing. Soil samples are collected and screened as described in **Section 1.0** and decontamination procedures are also the same as described in **Section 1.0**.

Wells are cased with both blank and factory-perforated Schedule 40 PVC. The factory perforations are typically 0.020 inches wide by 1.5 inch long slots, with 42 slots per foot. A PVC cap is typically installed at the bottom of the casing with stainless steel screws. No solvents or cements are used in the construction of the wells. Well stabilizers or centering devices may be installed around the casing to ensure the filter material and grout in the annulus are evenly distributed. The casing is purchased pre-cleaned or steam cleaned and washed prior to installation in the borehole.

The casing is set inside the augers and sand, gravel, or other filter material is poured into the annulus to fill the borehole from the bottom to approximately 1-2 feet above the perforations. A two foot thick bentonite plug is placed above the filter material to prevent the grout from filling the filter pack. Neat cement or sand-cement grout is poured into the annulus from the top of the bentonite plug to the surface. For wells located in parking lots or driveways, or roads, a traffic rated well box is installed around the well. For wells located in landscaped areas or fields, a stovepipe well protection device is installed around the well. Soil cuttings and rinseate water are temporarily stored onsite pending laboratory analytical results and proper transport and disposal.

6.0 MUD AND AIR ROTARY WELL INSTALLATION

Boreholes for wells can also be drilled with a truck-mounted air rotary or mud rotary drill rig. Air or mud can be used as a drill fluid to fill the borehole and prevent the borehole from caving in and remove drill cuttings. Mud or air can be chosen depending on the subsurface conditions. Soil samples are collected and screened as described in **Section 1.0** and decontamination procedures are also the same as described in **Section 1.0**.

Wells are cased with both blank and factory-perforated Schedule 40 PVC. The factory perforations are typically 0.020 inches wide by 1.5 inch long slots, with 42 slots per foot. A PVC cap is typically installed at the bottom of the casing with stainless steel screws. No solvents or cements are used in the construction of the wells. Well stabilizers or centering devices may be installed around the casing to ensure the filter material and grout in the annulus are evenly distributed. The casing is purchased pre-cleaned or steam cleaned and washed prior to installation in the borehole. Soil cuttings and drilling fluids are temporarily stored onsite pending laboratory analytical results and proper transport and disposal.

The casing is set inside the augers and sand, gravel, or other filter material is poured into the annulus to fill the borehole from the bottom to approximately 1-2 feet above the perforations. A two foot thick bentonite plug is placed above the filter material to prevent the grout from filling the filter pack. Neat cement or sand-cement grout is poured into the annulus from the top of the bentonite plug to the surface. For wells located in parking lots or driveways, or roads, a traffic rated well box is installed around the well. For wells located in landscaped areas or fields, a stovepipe well protection device is installed around the well. Soil cuttings and rinseate water are temporarily stored onsite pending laboratory analytical results and proper transport and disposal.

7.0 WELL DEVELOPMENT

After well installation, the wells are developed to remove residual drilling materials from the annulus and to improve well production by fine materials from the filter pack. Possible well development methods include pumping, surging, bailing, jetting, flushing, and air lifting. Development water is temporarily stored onsite pending laboratory analytical results and proper transport and disposal. Development equipment are steam cleaned or washed in solution and rinsed in deionized water prior to use, between sample collections and after use. After well development the wells are typically allowed to stabilize for at least 24 hours prior to purging and sampling.

8.0 LIQUID LEVEL MEASUREMENTS

Liquid level measurements are made with a water level meter and/or interface probe and disposable bailers. The probe tip attached to a measuring tape is lowered into the well and into the groundwater when a beeping tone indicates the probe is in the groundwater. The probe and measuring tape (graduated to hundredths of a foot) are slowly raised until the beeping stops and the depth to water measurement is recorded. If the meter makes a steady tone, this indicates the presence of floating liquid hydrocarbons (FLH) and the probe and measuring tape are raised until the steady tone stops and the depth to the FLH is measured. Once depth to water and depth to FLH (if present) has been recorded, the probe and measuring tape are lowered to the bottom of the well where the total depth of the well is measured. The depth to water, depth to FLH, and depth to bottom are measured again to confirm the results.

If FLH is encountered in the well, a disposable bailer is lowered into the well and brought back to the surface to confirm the thickness/presence of FLH. To minimize potential for cross contamination between wells, all measurements are done from cleanest to dirtiest well. Prior to beginning liquid level measurements, in between measurements in all wells, and at the completion of liquid level measurements, the water level probe and measuring tape is cleaned with solution (Alconox, Simple Green, or equivalent) and rinsed with deionized water.

9.0 WELL PURGING AND SAMPLING

Each well is typically purged of at least three well casing volumes of groundwater prior to collecting a groundwater sample. Purging can continue beyond three well casing volumes if field parameters including pH, temperature, electrical conductivity are not stabilizing during the purging process. If the well is purged dry before the three well casing volumes has been purged, the well is typically allowed to recharge to 80 percent of its initial water level before a groundwater sample is collected.

Purging equipment can include submersible pumps, PVC purging bailers, disposable bailers, air lift pumps, or pneumatic pumps. Prior to beginning well purging, in between each well purging, and at the completion of purging activities, all non-dedicated purging equipment is cleaned with solution (Alconox, Simple Green, or equivalent) and rinsed with deionized water.

Once the well has been purged, it will be sampled with a disposable bailer, PVC bailer, stainless steel bailer, or through a low flow groundwater pump. The groundwater sample is transferred from the bottom of the bailer to reduce volatilization to the appropriate sample container. The sample containers are specified by the analytical laboratory depending on the analyses requested. Sample containers typically include volatile organic compound (VOA) vials with septa of Teflon like materials. The groundwater sample is collected into the VOAs to minimize air bubbles and once the cap has been placed on the VOA, the VOA is tipped upside down to see if air bubbles are present in the VOA. Typically a duplicate VOA is collected from each well to be analyzed by the analytical laboratory, if warranted, to verify results.

Sample containers are labeled as described in **Section 3.0** and placed immediately in an ice chest and kept refrigerated until its delivery to the analytical laboratory. A trip blank may also be prepared by the analytical laboratory to travel with the ice chest during transport to the laboratory. Field blanks from equipment that has been decontaminated may be collected in between use in different wells to verify the decontamination procedure is effective. To minimize potential for cross contamination between wells, all wells are purged and sampled from cleanest to dirtiest well.

10.0 TEDLAR BAG SOIL VAPOR SAMPLING

Sampling equipment to collect Tedlar bag soil vapor samples includes an air pump, a Tedlar bag which can range in size from 1 to 10 liters, and 3/16-inch diameter polyethylene tubing. The air pump should be equipped with 3/16-inch hose barbs for the polyethylene tubing to attach to. The Tedlar bag must be equipped with a valve for filling and sealing the bag.

When soil vapor samples are collected from remediation equipment, the sample collection port on the remediation equipment is typically fitted with a 3/16-inch hose barb. Prior to collecting soil vapor samples from remediation equipment, air flow, temperature, and pressure or vacuum of the sampling point/remediation equipment are recorded. One end of the polyethylene tubing is connected to the sample collection port and one end is connected to the influent of the air pump, creating an air tight seal. The air pump is turned on and soil vapor from the sample collection port is pumped through the air pump for at least one minute. The air pump is turned off and one end of another piece of polyethylene tubing is connected to the effluent of the air pump and one end is connected to the valve on the Tedlar bag. The valve is opened and the air pump is turned on filling the Tedlar bag with the soil vapor sample until the bag has reached 75% capacity, when the valve on the Tedlar bag is closed and the air pump is turned off.

Tedlar bags are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory. After each soil vapor sample collection, the air pump is turned on for five minutes to allow ambient air to clear the air pump and polyethylene tubing.

11.0 SUMMA CANISTER SOIL VAPOR SAMPLING

Sampling equipment to collect Summa canister soil vapor samples includes a sterilized Summa stainless steel canister under vacuum, ¼-inch diameter polyethylene tubing, and a laboratory calibrated flow meter, if required.

When soil vapor samples are collected from remediation equipment, the sample collection port on the remediation equipment is typically fitted with brass connection with silicone septa that has been threaded into a tapped hole on the piping network. Prior to collecting soil vapor samples from remediation equipment, air flow, temperature, and pressure or vacuum of the sampling point/remediation equipment are recorded. One end of the polyethylene tubing is connected to the brass sample collection port and one end is connected to the canister valve or flow meter, creating an air tight seal. Prior to collecting the soil vapor sample, the valve on the Summa canister is opened to verify the Summa canister has the required vacuum which is recorded. The sample valve or flow meter is opened and the soil vapor sample is collected into the Summa canister and the sample valve is closed and the final vacuum reading (typically greater than 5 inches per square inch) on the Summa canister is recorded.

Summa canisters are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory.

12.0 SYRINGE SOIL VAPOR SAMPLING

Sampling equipment to collect syringe soil vapor samples includes a sterilized, 100 cubic centimeter, gas tight syringe and silicone septa.

When soil vapor samples are collected from remediation equipment, the sample collection port on the remediation equipment is typically fitted with brass connection with silicone septa that has been threaded into a tapped hole on the piping network. Prior to collecting soil vapor samples from remediation equipment, air flow, temperature, and pressure or vacuum of the sampling point/remediation equipment are recorded. The syringe is inserted into the silicone septa and the plunger is purged or pumped at least three times. The sample is collected the fourth time the syringe plunger is extracted and the syringe is removed from the sample collection port and the needle on the syringe is capped with a rubber stopper.

Syringes are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory.

13.0 TEDLAR BAG SOIL VAPOR SURVEY, TEMPORARY SAMPLING POINTS

Sampling equipment to collect Tedlar bag soil vapor survey samples includes an air pump, a Tedlar bag which can range in size from 1 to 10 liters, 3/16-inch diameter polyethylene tubing, and possibly a soil vapor probe. The air pump should be equipped with 3/16-inch hose barbs for the polyethylene tubing to attach to. The Tedlar bag must be equipped with a valve for filling and sealing the bag.

A temporary borehole is advanced using either a slam bar or a direct push drill rig. In the case of the slam bar, once the borehole has been created, a temporary soil vapor probe is inserted into the borehole and advanced with a slide hammer or other physical force two additional feet. A bentonite seal is then placed in the borehole above the soil vapor probe to create an air tight seal and prevent ambient air from entering the sample collection space. In the case of the direct push drill rig, the sampling rod is advanced to the desired depth with a 6-inch retractable vapor screen at the tip. The sample screen on the 6-inch vapor screen is removed and a bentonite seal is then placed in the borehole above the soil vapor probe to create an air tight seal and prevent ambient air from entering the sample collection space.

Once the bentonite seal has set, at least one hour, the soil vapor survey samples are collected into Tedlar bags as described in **Section 10.0.** Tedlar bags are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory. After each soil vapor sample collection, the air pump is turned on for five minutes to allow ambient air to clear the air pump and polyethylene tubing.

13.0 TEDLAR BAG SOIL VAPOR SURVEY, TEMPORARY AND REPEATABLE SAMPLING POINTS

Sampling equipment to collect Tedlar bag soil vapor survey samples includes an air pump, a Tedlar bag which can range in size from 1 to 10 liters, 3/16-inch diameter polyethylene tubing, and possibly a soil vapor probe. The air pump should be equipped with 3/16-inch hose barbs for the polyethylene tubing to attach to. The Tedlar bag must be equipped with a valve for filling and sealing the bag.

13.1 TEMPORARY SAMPLING POINTS

A temporary borehole is advanced using either a slam bar or a direct push drill rig. In the case of the slam bar, once the borehole has been created, a temporary soil vapor probe is inserted into the borehole and advanced with a slide hammer or other physical force two additional feet. A bentonite seal is then placed in the borehole above the soil vapor probe to create an air tight seal and prevent ambient air from entering the sample collection space. In the case of the direct push drill rig, the sampling rod is advanced to the desired depth with a 6-inch retractable vapor screen at the tip. The sample screen on the 6-inch vapor screen is removed and a bentonite seal is then placed in the borehole above the soil vapor probe to create an air tight seal and prevent ambient air from entering the sample collection space.

Once the bentonite seal has set, at least one hour, the soil vapor survey samples are collected into Tedlar bags as described in **Section 10.0.** Tedlar bags are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory. After each soil vapor sample collection, the air pump is turned on for five minutes to allow ambient air to clear the air pump and polyethylene tubing.

13.2 REPEATABLE SAMPLING POINTS

A borehole is advanced using either a hand auger or a drill rig. A 6-inch slotted probe with caps on both ends is placed in the borehole. A Swagelok fitting is attached to one end cap and 3/16-inch diameter Nylon tubing is attached to the Swagelok fitting. A one foot sand pack is placed around the probe and the remainder of the borehole is sealed with a layer of dry bentonite powder, followed by a layer of bentonite chips, and an additional layer of dry bentonite powder. A well box is placed on the surface of the repeatable sampling point and the excess Nylon tubing is placed inside the well box.

Soil vapor survey samples will be collected at least one week after probe installation. In addition, soil vapor survey samples will only be collected after five consecutive precipitation free days and after any onsite irrigation has been suspended.

The soil vapor survey samples are collected into Tedlar bags as described in **Section 10.0** or Summa canisters as described in **Section 11.0.** Tedlar bags or Summa canisters are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory. After each soil vapor sample collection, the air pump is turned on for five minutes to allow ambient air to clear the air pump and polyethylene tubing.

APPENDIX E

LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY FORM

KIFF Analytical LLC

Report Number : 77930
Date : 07/01/2011

Laboratory Results

Drew Van Allen
Environmental Compliance Group
270 Vintage Dr
Turlock, CA 95381

Subject : 4 Vapor Samples
Project Name : Shore Acres Gas
Project Number : GHA.19009

Dear Mr. Van Allen,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 77930
Date : 07/01/2011

Project Name : **Shore Acres Gas**
Project Number : **GHA.19009**

Sample : **VW-1-INIT** Matrix : Air Lab Number : 77930-01
Sample Date :06/24/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	**9.4**	0.20	ppmv	EPA 8260B	06/27/11 11:21
Toluene	**1.1**	0.15	ppmv	EPA 8260B	06/27/11 11:21
Ethylbenzene	**1.3**	0.15	ppmv	EPA 8260B	06/27/11 11:21
Total Xylenes	**2.7**	0.15	ppmv	EPA 8260B	06/27/11 11:21
Methyl-t-butyl ether (MTBE)	**1.3**	0.15	ppmv	EPA 8260B	06/27/11 11:21
TPH as Gasoline	**190**	15	ppmv	EPA 8260B	06/27/11 11:21
1,2-Dichloroethane-d4 (Surr)	96.8		% Recovery	EPA 8260B	06/27/11 11:21
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	06/27/11 11:21

Sample : **VW-1-DAY 2** Matrix : Air Lab Number : 77930-02
Sample Date :06/25/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	**15**	0.10	ppmv	EPA 8260B	06/27/11 18:31
Toluene	**5.8**	0.090	ppmv	EPA 8260B	06/27/11 18:31
Ethylbenzene	**4.5**	0.080	ppmv	EPA 8260B	06/27/11 18:31
Total Xylenes	**10**	0.080	ppmv	EPA 8260B	06/27/11 18:31
Methyl-t-butyl ether (MTBE)	**2.1**	0.10	ppmv	EPA 8260B	06/27/11 18:31
TPH as Gasoline	**500**	8.0	ppmv	EPA 8260B	06/27/11 18:31
1,2-Dichloroethane-d4 (Surr)	95.8		% Recovery	EPA 8260B	06/27/11 18:31
Toluene - d8 (Surr)	97.6		% Recovery	EPA 8260B	06/27/11 18:31

KIFF Analytical LLC

Report Number : 77930
Date : 07/01/2011

Project Name : **Shore Acres Gas**
Project Number : **GHA.19009**

Sample : **VW-1-END** Matrix : Air Lab Number : 77930-03
Sample Date :06/26/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	**21**	0.20	ppmv	EPA 8260B	06/27/11 13:58
Toluene	**13**	0.20	ppmv	EPA 8260B	06/27/11 13:58
Ethylbenzene	**9.0**	0.15	ppmv	EPA 8260B	06/27/11 13:58
Total Xylenes	**23**	0.15	ppmv	EPA 8260B	06/27/11 13:58
Methyl-t-butyl ether (MTBE)	**1.9**	0.20	ppmv	EPA 8260B	06/27/11 13:58
TPH as Gasoline	**1400**	20	ppmv	EPA 8260B	06/27/11 13:58
1,2-Dichloroethane-d4 (Surr)	95.1		% Recovery	EPA 8260B	06/27/11 13:58
Toluene - d8 (Surr)	95.6		% Recovery	EPA 8260B	06/27/11 13:58

Sample : **VW-2-INIT** Matrix : Air Lab Number : 77930-04
Sample Date :06/26/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	**140**	3.0	ppmv	EPA 8260B	06/27/11 19:08
Toluene	**240**	2.5	ppmv	EPA 8260B	06/27/11 19:08
Ethylbenzene	**84**	2.0	ppmv	EPA 8260B	06/27/11 19:08
Total Xylenes	**220**	2.0	ppmv	EPA 8260B	06/27/11 19:08
Methyl-t-butyl ether (MTBE)	**9.2**	2.5	ppmv	EPA 8260B	06/27/11 19:08
TPH as Gasoline	**11000**	250	ppmv	EPA 8260B	06/27/11 19:08
1,2-Dichloroethane-d4 (Surr)	99.8		% Recovery	EPA 8260B	06/27/11 19:08
Toluene - d8 (Surr)	98.6		% Recovery	EPA 8260B	06/27/11 19:08

Report Number : 77930

Date : 07/01/2011

QC Report : Method Blank Data

Project Name : **Shore Acres Gas**

Project Number : **GHA.19009**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.050	0.050	ppmv	EPA 8260B	06/27/2011
Ethylbenzene	< 0.050	0.050	ppmv	EPA 8260B	06/27/2011
Toluene	< 0.050	0.050	ppmv	EPA 8260B	06/27/2011
Total Xylenes	< 0.050	0.050	ppmv	EPA 8260B	06/27/2011
Methyl-t-butyl ether (MTBE)	< 0.10	0.10	ppmv	EPA 8260B	06/27/2011
TPH as Gasoline	< 5.0	5.0	ppmv	EPA 8260B	06/27/2011
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	06/27/2011
Toluene - d8 (Surr)	98.2		%	EPA 8260B	06/27/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 77930

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Drew Van Allen	California EDF Report? ☑ Yes ☐ No
Company / Address: 270 Vintage Drive, Turlock, CA 95382	Sampling Company Log Code: ECGT
Phone Number: 209.664.1035	Global ID: T0600174667
Fax Number: 209.664.1040	EDF Deliverable To (Email Address): ecg.ust@gmail.com
Project #: GHA.19009 / P.O. #:	Bill to: ECG LLC
Project Name: Shore Acres Gas	Sampler Print Name: Drew Van Allen / Mike Sgouraki
	Sampler Signature:

Project Address: 403 East 12th Street Oakland, CA

Sample Designation	Date	Time	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Container:	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative:	Preservative:	Preservative:	Matrix: Water	Matrix: Soil	Matrix: Air	Matrix:
VW-1-INIT	6/24/2011	2315					X										X	
VW-1-DAY 2	6/25/2011	0218					X										X	
VW-1-END	6/26/2011	1415					X										X	
VW-2-INIT	6/26/2011	1800					X										X	

Analysis Request — PLEASE CIRCLE METHOD

MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	TPHg, BTEX, and MTBE by EPA 8260B				
																X		
																X		
																X		
																X		

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☑ 1 wk

For Lab Use Only: 01 02 03 04

Relinquished by:	Date	Time	Received by:
Drew Van Allen	6/27/11	0020	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	6/27/11	0830	Michelle Spencer Kiff Analytical

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Page 5 of 6

Distribution: White - Lab; Pink - Originator
Rev: 061708

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER: MMS Initials

SRG#: 17930 Date: 062711

Project ID: Shore Acres Gas

Method of Receipt: ☐ Courier ☒ Over-the-counter ☐ Shipper

COC Inspection

Is COC present?	☒ Yes	☐ No		
Custody seals on shipping container?	☐ Intact	☐ Broken	☐ Not present	☒ N/A
Is COC Signed by Relinquisher? ☒ Yes ☐ No	Dated? ☒ Yes	☐ No		
Is sampler name legibly indicated on COC?	☒ Yes	☐ No		
Is analysis or hold requested for all samples	☒ Yes	☐ No		
Is the turnaround time indicated on COC?	☒ Yes	☐ No		
Is COC free of whiteout and uninitialed cross-outs?	☒ Yes	☐ No, Whiteout	☐ No, Cross-outs	

Sample Inspection

Coolant Present: ☐ Yes ☒ No (includes water)

Temperature °C_____ Therm. ID#_____ Initial_____ Date/Time_____ ☒ N/A

Are there custody seals on sample containers?	☐ Intact	☐ Broken	☒ Not present	
Do containers match COC? ☒ Yes ☐ No ☐ No, COC lists absent sample(s)	☐ No, Extra sample(s) present			
Are there samples matrices other than soil, water, air or carbon?	☐ Yes	☒ No		
Are any sample containers broken, leaking or damaged?	☐ Yes	☒ No		
Are preservatives indicated? ☐ Yes, on sample containers	☐ Yes, on COC	☐ Not indicated	☒ N/A	
Are preservatives correct for analyses requested?	☐ Yes	☐ No	☒ N/A	
Are samples within holding time for analyses requested?	☒ Yes	☐ No		
Are the correct sample containers used for the analyses requested?	☒ Yes	☐ No		
Is there sufficient sample to perform testing?	☒ Yes	☐ No		
Does any sample contain product, have strong odor or are otherwise suspected to be hot?	☐ Yes	☒ No		

Receipt Details

Matrix AR Container type Tedlar # of containers received 4

Matrix_____ Container type_____ # of containers received_____

Matrix_____ Container type_____ # of containers received_____

Date and Time Sample Put into Temp Storage Date: 062711 Time: 0830

Quicklog

Are the Sample ID's indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If Sample ID's are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Is the Project ID indicated:	☒ On COC	☐ On sample container(s)	☐ On Both	☐ Not indicated
If project ID is listed on both COC and containers, do they all match?	☐ Yes	☐ No	☒ N/A	
Are the sample collection dates indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection dates are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Are the sample collection times indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection times are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	

COMMENTS:

KIFF Analytical LLC

Report Number : 77965
Date : 07/01/2011

Laboratory Results

Drew Van Allen
Environmental Compliance Group
270 Vintage Dr
Turlock, CA 95381

Subject : 2 Vapor Samples
Project Name : Shore Acres Gas
Project Number : GHA.19009

Dear Mr. Van Allen,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 77965
Date : 07/01/2011

Project Name : **Shore Acres Gas**
Project Number : **GHA.19009**

Sample : **VW-2-DAY 2** Matrix : Air Lab Number : 77965-01

Sample Date :06/27/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	**68**	0.60	ppmv	EPA 8260B	06/30/11 00:41
Toluene	**99**	0.50	ppmv	EPA 8260B	06/30/11 00:41
Ethylbenzene	**24**	0.40	ppmv	EPA 8260B	06/30/11 00:41
Total Xylenes	**64**	0.40	ppmv	EPA 8260B	06/30/11 00:41
Methyl-t-butyl ether (MTBE)	**3.6**	0.50	ppmv	EPA 8260B	06/30/11 00:41
TPH as Gasoline	**4700**	80	ppmv	EPA 8260B	06/30/11 02:55
1,2-Dichloroethane-d4 (Surr)	90.3		% Recovery	EPA 8260B	06/30/11 00:41
Toluene - d8 (Surr)	94.8		% Recovery	EPA 8260B	06/30/11 00:41

Sample : **VW-2-END** Matrix : Air Lab Number : 77965-02

Sample Date :06/28/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	**44**	0.60	ppmv	EPA 8260B	06/30/11 04:01
Toluene	**68**	0.50	ppmv	EPA 8260B	06/30/11 04:01
Ethylbenzene	**16**	0.40	ppmv	EPA 8260B	06/30/11 04:01
Total Xylenes	**43**	0.40	ppmv	EPA 8260B	06/30/11 04:01
Methyl-t-butyl ether (MTBE)	**3.1**	0.50	ppmv	EPA 8260B	06/30/11 04:01
TPH as Gasoline	**3200**	50	ppmv	EPA 8260B	06/30/11 04:01
1,2-Dichloroethane-d4 (Surr)	96.1		% Recovery	EPA 8260B	06/30/11 04:01
Toluene - d8 (Surr)	96.3		% Recovery	EPA 8260B	06/30/11 04:01

Report Number : 77965

Date : 07/01/2011

QC Report : Method Blank Data

Project Name : **Shore Acres Gas**

Project Number : **GHA.19009**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.050	0.050	ppmv	EPA 8260B	06/30/2011
Ethylbenzene	< 0.050	0.050	ppmv	EPA 8260B	06/30/2011
Toluene	< 0.050	0.050	ppmv	EPA 8260B	06/30/2011
Total Xylenes	< 0.050	0.050	ppmv	EPA 8260B	06/30/2011
Methyl-t-butyl ether (MTBE)	< 0.10	0.10	ppmv	EPA 8260B	06/30/2011
TPH as Gasoline	< 5.0	5.0	ppmv	EPA 8260B	06/30/2011
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	06/30/2011
Toluene - d8 (Surr)	101		%	EPA 8260B	06/30/2011
Benzene	< 0.050	0.050	ppmv	EPA 8260B	06/29/2011
Ethylbenzene	< 0.050	0.050	ppmv	EPA 8260B	06/29/2011
Toluene	< 0.050	0.050	ppmv	EPA 8260B	06/29/2011
Total Xylenes	< 0.050	0.050	ppmv	EPA 8260B	06/29/2011
Methyl-t-butyl ether (MTBE)	< 0.10	0.10	ppmv	EPA 8260B	06/29/2011
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	06/29/2011
Toluene - d8 (Surr)	99.4		%	EPA 8260B	06/29/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 7795

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Drew Van Allen	California EDF Report? ☑ Yes ☐ No
Company / Address: 270 Vintage Drive, Turlock, CA 95382	Sampling Company Log Code: ECGT
Phone Number: 209.664.1035	Global ID: T0600174667
Fax Number: 209.664.1040	EDF Deliverable To (Email Address): ecg.ust@gmail.com
Project #: GHA.19009 / P.O. #:	Bill to: ECG LLC
Project Name: Shore Acres Gas	Sampler Print Name: Drew Van Allen / Michael Sgouros
	Sampler Signature:

Project Address: 403 East 12th Street, Oakland, CA

Analysis Request — PLEASE CIRCLE METHOD

Sample Designation	Date	Time	40 ml VOA	Sleeve	Poly	Glass	Tedlar	HCl	HNO_3	None	Water	Soil	Air	MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	TPHg, BTEX, and MTBE by EPA 8260B				TAT	For Lab Use Only
																																			12 hr	
																																		24 hr	
																																		48hr	
																																		72hr	
																																		☑ 1 wk	
VW-2-DAY 2	6/27/2011	1230					X						X																	X					01
VW-2-END	6/28/2011	1230					X						X																	X					02

Relinquished by:	Date	Time	Received by:
	6/29/11	1630	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	062911	1630	Kiff Analytical

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 061708

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER Initials: LJR

SRG#: 77965 Date: 062911

Project ID: Shore Acres Gas

Method of Receipt: ☐ Courier ☑ Over-the-counter ☐ Shipper

COC Inspection

Is COC present?	☑ Yes	☐ No	
Custody seals on shipping container?	☐ Intact	☐ Broken	☐ Not present ☒ N/A
Is COC Signed by Relinquisher? ☑ Yes ☐ No Dated?	☑ Yes	☐ No	
Is sampler name legibly indicated on COC?	☑ Yes	☐ No	
Is analysis or hold requested for all samples	☑ Yes	☐ No	
Is the turnaround time indicated on COC?	☑ Yes	☐ No	
Is COC free of whiteout and uninitialed cross-outs?	☑ Yes	☐ No, Whiteout	☐ No, Cross-outs

Sample Inspection

Coolant Present: ☐ Yes ☒ No (includes water)

Temperature °C_____ Therm. ID#_____ Initial_____ Date/Time_____ ☑ N/A

Are there custody seals on sample containers?	☐ Intact	☐ Broken	☒ Not present	
Do containers match COC? ☒ Yes ☐ No ☐ No, COC lists absent sample(s)		☐ No, Extra sample(s) present		
Are there samples matrices other than soil, water, air or carbon?	☐ Yes	☒ No		
Are any sample containers broken, leaking or damaged?	☐ Yes	☒ No		
Are preservatives indicated? ☐ Yes, on sample containers	☐ Yes, on COC	☐ Not indicated	☑ N/A	
Are preservatives correct for analyses requested?	☐ Yes	☐ No	☒ N/A	
Are samples within holding time for analyses requested?	☑ Yes	☐ No		
Are the correct sample containers used for the analyses requested?	☑ Yes	☐ No		
Is there sufficient sample to perform testing?	☑ Yes	☐ No		
Does any sample contain product, have strong odor or are otherwise suspected to be hot?			☐ Yes	☑ No

Receipt Details

Matrix AR Container type Tedlar # of containers received 2

Matrix_____ Container type_____ # of containers received_____

Matrix_____ Container type_____ # of containers received_____

Date and Time Sample Put into Temp Storage Date: 062911 Time: 1630

Quicklog

Are the Sample ID's indicated:	☐ On COC	☐ On sample container(s)	☑ On Both	☐ Not indicated
If Sample ID's are listed on both COC and containers, do they all match?	☑ Yes	☐ No	☐ N/A	
Is the Project ID indicated:	☑ On COC	☐ On sample container(s)	☐ On Both	☐ Not indicated
If project ID is listed on both COC and containers, do they all match?	☐ Yes	☐ No	☒ N/A	
Are the sample collection dates indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection dates are listed on both COC and containers, do they all match?	☑ Yes	☐ No	☐ N/A	
Are the sample collection times indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection times are listed on both COC and containers, do they all match?	☑ Yes	☐ No	☐ N/A	

COMMENTS: