

By Alameda County Environmental Health at 4:25 pm, Jul 05, 2013



July 1, 2013

Ms. Karel Detterman Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

Subject: Site Location: 6501 Shattuck Avenue, Oakland, CA

Fuel Leak Case No. RO0003066

Dear Ms. Detterman:

SOMA's "Second Quarter 2013 Groundwater Monitoring Report" for the subject site has been uploaded to the State's GeoTracker database and Alameda County's FTP site for your review.

Thank you for your time in reviewing our report. Please do not hesitate to call me at (925) 734-6400, if you have questions or comments.

Sincerely,

Mansour Sepehr, Ph.D.,PE Principal Hydrogeologist

cc: Mr. Athan Magganas w/report enclosure



Second Quarter 2013 Groundwater Monitoring Report

6501 Shattuck Avenue Oakland, California

July 1, 2013

Project 5031

Prepared for

Bruder LLC 2550 Appian Way, Suite 201 Pinole, California, 94564

PERJURY STATEMENT

Site Location: 6501 Shattuck Avenue, Oakland, California

Second Quarter 2013 Groundwater Monitoring Report

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

Bruder LLC

Athan Magganas

2550 Appian Way, Suite 201 Pinole, California 94564

June 27 2013

CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this document for Bruder LLC, at the request of Bruder LLC property owner Mr. Athan Magganas, for the property located at 6501 Shattuck Avenue in Oakland, California to comply with requirements of the Alameda County Environmental Health Department (ACEHD) for the Second Quarter 2013 groundwater monitoring event.

Mansour Sepehr, PhD, PE Principal Hydrogeologist

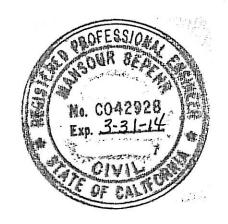


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1. INTRODUCTION

SOMA Environmental Engineering, Inc. (SOMA) has prepared this report on behalf of Bruder LLC property owner, Mr. Athan Magganas, for the site located at 6501 Shattuck Ave., Oakland, California. The site is located at the northwest quadrant of the intersection of Shattuck Avenue and 65th Street near the common municipal limits of Oakland and Berkeley, approximately 3.25 miles north-northeast of the downtown Oakland commercial district. Former underground storage tank (UST) locations and site features are shown in Figure 2.

This report summarizes results of the Second Quarter 2013 groundwater monitoring event conducted at the site on June 12, 2013. It includes physical and chemical properties and biodegradation parameters measured in the field for each groundwater sample and laboratory analytical results for groundwater samples.

1.1 Previous Activities

According to the Phase I Environmental Site Assessment Report dated January 26, 2007, prepared for the site by RGA Environmental, the site was redeveloped from a single-family residential property to a service station in 1933. The total period of operation of the service station could not be precisely determined from available historical sources, but based on the City Directory Abstract, the service station appears to have been converted to a repair shop and used car sales facility during the mid-1980s. The facility has operated as East Bay Smog Center and Auto Repair since 2000.

In September 2009, Controlled Environmental Services (CES) obtained permits for removal of six steel USTs located at the subject site. According to the report prepared by CES, dated October 23, 2009, two 1,000-gallon gasoline USTs, three 2,000-gallon gasoline USTs, and one 500-gallon waste oil UST were removed.

In June 2011, SOMA advanced six soil borings, B-4 through B-9, and collected soil and groundwater samples for analysis of TPHs and VOCs. Based on results of soil and groundwater investigation conducted in the vicinity of the former USTs, it was determined that petroleum-hydrocarbon contamination still exists in soil and groundwater beneath the site.

In October 2011, remedial excavation was conducted at the site. A total of 770 tons of PHC-impacted soils were excavated and disposed of off-site at Potrero Hills Landfill. The excavated area was backfilled and compacted with pre-tested clayey backfill material. Confirmation soil sampling indicated that all shallow

residual PHC soil contamination has been removed from the area in the vicinity of former USTs.

1.2 Summary of Field Activities and Laboratory Analysis

1.2.1 Field Activities

On June 12, 2013, three monitoring wells (MW-1, MW-2, and MW-3) were measured for depth to groundwater. Additional field measurements and groundwater samples were collected from all three wells. Properties measured in the field were Dissolved oxygen (DO), pH, temperature, electrical conductivity (EC), turbidity, and oxidation and reduction potential (ORP). This monitoring event was conducted in accordance with procedures and guidelines of Alameda County Environmental Health Department (ACEHD).

To evaluate the state of biodegradation processes in the subsurface, biodegradation parameters such as dissolved oxygen (DO), turbidity, and oxidation reduction potential (ORP) were measured.

Figure 2 shows well locations. Appendix A details groundwater monitoring procedures followed during this event.

Purged groundwater was temporarily stored on-site in a 55-gallon drum. On June 25, 2013, two drums generated during current and previous monitoring events were transported to an appropriate disposal facility. Appendix D includes the non-hazardous waste manifest.

1.2.2 Laboratory Analysis

Curtis and Tompkins Laboratories, a California state-certified laboratory, analyzed groundwater samples for the following: TPH-g, TPH as diesel (TPH-d), and TPH as motor Oil (TPH-mo); Full list of VOCs by EPA Method 8260 (including BTEX (benzene, toluene, ethylbenzene, and total xylenes), and MtBE). TPH-g, TPH-d, and TPH-mo were analyzed using EPA Method 8015B.

2. RESULTS

Results of field measurements and laboratory analyses for the groundwater monitoring event conducted on June 12, 2013 follow below.

2.1 Field Measurements

Monitoring wells MW-1 through MW-3 were measured for depth to groundwater (Table 1). Depths ranged from 5.35 feet in MW-1 to 8.60 feet in MW-2.

Groundwater elevations ranged from 121.72 feet in MW-2 to 125.39 feet in MW-3.

Figure 3 displays the groundwater elevation contour map. The groundwater flow direction is northwesterly at a gradient of approximately 0.076 feet/feet. Since the previous monitoring event (First Quarter 2013), groundwater flow direction has remained northwesterly and the gradient has increased slightly. Appendix B shows field measurements, biodegradation parameter measurements and gradient calculations.

The more positive the redox potential of an electron acceptor, the more energetically favorable is the reaction utilizing that electron acceptor. The most energetically preferred electron acceptor for redox reactions is DO. Negative redox potentials indicate that contaminants in the groundwater are conducive to anaerobic biodegradation. Positive redox potentials are more energetically favorable in utilizing electron acceptors during chemical reactions. This promotes the removal of organic mass from the contaminated groundwater by indigenous bacteria in the subsurface during the release of the transfer of electrons. Evaluating the distribution of electron acceptors can provide evidence of where, and to what extent, hydrocarbon biodegradation is occurring.

Once stabilization of the existing aquifer was achieved, upon terminating the purge cycle at each well, DO and ORP readings were as follows: DO ranged from 0.40 mg/L in MW-1 to 1.04 mg/L in MW-2. ORP showed positive redox potentials in MW-1, MW-2 and MW-3.

2.2 Laboratory Analysis

Groundwater analytical data for this monitoring event is shown in Table 1. Appendix C includes the laboratory report and chain of custody form.

TPH-g, TPH-d, TPH-mo, and all VOCs were below laboratory reporting-limit in MW-1, MW-2, and MW-3, except for 1,2-DCA which was detected in MW-1 at a low level of 1.00 µg/L. Figure 4 shows a map of 1,2-DCA concentrations in groundwater. Since the previous monitoring event (First Quarter 2013), no change has been observed in the contaminant concentrations.

3. CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations based on results of Second Quarter 2013 groundwater monitoring are summarized below.

 In general, the groundwater flow direction is northwesterly at a gradient of 0.076 feet/feet.

- All contaminant concentrations were below laboratory reporting-limits in all monitoring wells except MW-1, where 1,2-DCA was detected at a low level of 1.00 μg/L. Since the previous monitoring event (First Quarter 2013), 1,2-DCA has remained unchanged in MW-1.
- SOMA has completed four quarterly groundwater monitoring events at the site as previously recommended in the Remedial excavation report dated January 9, 2012. Based on the low to no-detect contaminant concentrations SOMA recommends adoption of no further action status for the site.

4. REPORT LIMITATIONS

This report is the summary of work done by SOMA, including observations and descriptions of site conditions. It includes analytical results produced by Curtis and Tompkins, Laboratories for the current groundwater monitoring event. Quantities and locations of wells were selected to provide the required information, but may not be completely representative of entire site conditions. All conclusions and recommendations are based on results of laboratory analysis. Conclusions beyond those specifically stated in this document should not be inferred from this report.

SOMA warrants that services were provided in accordance with generally accepted environmental engineering and consulting practices at the time of this sampling.

Figures





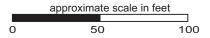
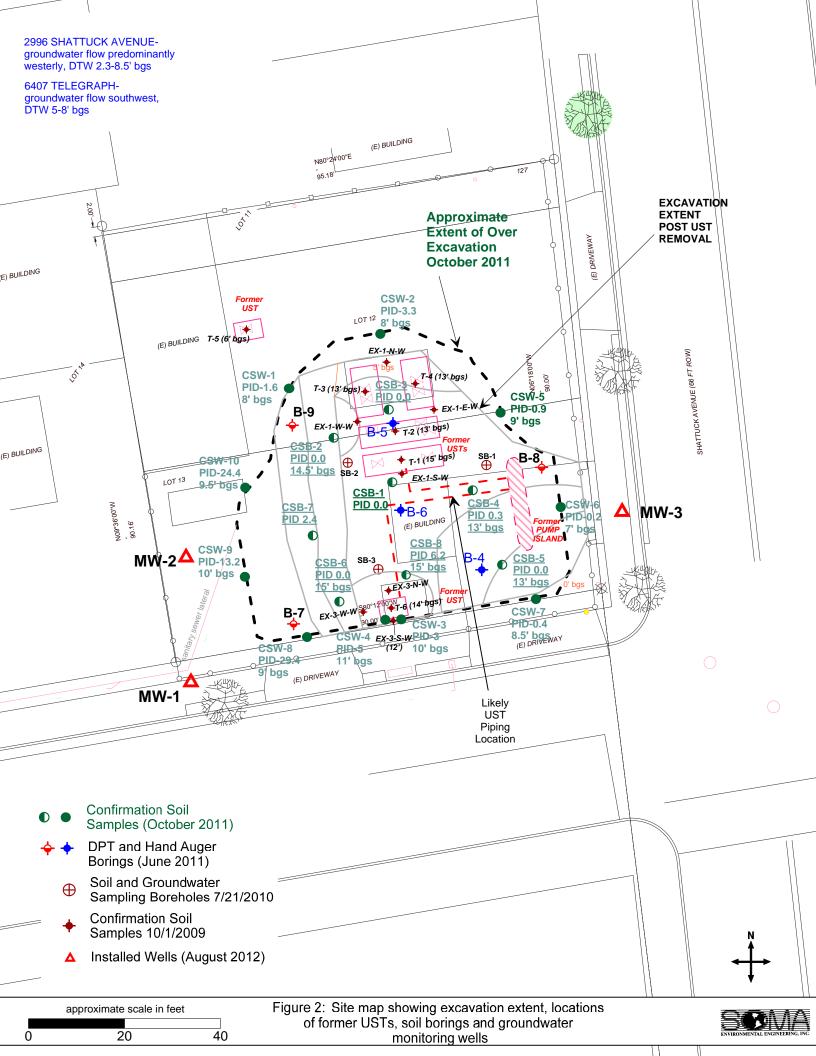
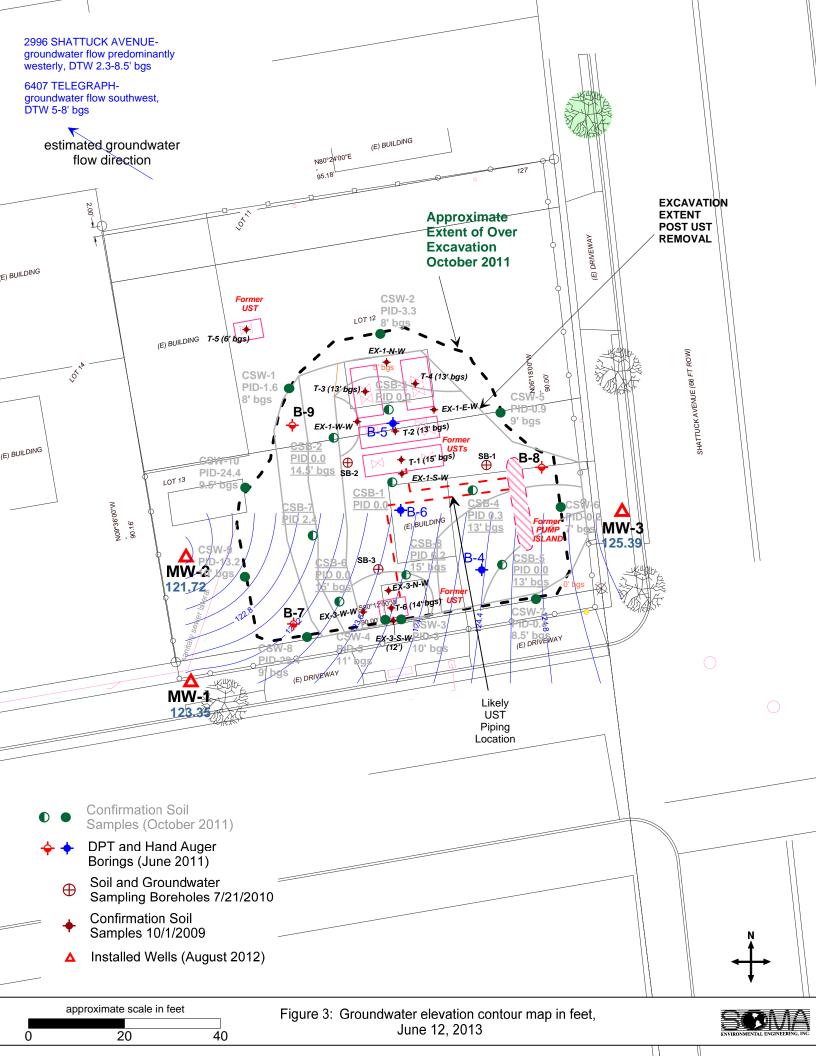
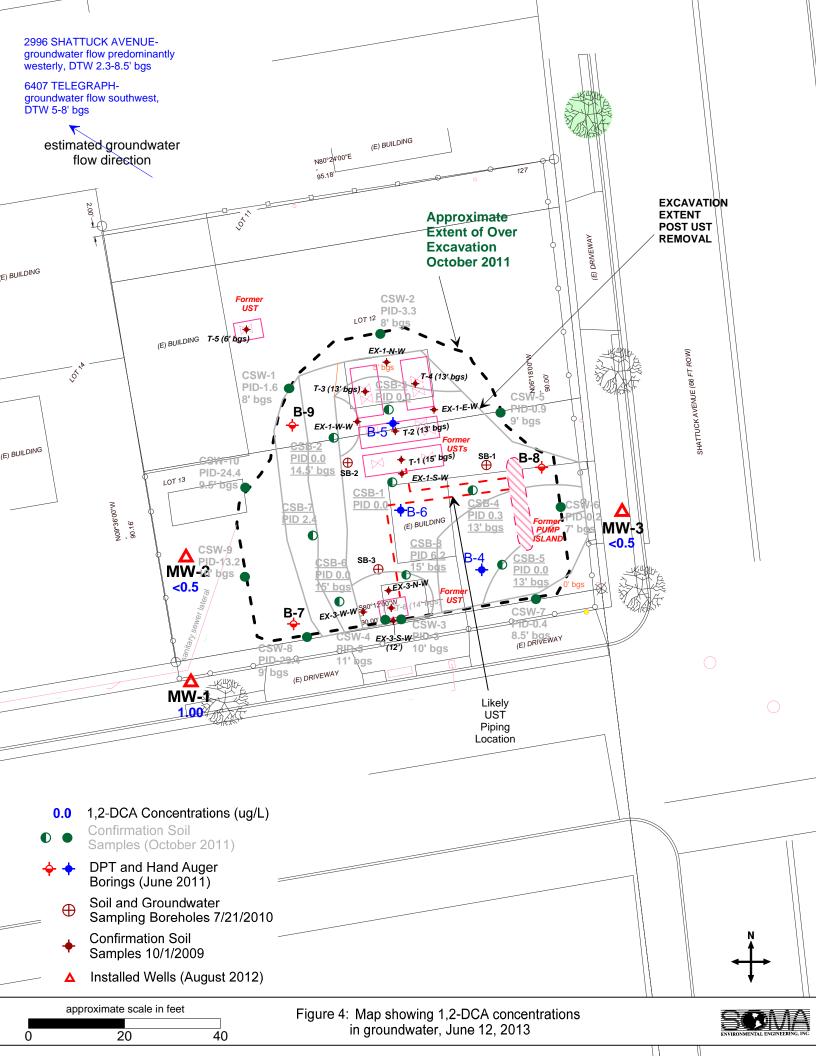


Figure 1: Site vicinity map.







Tables

Table 1 Groundwater Analytical Results 6501 Shattuck Ave, Oakland, CA

		Top of												
		Casing	Depth to											
		Elevation	Groundwater	Groundwater	TPH-g	TPH-d	TPH-mo	Benzene	Toluene	Ethylbenz	Xylenes	MtBE	1,2-DCA	
Monitoring Well	Date	(Ft.)	(Ft.)	Elevation	μg/L	μg/L	μg/L	μg/L	μg/L	ene μg/L	μg/L	μg/L	μg/L	EDB μg/L
MW-1	9/11/2012	128.70	6.14	122.56	<50	<52	<310	<0.5	<0.5	<0.5	<0.5	<0.5	1.30	<0.5
	12/20/2012	128.70	2.94	125.76	<50	<51	<310	<0.5	<0.5	<0.5	<0.5	<0.5	0.90	<0.5
	3/25/2013	128.70	4.48	124.22	<50	<56	<330	<0.5	<0.5	<0.5	<0.5	<0.5	1.00	<0.5
	6/12/2013	128.70	5.35	123.35	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	1.00	<0.5
MW-2	9/11/2012	130.32	7.81	122.51	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/20/2012	130.32	6.61	123.71	76 ^Y	<51	<310	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/25/2013	130.32	7.65	122.67	<50	<57	<340	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/12/2013	130.32	8.60	121.72	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3	9/11/2012	131.34	7.89	123.45	<50	<53	<320	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/20/2012	131.34	4.55	126.79	<50	<51	<310	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/25/2013	131.34	4.99	126.35	<50	<58	<350	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/12/2013	131.34	5.95	125.39	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Note:

All other VOCs were below laboratory-reporting limits in groundwater samples

< : Below Laboratory Reporting Limit (Method Detection Limit)

Appendix A

Standard Operating Procedures for Conducting Groundwater Monitoring Activities

Standard Operating Procedures for Conducting Groundwater Monitoring Activities

Water Level Measurements

Prior to measurement of groundwater depth at each well, equalization with the surrounding aquifer must be achieved. Initially, the well cap is removed and the pressure is allowed to dissipate, creating a more stable water table level within the well. After about 10-15 minutes, once the water level in the well stabilizes, the depth to groundwater is measured from the top of the casing to the nearest 0.01 foot using an electric sounder.

Purging and Field Measurements

Prior to sample collection, each well is purged using a battery-operated, 2-inch-diameter pump (Model ES-60 DC). During purging, groundwater is measured for parameters such as dissolved oxygen (DO), pH, temperature, electrical conductivity (EC), and oxygen-reduction potential (ORP) using a Hanna HI-9828 multi-parameter instrument. Turbidity is measured using a Hanna HI-98703 portable turbidimeter. The equipment is calibrated at the Site using standard solutions and procedures provided by the manufacturer.

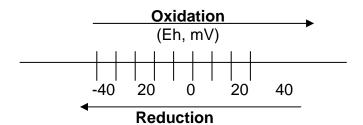
The pH of groundwater has an effect on the activity of microbial populations in the groundwater. The groundwater temperature affects the metabolic activity of bacteria. The groundwater EC is directly related to the concentration of total dissolved solids (TDS) in solution.

There is a strong correlation between the turbidity level and the biological oxygen demand of natural water bodies. The main purpose for checking the turbidity level is to provide a general overview of the extent of the suspended solids in the groundwater.

ORP is the measure of the potential for an oxidation or reduction process to occur. In the oxidation process, a molecule or ion loses one or several electrons. In the reduction process, a molecule or ion gains one or several electrons. The unit of the redox potential is the volt or millivolt. The most important redox reaction in petroleum-contaminated groundwater is the oxidation of petroleum hydrocarbons in the presence of bacteria and free molecular oxygen. Because the solubility of O_2 in water is low (9 mg/L at 25 °C and 11 mg/L at 5 °C), and because the rate of O_2 replenishment in subsurface environments is limited, DO can be entirely consumed when the oxidation of only a small amount of petroleum hydrocarbons occurs.

Oxidation of petroleum hydrocarbons can still occur when all the dissolved O₂ in the groundwater is consumed; however, the oxidizing agents (i.e., the constituents that undergo reduction) now become NO₃, MnO₂, Fe (OH)₃, SO₄²⁻

and others (Freeze and Cherry, 1979). As these oxidizing agents are consumed, the groundwater environment becomes more and more reduced. If the process advances far enough, the environment may become so strongly reduced that the petroleum hydrocarbons undergo anaerobic degradation, resulting in the production of methane and carbon dioxide. The concept of oxidation and reduction in terms of changes in oxidation states is illustrated below.



Purging of wells continues until the parameters for DO, pH, temperature, EC, turbidity, and redox stabilize, or three casing volumes are purged.

Once stabilization occurs, the groundwater samples are also tested on-site for ferrous iron (Fe⁺²), nitrate (NO₃ $^{-1}$), and sulfate (SO₄ $^{-2}$) concentrations.

 ${\rm Fe}^{+2}$, ${\rm NO_3}^-$, and ${\rm SO_4}^{-2}$ are measured colorimetrically using the Hach Colorimeter Model 890, a microprocessor-controlled photometer suitable for colorimetric testing in the laboratory or the field. The required reagents for each specific test are provided in AccuVac ampuls.

Sampling

For sampling purposes, after purging a disposable polyethylene bailer is used to collect sufficient samples from each monitoring well for laboratory analyses. Groundwater samples are transferred into 40-mL VOA vials and preserved with hydrochloric acid. The vials are sealed to prevent air bubbles from developing within the headspace. For TPH-d analysis, groundwater samples are collected using 1-L or 500-mL, amber, nonpreserved glass containers. Samples are placed in an ice-filled cooler and maintained at 4°C. A chain of custody form for all samples is prepared to accompany the samples, which are promptly delivered to a California state-certified analytical laboratory.

Appendix B

Tables of elevations and coordinates on wells, Field
Measurements of Physical, Chemical and Biodegradation
Parameters of the Groundwater Samples and Groundwater
Gradient Calculations

DATE: 9/04/2012 JOB#

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL ENGINEERING 6501 SHATTUCK AVENUE OAKLAND, CA 94609

WELL ID #	NORTHING (FT.) / LATITUDE (D.DEG.)	EASTING (FT.) / LONGITUDE (D.DEG.)	ELEVATION (FT.)	DESCRIPTION
MVV-1	2136901.934	6051727.243	128.70	2"PVC NOTCH NORTH SIDE
	N37.850339023	W122.266261635	129.19	SET PUNCH NORTH SIDE RIM
	100 1 000 100 100 100 100 100 100 100 1		129.22	CONC NORTH SIDE
MW-2	2136927.936	6051726.241	130.32	2" PVC NOTCH NORTH SIDE
	N37.850410368	W122.266266804	130.79	SET PUNCH NORTH SIDE RIM
			130.58	GRND NORTH SIDE
MW-3	2136937.443	6051817.078	131.34	2" PVC NOTCH NORTH SIDE
	N37.85044118	W122.26595287	131.72	SET PUNCH NORTH SIDE RIM
			131.73	CONC NORTH SIDE

			-	
		and the second s	CONTRACTOR OF STATES	
				-
				,

HORIZONTAL AND VERTICAL CONTROL:

COORDINATE VALUES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD83. ELEVATIONS ARE NAVD 88 DATUM.

BASE STATIONS USED:

HT2918 BERKELEY H J HEINZ CO TOWER NORTHING 2,138,045.28, EASTING 6,045,147.46 GPS BASE200 MW-3 PUNCH NORTH SIDE NORTHING 2,136,937.769, EASTING 6,051,817.025, ELEVATION=131.724

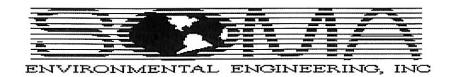
BENCH MARK USED: CITY OF OAKLAND BM

MONUMENT 32 FEET AT THE NORTHWEST CORNER OF THE INTERSECTION OF SHATTUCK AVENUE AND ALCATRAZ AVENUE. ELEVATION=125.685'

EQUIPMENT USED: TRIMBLE GPS-R8 & TS S6, TOPCON AT-G2 LEVEL

Edgis Land Surveying

Land Surveying and Mapping 1374 Garland Avenue, Clovis, CA 93612 Phone (559) 803-2679 Fax (559) 222-2580 email: edgis@aol.com



	0010	(-)		_			
Well No.:	1.11)		Р	roject No.:	5031	
Casing Diameter:	_2	inch			Address:	6501 Shattuck Avenue	
Depth of Well:	145	<u>) ∕2</u> ft				Oakland, CA	
Top of Casing Elevation:	128.	<u>70</u> ft			Date:	June 12, 2013	
Depth to Groundwater:	5.	35 ft			Sampler:	Lizzie Hightower	
Groundwater Elevation:	123	<u>;35</u> ft				å	
Water Column Height:	12.0	√ <u></u> ft					
Purged Volume:	6	gallons					
Purging Method:	Baile	r 🗆			Pump 💆		
Sampling Method:	Baile	r 🗆			Pump /		
Color:	No	P'	Yes		Describe	little clank	1
Sheen:	No	Ø	Yes		Describe		
Odor:	No		Yes		Describe		3

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pН	Temp °C	E.C. (μS/cm)	Turb. NTU	ORP
4,06	5401	7					
4:11		,157	16,97	12.5¢	721	17,9	110.7
4:21	7	(7,0)	6,94	idita	グラウ	1915	127,0
4:71	5	0160	6,97	13.52	742	(r.f.)	105,0
4.36	6	OHO	6,00	10.94	777	13,4	101,0
4172	SOIN	919		,,	. , ,		
. ,		1					

Notes:



	_				
Well No.:	WM-5		Project No.:	5031	
Casing Diameter:	<u> </u>	nch	Address:	6501 Shattuck	Avenue
Depth of Well:	79.14 H			Oakland, CA	
Top of Casing Elevation:	130.32 ft		Date:	June 12, 2013	
Depth to Groundwater:	3.67 ft	8	Sampler:	Lizzie Hightowe	er
Groundwater Elevation:	121.72 ft				
Water Column Height:	11. H				
Purged Volume:	<u></u>	allons			
Purging Method:	Bailer □		Pump 🗖		
Sampling Method:	Bailer □		Pump 🗹		
				. 1	1
Color:	No □	Yes	□/ Describe	117416	Clow) y
Sheen:	No 戶	Yes	□ Describe		
Odor:	No 💆	Yes	□ Describe		

Field Measurements:

	Time	Volume (gallons)	D.O. ṃg/L	pН	Temp °C	E.C. (μS/cm)	Turb. NTU	ORP
	Hert 4.2:50	5-154	7					
	7:03	i	フラコ	フ、つぐ	17160	707	109	1727
	80.5		707	715	17,69	725	55.0	132,1
	5:19) J	2,55	7,00	17,75	OK	713	1717
200	J. 78	√.	049	700	17.57	747	249	139,0
	3:59	6	1,0%	6,93	17.51	749	19,5	129,0
	7:25	Sa. M	PIP	13				
	J . J							

Notes:



Well No.:	WM-3	F	Project No.: (5031
Casing Diameter:	7 inch		Address:	6501 Shattuck Avenue
Depth of Well:	24,87 ft		(Oakland, CA
Top of Casing Elevation:	131.34 ft		Date: .	June 12, 2013
Depth to Groundwater:	5.0) Ft		Sampler: I	Lizzie Hightower
Groundwater Elevation:	125.39 ft			
Water Column Height:	18,95 ft		ì	
Purged Volume:	6_ gallons			
Purging Method:	Bailer □			crotlik
Sampling Method:	Bailer □		Pump 🗹	agote Ch
Color:	No 🗆	Yes ⊅	Describe	conty
Sheen:	No 🗸	Yes □	Describe	
Odor:	No 🗡	Yes □	Describe	

Field Measurements:

Time	Volume	D.O.	рН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(μS/cm)	NTU	
J# 1:21	576/5	17				137	
1:27	i	589	451	19,02	(वुन	1	122.7
1172	7	0.57	6.10	Hore!	335	194	1111
1,73	3	0.66	[10,]	19/27	(7)	134	10/17
1:99	-	03	6,99	19112	(97	79,7	02/9
バナベ	هر	19,0	7,00	19.14	rag	170	29,7
547 20	SON	19191		14	- 0 1	. , ,	012

Notes:



EPA On-line Tools for Site Assessment Calculation

Hydraulic Gradient -- Magnitude and Direction

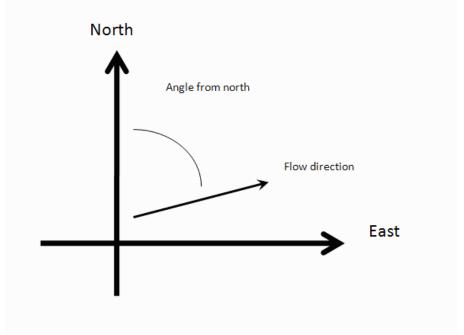
Gradient Calculation from fitting a plane to as many as thirty points

where $(\boldsymbol{x}_{\!_{i}},\!\boldsymbol{y}_{\!_{i}})$ are the coordinates of the well and $\boldsymbol{h}_{\!_{i}}$ is the head

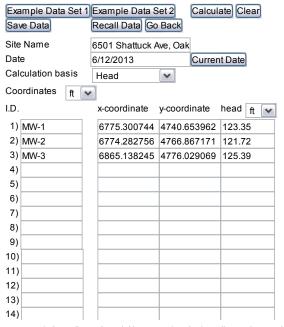
 $i = 1,2,3, \dots, 30$

The coefficients a, b, and c are calculated by a least-squares fitting of the the data to a plane

The gradient is calculated from the square root of $(a^2 + b^2)$ and the angle from the arctangent of a/b or b/a depending on the quadrant



Inputs



15)			
16)			
17)			
18)			
19)			
20)			
21)			
22)			
23)			
24)			
25)			
26)			
27)			
28)			
29)			
30)			

Results

Number of Points Used in Calculation	3
Max. Difference Between Head Values	1.119
Gradient Magnitude (i)	0.07620
Flow direction as degrees from North (positive yaxis)	322.4
Coefficient of Determination (R ²)	1.00

WCMS

Last updated on 1/10/2013

Appendix C

Laboratory Report and Chain of Custody Form



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 246140 ANALYTICAL REPORT

SOMA Environmental Engineering Inc. Project : 5031

6620 Owens Dr. Location: 6501 Shattuck Ave., Oakland

Pleasanton, CA 94588 Level : II

<u>Sample ID</u>	<u>Lab ID</u>
MW-1	246140-001
MW-2	246140-002
MW-3	246140-003

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature:

Tracy Babjar Project Manager (510) 204-2226 Date: 06/20/2013

NELAP # 01107CA



CASE NARRATIVE

Laboratory number: 246140

Client: SOMA Environmental Engineering Inc.

Project: 5031

Location: 6501 Shattuck Ave., Oakland

Request Date: 06/13/13 Samples Received: 06/13/13

This data package contains sample and QC results for three water samples, requested for the above referenced project on 06/13/13. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):

No analytical problems were encountered.

Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878 2323 Fifth Street Berkeley, CA 94710 (510)486-0900 Phone (510)486-0532 Fax

C&T LOGIN # 246 140

Sampler: Parsa Motavalli

Project No: 5031

Project Name: 6501 Shattuck Ave., Oakland

Turnaround Time: Standard

Report To: Joyce Bobek

Company: **SOMA Environmental**

Telephone: 925-734-6400

Eav.

005 704 6404

		Fax:					925-734-640)1				
				Мa	tri	X		Preservative				
Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste		# of Containers	HCL	H ₂ SO ₄	HNO3	ICE	
1	MW-1	4175,9172 6/14	þ	*			4 VOAS, 1-L Amber	*			*	
2	MW-2	3:33.7.35 Wb	И	*			4 VOAS, 1-L Amber	*			*	
3	MW-3	1:53/2:00 4/2/		*			4 VOAS, 1-L Amber	*			*	
					Ц							
Votes	EDF OUTPUT REQU	IRED	RI	EL	INC	QL	JISHED BY:					
	Silica-gel clean-up requ	ired	Ι.	2		,	110-		ta li	2/	12	10

* TPH-g, TPH-d, TPH-mo 8015	* VOCs (Full List) 8260		:								
*	*										
*	*										
*	, *							-			
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RE	CEIV	ED B	└─ Y:	<u> </u>		L	L	L		Щ.	Щ
	RECEIVED BY:										

DATÉ/TÍME

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DATE/TIME

DATE/TIME

DATE/TIME

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COOLER RECEIPT CHECKLIST



Login # 246/40 Date Received 6/13/13	Number of coolers 1
Login # 2 46 146 Date Received 613/13 Note that Client SOMA ENVIRONMENTAL Project 6501 SHA	TUCK AVE OAKLAND (!
Date Opened (d13/13 By (print) TR (sign) \$\mathre{Z}\$	Time Raitas
Date Opened $(6/13/13)$ By (print) TR (sign) U Date Logged in $(1/3/13)$ By (print) U (sign)	¥7
Did cooler come with a shipping slip (airbill, etc) Shipping info	
2A. Were custody seals present? YES (circle) on cooler	
How many Name Name	YES NO NA
2B. Were custody seals intact upon arrival? 3. Were custody papers dry and intact when received? 4. Were custody papers filled out properly (ink, signed, etc)? 5. Is the project identifiable from custody papers? (If so fill out top of 6. Indicate the packing in cooler: (if other, describe)	YES NO (ES NO of form) YES NO
☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ Cloth material ☐ Cardboard ☐ Styrofoam 7. Temperature documentation: * Notify PM if temperature exceeds a supplied to the properties of	
Type of ice used: ★ Wet Blue/Gel None	Temp(°C) <u>1.9</u>
☐ Samples Received on ice & cold without a temperature bla	ank; temp. taken with IR gun
☐ Samples received on ice directly from the field. Cooling p.	rocess had begun
8. Were Method 5035 sampling containers present? If YES, what time were they transferred to freezer? 9. Did all bottles arrive unbroken/unopened? 10. Are there any missing / extra samples? 11. Are samples in the appropriate containers for indicated tests? 12. Are sample labels present, in good condition and complete? 13. Do the sample labels agree with custody papers? 14. Was sufficient amount of sample sent for tests requested? 15. Are the samples appropriately preserved? 16. Did you check preservatives for all bottles for each sample? 17. Did you document your preservative check? 18. Did you change the hold time in LIMS for unpreserved VOAs? 19. Did you change the hold time in LIMS for preserved terracores? 20. Are bubbles > 6mm absent in VOA samples? 21. Was the client contacted concerning this sample delivery? If YES, Who was called? By	YES NO
COMMENTS	



Total Volatile Hydrocarbons Lab #: 246140 Location: 6501 Shattuck Ave., Oakland EPA 5030B Client: SOMA Environmental Engineering Inc. Prep: EPA 8015B Project#: 5031 Analysis: 199715 Batch#: Matrix: Water Sampled: 06/12/13 Units: ug/L Diln Fac: 1.000 Received: 06/13/13

Field ID: MW-1 Lab ID: 246140-001 Type: SAMPLE Analyzed: 06/14/13

Analyte Result RL
Gasoline C7-C12 ND 50

Surrogate %REC Limits
Bromofluorobenzene (FID) 105 76-128

Field ID: MW-2 Lab ID: 246140-002 Type: SAMPLE Analyzed: 06/14/13

 Analyte
 Result
 RL

 Gasoline C7-C12
 ND
 50

Surrogate%RECLimitsBromofluorobenzene (FID)10476-128

Field ID: MW-3 Lab ID: 246140-003 Type: SAMPLE Analyzed: 06/15/13

 Analyte
 Result
 RL

 Gasoline C7-C12
 ND
 50

Surrogate %REC Limits
Bromofluorobenzene (FID) 106 76-128

Bromofluorobenzene (FID) 106 76-128

Type: BLANK Analyzed: 06/14/13

Lab ID: QC693718

Analyte Result RL
Gasoline C7-C12 ND 50

Surrogate %REC Limits
Bromofluorobenzene (FID) 102 76-128

ND= Not Detected RL= Reporting Limit Page 1 of 1

8.0



Batch QC Report

Total Volatile Hydrocarbons								
Lab #:	246140	Location:	6501 Shattuck Ave., Oakland					
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B					
Project#:	5031	Analysis:	EPA 8015B					
Type:	LCS	Diln Fac:	1.000					
Lab ID:	QC693717	Batch#:	199715					
Matrix:	Water	Analyzed:	06/14/13					
Units:	ug/L							

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,039	104	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	102	76-128

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Batch QC Report

Total Volatile Hydrocarbons									
Lab #:	246140			Location:	6501 Shattuck Ave., Oakland				
Client:	SOMA Enviro	nmental	Engineering Inc	. Prep:	EPA 5030B				
Project#:	5031			Analysis:	EPA 8015B				
Field ID:	ZZZZ	ZZZZZZ		Batch#:	199715				
MSS Lab II	2461	15-004		Sampled:	06/12/13				
Matrix:	Wate	r		Received:	06/13/13				
Units:	ug/L	ı		Analyzed:	06/15/13				
Diln Fac:	1.00	0							

Type: MS

Lab ID: QC693719

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<10.56	2,000	1,943	97	76-120

Surrogate	%REC	Limits	
Bromofluorobenzene (FID)	106	76-128	

Type: MSD Lab ID: QC693720

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,937	97	76-120	0	20



Total Extractable Hydrocarbons 6501 Shattuck Ave., Oakland EPA 3520C Lab #: 246140 Location: Client: Prep: SOMA Environmental Engineering Inc. Project#: 5031 EPA 8015B Analysis: 06/12/13 06/13/13 Matrix: Water Sampled: Units: ug/L Received: Diln Fac: 1.000 06/17/13 Prepared: 1997<u>68</u> Batch#: 06/18/13 Analyzed:

Field ID: MW-1 Lab ID: 246140-001 Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	50	
Motor Oil C24-C36	ND	300	

Surrogate	%REC	Limits	
o-Terphenyl	114	62-133	

Field ID: MW-2 Lab ID: 246140-002 Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	50	
Motor Oil C24-C36	ND	300	

Surrogate	%REC	Limits
241109400	<u> </u>	
o-Terphenyl	118	62-133
O ICIPICITY I	110	02 100

Field ID: MW-3 Lab ID: 246140-003 Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	50	
Motor Oil C24-C36	ND	300	

	Surrogate	%REC	Limits	
()-	Terphenyl	107	62-133	

Type: BLANK Cleanup Method: EPA 3630C Lab ID: QC693924

Analyte Result RL

Diesel C10-C24	ND	50	
Motor Oil C24-C36	ND	300	

o-Terphenyl 98	62-133

ND= Not Detected RL= Reporting Limit Page 1 of 1

12.0



Total Extractable Hydrocarbons					
Lab #:	246140		Location:	6501 Shattuck Ave., Oakland	
Client:	SOMA Environmental	Engineering Inc.	Prep:	EPA 3520C	
Project#:	5031		Analysis:	EPA 8015B	
Matrix:	Water		Batch#:	199768	
Units:	ug/L		Prepared:	06/17/13	
Diln Fac:	1.000		Analyzed:	06/18/13	

Type: BS Cleanup Method: EPA 3630C

Lab ID: QC693925

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,210	88	59-120

Surrogate	%REC	Limits
o-Terphenyl	107	62-133

Type: BSD Cleanup Method: EPA 3630C

Lab ID: QC693926

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,500	100	59-120	12	46

Surrogate	%REC	Limits	
o-Terphenyl	120	62-133	



Total Extractable Hydrocarbons						
Lab #:	246140		Location:	6501 Shattuck Ave., Oakland		
Client:	SOMA Environme	ental Engineering Inc.	Prep:	EPA 3520C		
Project#:	5031		Analysis:	EPA 8015B		
Field ID:	ZZZZZZZ	ZZZZ	Batch#:	199768		
MSS Lab ID	246234-	002	Sampled:	06/17/13		
Matrix:	Water		Received:	06/17/13		
Units:	ug/L		Prepared:	06/17/13		
Diln Fac:	1.000		Analyzed:	06/18/13		

Type: MS Lab ID: QC693964

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	40,780	2,500	32,700 >LR	-324 NM	1 61-120

Surrogate	%REC	Limits
o-Terphenyl	104	62-133

Type: MSD Lab ID: QC693965

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,604	6,117	-1331 NN	1 61-120	NC	43

Surrogate	%REC	Limits
o-Terphenyl	102	62-133

NC= Not Calculated

NM= Not Meaningful: Sample concentration > 4X spike concentration

>LR= Response exceeds instrument's linear range

RPD= Relative Percent Difference



Purgeable Organics by GC/MS						
Lab #:	246140		Location:	6501 Shattuck Ave., Oakland		
Client:	SOMA Environmental H	Engineering Inc.	Prep:	EPA 5030B		
Project#:	5031		Analysis:	EPA 8260B		
Field ID:	MW-1		Batch#:	199693		
Lab ID:	246140-001		Sampled:	06/12/13		
Matrix:	Water		Received:	06/13/13		
Units:	ug/L		Analyzed:	06/14/13		
Diln Fac:	1.000					

Analyte	Result	RL	
Freon 12	ND	1.0	
Chloromethane	ND	1.0	
Vinyl Chloride	ND	0.5	
Bromomethane	ND	1.0	
Chloroethane	ND	1.0	
Trichlorofluoromethane	ND	1.0	
Acetone	ND	10	
Freon 113	ND	2.0	
1,1-Dichloroethene	ND	0.5	
Methylene Chloride	ND	10	
Carbon Disulfide	ND	0.5	
MTBE	ND	0.5	
trans-1,2-Dichloroethene	ND	0.5	
Vinyl Acetate	ND	10	
1,1-Dichloroethane	ND	0.5	
2-Butanone	ND	10	
cis-1,2-Dichloroethene	ND	0.5	
2,2-Dichloropropane	ND	0.5	
Chloroform	ND	0.5	
Bromochloromethane	ND	0.5	
1,1,1-Trichloroethane	ND	0.5	
1,1-Dichloropropene	ND	0.5	
Carbon Tetrachloride	ND	0.5	
1,2-Dichloroethane	1.0	0.5	
Benzene	ND	0.5	
Trichloroethene	ND	0.5	
1,2-Dichloropropane	ND	0.5	
Bromodichloromethane	ND	0.5	
Dibromomethane	ND	0.5	
4-Methyl-2-Pentanone	ND	10	
cis-1,3-Dichloropropene	ND	0.5	
Toluene	ND	0.5	
trans-1,3-Dichloropropene	ND	0.5	
1,1,2-Trichloroethane	ND	0.5	
2-Hexanone	ND	10	
1,3-Dichloropropane	ND	0.5	
Tetrachloroethene	ND	0.5	

RL= Reporting Limit



Purgeable Organics by GC/MS						
Lab #:	246140		Location:	6501 Shattuck Ave., Oakland		
Client:	SOMA Environmental	Engineering Inc.	Prep:	EPA 5030B		
Project#:	5031		Analysis:	EPA 8260B		
Field ID:	MW-1		Batch#:	199693		
Lab ID:	246140-001		Sampled:	06/12/13		
Matrix:	Water		Received:	06/13/13		
Units:	ug/L		Analyzed:	06/14/13		
Diln Fac:	1.000					

Analyte	Result	RL	
Dibromochloromethane	ND	0.5	
1,2-Dibromoethane	ND	0.5	
Chlorobenzene	ND	0.5	
1,1,1,2-Tetrachloroethane	ND	0.5	
Ethylbenzene	ND	0.5	
m,p-Xylenes	ND	0.5	
o-Xylene	ND	0.5	
Styrene	ND	0.5	
Bromoform	ND	1.0	
Isopropylbenzene	ND	0.5	
1,1,2,2-Tetrachloroethane	ND	0.5	
1,2,3-Trichloropropane	ND	0.5	
Propylbenzene	ND	0.5	
Bromobenzene	ND	0.5	
1,3,5-Trimethylbenzene	ND	0.5	
2-Chlorotoluene	ND	0.5	
4-Chlorotoluene	ND	0.5	
tert-Butylbenzene	ND	0.5	
1,2,4-Trimethylbenzene	ND	0.5	
sec-Butylbenzene	ND	0.5	
para-Isopropyl Toluene	ND	0.5	
1,3-Dichlorobenzene	ND	0.5	
1,4-Dichlorobenzene	ND	0.5	
n-Butylbenzene	ND	0.5	
1,2-Dichlorobenzene	ND	0.5	
1,2-Dibromo-3-Chloropropane	ND	2.0	
1,2,4-Trichlorobenzene	ND	0.5	
Hexachlorobutadiene	ND	2.0	
Naphthalene	ND	2.0	
1,2,3-Trichlorobenzene	ND	0.5	

Surrogate	%REC	Limits	
Dibromofluoromethane	102	77-134	
1,2-Dichloroethane-d4	114	72-140	
Toluene-d8	93	80-120	
Bromofluorobenzene	92	80-120	

RL= Reporting Limit



Purgeable Organics by GC/MS						
Lab #:	246140		Location:	6501 Shattuck Ave., Oakland		
Client:	SOMA Environmental	Engineering Inc.	Prep:	EPA 5030B		
Project#:	5031		Analysis:	EPA 8260B		
Field ID:	MW-2		Batch#:	199693		
Lab ID:	246140-002		Sampled:	06/12/13		
Matrix:	Water		Received:	06/13/13		
Units:	ug/L		Analyzed:	06/14/13		
Diln Fac:	1.000					

Analyte	Result	RL	
Freon 12	ND	1.0	
Chloromethane	ND	1.0	
Vinyl Chloride	ND	0.5	
Bromomethane	ND	1.0	
Chloroethane	ND	1.0	
Trichlorofluoromethane	ND	1.0	
Acetone	ND	10	
Freon 113	ND	2.0	
1,1-Dichloroethene	ND	0.5	
Methylene Chloride	ND	10	
Carbon Disulfide	ND	0.5	
MTBE	ND	0.5	
trans-1,2-Dichloroethene	ND	0.5	
Vinyl Acetate	ND	10	
1,1-Dichloroethane	ND	0.5	
2-Butanone	ND	10	
cis-1,2-Dichloroethene	ND	0.5	
2,2-Dichloropropane	ND	0.5	
Chloroform	ND	0.5	
Bromochloromethane	ND	0.5	
1,1,1-Trichloroethane	ND	0.5	
1,1-Dichloropropene	ND	0.5	
Carbon Tetrachloride	ND	0.5	
1,2-Dichloroethane	ND	0.5	
Benzene	ND	0.5	
Trichloroethene	ND	0.5	
1,2-Dichloropropane	ND	0.5	
Bromodichloromethane	ND	0.5	
Dibromomethane	ND	0.5	
4-Methyl-2-Pentanone	ND	10	
cis-1,3-Dichloropropene	ND	0.5	
Toluene	ND	0.5	
trans-1,3-Dichloropropene	ND	0.5	
1,1,2-Trichloroethane	ND	0.5	
2-Hexanone	ND	10	
1,3-Dichloropropane	ND	0.5	
Tetrachloroethene	ND	0.5	

RL= Reporting Limit



Purgeable Organics by GC/MS						
Lab #:	246140		Location:	6501 Shattuck Ave., Oakland		
Client:	SOMA Environmental	Engineering Inc.	Prep:	EPA 5030B		
Project#:	5031		Analysis:	EPA 8260B		
Field ID:	MW-2		Batch#:	199693		
Lab ID:	246140-002		Sampled:	06/12/13		
Matrix:	Water		Received:	06/13/13		
Units:	ug/L		Analyzed:	06/14/13		
Diln Fac:	1.000					

Analyte	Result	RL	
Dibromochloromethane	ND	0.5	
1,2-Dibromoethane	ND	0.5	
Chlorobenzene	ND	0.5	
1,1,1,2-Tetrachloroethane	ND	0.5	
Ethylbenzene	ND	0.5	
m,p-Xylenes	ND	0.5	
o-Xylene	ND	0.5	
Styrene	ND	0.5	
Bromoform	ND	1.0	
Isopropylbenzene	ND	0.5	
1,1,2,2-Tetrachloroethane	ND	0.5	
1,2,3-Trichloropropane	ND	0.5	
Propylbenzene	ND	0.5	
Bromobenzene	ND	0.5	
1,3,5-Trimethylbenzene	ND	0.5	
2-Chlorotoluene	ND	0.5	
4-Chlorotoluene	ND	0.5	
tert-Butylbenzene	ND	0.5	
1,2,4-Trimethylbenzene	ND	0.5	
sec-Butylbenzene	ND	0.5	
para-Isopropyl Toluene	ND	0.5	
1,3-Dichlorobenzene	ND	0.5	
1,4-Dichlorobenzene	ND	0.5	
n-Butylbenzene	ND	0.5	
1,2-Dichlorobenzene	ND	0.5	
1,2-Dibromo-3-Chloropropane	ND	2.0	
1,2,4-Trichlorobenzene	ND	0.5	
Hexachlorobutadiene	ND	2.0	
Naphthalene	ND	2.0	
1,2,3-Trichlorobenzene	ND	0.5	

Surrogate	%REC	Limits	
Dibromofluoromethane	104	77-134	
1,2-Dichloroethane-d4	112	72-140	
Toluene-d8	94	80-120	
Bromofluorobenzene	93	80-120	

RL= Reporting Limit



Purgeable Organics by GC/MS						
Lab #:	246140		Location:	6501 Shattuck Ave., Oakland		
Client:	SOMA Environmental	Engineering Inc.	Prep:	EPA 5030B		
Project#:	5031		Analysis:	EPA 8260B		
Field ID:	MW-3		Batch#:	199693		
Lab ID:	246140-003		Sampled:	06/12/13		
Matrix:	Water		Received:	06/13/13		
Units:	ug/L		Analyzed:	06/14/13		
Diln Fac:	1.000					

Freon 12 ND 1.0 Chloromethane ND 1.0 Vinyl Chloride ND 0.5 Bromomethane ND 1.0 Chloroethane ND 1.0 Chloroethane ND 1.0 Trichlorofluoromethane ND 1.0 Acetone ND 1.0 Freon 113 ND 2.0 1,1-Dichloroethene ND 0.5 Methylene Chloride ND 0.5 MTBE ND 0.5 trans-1,2-Dichloroethene ND 0.5 Vinyl Acetate ND 0.5 Vinyl Acetate ND 0.5 2-Butanone ND 0.5 2-Butanone ND 0.5 2,2-Dichloroethene ND 0.5 2,2-Dichloropropane ND 0.5 Chloroform ND 0.5 Bromochloromethane ND 0.5 1,1-Trichloroethane ND 0.5 1,1-	
Chloromethane ND 1.0 Vinyl Chloride ND 0.5 Bromomethane ND 1.0 Chloroethane ND 1.0 Trichlorofluoromethane ND 1.0 Acetone ND 10 Freon 113 ND 2.0 1,1-Dichloroethene ND 0.5 Methylene Chloride ND 10 Carbon Disulfide ND 0.5 MTBE ND 0.5 trans-1,2-Dichloroethene ND 0.5 Vinyl Acetate ND 10 1,1-Dichloroethane ND 0.5 2-Butanone ND 0.5 2,2-Dichloropropane ND 0.5 Chloroform ND 0.5 Bromochloromethane ND 0.5 1,1,1-Trichloroethane ND 0.5 1,1-Dichloropropene ND 0.5 Carbon Tetrachloride ND 0.5	
Vinyl Chloride ND 0.5 Bromomethane ND 1.0 Chloroethane ND 1.0 Trichlorofluoromethane ND 1.0 Acetone ND 10 Freon 113 ND 2.0 1,1-Dichloroethene ND 0.5 Methylene Chloride ND 10 Carbon Disulfide ND 0.5 MTBE ND 0.5 trans-1,2-Dichloroethene ND 0.5 Vinyl Acetate ND 10 1,1-Dichloroethane ND 0.5 2-Butanone ND 0.5 2,2-Dichloroethene ND 0.5 2,2-Dichloropropane ND 0.5 Chloroform ND 0.5 Bromochloromethane ND 0.5 1,1,1-Trichloroethane ND 0.5 1,1-Dichloropropene ND 0.5 Carbon Tetrachloride ND 0.5	
Bromomethane	
Chloroethane ND 1.0 Trichlorofluoromethane ND 1.0 Acetone ND 10 Freon 113 ND 2.0 1,1-Dichloroethene ND 0.5 Methylene Chloride ND 10 Carbon Disulfide ND 0.5 MTBE ND 0.5 trans-1,2-Dichloroethene ND 0.5 Vinyl Acetate ND 10 1,1-Dichloroethane ND 0.5 2-Butanone ND 0.5 2,2-Dichloropropane ND 0.5 Chloroform ND 0.5 Bromochloromethane ND 0.5 1,1,1-Trichloroethane ND 0.5 1,1-Dichloropropene ND 0.5 Carbon Tetrachloride ND 0.5	
Trichlorofluoromethane ND 1.0 Acetone ND 10 Freon 113 ND 2.0 1,1-Dichloroethene ND 0.5 Methylene Chloride ND 10 Carbon Disulfide ND 0.5 MTBE ND 0.5 trans-1,2-Dichloroethene ND 0.5 Vinyl Acetate ND 10 1,1-Dichloroethane ND 0.5 2-Butanone ND 0.5 2,2-Dichloroethene ND 0.5 2,2-Dichloropropane ND 0.5 Chloroform ND 0.5 Bromochloromethane ND 0.5 1,1,1-Trichloroethane ND 0.5 1,1-Dichloropropene ND 0.5 Carbon Tetrachloride ND 0.5	
Acetone ND 10 Freon 113 ND 2.0 1,1-Dichloroethene ND 0.5 Methylene Chloride ND 10 Carbon Disulfide ND 0.5 MTBE ND 0.5 trans-1,2-Dichloroethene ND 0.5 Vinyl Acetate ND 10 1,1-Dichloroethane ND 0.5 2-Butanone ND 0.5 2,2-Dichloroethene ND 0.5 2,2-Dichloropropane ND 0.5 Chloroform ND 0.5 Bromochloromethane ND 0.5 1,1,1-Trichloroethane ND 0.5 1,1-Dichloropropene ND 0.5 Carbon Tetrachloride ND 0.5	
Freon 113 ND 2.0 1,1-Dichloroethene ND 0.5 Methylene Chloride ND 10 Carbon Disulfide ND 0.5 MTBE ND 0.5 trans-1,2-Dichloroethene ND 0.5 Vinyl Acetate ND 10 1,1-Dichloroethane ND 0.5 2-Butanone ND 0.5 2,2-Dichloroethene ND 0.5 2,2-Dichloropropane ND 0.5 Chloroform ND 0.5 Bromochloromethane ND 0.5 1,1,1-Trichloroethane ND 0.5 1,1-Dichloropropene ND 0.5 Carbon Tetrachloride ND 0.5	
1,1-DichloroetheneND0.5Methylene ChlorideND10Carbon DisulfideND0.5MTBEND0.5trans-1,2-DichloroetheneND0.5Vinyl AcetateND101,1-DichloroethaneND0.52-ButanoneND10cis-1,2-DichloroetheneND0.52,2-DichloropropaneND0.5ChloroformND0.5BromochloromethaneND0.51,1,1-TrichloroethaneND0.51,1-DichloropropeneND0.5Carbon TetrachlorideND0.5	
Methylene Chloride ND 10 Carbon Disulfide ND 0.5 MTBE ND 0.5 trans-1,2-Dichloroethene ND 0.5 Vinyl Acetate ND 10 1,1-Dichloroethane ND 0.5 2-Butanone ND 0.5 2,2-Dichloroethene ND 0.5 2,2-Dichloropropane ND 0.5 Chloroform ND 0.5 Bromochloromethane ND 0.5 1,1,1-Trichloroethane ND 0.5 1,1-Dichloropropene ND 0.5 Carbon Tetrachloride ND 0.5	
Carbon Disulfide ND 0.5 MTBE ND 0.5 trans-1,2-Dichloroethene ND 0.5 Vinyl Acetate ND 10 1,1-Dichloroethane ND 0.5 2-Butanone ND 10 cis-1,2-Dichloroethene ND 0.5 2,2-Dichloropropane ND 0.5 Chloroform ND 0.5 Bromochloromethane ND 0.5 1,1,1-Trichloroethane ND 0.5 1,1-Dichloropropene ND 0.5 Carbon Tetrachloride ND 0.5	
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Carbon Tetrachloride ND 0.5	
1,2-Dichloroethane ND 0.5	
Benzene ND 0.5	
Trichloroethene ND 0.5	
1,2-Dichloropropane ND 0.5	
Bromodichloromethane ND 0.5	
Dibromomethane ND 0.5	
4-Methyl-2-Pentanone ND 10	
cis-1,3-Dichloropropene ND 0.5	
Toluene ND 0.5	
trans-1,3-Dichloropropene ND 0.5	
1,1,2-Trichloroethane ND 0.5	
2-Hexanone ND 10	
1,3-Dichloropropane ND 0.5	
Tetrachloroethene ND 0.5	

RL= Reporting Limit



Purgeable Organics by GC/MS						
Lab #:	246140	Location:	6501 Shattuck Ave., Oakland			
Client:	SOMA Environmental Engineering In	nc. Prep:	EPA 5030B			
Project#:	5031	Analysis:	EPA 8260B			
Field ID:	MW-3	Batch#:	199693			
Lab ID:	246140-003	Sampled:	06/12/13			
Matrix:	Water	Received:	06/13/13			
Units:	ug/L	Analyzed:	06/14/13			
Diln Fac:	1.000					

Analyte	Result	RL	
Dibromochloromethane	ND	0.5	
1,2-Dibromoethane	ND	0.5	
Chlorobenzene	ND	0.5	
1,1,1,2-Tetrachloroethane	ND	0.5	
Ethylbenzene	ND	0.5	
m,p-Xylenes	ND	0.5	
o-Xylene	ND	0.5	
Styrene	ND	0.5	
Bromoform	ND	1.0	
Isopropylbenzene	ND	0.5	
1,1,2,2-Tetrachloroethane	ND	0.5	
1,2,3-Trichloropropane	ND	0.5	
Propylbenzene	ND	0.5	
Bromobenzene	ND	0.5	
1,3,5-Trimethylbenzene	ND	0.5	
2-Chlorotoluene	ND	0.5	
4-Chlorotoluene	ND	0.5	
tert-Butylbenzene	ND	0.5	
1,2,4-Trimethylbenzene	ND	0.5	
sec-Butylbenzene	ND	0.5	
para-Isopropyl Toluene	ND	0.5	
1,3-Dichlorobenzene	ND	0.5	
1,4-Dichlorobenzene	ND	0.5	
n-Butylbenzene	ND	0.5	
1,2-Dichlorobenzene	ND	0.5	
1,2-Dibromo-3-Chloropropane	ND	2.0	
1,2,4-Trichlorobenzene	ND	0.5	
Hexachlorobutadiene	ND	2.0	
Naphthalene	ND	2.0	
1,2,3-Trichlorobenzene	ND	0.5	

Surrogate	%REC	Limits	
Dibromofluoromethane	102	77-134	
1,2-Dichloroethane-d4	111	72-140	
Toluene-d8	93	80-120	
Bromofluorobenzene	92	80-120	

RL= Reporting Limit



	Purgeable Org	ganics by GC/MS	
Lab #:	246140	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5031	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199693
Units:	ug/L	Analyzed:	06/14/13
Diln Fac:	1.000		

Type: BS Lab ID: QC693625

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	26.65	107	61-137
Benzene	25.00	26.97	108	78-125
Trichloroethene	25.00	26.96	108	77-122
Toluene	25.00	27.69	111	79-123
Chlorobenzene	25.00	26.04	104	80-120

Surrogate	%REC	Limits	
Dibromofluoromethane	98	77-134	
1,2-Dichloroethane-d4	104	72-140	
Toluene-d8	93	80-120	
Bromofluorobenzene	83	80-120	

Type: BSD Lab ID: QC693626

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	25.03	100	61-137	6	24
Benzene	25.00	25.99	104	78-125	4	20
Trichloroethene	25.00	25.10	100	77-122	7	20
Toluene	25.00	26.05	104	79-123	6	20
Chlorobenzene	25.00	25.37	101	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	98	77-134
1,2-Dichloroethane-d4	100	72-140
Toluene-d8	95	80-120
Bromofluorobenzene	84	80-120



	P	Purgeable Orga	anics by GC/MS	
Lab #:	246140		Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental En	ngineering Inc.	Prep:	EPA 5030B
Project#:	5031		Analysis:	EPA 8260B
Type:	BLANK		Diln Fac:	1.000
Lab ID:	QC693627		Batch#:	199693
Matrix:	Water		Analyzed:	06/14/13
Units:	ug/L			

Analyte	Result	RL	
Freon 12	ND	1.0	
Chloromethane	ND	1.0	
Vinyl Chloride	ND	0.5	
Bromomethane	ND	1.0	
Chloroethane	ND	1.0	
Trichlorofluoromethane	ND	1.0	
Acetone	ND	10	
Freon 113	ND	2.0	
1,1-Dichloroethene	ND	0.5	
Methylene Chloride	ND	10	
Carbon Disulfide	ND	0.5	
MTBE	ND	0.5	
trans-1,2-Dichloroethene	ND	0.5	
Vinyl Acetate	ND	10	
1,1-Dichloroethane	ND	0.5	
2-Butanone	ND	10	
cis-1,2-Dichloroethene	ND	0.5	
2,2-Dichloropropane	ND	0.5	
Chloroform	ND	0.5	
Bromochloromethane	ND	0.5	
1,1,1-Trichloroethane	ND	0.5	
1,1-Dichloropropene	ND	0.5	
Carbon Tetrachloride	ND	0.5	
1,2-Dichloroethane	ND	0.5	
Benzene	ND	0.5	
Trichloroethene	ND	0.5	
1,2-Dichloropropane	ND	0.5	
Bromodichloromethane	ND	0.5	
Dibromomethane	ND	0.5	
4-Methyl-2-Pentanone	ND	10	
cis-1,3-Dichloropropene	ND	0.5	
Toluene	ND	0.5	
trans-1,3-Dichloropropene	ND	0.5	
1,1,2-Trichloroethane	ND	0.5	
2-Hexanone	ND	10	
1,3-Dichloropropane	ND	0.5	
Tetrachloroethene	ND	0.5	

ND= Not Detected

RL= Reporting Limit



	Purgeable Org	ganics by GC/MS	3
Lab #:	246140	Location:	6501 Shattuck Ave., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5031	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC693627	Batch#:	199693
Matrix:	Water	Analyzed:	06/14/13
Units:	ug/L		

Analyte	Result	RL	
Dibromochloromethane	ND	0.5	
1,2-Dibromoethane	ND	0.5	
Chlorobenzene	ND	0.5	
1,1,1,2-Tetrachloroethane	ND	0.5	
Ethylbenzene	ND	0.5	
m,p-Xylenes	ND	0.5	
o-Xylene	ND	0.5	
Styrene	ND	0.5	
Bromoform	ND	1.0	
Isopropylbenzene	ND	0.5	
1,1,2,2-Tetrachloroethane	ND	0.5	
1,2,3-Trichloropropane	ND	0.5	
Propylbenzene	ND	0.5	
Bromobenzene	ND	0.5	
1,3,5-Trimethylbenzene	ND	0.5	
2-Chlorotoluene	ND	0.5	
4-Chlorotoluene	ND	0.5	
tert-Butylbenzene	ND	0.5	
1,2,4-Trimethylbenzene	ND	0.5	
sec-Butylbenzene	ND	0.5	
para-Isopropyl Toluene	ND	0.5	
1,3-Dichlorobenzene	ND	0.5	
1,4-Dichlorobenzene	ND	0.5	
n-Butylbenzene	ND	0.5	
1,2-Dichlorobenzene	ND	0.5	
1,2-Dibromo-3-Chloropropane	ND	2.0	
1,2,4-Trichlorobenzene	ND	0.5	
Hexachlorobutadiene	ND	2.0	
Naphthalene	ND	2.0	
1,2,3-Trichlorobenzene	ND	0.5	

Surrogate	%REC	Limits	
Dibromofluoromethane	99	77-134	
1,2-Dichloroethane-d4	104	72-140	
Toluene-d8	93	80-120	
Bromofluorobenzene	89	80-120	

ND= Not Detected

RL= Reporting Limit

Appendix D

Non-Hazardous Waste Manifest

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST 3. Generators have and Military Astleme BR WDEN LLC GSD SHATTACK GSD SHATTACK AVE 4. Generators Provor () 5. Transporter 1 Town Company Name 6. US EPA ID Number 7. Transporter 1 Town Company Name 9. US EPA ID Number 10. US EPA ID Number 11. WASTE DESCRIPTION 11. WASTE DESCRIPTION 11. WASTE DESCRIPTION 11. WASTE DESCRIPTION 12. Constitution Transporter 1 Town Constitution Town Const
BRUDEN LLC GSOI SHATTURK AVE 4. Genventor's Phone () ORKLAND, CA 5. Transporter 1 Company Name 1. A. State Transporter 1 D. 1. Transporter 1 Phone 1. C. State Transporter 2 D. 1. Transporter 2 Company Name 1. D. Transporter 2 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 5 D. 1. Transporter 2 Phone 1. C. State Transporter 5 D. 1. Transporter 2 Phone 1. C. State Transporter 5 D. 1. Transporter 4 D. 1. Transporter 2 Phone 1. C. State Transporter 5 D. 1. Transporter 4 D. 1. Transpo
A. State Transporter 1 Company Name
4. Generation Proces () CAKLAND, CA 5. Transporter 1 Company Name a. US EPA ID Number A. State Transporter's ID B. Transporter 1 Proce C. Stelle Transporter's ID D. Transporter 2 Proce C. Stelle Transporter's ID D. Transporter 2 Proce E. State Facility 8 ID F. Facility 9 Proce 11. WASTE DESCRIPTION 11. WASTE DESCRIPTION 11. WASTE DESCRIPTION 11. WASTE DESCRIPTION 12. Containers Total Link Control Link Control Total Total Control Total
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7. Transporter 2 Company Name 8. US EPA ID Number C. State Transporter to D. D. Transporter 2 Phone 9. Designated Facility Name and Site Address 10. US EPA ID Number E. State Facility Phone F. State Facility Phone F. State Facility Phone 11. WASTE DESCRIPTION 12. Containers 13. 14. 15. 16. 16. 16. 17. 18. 18. 18. 18. 18. 18. 18. 18. 18. 18
9. Designated Facility Name and Site Address 10. US EFA ID Number E. State Facility's ID F. Facility's Prone 11. WASTE DESCRIPTION 12. Containers No. Type Quantity WILVOL A. No. Type Quantity WILVOL B. Non-HAZ MONITORING WELL WATER D. M. Handling Codes for Wastes Listed Above Coluge Clear G. Additional Descriptions for Materials Listed Above Coluge Clear DOGG Schip - Fine) 15. Special Handling Instructions and Additional Information 16. Generator's Certification: heavy certify that the contents of this adepend are to for subject to indicate the destruction waster regulations. Date Printed Typed Name Signature Nonto Dey Year
9. Designated Facility Name and Size Address 10. US EPA ID Number E. State Facility's ID F. Facility's Phone 11. WASTE DESCRIPTION 12. Containers 13. Indigenous United States Address 15. Type Quantity Wat.Pot. No. Type Quantity Wat.Pot. 16. Designation for Materials Listed Above Column Co
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11. WASTE DESCRIPTION 12. Containers 13. 14. Total Vol. Vol. Vol. Vol. Vol. Vol. Vol. Vol
11. WASTE DESCRIPTION 12. Containers No. Type County Wi.Viol 13. No. Type County Wi.Viol 14. Containers No. Type County Wi.Viol 15. Second Handling Instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby contrily that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date Printed/Typed Name Signature Non Type RS GAL 16. Handling Codes for Wastes Listed Above Hr. Handling Codes for Wastes Listed Above Color Co
11. WASTE DESCRIPTION 12. Containers Total Unit Unit Ocianity Wi/Vol. A. Non - Haz Monitoring Well Waster 2 prm 85 Gal B. G. G. Additional Descriptions for Materials Listed Above Colliga Clear Opag Solid - Grae To Solid Colling Codes for Waster Listed Above Colliga Clear Opag Solid - Grae 15. Special Handling Instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date Printed Typed Name Signature North Day Year
a. No. Type Quantity Wi.Vol. Non-HAZ Monitoring Well Water 2 prm 85 G4L G4 G. Additional Descriptions for Materials Listed Above CCLOR- Clar W5 SLID - Fine) 15. Special Handling instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date Printed/Typed Name Signature Non- Type Quantity Wi.Vol. H. Handling Codes for Wastes Listed Above Characteristics of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.
a. No. Type Quantity Wi.Vol. Non-HAZ Monitoring Well Water 2 prm 85 G4L G4 G. Additional Descriptions for Materials Listed Above CCLOR- Clar W5 SLID - Fine) 15. Special Handling instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date Printed/Typed Name Signature Non- Type Quantity Wi.Vol. H. Handling Codes for Wastes Listed Above Characteristics of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.
Non-Haz Monitoring Well Water 2 prm 85 G4L D
Non-Haz Monitoring West Waster
C. G. Additional Descriptions for Materials Listed Above H. Handling Codes for Wastes Listed Above
G. Additional Descriptions for Materials Listed Above CCLUR CLOR CLOR SCLID - GINERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date Printed/Typed Name Signature Month Day Year
G. Additional Descriptions for Materials Listed Above CCLUR CLOR CLOR SCLID - GINERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date Printed/Typed Name Signature Month Day Year
G. Additional Descriptions for Materials Listed Above CCLUR CLOR CLOR SCLID - GINERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date Printed/Typed Name Signature Month Day Year
A d. G. Additional Descriptions for Materials Listed Above COLOR- CLEAR ODOR- GO Solid - Fine) 15. Special Handling Instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Printed/Typed Name Signature Month Day Year
G. Additional Descriptions for Materials Listed Above CCLUR CLOR CLOR ODOR BY Solid - Clor 15. Special Handling Instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Printed/Typed Name Signature Month Day Year
G. Additional Descriptions for Materials Listed Above CCLDR-Clear ODOR-B Schip-Fine) 15. Special Handling Instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date Printed/Typed Name Signature Month Day Year
G. Additional Descriptions for Materials Listed Above CGLDR CLOR DOGG BY SGLID - GLOR 15. Special Handling Instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date Printed/Typed Name Signature Month Day Year
COLOR - Clear ODOR - B SOLID - Fine) 15. Special Handling Instructions and Additional Information 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. Date
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18. Transporter 2 Acknowledgement of Receipt of Materials Date
R Printed/Typed Name Signature Month Day Year
E R
19. Discrepancy Indication Space
$ \hat{\mathbf{c}} $
20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
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