#### **RECEIVED**

8:58 am, Aug 23, 2011

Alameda County

Environmental Health

Mr. Mark Detterman Alameda County Environmental Health Care Services Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502

Re: Haber Oil Product

1401 Grand Avenue, San Leandro, CA

ACEHD Case # RO0000370, GeoTracker ID T0600101827

Dear Mr. Detterman:

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

Sincerely,

Mohan Chopra





August 8, 2011 Project No. 2120-1401-01

Mr. Mark Detterman Alameda County Health Care Services Agency Environmental Health Department 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Re: Quarterly Groundwater Monitoring Report – Second Quarter 2011 Haber Oil Product, 1401 Grand Avenue, San Leandro, CA

ACEHD Case # RO0000370, GeoTracker ID T0600101827

Dear Mr. Detterman:

Stratus Environmental, Inc. (Stratus) is submitting the attached report which presents an update of work performed during the second quarter 2011 on behalf of Mr. Mohan Chopra, for the Haber Oil Product site located at 1401 Grand Avenue, San Leandro, California. This report has been prepared in compliance with Alameda County Environmental Health Department (ACEHD) and California Regional Water Quality Control Board (RWQCB) requirements for underground storage tank (UST) investigations.

I declare, under penalty of perjury that the information and/or recommendations contained in the attached report is true and correct.

If you have any questions regarding this report, please contact Steve Carter at (530) 676-6008.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Stephen Carter, P.G.

Project Manager

∕Gowri S∕Kowtha, P.E.

Principal Engineer

Attachment: Quarterly Groundwater Monitoring Report, Second Quarter 2011

Stephen J. Carter

cc: Mr. Mohan Chopra

# HABER OIL PRODUCT QUARTERLY GROUNDWATER MONITORING REPORT

Facility Address: 1401 Grand Avenue, San Leandro, CA

Consulting Co. / Contact Person: Stratus Environmental, Inc. / Steve Carter, P.G.

Consultant Project No: 2120-1401-01

Primary Agency/Regulatory ID No: Mark Detterman, Alameda County Environmental Health Department

(ACEHD) / Case # RO0000370

#### WORK PERFORMED THIS QUARTER (Second Quarter 2011):

- 1. Stratus was retained by Mr. Mohan Chopra on March 23, 2011 to provide environmental consulting services at the subject site.
- 2. On April 1, 2011, Stratus submitted a completed encroachment permit application package to the city of San Leandro for the sampling of well MW-6. Stratus received the approved encroachment permit on April 7, 2011.
- 3. On April 11, 2011, Stratus conducted quarterly groundwater monitoring and sampling activities. During this event, wells MW-1 through MW-8 were gauged, purged, and sampled. Groundwater samples were analyzed at a state-certified analytical laboratory. Tabulated historical groundwater elevation and analytical data are summarized in Table 1. Field data sheets, sampling procedures, and laboratory analytical reports are included as Attachments A, B, and C, respectively.
- 4. Groundwater monitoring wells were resurveyed to GeoTracker standards on June 15, 2011. These data were uploaded to GeoTracker on June 21, 2011.
- 5. In a letter dated June 23, 2011, ACEHD requested a Site Conceptual Model (SCM), and a work Plan to address data gaps identified by the SCM, including a vapor survey and preferential pathway study.

# WORK PROPOSED FOR NEXT QUARTER (Third Quarter 2011):

1. In accordance with the SWRCB-approved semi-annual monitoring and sampling program, this site is scheduled for monitoring and sampling during the first and third quarters. Status was retained to provide environmental consulting services during the last week of the first quarter 2011, and we were unable to complete first quarter sampling activities before the end of the quarter. Per email correspondence with ACEHD, dated March 28, 2011, the site was therefore sampled early in the second quarter 2011 with the understanding that it would be sampled again late in the third quarter 2011 and semiannually after that. The site is tentatively scheduled to be sampled in September 2011.

Current Phase of Project:	Groundwater Monitoring
Frequency of Groundwater Monitoring and Sampling:	All Wells = Semi-annual (1 <sup>st</sup> & 3 <sup>rd</sup> )

Groundwater Sampling Date:	April 11, 2011
Is Free Product (FP) Present on Site:	No
Approximate Depth to Groundwater:	34.85 to 37.35 ft bgs
Groundwater Flow Direction:	Onsite: radial toward MW-3; Offsite: northwest
Groundwater Gradient	0.03 ft/ft

#### DISCUSSION:

Stratus conducted groundwater monitoring and sampling activities on April 11, 2011. During this event, wells MW-1 through MW-8 were gauged, purged, and sampled. Groundwater samples were analyzed at a state-certified analytical laboratory for gasoline range organics (GRO) by EPA Method SW8015B/DHS LUFT Manual, and for benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tertiary-butyl ether (MTBE), tertiary amyl methyl ether (TAME), ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary butyl alcohol (TBA), 1,2-dichloroethane (1,2-DCA), and 1,2-dibromoethane (EDB) by EPA Method SW8260B. Tabulated historical groundwater elevation and analytical data are summarized in Table 1.

At the time of the April 11, 2011 monitoring event, groundwater levels had increased between 3.14 and 4.10 feet in all wells since the previous monitoring event (May 23, 2007). Depth-to-water measurements were converted to feet above mean sea level (MSL) and used to construct a groundwater elevation contour map (Figure 3). The on-site groundwater flow appears to be radial toward well MW-3; the offsite groundwater flow is generally toward the northwest at a gradient of approximately 0.03 to 0.05 ft/ft. While it has been five years since the previous monitoring event, these hydrogeologic conditions are generally similar with historical data.

Petroleum hydrocarbons were reported in four of the sampled wells. GRO was reported in well MW-2 (25,000 micrograms per liter [ $\mu$ g/L]) and MW-3 (390  $\mu$ g/L). Benzene was reported in well MW-2 (1,600  $\mu$ g/L). MTBE was reported in wells MW-1 (7.3  $\mu$ g/L), MW-2 (210  $\mu$ g/L), MW-3 (600  $\mu$ g/L) and MW-4 (16  $\mu$ g/L). TBA was reported in wells MW-3 (120  $\mu$ g/L) and MW-4 (76  $\mu$ g/L). Concentrations of TAME, DIPE, ETBE, EDB, or 1,2-DCA were not reported in any of the wells. Chemical analytical data for this sampling event appear generally consistent with historical data. Analytical results of GRO, benzene and MTBE for groundwater samples collected April 11, 2011 are presented in Figure 4.

#### **RECOMMENDATIONS:**

The sampling technician reported high turbidity in the groundwater evacuated from wells MW-1, MW-2, MW-3 and MW-4; Stratus recommends these wells be redeveloped. Stratus will prepare and submit a SCM and a work plan for a vapor survey and preferential pathway study, as requested by ACEHD. Additional recommendations will be included in the SCM as warranted.

#### **ATTACHMENTS:**

•	Table 1	Groundwater Elevation and Analytical Summary
	Figure 1	Site Location Map
9	Figure 2	Site Plan
	Figure 3	Groundwater Elevation Contour Map (Second Quarter 2011)
0	Figure 4	Groundwater Analytical Summary (Second Quarter 2011)
	Appendix A	Field Data Sheets
•	Appendix B	Sampling and Analyses Procedures
	Appendix C	Laboratory Analytical Reports and Chain-of-Custody Documentation
	Appendix D	GeoTracker Electronic Submittal Confirmations

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY
Haber Oil Product

Well	Date	Depth to Water	Well Elevation	Groundwater Elevation	GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	МТВЕ	DIPE	ЕТВЕ	TAME	1,2-DCA	EDB	TBA
Number	Collected	(feet)	(ft msl)	(ft msl)	(µg/L)	(μg/L)	$(\mu g/L)$	(µg/L)	μg/L)	(µg/L)	(µg/L)	(μg/L)	(µg/L)	(μg/L)	(μg/L)	μg/L)
MW-1	09/29/92	42.77	87.96	45.21	3,100	160	ND	ND	6							
	02/18/94	41.02		46.96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	07/05/94	41.36		46.62	3,000	1,300	3.8	35	2.5		-					
	10/12/94	42.01		45.97	2,500	820	3.9	100	20							
l	02/01/95	38.46		49.52	4,600	1,800	9.9	230	30							
	05/04/95	37.65		50.33	2,400	670	2.8	76	6							
	06/23/95	38.54	87.98	49.44	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/19/95	40.16		47.82	500	87	1.5	11	9.8	3.5						
	03/28/96	37.10		50.88	1,300	320	2.3	34	1.5	4.6						
	06/21/96	38.56		49.42	1,400	300	8.7	33	9.8	19			~-			
	03/11/97	36.90		51.08	600	53	0.95	3	1.5	14						
	7/14/1997 <sup>1</sup>	39.45			200	20	5.5	1.2	2.3	35						
	01/25/98	33.70			300	21	0.73	7.6	1	<14						
	02/17/99	34.58			970	67	120	9.3	58	290						
	01/20/03	38.21			170	< 0.5	< 0.5	< 0.5	< 0.5	85	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	<50
	04/17/03	38.91			52	1.1	<1	<1	<1	56	<1.0	<1.0	<1.0	<1.0	<1.0	13
	07/15/03	39.60			60	<1	<1	<1	<1	53	<1.0	<1.0	<1.0	<1.0	<1.0	12
	11/25/03	40.00			140	2.5	<1	<1	<1	32	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/20/04	38.45			220	8.5	<5	<5	9.8	180	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50
	06/03/04	39.59			59	< 2.5	< 2.5	< 2.5	< 2.5	130	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	<25
	08/31/04	40.35			< 50	< 0.5	< 0.5	< 0.5	< 0.5	31	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/09/05	38.02			130	<10	<10	<10	<10	790	<10	<10	<10	<10	<10	<100
	06/22/05	37.91			< 50	<5	<5	<5	<5	320	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50
	08/31/05	39.27			< 50	<2.5	< 2.5	< 2.5	< 2.5	140	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	<25
	11/14/05	39.77			< 50	< 0.5	< 0.5	< 0.5	< 0.5	49	<1.0	<1.0	<1.0	<1.0	< 2.0	<10
	02/15/06	36.88			95a	<5	<5	<5	<5	180	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	<50
	06/15/06	36.37			< 50	<5	<5	<5	<5	280	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50
	01/11/07	38.87			< 50	< 2.5	< 2.5	< 2.5	< 2.5	92	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	<25
	05/23/07	39.35			< 50	<1	<1	<1	<1	72	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	04/11/11	36.18	90.70	54.52	<50	< 0.50	< 0.50	< 0.50	< 0.50	7.3	<1.0	<1.0	<1.0	<1.0	< 2.0	<10

# TABLE 1 GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY **Haber Oil Product**

Well	Date	Depth to Water	Well	Groundwater	CDO	Ъ		Ethyl-	Total							
Number	Collected	(feet)	Elevation (ft msl)	Elevation (ft msl)	GRO	Benzene	Toluene	benzene	Xylenes		DIPE	ETBE		1,2-DCA	EDB	TBA
MW-2	09/29/92	41.55	86.60	45.06	(μg/L) 20,000	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(µg/L)	(μg/L)	(μg/L)	(µg/L)	(μg/L)
101 00 -2	02/18/94	39.81	00.00	46.80	20,000 NS	4,600	3,800	260	3,300	3.76						
	07/05/94	40.13				NS	NS 7.000	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/12/94	40.13		46.48	46,000	9,100	7,000	1,400	7,300							
	02/01/95			45.84	24,000	4,400	2,800	730	3,500							
		37.27	06.61	49.34	45,000	7,000	5,100	1,200	6,100							
	05/04/95	36.54	86.61	50.07	63,000	10,000	11,000	1,600	8,800							
	06/23/95	37.40		49.21	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/19/95	38.80		47.81	25,000	5,200	3,800	860	3,800	450						
	03/28/96	35.97		50.64	38,000	5,800	4,700	1,100	5,100	450						
	06/21/96	37.90		49.31	49,000	6,600	6,300	1,400	6,200	530						
	03/11/97	35.71		50.90	28,000	4,000	4,500	990	4,300	710						
	07/14/97	38.46		48.15	43,000	6,200	8,900	1,500	7,400	1,600						
	01/25/98	32.80		53.81	24,000	2,700	4,900	700	4,000	2,700						
	02/17/99	33.51		53.10	7,300	67	120	9.3	58	290						
	01/20/03	37.04		49.57	48,000	2,900	3,000	2,000	11,000	3,800	< 50	< 50	< 50	< 50	< 50	<500
	04/17/03	37.50		49.11	57,000	3,400	5,100	2,800	10,000	5,600	<120	<120	<120	<120	<120	<1,200
	07/15/03	38.15		48.46	78,000	3,300	4,400	1,800	9,300	4,100	<120	<120	<120	<120	<120	<1,200
	11/25/03	38.68		47.93	65,000	6,800	8,800	2,900	16,000	2,700	<250	<250	<250	<250	<250	<2,500
	02/20/04	37.27		49.34	61,000	5,900	3,500	2,400	10,000	2,700	<100	<100	<100	<100	<100	<1,000
	06/03/04	38.32		48.29	50,000	5,400	4,200	2,200	8,800	3,900	<100	<100	<100	<100	<100	<1,000
	08/31/04	39.07		47.54	43,000	4,400	2,300	2,300	8,200	2,700	< 50	< 50	< 50	< 50	< 50	<500
	02/10/05	37.15		49.46	46,000	5,800	3,600	1,800	7,900	5,600	<100	<100	<100	<100	<100	<1,000
	06/22/05	36.76		49.85	37,000	5,500	1,400	2,500	8,600	3,900	<100	<100	<100	<100	<100	<1,000
	08/31/05	38.00		48.61	43,000	5,800	2,300	2,300	8,300	3,600	<100	<100	<100	<100	<100	<1,000
	11/14/05	38.50		48.11	42,000	4,500	2,100	1,500	6,300	2,000	< 50	< 50	< 50	<50	<50	<500
	02/15/06	35.78		50.83	38,000	3,700	2,700	2,000	6,600	2,000	<100	<100	<100	<100	<100	<1,000
	06/15/06	35.22		51.39	12,000	1,100	1,100	740	2,600	260	<50	<50	<50	<50	<50	<500
	01/11/07	37.51		49.10	18,000	1,300	790	790	3,000	400	<50	<50	<50	<50	<50	<500
	05/23/07	38.11		48.50	22,000	1,700	690	1,100	3,200	670	<50	<50	<50	<50	<50	<500 <500
	04/11/11	34.97	89.29	54.32	25,000	1,600	1,900	1,600	6,100	210	<40[1]	<40[1]	<40[1]	<40[1]	<80[1]	<400[1]

TABLE 1 GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY Haber Oil Product

		Depth to	Well	Groundwater				Ethyl-	Total							
Well	Date	-	Elevation	Elevation	GRO	Benzene	Toluene	•	Xylenes	MTRE	DIPE	ETBE	TAME	1,2-DCA	EDB	ТВА
Number	Collected	(feet)	(ft msl)	(ft msl)	(µg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	1,2-DCA (μg/L)	LDB (μg/L)	μg/L)
MW-3	09/29/92	44.60	87.50	42.88	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/18/94	43.09		44.39	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	07/05/94	43.32		44.16	3,600	1,600	8.3	76	47							
	10/12/94	43.92		43.56	1,700	390	0.9	18	5.7							
	02/01/95	40.13		47.35	11,000	4,200	31	330	290							
	05/04/95	39.61		47.87	7,200	3,100	38	200	62							
	06/23/95	40.65	87.48	46.83	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/19/95	42.20		45.28	950	160	2.3	15	1.6	120						
	03/28/96	38.75		48.73	4,600	1,400	12	170	20	1,100						
	06/21/96	40.61		46.87	1,300	94	2.1	39	2	300						
	03/11/97	38.71		48.77	1,100	53	13	63	17	680						
	07/14/97	40.61		46.87	400	0.93	10	1.3	0.68	110						
	01/25/98	33.91		53.57	490	7.9	6.1	5.3	29	710						
	02/17/99	34.91		52.57	ND	67	120	9.3	58	290						
	01/20/03	39.81		47.67	120	<5	<5	< 5	5.2	250	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50
	04/17/03	40.60		46.88	180	< 0.5	< 0.5	< 0.5	< 0.5	340	< 6.7	< 6.7	< 6.7	< 6.7	< 6.7	<67
	07/15/03	41.34		46.14	160	<1.2	<1.2	<1.2	<1.2	660	<12	<12	<12	<12	<12	<120
	11/25/03	41.70		45.78	110	<5	<5	<5	< 5	330	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	<50
	02/20/04	40.23		47.25	90	<5	<5	<5	< 5	730	<10	<10	<10	<10	<10	<100
	06/03/04	41.34		46.14	110a	< 50	< 50	< 50	< 50	1,400	< 50	< 50	< 50	< 50	< 50	<500
	08/31/04	42.03		45.45	110	< 0.5	< 0.5	< 0.5	< 0.5	860	<10	<10	<10	<10	<10	<100
	02/10/05	40.11		47.37	1,000	< 50	< 50	< 50	270	2,700	< 50	< 50	< 50	< 50	< 50	830
	06/22/05	39.78		47.70	3,900	<100	<100	<100	690	5,600	<100	<100	<100	<100	<100	<1,000
	08/31/05	41.12		46.36	490a,b	< 50	< 50	< 50	< 50	2,500	< 50	< 50	< 50	< 50	< 50	<500
	11/14/05	41.51		45.97	210a	<25	<25	<25	<25	1,500	<25	<25	<25	<25	<25	<250
	02/15/06	38.56		48.92	560a,b	< 50	< 50	< 50	< 50	2,600	< 50	< 50	< 50	< 50	< 50	< 500
	06/15/06	38.12		49.36	2,700	<100	<100	120	610	4,300	<100	<100	<100	<100	<100	<1,000
	01/11/07	40.68		46.80	240b	<10	<10	<10	<10	860	<10	<10	<10	<10	<10	<100
	05/23/07	41.27		46.21	160a,e	<25	<25	<25	<25	1,000	<25	<25	<25	<25	<25	<250
	04/11/11	37.35	90.15	52.80	390	< 0.50	< 0.50	< 0.50	< 0.50	600	<1.0	<1.0	1.1	<1.0	< 2.0	120

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY
Haber Oil Product

Well		Depth to	Well	Groundwater				Ethyl-	Total							
	Date	-	Elevation	Elevation	GRO	Benzene	Toluene	•	Xylenes	MTRE	DIPE	ETBE	TAME	1,2-DCA	EDB	TBA
Number C	Collected	(feet)	(ft msl)	(ft msl)	(µg/L)	(μg/L)	(µg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	μg/L)	μg/L)
MW-4 0	09/29/92	44.29	86.20	41.92	630	170	60	7.3	650					(r·s·)		(#B/L)
0	02/18/94	39.36		46.85	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
0	07/05/94	39.69		46.52	2,600	470	45	84	250							
1	10/12/94	40.48		45.73	680	140	8.7	14	52							
0	02/01/95	36.96		49.25	1,400	390	55	49	180							
0	05/04/95	36.33		49.88	3,300	890	68	150	300		****					
0	06/23/95	37.40	86.21	48.81	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1	12/19/95	38.45		47.76	2,000	700	29	89	150	210				~~		
18:	03/28/96	35.00		51.21	5,600	1,400	38	310	300	640						
0	06/21/96	37.12		49.04	11,000	2,400	83	530	910	1,200						
0	03/11/97	33.24		52.97	3,800	1,100	53	240	260	1,100						
il .	07/14/97	38.10		48.11	980	210	1.7	90	46	400						
0	01/25/98	32.96		53.25	910	150	19	310	140	230						
1	02/17/99	33.43		52.78	230	65	2.2	9.6	33	200						
0	01/20/03	36.70		49.51	210	< 50	< 50	< 50	< 50	3,000	< 50	< 50	< 50	< 50	< 50	< 500
0	04/17/03	37.32		48.89	380	<120	<120	<120	<120	5,400	<120	<120	<120	<120	<120	<1,200
0	07/15/03	38.04		48.17	440	<120	<120	<120	<120	6,800	<120	<120	<120	<120	<120	<1,200
1	11/25/03	38.43		47.78	<1,000 d	<250	<250	<250	<250	8,800	<250	<250	<250	<250	<250	<2,500
0	02/20/04	36.91		49.30	<250 d	<100	<100	<100	<100	6,600	<100	<100	<100	<100	<100	<1,000
0	06/03/04	38.01		48.20	320	<100	<100	<100	<100	6,200	<100	<100	<100	<100	<100	<1,000
i	08/31/04	38.68		47.53	<250	< 0.5	< 0.5	< 0.5	< 0.5	3,900	< 50	< 50	< 50	< 50	< 50	< 500
0	)2/10/05	36.99		49.22	390	<100	<100	<100	<100	6,600	<100	<100	<100	<100	<100	<1,000
	)6/22/05	36.54		49.67	59	<25	<25	<25	<25	1,000	<25	<25	<25	<25	<25	<250
0	08/31/05	37.81		48.40	64	<25	<25	<25	<25	1,500	<25	<25	<25	<25	<25	<250
i	1/14/05	38.26		47.95	130	< 50	< 50	< 50	< 50	1,700	< 50	< 50	< 50	< 50	< 50	<500
0.	)2/15/06	35.57		50.64	220	<17	<17	<17	<17	1,100	<17	<17	<17	<17	<17	<170
ı	06/15/06	35.17		51.04	75	<25	<25	<25	<25	550	<25	<25	<25	<25	<25	<250
	1/11/07	37.38		48.83	69	<10	<10	<10	<10	780	<10	<10	<10	<10	<10	<100
0.	5/23/07	38.05		48.16	< 50	<5	<5	<5	<5	280	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	<50
0-	)4/11/11	34.85	88.88	54.03	<50	< 0.50	< 0.50	0.68	0.96	16	<1.0	<1.0	<1.0	<1.0	<2.0	76

# TABLE 1 GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY Haber Oil Product

		Depth to	Well	Groundwater				Ethyl-	Total							
Well	Date		Elevation	Elevation	GRO		Toluene		Xylenes		DIPE	ETBE		1,2-DCA	EDB	TBA
Number	Collected	(feet)	(ft msl)	(ft msl)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(µg/L)	(µg/L)	(μg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-5	09/29/92	44.53	89.06	44.57	60	10,000	7.1	ND	6.9							
	02/18/94	42.88		46.22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	07/05/94	43.08		46.02	ND	ND	ND	ND	1							
	10/12/94	43.81		45.29	ND	ND	ND	ND	ND						***	
	02/01/95	39.94		49.16	ND	ND	ND	ND	ND							
	05/04/95	38.94		50.16	ND	ND	ND	ND	ND							
	06/23/95	39.87	89.10	49.23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/19/95	41.79		47.31	ND	ND	ND	ND	ND	ND						
	03/28/96	38.30		50.80	ND	ND	ND	ND	ND	ND						
	06/21/96	40.03		49.07	ND	ND	ND	ND	ND	ND						
	03/11/97	38.02		51.08	ND	ND	ND	ND	0.77	ND						
	07/14/97	41.20		47.90	ND	ND	ND	ND	ND	ND						
	01/25/98	34.08		55.02	ND	ND	ND	ND	ND	ND						
	02/17/99	35.08		54.02	170	ND	0.74	ND	ND	ND						
	01/20/03	39.50		49.60	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	04/17/03	39.92		49.18	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	07/15/03	41.06		48.04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	11/25/03	41.41		47.69	< 50	<1	<1	<1	<1	0.84	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/20/04	39.69		49.41	< 50	<5	< 5	<5	<5	< 5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/03/04	40.95		48.15	< 50	<1	<1	<1	<1	7.2	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	08/31/04	41.75		47.35	< 50	< 0.5	< 0.5	< 0.5	< 0.5	2.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/09/05	39.49		49.61	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/22/05	39.28		49.82	< 50	< 0.5	< 0.5	< 0.5	< 0.5	2.2	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	08/31/05	40.68		48.42	< 50	< 0.5	< 0.5	< 0.5	< 0.5	2.7	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	11/14/05	41.11		47.99	< 50	< 0.5	< 0.5	< 0.5	< 0.5	5.1	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/15/06	38.08		51.02	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/14/06	37.46		51.64	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	01/11/07	40.55		48.55	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	05/23/07	40.86		48.24	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	04/11/11	37.25	91.79	54.54	<50	< 0.50	< 0.50	<0.50	< 0.50	< 0.50	<1.0	<1.0	<1.0	<1.0	<2.0	<10

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY
Haber Oil Product

Well	Date	Depth to Water	Well Elevation	Groundwater Elevation	GRO	Benzene	Toluono	Ethyl- benzene	Total	МТВЕ	DIPE		TEADATE	12 DCA	EDD	TID A
Number	Collected	(feet)	(ft msl)	(ft msl)	(μg/L)	Denzene (μg/L)	(μg/L)	(μg/L)	Ayrenes (μg/L)	MII DE (μg/L)	DIPE (μg/L)	ETBE (μg/L)	1 AME (μg/L)	1,2-DCA (μg/L)	EDB (µg/L)	TBA (μg/L)
MW-6	06/21/95	38.11	84.02	45.91	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	06/23/95	38.17		45.85	ND	ND	ND	ND	ND	3						
	12/19/95	39.25		44.77	ND	ND	ND	ND	ND	10						
	03/28/96	36.18		47.84	ND	ND	ND	ND	ND	ND					~~	
	06/21/96	38.00		46.02	ND	ND	ND	ND	ND	ND	-					
	03/11/97	36.32		47.70	ND	ND	ND	ND	ND	ND						
	07/14/97	39.04		44.98	ND	ND	ND	ND	ND	19						
	01/25/98	31.64		52.38	ND	ND	ND	ND	ND	ND						
	02/17/99	32.82		51.20	ND	ND	ND	ND	ND	ND				***		
	01/20/03	37.21		46.81	< 50	< 0.5	< 0.5	< 0.5	< 0.5	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	04/17/03	38.00		46.02	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	07/15/03	38.61		45.41	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	11/25/03	38.97		45.05	< 50	<1	<1	<1	<1	0.84	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/20/04	37.61		46.41	< 50	<5	< 5	<5	<5	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/03/04	38.64		45.38	< 50	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	08/31/04	39.27		44.75	< 50	< 0.5	< 0.5	< 0.5	< 0.5	5.1	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/09/05	37.51		46.51	< 50	< 0.5	< 0.5	< 0.5	< 0.5	2	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/22/05	37.30		46.72	< 50	< 0.5	< 0.5	< 0.5	< 0.5	0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	08/31/05	38.51		45.51	< 50	< 0.5	< 0.5	< 0.5	< 0.5	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	11/14/05	38.83		45.19	< 50	< 0.5	< 0.5	< 0.5	< 0.5	0.73	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/15/06	36.13		47.89	< 50	< 0.5	< 0.5	< 0.5	< 0.5	2.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/14/06	35.86		48.16	< 50	< 0.5	< 0.5	< 0.5	< 0.5	72	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	01/11/07	39.74		44.28	< 50	< 0.5	< 0.5	< 0.5	< 0.5	7.7	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	05/24/07	38.80		45.22	< 50	< 0.5	< 0.5	< 0.5	< 0.5	4.7	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	04/11/11	34.93	86.73	51.80	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<1.0	<1.0	<1.0	<1.0	< 2.0	<10

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY
Haber Oil Product

Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	GRO (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	DIPE (μg/L)	ETBE (µg/L)	TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	TBA (μg/L)
MW-7	06/21/95	40.30	87.11	46.81	NS	NS	NS	NS	NS	NS	NS	NS	NS NS	NS	NS NS	NS
	06/23/95	41.00		46.11	ND	ND	ND	ND	ND	ND						
	12/19/95	42.26		44.85	ND	ND	ND	ND	ND	ND						
	03/28/96	38.94		48.17	ND	ND	ND	ND	ND	ND						
	06/21/96	40.80		46.31	ND	ND	ND	ND	ND	ND						
	03/11/97	38.96		48.15	ND	ND	ND	ND	ND	ND						
	07/14/97	41.97		45.14	ND	ND	ND	ND	ND	ND						
	01/25/98	33.47		53.64	ND	ND	ND	ND	ND	ND						
	02/17/99	34.59		52.52	ND	ND	ND	ND	ND	ND			***			
	01/20/03	39.77		47.34	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	04/17/03	40.63		46.48	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	07/15/03	41.30		45.81	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	11/25/03	41.68		45.43	< 50	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/20/04	40.21		46.90	< 50	<5	<5	<5	<5	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
1	06/03/04	41.33		45.78	< 50	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	08/31/04	41.94		45.17	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/09/05	40.03		47.08	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/22/05	39.85		47.26	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	08/31/05	41.16		45.95	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	11/14/05	41.48		45.93	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/15/06	38.59		48.52	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/14/06	38.59		48.52	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	01/11/07	40.73		46.38	< 50	< 0.5	9.7	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	05/24/07	41.18		45.93	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	04/11/11	37.08	89.69	52.61	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<1.0	<1.0	<1.0	<1.0	<2.0	<10

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY
Haber Oil Product

Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	GRO (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	DIPE (μg/L)	ETBE (µg/L)	TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	TBA (μg/L)
MW-8	06/21/95	38.20	89.7	51.50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS NS
	06/23/95	38.36		51.34	ND	ND	ND	ND	ND	ND						140
	12/19/95	40.35		49.35	ND	ND	ND	ND	ND	ND						100 500
	03/28/96	36.98		52.72	ND	ND	ND	ND	ND	ND						
	06/21/96	38.69		51.01	ND	ND	ND	ND	ND	ND						
	03/11/97	36.74		52.96	ND	ND	ND	ND	ND	ND						
	07/14/97	39.98		49.72	ND	ND	ND	ND	ND	ND						
	01/25/98	32.73		56.97	ND	ND	ND	ND	ND	ND						
	02/17/99	33.92		55.78	ND	ND	ND	ND	ND	ND						
	01/20/03	38.94		50.76	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	04/17/03	39.52		50.18	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	07/15/03	40.50		49.20	< 50	< 0.5	< 0.5	< 0.5	0.66	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	11/25/03	40.92		48.78	< 50	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/20/04	39.15		50.55	< 50	<5	<5	<5	<5	<5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/03/04	40.36		49.34	< 50	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	08/31/04	41.19		48.51	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/09/05	38.93		50.77	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/22/05	38.43		51.27	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	08/31/05	39.95		49.75	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	11/14/05	40.40		49.30	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	02/15/06	37.44		52.26	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	06/14/06	36.53		53.17	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	01/11/07	38.00		51.70	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	05/23/07	40.23		49.47	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	04/11/11	36.35	92.41	56.06	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<1.0	<1.0	<1.0	<1.0	<2.0	<10

# TABLE 1

# GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY

#### **Haber Oil Product**

# 1401 Grand Avenue, San Leandro, California

Well Number	Date Collected	Depth to Water (feet)	Well Elevation (ft msl)	Groundwater Elevation (ft msl)	GRO (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	DIPE (μg/L)	ETBE (µg/L)	TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	TBA (μg/L)
Note: GRO = Gas	oline Range Org	ganies C4-C	13.					msl = Mean	sea level							
П,	ethyl tert-butyl asing modified		urveyed.					$\mu g/L = micr$	ograms per li	iter						

a= No recognizable pattern.

Haber Oil

b= Heavier gasoline range compounds are significant (aged gasoline?)

c= Lighter gasoline range compounds (the most notable fraction) are significant.

d= Laboratory report note: reporting limit raised due to high MTBE content.

e= Laboratory report note: Lighter than water immiscible sheen/product present.

[1] = Reporting limits were increased due to high concentrations of target analytes.

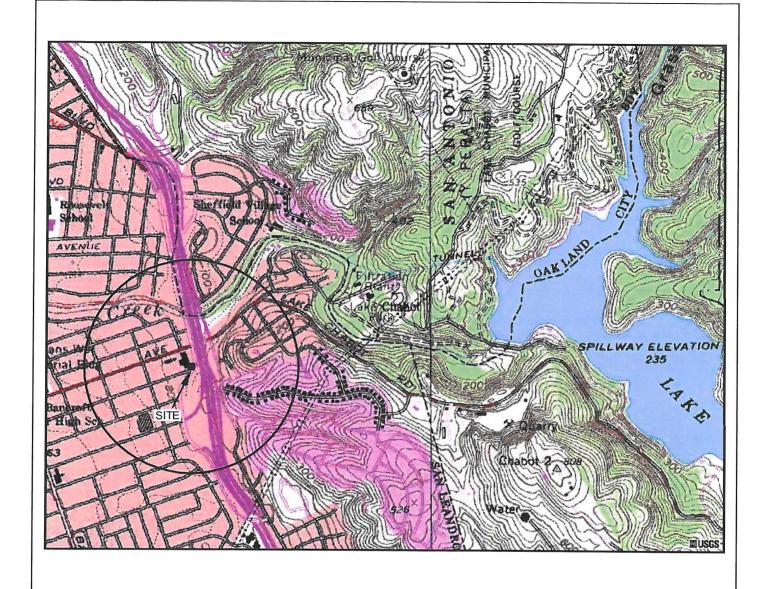
NA = Not analyzed

NS = Not Sampled

ND = Not Detected

-- = Samples not analyzed for this compound.

Data prior to April 11, 2011, taken from P&D Environmental, Inc. First Quarter 2007 Quarterly Groundwater Monitoring Report, dated July 9, 2011, Tables 1 and 2.



GENERAL NOTES: BASE MAP FROM U.S.G.S. SAN LEANDRO, CA. 7.5 MINUTE TOPOGRAPHIC PHOTOREVISED 1978









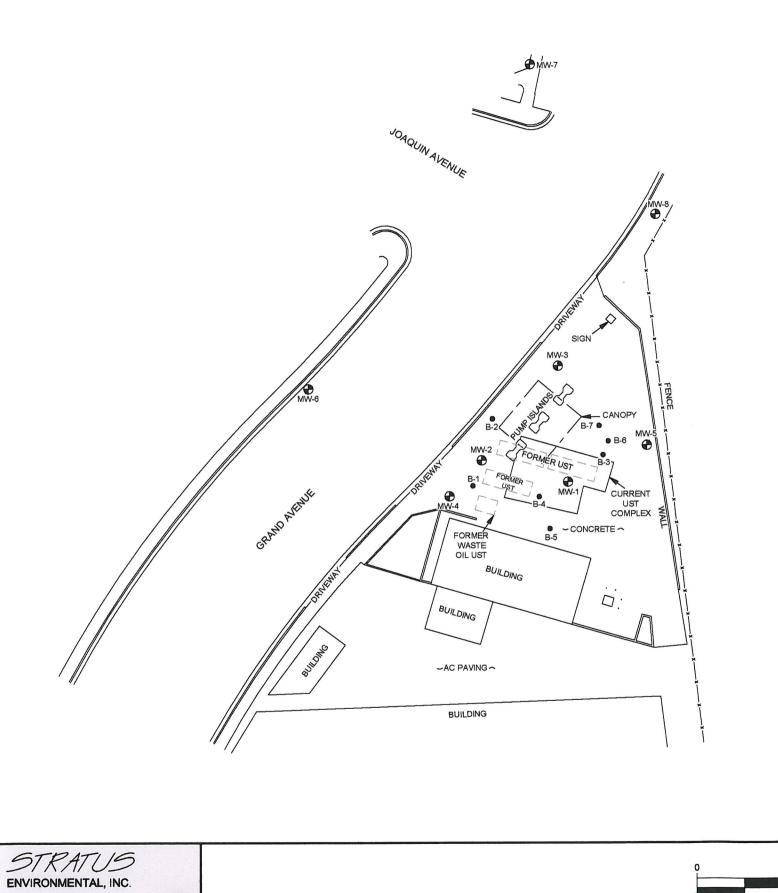
FORMER HABER OIL PRODUCT 1401 GRAND AVENUE SAN LEANDRO, CALIFORNIA

SITE LOCATION MAP

FIGURE

1
PROJECT NO.

2120-1401-01



LEGEND

→ MW-1 GROUNDWATER MONITORING WELL LOCATION

B-1 SOIL BORING LOCATION

NOTES:

1. SOIL BORING AND FORMER UST LOCATIONS ARE APPROXIMATE
2. BASE MAP PROVIDED BY MURROW SURVEYING

FORMER HABER OIL PRODUCT 1401 GRAND AVENUE SAN LEANDRO, CALIFORNIA

SITE PLAN

PROJECT NO. 2120-1401-01

**FIGURE** 

LEGEND

→ MW-1 GROUNDWATER MONITORING WELL LOCATION

(54.52) GROUNDWATER ELEVATION IN FEET RELATIVE TO MSL

-52.0 - GROUNDWATER ELEVATION CONTOUR IN FEET RELATIVE TO MSL

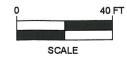
→ INFERRED GROUNDWATER FLOW DIRECTION

WELLS MEASURED ON 4/11/11 MSL = MEAN SEA LEVEL

NOTES:

1. SOIL BORING AND FORMER UST LOCATIONS ARE APPROXIMATE
2. BASE MAP PROVIDED BY MURROW SURVEYING

STRATUS ENVIRONMENTAL, INC.



FORMER HABER OIL PRODUCT 1401 GRAND AVENUE SAN LEANDRO, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP 2nd QUARTER 2011

**FIGURE** 

PROJECT NO. 2120-1401-01

<50 <0.50 <0.50 390 <0.50 600 <50 <0.50 25,000 1,600 210 <50 <0.50 <0.50 <50 <0.50 16 <50 <0.50 7.3 UST COMPLEX ~CONCRETE ~ FORMER WASTE OIL UST BUILDING BUILDING -AC PAVING ~ BUILDING

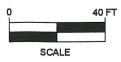
→ MW-1 GROUNDWATER MONITORING WELL LOCATION

<50 ] GASOLINE RANGE ORGANICS (GRO) IN μg/L <0.50 BENZENE CONCENTRATION IN µg/L
<0.50 METHYL TERTIARY BUTYL ETHER (MTBE) IN µg/L

WELLS SAMPLED ON 4/11/11 GRO ANALYZED BY EPA METHOD 8015B MTBE & BENZENE ANALYZED BY EPA METHOD 8260B

NOTES:
1. SOIL BORING AND FORMER UST LOCATIONS ARE APPROXIMATE
2. BASE MAP PROVIDED BY MURROW SURVEYING

STRATUS ENVIRONMENTAL, INC.



FORMER HABER OIL PRODUCT 1401 GRAND AVENUE SAN LEANDRO, CALIFORNIA

GROUNDWATER ANALYTICAL SUMMARY 2nd QUARTER 2011

**FIGURE** 

PROJECT NO. 2120-1401-01

# APPENDIX A FIELD DATA SHEETS



Site Address _	1401 Grand Avenue
City _	San Leandro
Sampled by:	Vince Zalutka
Signature	Warias Balastina

Site Number Project Number	Haber Oil	
Project Number	2120-1401-01	
Project PM	Steve Carter	
DATE	4-11-11	

	Wa	iter Level D	ata			Purge V	olume Calc	ulations		Name of the latest of the late	Purge	Metho	d	S	ample Reco	rd	Field Data
Well ID	Time	Depth to Product (feet)	Depth to Water (feet)	Total Depth (feet)	Water column (feet)	Diameter (inches)	Multiplier	3 casing volumes (gallons)	Actual water purged (gallons)	No Purge	D 11	Pump		DTW at sample time	Sample I.D	Sample Time	DO (mg/L)
MW-1	0735			51.80		4"	2	31.24	31.50		X	+ tend to be the total control of the total control	49	36.86	MW-1	1312	.64
) 2	0740			52.50		4"	5	35.06		/		$\mathbf{X}$	/	36.40		1211	1.17
$\frac{3}{1}$	0720		37.35		17.65	4"	٤	35.30				X	ŀ	37.75	⟨ 3	1400	.81
<del>-</del>	0747		34.85			4"	2	36.80	37.00		X		g/	37-95	24	1046	
/5	0727			54.40		4"	2		34.50		<b>*</b>		e	37.40	) 5	141(	.57
	0925		34.93		14.47		.5	7.24			X		4	34.93	76	0943	1.44
28	0758		37.08	49.00	11.92	2.	.5	5.96	6.00		X		ь	37.12	27	0856	
0	0753		36.35	47.80	11.45	2	.5	5.73	6.00.		X		b.	36.55	MW-8	0822	1.83
					,												
			į														
					dg is ge	·											
		Te 11		<u>&gt;</u> ( ,	unty	the	- "	lan	0 1								
				ND	for		<u> </u>	50	e 15 no						ъ		
		Arr	sw A	para	13	ne	ded	, 50	110								
		7		200. 0		,, 0	<i>20</i> Cy										
														-			
		DIF	ty "	sella	; M	W-	2,3,	4,1	M	ey	12	ear					
		$\times$ $\frac{1}{2}$				re-	dei	4,1	nen	4	-					z.	
	\	10 /0°	74. 200														
	&		30														
		0 , 0	7														
									M7 V								

Multiplier 2" = 0.5 3" = 1.0 4" = 2.0 6" = 4.4 Please refer to groundwater sampling field procedures pH/Conductivity/temperature Meter - Oakton Model PC-10

DO Meter - Oakton 300 Series (DO is always measured before purge)

C	ALIBRATIO	ON DATE	
pH_	V3	4-11-11	
Conductivity		7	
DO _	0	2	•



Site Address \_1401 Grand Ave
City San Leandro
Sampled By: V Zalutka
Signature

 Site Number
 Haber Oil

 Project Number
 2120-1401-01

 Project PM
 Steve Carter

 DATE
 4/-//-//

g				*					
Well ID	M	w-8			Well ID	MU	1-7		
Purge start time	080	5	Odor	YN	Purge start time	084		Odor	Y (N)
Bail	Temp C	pН	cond	gallons	Bail	Temp C	рН	cond	gallons
lime 0805	16.6	6.81	505	80	time 0844	18.0	7.07	481	0
time 0813	17.6	6.90	491	3.0	time 0850	18.3	6.97	5/8	3.0
time 0822	17.7	7.18	517	6.0	time 0856	18.3	7.03	493	6.0
time					time				
purge stop time	08	22	ORP	51	purge stop time	08	54	ORP 7	19
Well ID MU	1-6	MUS-	7		Well ID	M	w - 4		
Purge start time	092	.0	Odor	Y (N)	Purge start time	1018	>	Odor	(V) N
Bail	Temp C	рН	cond	gallons	Bai /	Temp C	pН	cond	gallons
time 0920	18.6	7.01	568	Þ	time /0/0	19.6	6.92	567	À
time 0928	18.7	7.03	562	3.5	time /027	19.3		568	19.0
time 0943	19.1	7.02	561	7.0		19.3	7.04		37.0
time		· ·			lime				
purge stop time	09	43	ORP	96	purge stop time	10	46	ORP (	64
Well ID		nw-2			Well ID	n	120 -	3	
Purge start time	1117	·	Odor	(Y) N	Purge start time	1220	>	Odor	ΥN
Pump	Temp C	Hq	cond	gallons	Punp	Temp C	pН	cond	gallons
time //17	19-5	6.86	492	$\otimes$	time 1220	19.8	6.83	497	4
time 1139	19.7	6.92	478	18	time 1239	19.3	7.01	501	17
lime /200	<del> </del>	Low	(ia)	37	time /3/7	60	n c	D .	35.5
ime /2/1	19.5	6.77	505		time /400	19.5	7.12	487	35.5
ourge stop time	1200	>	ORP &	3/	purge stop time	131	7	ORP S	>
Well ID	Mn	яя			Well ID	ML	V-5		
Purge start time	123	3	Odor	(Y) N	Purge start time	132	7	Odor	Y(N)
Ba:/	Temp C	На	cond	gallons	Bail	Temp C	pН	cond	gallons
ime 1233	19.7	6.80	498	<u> </u>	time 1327	18.6	6.85	568	80
ime 1249	19.4	6.94	495	16	time 1339	18.8	6.93	563	17
ime 1312	19.4	7.07	489	31.5	time 13 52	ho		34.5	god !
me			(		ime   \( \mathcal{H} \)	19.0	7.00	525	24.5
urge stop time	3	12	ORP	47	ourge slop lime	1352		ORP 7	Z.

4

# APPENDIX B SAMPLING AND ANALYSES PROCEDURES

# SAMPLING AND ANALYSIS PROCEDURES

The sampling and analysis procedures as well as the quality assurance plan are contained in this appendix. The procedures and adherence to the quality assurance plan will provide for consistent and reproducible sampling methods; proper application of analytical methods; accurate and precise analytical results; and finally, these procedures will provide guidelines so that the overall objectives of the monitoring program are achieved.

# Ground Water and Liquid-Phase Petroleum Hydrocarbon Depth Assessment

A water/hydrocarbon interface probe is used to assess the liquid-phase petroleum hydrocarbon (LPH) thickness, if present, and a water level indicator is used to measure the ground water depth in monitoring wells that do not contain LPH. Depth to ground water or LPH is measured from a datum point at the top of each monitoring well casing. The datum point is typical a notch cut in the north side of the casing edge. If a water level indicator is used, the tip is subjectively analyzed for hydrocarbon sheen.

#### **Subjective Analysis of Ground Water**

Prior to purging, a water sample is collected from the monitoring well for subjective assessment. The sample is retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating LPH and the appearance of a LPH sheen.

# **Monitoring Well Purging and Sampling**

Monitoring wells are purged using a pump or bailer until pH, temperature, and conductivity of the purge water has stabilized and a minimum of three well volumes of water have been removed. If three well volumes can not be removed in one half hour's time the well is allowed to recharge to 80% of original level. After recharging, a ground water sample is then removed from each of the wells using a disposable bailer.

A Teflon bailer, electric submersible or bladder pump will be the only equipment used for well sampling. When samples for volatile organic analysis are being collected, the pump flow will be regulated at approximately 100 milliliters per minute to minimize pump effluent turbulence and aeration. Glass bottles of at least 40-milliliters volume and fitted with Teflon-lined septa will be used in sampling for volatile organics. These bottles will be filled completely to prevent air from remaining in the bottle. A positive meniscus forms when the bottle is completely full. A convex Teflon septum will be placed over the positive meniscus to eliminate air. After the bottle is capped, it is inverted and tapped to verify that it contains no air bubbles. The sample containers for other parameters will be filled, filtered as required, and capped.

The water sample is collected, labeled, and handled according to the Quality Assurance Plan. Water generated during the monitoring event is disposed of accruing to regulatory accepted method pertaining to the site.

#### **QUALITY ASSURANCE PLAN**

Procedures to provide data quality should be established and documented so that conditions adverse to quality, such as deficiencies, deviations, nonconforments, defective material, services, and/or equipment, can be promptly identified and corrected.

# **General Sample Collection and Handling Procedures**

Proper collection and handling are essential to ensure the quality of a sample. Each sample is collected in a suitable container, preserved correctly for the intended analysis, and stored prior to analysis for no longer than the maximum allowable holding time. Details on the procedures for collection and handling of samples used on this project can be found in this section.

# Soil and Water Sample Labeling and Preservation

Label information includes a unique sample identification number, job identification number, date, and time. After labeling all soil and water samples are placed in a Ziploc® type bag and placed in an ice chest cooled to approximately 4° Celsius. Upon arriving at Stratus' office the samples are transferred to a locked refrigerator cooled to approximately 4° Celsius. Chemical preservation is controlled by the required analysis and is noted on the chain-of-custody form. Trip blanks supplied by the laboratory accompany the groundwater sample containers and groundwater samples.

Upon recovery, the sample container is sealed to minimize the potential of volatilization and cross-contamination prior to chemical analysis. Soil sampling tubes are typically closed at each end with Teflon® sheeting and plastic caps. The sample is then placed in a Ziploc® type bag and sealed. The sample is labeled and refrigerated at approximately 4° Celsius for delivery, under strict chain-of-custody, to the analytical laboratory.

#### Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures document sample possession from the time of collection to ultimate disposal. Each sample container submitted for analysis has a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, is recorded on the borehole log or in the field records. The samples are analyzed by a California-certified laboratory.

A chain-of-custody form is used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them relinquishes the samples by signing the chain-of-custody form and

noting the time. The sample-control officer at the laboratory verifies sample integrity and confirms that the samples are collected in the proper containers, preserved correctly, and contain adequate volumes for analysis. These conditions are noted on a Laboratory Sample Receipt Checklist that becomes part of the laboratory report upon request.

If these conditions are met, each sample is assigned a unique log number for identification throughout analysis and reporting. The log number is recorded on the chain-of-custody form and in the legally-required log book maintained by the laboratory. The sample description, date received, client's name, and other relevant information is also recorded.

# **Equipment Cleaning**

Sample bottles, caps, and septa used in sampling for volatile and semivolatile organics will be triple rinsed with high-purity deionized water. After being rinsed, sample bottles will be dried overnight at a temperature of 200°C. Sample caps and septa will be dried overnight at a temperature of 60°C. Sample bottles, caps, and septa will be protected from solvent contact between drying and actual use at the sampling site. Sampling containers will be used only once and discarded after analysis is complete.

Plastic bottles and caps used in sampling for metals will be soaked overnight in a 1-percent nitric acid solution. Next, the bottles and caps will be triple rinsed with deionized water. Finally, the bottles and caps will be air dried before being used at the site. Plastic bottles and caps will be constructed of linear polyethylene or polypropylene. Sampling containers will be used only once and discarded after analysis is complete. Glass and plastic bottles used by Stratus to collect groundwater samples are supplied by the laboratory.

Before the sampling event is started, equipment that will be placed in the well or will come in contact with groundwater will be disassembled and cleaned thoroughly with detergent water, and then steam cleaned with deionized water. Any parts that may absorb contaminants, such as plastic pump valves, etc. will be cleaned as described above or replaced.

During field sampling, equipment surfaces that are placed in the well or contact groundwater will be steam cleaned with deionized water before the next well is purged or sampled. Equipment blanks will be collected and analyzed from non-disposable sampling equipment that is used for collecting groundwater samples at the rate of one blank per twenty samples collected.

#### **Internal Quality Assurance Checks**

Internal quality assurance procedures are designed to provide reliability of monitoring and measurement of data. Both field and laboratory quality assurance checks are necessary to evaluate the reliability of sampling and analysis results. Internal quality assurance procedures generally include:

#### - Laboratory Quality Assurance

- Documentation of instrument performance checks
- Documentation of instrument calibration
- Documentation of the traceability of instrument standards, samples, and data
- Documentation of analytical and QC methodology (QC methodology includes use of spiked samples, duplicate samples, split samples, use of reference blanks, and check standards to check method accuracy and precision)

#### - Field Quality Assurance

- Documentation of sample preservation and transportation
- Documentation of field instrument calibration and irregularities in performance

Internal laboratory quality assurance checks will be the responsibility of the contract laboratories. Data and reports submitted by field personnel and the contract laboratory will be reviewed and maintained in the project files.

#### **Types of Quality Control Checks**

Samples are analyzed using analytical methods outlined in EPA Manual SW 846 and approved by the California Regional Water Quality Control Board-Central Valley Region in the Leaking Underground Fuel Tanks (LUFT) manual and appendices. Standard contract laboratory quality control may include analysis or use of the following:

- Method blanks reagent water used to prepare calibration standards, spike solutions, etc. is analyzed in the same manner as the sample to demonstrate that analytical interferences are under control.
- Matrix spiked samples a known amount of spike solution containing selected
  constituents is added to the sample at concentrations at which the accuracy of the
  analytical method is to satisfactorily monitor and evaluate laboratory data quality.
- Split samples a sample is split into two separate aliquots before analysis to assess the reproducibility of the analysis.
- Surrogate samples samples are spiked with surrogate constituents at known concentrations to monitor both the performance of the analytical system and the effectiveness of the method in dealing with the sample matrix.
- Control charts graphical presentation of spike or split sample results used to track the accuracy or precision of the analysis.
- Quality control check samples when spiked sample analysis indicates atypical instrument performance, a quality check sample, which is prepared independently of the calibration standards and contains the constituents of interest, is analyzed to confirm that measurements were performed accurately.

 Calibration standards and devices – traceable standards or devices to set instrument response so that sample analysis results represent the absolute concentration of the constituent.

Field QA samples will be collected to assess sample handling procedures and conditions. Standard field quality control may include the use of the following, and will be collected and analyzed as outlined in EPA Manual SW 846.

- Field blanks reagent water samples are prepared at the sampling location by the same procedure used to collect field groundwater samples and analyzed with the groundwater samples to assess the impact of sampling techniques on data quality. Typically, one field blank per twenty groundwater samples collected will be analyzed per sampling event.
- Field replicates duplicate or triplicate samples are collected and analyzed to assess the reproducibility of the analytical data. One replicate groundwater sample per twenty samples collected will be analyzed per sampling event, unless otherwise specified. Triplicate samples will be collected only when specific conditions warrant and generally are sent to an alternate laboratory to confirm the accuracy of the routinely used laboratory.
- Trip blanks reagent water samples are prepared before field work, transported and stored with the samples and analyzed to assess the impact of sample transport and storage for data quality. In the event that any analyte is detected in the field blank, a trip blank will be included in the subsequent groundwater sampling event.

Data reliability will be evaluated by the certified laboratory and reported on a cover sheet attached to the laboratory data report. Analytical data resulting from the testing of field or trip blanks will be included in the laboratory's report. Results from matrix spike, surrogate, and method blank testing will be reported, along with a statement of whether the samples were analyzed within the appropriate holding time.

Stratus will evaluate the laboratory's report on data reliability and note significant QC results that may make the data biased or unacceptable. Data viability will be performed as outlined in EPA Manual SW 846. If biased or unacceptable data is noted, corrective actions (including re-sample/re-analyze, etc.) will be evaluated on a site-specific basis.

# APPENDIX C

# LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION



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# **ANALYTICAL REPORT**

Stratus Environmental 3330 Cameron Park Drive Cameron Park, CA 956828861

Attn: Steve Carter Phone: (530) 676-6008

Fax: (530) 676-6005

Date Received: 04/13/11

Job: 2120-1401-01/Haber Oil

Total Petroleum Hydrocarbons - Purgeable (TPH-P) EPA Method SW8015B Volatile Organic Compounds (VOCs) EPA Method SW8260B

	Parameter		Concentra	tion	Reporting	Date	Date
					Limit	Extracted	Analyzed
Client ID:	MW-1						•
Lab ID:	STR11041345-01A	TPH-P (GRO)	ND		50 μg/L	04/14/11	04/14/11
Date Sampled	04/11/11 13:12	Tertiary Butyl Alcohol (TBA)	ND		10 μg/L	04/14/11	04/14/11
		Methyl tert-butyl ether (MTBE)	7.3		0.50 μg/L	04/14/11	04/14/11
		Di-isopropyl Ether (DIPE)	ND		1.0 µg/L	04/14/11	04/14/11
		Ethyl Tertiary Butyl Ether (ETBE)	ND		1.0 μg/L	04/14/11	04/14/11
		1,2-Dichloroethane	ND		1.0 μg/L	04/14/11	04/14/11
		Benzene	ND		0.50 µg/L	04/14/11	04/14/11
		Tertiary Amyl Methyl Ether (TAME)	ND		1.0 µg/L	04/14/11	04/14/11
		Toluene	ND		0.50 μg/L	04/14/11	04/14/11
		1,2-Dibromoethane (EDB)	ND		2.0 μg/L	04/14/11	04/14/11
		Ethylbenzene	ND		$0.50~\mu g/L$	04/14/11	04/14/11
		m,p-Xylene	ND		$0.50~\mu g/L$	04/14/11	04/14/11
		o-Xylene	ND		0.50 μg/L	04/14/11	04/14/11
Client ID:	MW-2						
Lab ID :	STR11041345-02A	TPH-P (GRO)	25,000		<b>4,</b> 000 μg/L	04/14/11	04/14/11
Date Sampled	04/11/11 12:11	Tertiary Butyl Alcohol (TBA)	ND	V	400 μg/L	04/14/11	04/14/11
		Methyl tert-butyl ether (MTBE)	210		20 μg/L	04/14/11	04/14/11
		Di-isopropyl Ether (DIPE)	ND	ν	40 μg/L	04/14/11	04/14/11
		Ethyl Tertiary Butyl Ether (ETBE)	ND	V	40 μg/L	04/14/11	04/14/11
		1,2-Dichloroethane	ND	V	40 μg/L	04/14/11	04/14/11
		Benzene	1,600		20 μg/L	04/14/11	04/14/11
		Tertiary Amyl Methyl Ether (TAME)	ND	V	40 μg/L	04/14/11	04/14/11
		Toluene	1,900		20 μg/L	04/14/11	04/14/11
		1,2-Dibromoethane (EDB)	ND	V	80 μg/L	04/14/11	04/14/11
		Ethylbenzene	1,600		20 μg/L	04/14/11	04/14/11
		m,p-Xylene	4,600		20 μg/L	04/14/11	04/14/11
		o-Xylene	1,500		20 μg/L	04/14/11	04/14/11



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Client ID:	MW-3					
Lab ID:	STR11041345-03A	TPH-P (GRO)	390	100 µg/L	04/14/11	04/14/11
Date Sampled	04/11/11 14:00	Tertiary Butyl Alcohol (TBA)	120	10 μg/L	04/14/11	04/14/11
		Methyl tert-butyl ether (MTBE)	600	0.50 μg/L	04/14/11	04/14/11
		Di-isopropyl Ether (DIPE)	ND	1.0 μg/L	04/14/11	04/14/11
		Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 μg/L	04/14/11	04/14/11
		1,2-Dichloroethane	ND	1.0 μg/L	04/14/11	04/14/11
		Benzene	ND	0.50 μg/L	04/14/11	04/14/11
		Tertiary Amyl Methyl Ether (TAME)	1.1	1.0 μg/L	04/14/11	04/14/11
		Toluene	ND	0.50 μg/L	04/14/11	04/14/11
		1,2-Dibromoethane (EDB)	ND	2.0 μg/L	04/14/11	04/14/11
		Ethylbenzene	ND	0.50 μg/L	04/14/11	04/14/11
		m,p-Xylene	ND	0.50 µg/L	04/14/11	04/14/11
		o-Xylene	ND	0.50 μg/L	04/14/11	04/14/11
Client ID:	MW-4					
Lab ID :	STR11041345-04A	TPH-P (GRO)	ND	50 μg/L	04/14/11	04/14/11
Date Sampled	04/11/11 10:46	Tertiary Butyl Alcohol (TBA)	76	10 μg/L	04/14/11	04/14/11
		Methyl tert-butyl ether (MTBE)	16	0.50 μg/L	04/14/11	04/14/11
		Di-isopropyl Ether (DIPE)	ND	1.0 µg/L	04/14/11	04/14/11
		Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 μg/L	04/14/11	04/14/11
		1,2-Dichloroethane	ND	1.0 μg/L	04/14/11	04/14/11
		Benzene	ND	$0.50~\mu g/L$	04/14/11	04/14/11
		Tertiary Amyl Methyl Ether (TAME)	ND	1.0 μg/L	04/14/11	04/14/11
		Toluene	ND	0.50 μg/L	04/14/11	04/14/11
		1,2-Dibromoethane (EDB)	ND	$2.0~\mu g/L$	04/14/11	04/14/11
		Ethylbenzene	0.68	$0.50~\mu g/L$	04/14/11	04/14/11
		m,p-Xylene	0.96	$0.50~\mu g/L$	04/14/11	04/14/11
		o-Xylene	ND	$0.50~\mu g/L$	04/14/11	04/14/11
Client ID:	MW-5					
Lab ID:	STR11041345-05A	TPH-P (GRO)	ND	50 μg/L	04/14/11	04/14/11
Date Sampled	04/11/11 14:11	Tertiary Butyl Alcohol (TBA)	ND	10 μg/L	04/14/11	04/14/11
		Methyl tert-butyl ether (MTBE)	ND	0.50 μg/L	04/14/11	04/14/11
		Di-isopropyl Ether (DIPE)	ND	1.0 μg/L	04/14/11	04/14/11
		Ethyl Tertiary Butyl Ether (ETBE)	ND	$1.0~\mu g/L$	04/14/11	04/14/11
		1,2-Dichloroethane	ND	1.0 μg/L	04/14/11	04/14/11
		Benzene	ND	0.50 μg/L	04/14/11	04/14/11
		Tertiary Amyl Methyl Ether (TAME)	ND	1.0 µg/L	04/14/11	04/14/11
		Toluene	ND	0.50 μg/L	04/14/11	04/14/11
		1,2-Dibromoethane (EDB)	ND	2.0 μg/L	04/14/11	04/14/11
		Ethylbenzene	ND	0.50 µg/L	04/14/11	04/14/11
		m,p-Xylene	ND	0.50 μg/L	04/14/11	04/14/11
		o-Xylene	ND	$0.50~\mu \mathrm{g/L}$	04/14/11	04/14/11



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Client ID:	MW-6					
Lab ID:	STR11041345-06A	TPH-P (GRO)	ND	50 μg/L	04/14/11	04/14/11
Date Sampled	04/11/11 09:43	Tertiary Butyl Alcohol (TBA)	ND	10 μg/L	04/14/11	04/14/11
		Methyl tert-butyl ether (MTBE)	ND	0.50 μg/L	04/14/11	04/14/11
		Di-isopropyl Ether (DIPE)	ND	1.0 μg/L	04/14/11	04/14/11
		Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 μg/L	04/14/11	04/14/11
		1,2-Dichloroethane	ND	1.0 μg/L	04/14/11	04/14/11
		Benzene	ND	0.50 µg/L	04/14/11	04/14/11
		Tertiary Amyl Methyl Ether (TAME)	ND	1.0 μg/L	04/14/11	04/14/11
		Toluene	ND	0.50 μg/L	04/14/11	04/14/11
		1,2-Dibromoethane (EDB)	ND	2.0 μg/L	04/14/11	04/14/11
		Ethylbenzene	ND	0.50 μg/L	04/14/11	04/14/11
		m,p-Xylene	ND	0.50 μg/L	04/14/11	04/14/11
		o-Xylene	ND	0.50 µg/L	04/14/11	04/14/11
Client ID:	MW-7			- 1.0 -		*
Lab ID:	STR11041345-07A	TPH-P (GRO)	ND	50 μg/L	04/14/11	04/14/11
Date Sampled	04/11/11 08:56	Tertiary Butyl Alcohol (TBA)	ND	10 μg/L	04/14/11	04/14/11
		Methyl tert-butyl ether (MTBE)	ND	0.50 μg/L	04/14/11	04/14/11
		Di-isopropyl Ether (DIPE)	ND	1.0 μg/L	04/14/11	04/14/11
		Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 µg/L	04/14/11	04/14/11
		1,2-Dichloroethane	ND	1.0 µg/L	04/14/11	04/14/11
		Benzene	ND	0.50 μg/L	04/14/11	04/14/11
		Tertiary Amyl Methyl Ether (TAME)	ND	1.0 μg/L	04/14/11	04/14/11
		Toluene	ND	0.50 μg/L	04/14/11	04/14/11
		1,2-Dibromoethane (EDB)	ND	2.0 μg/L	04/14/11	04/14/11
		Ethylbenzene	ND	0.50 μg/L	04/14/11	04/14/11
		m,p-Xylene	ND	0.50 μg/L	04/14/11	04/14/11
		o-Xylene	ND	0.50 μg/L	04/14/11	04/14/11
Client ID:	MW-8					
Lab ID:	STR11041345-08A	TPH-P (GRO)	ND	50 μg/L	04/14/11	04/14/11
Date Sampled	04/11/11 08:22	Tertiary Butyl Alcohol (TBA)	ND	10 μ <b>g/</b> L	04/14/11	04/14/11
		Methyl tert-butyl ether (MTBE)	ND	0.50 μg/L	04/14/11	04/14/11
		Di-isopropyl Ether (DIPE)	ND	1.0 µg/L	04/14/11	04/14/11
		Ethyl Tertiary Butyl Ether (ETBE)	ND	1.0 μg/L	04/14/11	04/14/11
		1,2-Dichloroethane	ND	1.0 µg/L	04/14/11	04/14/11
		Benzene	ND	0.50 μg/L	04/14/11	04/14/11
		Tertiary Amyl Methyl Ether (TAME)	ND	1.0 μg/L	04/14/11	04/14/11
		Toluene	ND	0.50 μg/L	04/14/11	04/14/11
		1,2-Dibromoethane (EDB)	ND	2.0 μg/L	04/14/11	04/14/11
		Ethylbenzene	ND	0.50 μg/L	04/14/11	04/14/11
		m,p-Xylene	ND	0.50 μg/L	04/14/11	04/14/11
		o-Xylene	ND	0.50 μg/L	04/14/11	04/14/11

Gasoline Range Organics (GRO) C4-C13

V = Reporting Limits were increased due to high concentrations of target analytes.

ND = Not Detected

Reported in micrograms per Liter, per client request.

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (714) 386-2901 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date



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# **VOC Sample Preservation Report**

Work Order: STR11041345

Job:

2120-1401-01/Haber Oil

Alpha's Sample ID	Client's Sample ID	Matrix	Нq
11041345-01A	MW-1	Aqueous	2
11041345-02A	MW-2	Aqueous	2
11041345-03A	MW-3	Aqueous	2
11041345-04A	MW-4	Aqueous	2
11041345-05A	MW-5	Aqueous	2
11041345-06A	MW-6	Aqueous	5
11041345-07A	MW-7	Aqueous	2
11041345-08A	MW-8	Aqueous	2

4/20/11



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<b>Date:</b> [8-Apr-1]	(	QC S1	ummar	y Report			Work Order: 11041345		
Method Blank File ID: 11041408.D		Type: <b>W</b>		est Code: EPA Natch ID: MS12W			04/14/2011 11:57		
Sample ID: MBLK MS12W0414B Analyte	Units : µg/L Result	PQL		SD_12_110414E SpkRefVal %R		Prep Date: UCL(ME) RPDRet	<b>04/14/2011 11:57</b> Val. %RPD(Limit)	Qual	
TPH-P (GRO) Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	ND 9.87 10.1 9.24	50		99 10 99	9 70 1 70	130 130 130	Tan James		
<b>Laboratory Control Spike</b>		Type: L	CS Te	est Code: EPA N	ethod SW8	015B/C			
File ID: 11041406.D Sample ID: GLCS MS12W0414B Analyte	Units : µg/L Result	PQL	Run ID: MS	tch ID: MS12W	3	Prep Date:	04/14/2011 11:12 04/14/2011 11:12		
TPH-P (GRO) Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	380 9.89 10.1 9.28	50		99 99 10	70 70 70 1 70	130 130 130 130 130 130	va. w. v. v. v.	Qual	
Sample Matrix Spike File ID: 11041418.D		Type: M		est Code: EPA N			04/14/2011 15:51		
Sample ID: 11041302-16AGS Analyte	Units : <b>µg/L</b> Result	PQL	Run ID: MS	SD_12_110414E	3	Prep Date: UCL(ME) RPDRef	04/14/2011 15:51	Qual	
TPH-P (GRO) Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	1750 44.9 50.7 49.1	250		0 87 90 10 98	7 51 0 70 1 70	144 130 130 130			
Sample Matrix Spike Duplicate		Type: M		est Code: EPA N					
File ID: 11041419.D Sample ID: 11041302-16AGSD Analyte	Units : <b>µg/L</b> Result	PQL	Run ID: MS	itch ID: MS12W( 5D_12_110414E	1	Analysis Date: Prep Date: UCL(ME) RPDRef	04/14/2011 16:14 04/14/2011 16:14	Qual	
TPH-P (GRO) Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	1750 46.5 51 47.1	250		0 87 93 10 94	7 51 3 70 2 70	144 174 130 130 130 130		Qual	

#### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Reported in micrograms per Liter, per client request.



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<b>Date:</b> 18-Apr-11	QC Summary Report							Work Order: 11041345		
Method Blank File ID: 11041408.D		Type: M	В	est Code: E atch ID: MS	12W04			sis Date:	04/14/2011 11:57	
Sample ID: MBLK MS12W0414A	Units : µg/L		Run ID: M	SD_12_110	414B		Prep	Date:	04/14/2011 11:57	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	CLCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qua
Tertiary Butyl Alcohol (TBA)	ND	10								
Methyl tert-butyl ether (MTBE)	ND	0.5								
Di-isopropyl Ether (DIPE) Ethyl Tertiary Butyl Ether (ETBE)	ND	1								
1,2-Dichloroethane	ND ND	1								
Benzene	ND	1 0.5								
Tertiary Amyl Methyl Ether (TAME)	ND	1								
Toluene	ND	0.5								
1,2-Dibromoethane (EDB)	ND	2								
Ethylbenzene	ND	0.5								
m,p-Xylene	ND	0.5								
o-Xylene	ND	0.5								
Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8	9.87		10		99	70	130			
Surr: 4-Bromofluorobenzene	10.1 9.24		10		101	70 <b>7</b> 0	130			
	9.24		10		92	70	130	<del></del>		
Laboratory Control Spike File ID: 11041407.D		Type: LC		est Code: El						
Sample iD: LCS MS12W0414A	1 1-14			atch ID: MS		14A	•		04/14/2011 11:35	
	Units : µg/L			SD_12_110			Prep I		04/14/2011 11:35	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef\	/al %RPD(Limit)	Qua
Methyl tert-butyl ether (MTBE)	9.52	0.5	10		95	65	140			
Benzene Toluene	9.9	0.5	10		99	70	130			
Ethylbenzene	10.5	0.5	10		105	80	120			
m,p-Xylene	11.4 10.8	0.5 0.5	10 10		114 108	80 70	120			
o-Xylene	11.2	0.5	10		112	70 70	130 130			
Surr: 1,2-Dichloroethane-d4	9.63	0.0	10		96	70	130			
Surr: Toluene-d8	10		10		100	70	130			
Surr: 4-Bromofluorobenzene	9.26		10		93	70	130			
Sample Matrix Spike		Туре: М	\$ Te	est Code: El	PA Met	hod SW82	260B			
File ID: 11041416.D			Ва	tch ID: MS1	12W041	14A	Analys	sis Date:	04/14/2011 15:05	
Sample ID: 11041302-16AMS	Units : µg/L	F	Run ID: MS	SD_12_1104	114B		Prep I	Date:	04/14/2011 15:05	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef\	/al %RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	49.8	1.3	50	0	100	47	150			
Benzene	49.8	1.3	50	0	99.5	59	138			
Toluene Ethylperane	55	1.3	50	0.63	109	68	130			
Ethylbenzene m,p-Xylene	57.6	1.3	50	0	115	68	130			
o-Xylene	56.3 57.7	1.3 1.3	50 50	0	113	68 70	131	*		
Surr: 1,2-Dichloroethane-d4	50	1.5	50	0	115 100	70 70	130 130			
Surr: Toluene-d8	50.7		50		101	70	130			
Surr: 4-Bromofluorobenzene	46.1		50		92	70	130			
Sample Matrix Spike Duplicate		Type: MS	D Te	st Code: EF	A Met	hod SW82	60B			
File ID: 11041417.D			Ва	tch ID: MS1	2W041	4A	Analys	sis Date:	04/14/2011 15:28	
Sample ID: <b>11041302-16AMSD</b>	Units : µg/L	F	Run ID: MS	SD_12_1104	14B		Prep D		04/14/2011 15:28	
Analyte	Result	PQL				LCL(ME)	•		/al %RPD(Limit)	Qual
Methyl tert-butyl ether (MTBE)	49.9	1.3	50	0		47	150	49.75		
Benzene	50	1.3	50	Ö	100	59	138	49.77	, ,	
Toluene	53.4	1.3	50	0.63	106	68	130	54.95	, ,	
Ethylbenzene m.n-Xvlene	57.5	1.3	50	0	115	68	130	57.63	0.3(20)	
m,p-Xylene o-Xylene	54.1	1.3	50	0	108	68	131	56.3	3.9(20)	
Surr: 1,2-Dichloroethane-d4	57.6 51.7	1.3	50	0	115	70 70	130	57.66	0.2(20)	
Surr: Toluene-d8	51.7 50.2		50 50		103 100	70 70	130 130			
Surr: 4-Bromofluorobenzene	47.7		50 50		95	70 70	130			
	,		00		90	, 0	100			



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Date:	OC Cymrus am Dan aut	
_18-Apr-11	QC Summary Report	

Work Order: 11041345

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Billing Information:

# CHAIN-OF-CUSTODY RECORD

# Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778

Phone Number Report Attention

EMail Address TEL: (775) 355-1044 FAX: (775) 355-0406

scarter@stratusinc.net

(530) 676-6008 x

Steve Carter

Page: 1 of 1

Report Due By: 5:00 PM On: 20-Apr-11 WorkOrder: STR11041345

EDD Required: Yes

Sampled by: Client

13-Apr-11 Date Printed Samples Received 13-Apr-11 Cooler Temp ၁ ၀ Job: 2120-1401-01/Haber Oil

= Final Rpt, MBLK, LCS, MS/MSD With Surrogates Client's COC #: 32753 QC Level: S3

Cameron Park, CA 95682-8861

3330 Cameron Park Drive Stratus Environmental

Client:

Suite 550

			***************************************					Jacobs	Toute	
Alpha	Client		Collection No. a	No. of E	of Bottles	4.	TPH/P W	NOC W	reducied lesis	
Sample ID	Sample ID	Matr	Matrix Date	Alpha	Sub	TAT	1			Sample Remarks
STR11041345-01A MW-1	MW-1	AQ	AQ 04/11/11 13:12	5	0	5	GAS-C	GAS-C BTEX/OXY/ 1.2- Draffing C		
STR11041345-02A	MW-2	AQ	AQ 04/11/11 12:11	2	0	5	GAS-C	STEX/OXY/		
STR11041345-03A MW-3	MW-3	AQ	AQ 04/11/11 14:00	22	0	5	GAS-C	BTEXOXY/		and the second s
STR11041345-04A MW-4	MW-4	AQ	04/11/11 10:46	2	0	22	GAS-C	STEX/OXY/ 1.2- CA/FDB C		
STR11041345-05A MW-5	MW-5	AQ	04/11/11	5	0	2	GAS-C	BTEX/OXY/ 1.2- DCAFDR C		
STR11041345-06A	MW-6	AQ	AQ 04/11/11 09:43	2	0	5	GAS-C	GAS-C BTCACAY/ 1,2- DCA/EDB C		
STR11041345-07A	MW-7	AQ	AQ 04/11/11 08:56	5	0	5	GAS-C	TEX/OXY/ 1.2- CA/EDB C		
STR11041345-08A MW-8	MW-8	AQ	AQ 04/11/11 08:22	ιΩ	0	rs.	GAS-C	GAS-C BTEX/OXY/ 1,2. DCA/EDB_C		Corp. and Man.

Comments:

Security seals intact. Frozen ice.:

Signafure Logged in by:

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other)

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Alpha Analytical, Inc.

Company

ETBE DIPE Globy 10600101827 EDD/EDF? YES X NO\_ of Level: III or IV Data Validation DOD Site REMARKS Page #\_\_ SOXVS TAME MIBE Samples Collected From Which State? Analyses Required OTHER Z CA X OR OR 0215 AZ 2 # Containers\*\* <u>ک</u> 255 Glendale Avenue, Suite 21 Alpha Analytical, Inc. Sparks, Nevada 89431-5778 Phone (775) 355-1044 Fax (775) 355-0406 TAT Report Attention / Project Manager Job Name Mobile: 2120-1401-0 Sample Description  $\infty$ す W) 4 #550 l Phone Numbe**C.30 - 1676-600**4Fax **530-1676-6005** Z Z ₹ 3 Phone: Name: Email: # qof \ \ \ さっ 4 9 5 (Use Only) TH S Par K AVE ~のなれないの > ST410+1345 Lab ID Number Company Name Stratus Address 3330 Cameron City, State, Zip Cameron (arand Consultant / Client Name Steve Billing Information: ZipSan Sampled See Key Below AG A S Matrix\* 707 11 407151 08220411 8443 00), 070 Sampled 1121 

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action (NAC 445.0636 (c) (2)). Sampled By: Time: Date: Received by: (Signature/Affiliation) Relinquished by: (Signature/Affiliation)

ADDITIONAL INSTRUCTIONS:

1 30 June 3 OT-Other P-Plastic B-Brass T-Tedlar O-Orbo V-Voa S-Soil Jar \*\*: L-Liter Received by: Anghatum AR - Air OT - Other WA - Waste SO - Soil Relinquished by: (Signature/Affiliation) Relinquished by: (Signature Affiliation) 'Key: AQ - Aqueous

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

# APPENDIX D

# GEOTRACKER ELECTRONIC SUBMITTAL CONFIRMATIONS

# GEOTRACKER ESI

UPLOADING A GEO\_WELL FILE

# SUCCESS

Processing is complete. No errors were found! Your file has been successfully submitted!

**Submittal Type:** 

**GEO\_WELL** 

Submittal Title:

GeoWell 4/11/11

Facility Global ID:

T0600101827

Facility Name:

HABER OIL PRODUCT

File Name:

GEO\_WELL.zip

**Organization Name:** 

Stratus Environmental, Inc.

Username:

STRATUS NOCAL

IP Address:

12.186.106.98

Submittal Date/Time:

5/10/2011 1:45:52 PM

**Confirmation Number:** 

5880890846

# GEOTRACKER ESI

**UPLOADING A EDF FILE** 

# SUCCESS

Processing is complete. No errors were found! Your file has been successfully submitted!

**Submittal Type:** EDF - Monitoring Report - Quarterly

Submittal Title: Analytical 4/11/11 Facility Global ID: T0600101827

Facility Name: HABER OIL PRODUCT 11041345 EDF.zip

Organization Name: Stratus Environmental, Inc.

Username: STRATUS NOCAL IP Address: 12.186.106.98

Submittal Date/Time: 5/11/2011 11:59:26 AM

**Confirmation Number:** 6671219825

**VIEW QC REPORT** 

**VIEW DETECTIONS REPORT** 

# GEOTRACKER ESI

UPLOADING A GEO\_XY FILE

# SUCCESS

Processing is complete. No errors were found! Your file has been successfully submitted!

**Submittal Type:** 

GEO\_XY

Submittal Title:

GEO\_XY Points

Facility Global ID:

T0600101827

Facility Name:

HABER OIL PRODUCT

File Name:

GEO\_XY.zip

**Organization Name:** 

Stratus Environmental, Inc.

Username:

STRATUS NOCAL

IP Address:

12.186.106.98

Submittal Date/Time:

6/21/2011 8:07:00 AM

**Confirmation Number:** 

4938755810

**VIEW GEO XY SUBMITTAL DATA ON MAP** 

# **GEOTRACKER ESI**

UPLOADING A GEO\_Z FILE

# SUCCESS

Processing is complete. No errors were found! Your file has been successfully submitted!

Submittal Type:GEO\_ZSubmittal Title:Geo\_Z

Facility Global ID: T0600101827

Facility Name: HABER OIL PRODUCT

File Name: GEO\_Z.zip

Organization Name: Stratus Environmental, Inc.

<u>Username:</u> STRATUS NOCAL IP Address: 12.186,106,98

Submittal Date/Time: 6/21/2011 8:08:48 AM

Confirmation Number: 1452897429

# GEOTRACKER ESI

UPLOADING A GEO\_MAP FILE

# SUCCESS

Your GEO\_MAP file has been successfully submitted!

**Submittal Type:** 

GEO\_MAP

Facility Global ID:

T0600101827

Facility Name:

HABER OIL PRODUCT

File Name:

GeoMap.pdf

**Organization Name:** 

Stratus Environmental, Inc.

Username:

**STRATUS NOCAL** 

IP Address:

12.186.106.98

Submittal Date/Time:

6/20/2011 3:12:25 PM

**Confirmation Number:** 

4759168505

# GEOTRACKER ESI

**UPLOADING A GEO XY FILE** 

# SUCCESS

Processing is complete. No errors were found! Your file has been successfully submitted!

Submittal Type: GEO XY

<u>Submittal Title:</u> GEO \_XY Points <u>Facility Global ID:</u> T0600101827

Facility Name: HABER OIL PRODUCT

File Name: GEO\_XY.zip

Organization Name: Stratus Environmental, Inc.

<u>Username:</u> STRATUS NOCAL

<u>IP Address:</u> 12.186.106.98

Submittal Date/Time: 6/21/2011 8:07:00 AM

Confirmation Number: 4938755810

**VIEW GEO XY SUBMITTAL DATA ON MAP** 

# **GEOTRACKER ESI**

UPLOADING A GEO\_Z FILE

# SUCCESS

Processing is complete. No errors were found! Your file has been successfully submitted!

**Submittal Type:** 

GEO Z

Submittal Title:

Geo Z

Facility Global ID:

T0600101827

Facility Name:

HABER OIL PRODUCT

File Name:

GEO\_Z.zip

**Organization Name:** 

Stratus Environmental, Inc.

<u>Username:</u>

STRATUS NOCAL

IP Address:

12.186.106.98 6/21/2011 8:08:48 AM

<u>Submittal Date/Time:</u> <u>Confirmation Number:</u>

1452897429

# GEOTRACKER ESI

**UPLOADING A GEO\_MAP FILE** 

# SUCCESS

Your GEO\_MAP file has been successfully submitted!

**Submittal Type:** 

GEO\_MAP

Facility Global ID:

T0600101827

**Facility Name:** 

**HABER OIL PRODUCT** 

File Name:

GeoMap.pdf

**Organization Name:** 

Stratus Environmental, Inc.

<u>Username:</u>

**STRATUS NOCAL** 

IP Address:

12.186.106.98 6/20/2011 3:12:25 PM

Submittal Date/Time:
Confirmation Number:

4759168505