Jennifer C. Sedlachek Project Manager

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September 8, 2016

Ms. Karel Detterman Alameda County Health Care Services Agency Department of Environmental Health 1131 Harbor Bay Parkway, Room 250 Alameda, California 94502-6577 RECEIVED

By Alameda County Environmental Health 3:29 pm, Sep 12, 2016

RE: Former Mobil RAS #99105/6301 San Pablo Avenue, Oakland, California.

Dear Ms. Detterman:

Attached for your review and comment is a copy of the letter report entitled *Work Plan for Additional Soil Vapor Assessment*, dated September 8, 2016, for the above-referenced site. The report was prepared by Cardno, of Petaluma, California, and details activities at the subject site.

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.

If you have any questions or comments, please contact me at 510.547.8196.

Sincerely,

Jennifer C. Sedlachek Project Manager

Sedbulk

Attachment:

Cardno's Work Plan for Additional Soil Vapor Assessment,

dated September 8, 2016

cc:

w/ attachment

Mr. Leroy Griffin, Oakland Fire Department

Messrs. On Dan and Nathan Lam

w/o attachment

Mr. Scott Perkins, Cardno



September 8, 2016 Cardno 2783C.W03

Ms. Jennifer C. Sedlachek
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SUBJECT Work Plan for Additional Soil Vapor Assessment

Former Mobil Service Station 99105 6301 San Pablo Avenue, Oakland, California

Ms. Sedlachek:

At the request of ExxonMobil Environmental Services (EMES), on behalf of ExxonMobil Oil Corporation, Cardno prepared this work plan for additional soil vapor assessment. The purpose of the work is to further assess concentrations of fuel hydrocarbons and related constituents in soil vapor near the commercial building at the site and to evaluate potential risks to workers or patrons posed by the potential intrusion of soil vapor to indoor air. Cardno proposes to install three shallow soil vapor sampling wells to approximately 2 feet bgs near the office space of the on-site building.

SITE DESCRIPTION

The site (Assessor's Parcel Number 16-1455-10) is located at 6301 San Pablo Avenue, on the northwest corner of San Pablo Avenue and 63rd Street, in Oakland, California, as shown in the Site Vicinity Map (Plate 1). The site was operated as a Mobil service station from 1951 to 1980, then used as a rental car lot, and is currently an automobile oil change facility. Four 2,000-gallon gasoline USTs and one 350-gallon used-oil UST were present on the property. The tanks were not used after 1980 and were removed in 1994. The locations of the former USTs, former dispenser islands, groundwater monitoring wells, and select site features are shown on the Generalized Site Plan (Plate 2).

The site lies at an elevation of approximately 42 feet above msl. Properties in the vicinity of the site are occupied by-mixed use residential and commercial developments. An elementary school is located across San Pablo Avenue to the east and residential properties are located to the west and south of the site (Plate 2). The Saint Paul Primitive Baptist Church is located adjacent to the site to the southwest.

The subject site is located in the East Bay Plain Subbasin of the Santa Clara Valley Groundwater Basin. A northwest trending alluvial plain, the East Bay Plain Subbasin is bounded on the north by San Pablo Bay, on the east by the Franciscan Basement rock contact, and by the Niles Cone Groundwater Basin to the south. The East Bay Plain Subbasin aquifer system consists of unconsolidated deposits, Quaternary in age, with a cumulative thickness of approximately 1,000 feet. These deposits included early Pleistocene Santa Clara Formation, the late Pleistocene Alameda Formation, the early Holocene Temescal Formation, and artificial fill (DWR, 2014).

DTW at the subject site has ranged from approximately 3.75 to 13.81 feet bgs during the monitoring program. The direction of groundwater flow is typically towards the west and San Francisco Bay.

PREVIOUS WORK

Cumulative groundwater monitoring and sampling data is included in Tables 1A and 1B. Well construction details are included in Table 2. Cumulative soil analytical results are included in Tables 3. Cumulative soil vapor analytical results and PID readings are included in Tables 4 and 5, respectively.

Site Assessment Activities

Site assessment activities have included the installation of groundwater monitoring wells MW1 through MW8, temporary monitoring points MP-1 through MP-6, soil vapor sampling wells VW1 through VW5 and SVS1 through SVS3, and the drilling of soil borings AB-1 through AB-13, B1 through B5, and HA-1 (ETIC, 2011; Cardno ERI, 2014; Cardno ERI, 2012). Wells MW1, MW4, and MP-1 through MP-6 have been destroyed (ETIC, 2011).

Remediation Activities

In 1994, one 350-gallon used oil UST and four 2,000-gallon gasoline USTs were removed from the site. Holes were observed in two of the 2,000-gallon gasoline tanks. Analytical results from soil samples collected from the bottom of the gasoline tank excavation area (11 feet bgs), indicated maximum concentrations of 520 mg/kg of TPHg and 0.18 mg/kg of benzene. During UST excavation, liquid-phase hydrocarbons were observed in groundwater (Alisto, 1996).

In February 1996, standing water in the UST excavation was pumped out of the excavation area. Soil samples were collected from the bottom of the gasoline tank excavation area (Table 3). Additionally, two 2-inch diameter steel and three 2-inch diameter fiberglass fuel pipelines were removed from the site. Signs of rust were observed in the steel piping at the stub-ups near the northwest end of the former dispenser island. Holes were not observed in the pipes. The pipeline excavation was approximately 3 feet deep by 3 feet wide and 50 feet long, extending from the southeastern corner of the gasoline tank excavation to the dispenser islands. Hydrocarbons were observed in soil near the northwestern end of the former dispenser island. An area approximately 16 feet long by 11 feet wide and 5 feet deep was overexcavated to remove the soil. Compliance soil samples were collected every 20 feet from beneath the former product lines (Alisto, 1996).

An estimated total of 367 cubic yards of soil was excavated from the site during the UST and product line removals (ETIC, 2011).

During redevelopment activities conducted by the property owner in early 1999, more than 200 cubic yards of soil was removed from the northeastern side of the site (ETIC, 2011).

A DPE event was conducted in November 1998. Monitoring wells MW3 and MW4 were used as groundwater and soil vapor extraction wells. Six temporary monitoring points (MP-1 through MP-6) were installed to monitor vacuum readings and groundwater depths during the DPE event. Approximately 75 gallons of groundwater were generated and 21 pounds of vapor-phase hydrocarbons were removed. Monitoring points MP-1 through MP-6 were destroyed following the DPE event (TRC, 2000).

A second DPE test was performed in August 2014. Approximately 37 pounds of vapor-phase TPHg was removed during 86 hours of operation (Cardno ERI, 2014).

Soil Vapor Monitoring Activities

Soil vapor monitoring began at the site in 2010 with the installation of wells VW1 through VW5 (ETIC, 2011). Off-site soil vapor sampling wells SVS1 though SVS3 were installed and sampled in 2012 (Cardno ERI, 2012). Cumulative soil vapor analytical data is presented in Table 4. In addition to the sampling, PID readings have been collected from select wells during groundwater monitoring events since 2014 (Table 5). Concentrations and/or reporting limits of select analytes exceed applicable screening levels. Maximum concentrations and PID readings have been reported from well VW4 located near the southeastern corner of the on-site commercial building.

PROPOSED WORK

Cardno proposes to install three shallow soil vapor sampling wells (SVS4 through SVS6) near the southern building perimeter to further evaluate the distribution and attenuation of vapor-phase concentrations. At each location, a boring will be advanced to approximately 2 feet bgs and a well will be constructed. The proposed locations of the soil vapor sampling wells are shown on Plate 2. The proposed well locations were selected to assess soil vapor conditions near the office portion of the on-site commercial building. With the exception of the office/storage space at the southern end of the building, the building is used for vehicle service. There are large roll-up doors (frequently open) as well as automobiles inside the building. The employees are routinely exposed to vehicle fluids and exhaust from vehicles. In addition, a basement was excavated beneath the building to permit workers to work beneath vehicles to perform fluid changes. The excavation for the basement removed the majority of soil near the product lines associated with the former service station. Soil near (and beyond) the southern portion of the building was not removed during the excavation and includes the location of well VW4. The approximate limits of the basement and associated excavation are shown on Plate 2.

The proposed locations are approximate and may be moved based on subsurface obstructions. Cardno will perform the soil vapor assessment survey in accordance with the protocol presented in the following guidance documentation:

- Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (DTSC, 2011).
- Advisory Active Soil Gas Investigations (DTSC, 2015).
- Collecting and Interpreting Soil Gas-Samples from the Vadose Zone, A Practical Strategy for Assessing the Subsurface Vapor-to-Indoor Air Migration Pathway of Petroleum Hydrocarbon (API, 2005).
- Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater (CRWQCB-SFB, 2016).

The procedures for drilling, decontamination, and well construction are described in the field protocol contained in Appendix A. The fieldwork will be conducted under the advisement of a professional geologist and in accordance with applicable regulatory guidelines.

Pre-Field Activities

Prior to the onset of drilling, a well installation permit will be obtained from the Alameda County Public Works Agency (Public Works) if required. Cardno personnel will visit the site to check for obstructions and to mark the proposed locations. Underground Service Alert, Alameda County Environmental Health Services (ACEH), and Public Works will be notified at least 48 hours prior to the onset of field activities; in addition, a private utility location company will be employed to identify potential underground utilities or other obstructions in the proposed well locations.

Soil Vapor Well Installation

Soil borings SVS4 through SVS6 will be installed using hand augers to a depth of 2 feet bgs. The borings will be installed using a hand auger with a diameter of approximately 2 inches. Soil samples will be collected at total depth (screened interval) from each boring.

The wells will be constructed with a sand pack from approximately 1.5 to 2 feet bgs. Soil vapor samples will be collected a minimum of 48 hours after installation in accordance with the field protocol included in Appendix A.

Soil Vapor Sample Collection

Existing wells VW1 through VW5, SVS1 though SVS3, and proposed wells SVS4 through SVS6 will be purged and sampled following a waiting period of at least 48 hours after installation. The purge volume will be calculated based on the volume of each well and the associated sample collection tubing. Three purge volumes will be removed from each well prior to sample collection.

Prior to purging each well, Cardno will conduct a vacuum leak test on the sampling equipment. For the leak test, Cardno will attach the sample vessel, purging manifold, and vacuum pump to an air-tight valve on the subslab well. With the air-tight valve closed, Cardno will apply a vacuum of approximately 25 to 28 inches of mercury (in Hg) to the sample collection system and turn off the vacuum pump. Cardno will then monitor the vacuum for 5 minutes. If the vacuum is not maintained, Cardno will isolate the leak and remount the fittings and tubing until the vacuum is held for 5 minutes.

Purging will be performed with a sample manifold equipped with a vacuum gauge and flow regulator and vacuum pump. The flow regulator will be set to a rate of no more than 200 milliliters per minute (ml/min).

After purging, Cardno will close the vapor-tight valve and remove the purge device. Summa™ canisters with a volume of less than or equal to 400 ml will be used or a mobile laboratory will be mobilized to the site to perform the analysis. The mobile lab and/or smaller (less than one-liter) sample containers will be utilized to minimize the required sample volume which reduces the chance for surface air to enter he sample container. The samples will be collected using a maximum 200 ml/min flow regulator. The Summa™ canister will be opened and allowed to fill. The canister vacuum readings at the beginning and end of sampling will be recorded. Leak detection will be performed during vapor sampling by covering the surface completion of the well and the Summa™ canister with a shroud, and introducing helium into the shroud. The concentration of helium will be maintained at approximately 10%; the helium concentration in the shroud will be monitored with a helium meter. Cardno will end sample collection when the vacuum within the sample canister is approximately 5 in Hg.

Cardno will label the sample containers, store the samples at ambient temperature in laboratory-supplied containers, and initiate COC records.

A minimum of one duplicate sample will be collected during each sampling event. Samples will be collected a minimum of two times, approximately six months apart to evaluate seasonal fluctuations.

Laboratory Analyses

The soil vapor samples will be submitted for analysis to a California state-certified laboratory, under COC protocol. The samples will be analyzed for full-scan VOCs (including but not limited to BTEX, fuel oxygenates, lead scavengers, and naphthalene) by EPA Method TO-15M, TPHg by EPA Method TO-3M, methane by EPA Method 8015M, and oxygen and carbon dioxide by American Society of Testing and Materials (ASTM) Method D-1946. In addition, the samples will be analyzed for naphthalene by EPA method TO-17.

Soil samples will be analyzed for TPHmo, TPHd, and TPHg by EPA Method 8015B; BTEX, naphthalene, fuel oxygenates (MTBE, DIPE, ETBE, TAME, and TBA), and lead scavengers (1,2-DCA and EDB) by EPA Method 8260B; and PAHs using EPA Method 8310.

Site Safety Plan

Fieldwork will be performed in accordance with a site-specific safety plan.

RISK EVALUATION

Cardno will assess potential risk from vapor intrusion by comparing the reported concentrations to ESLs established by the San Francisco Bay Regional Water Quality Control Board (CRWQCB-SFB, 2016). If the published screening levels indicate a potential risk, the risk will be evaluated using the Johnson and Ettinger Model, as modified by the DTSC in December 2014 (DTSC, 2014).

Report

After completion of the proposed field activities, the field and laboratory procedures, boring logs, laboratory results, conclusions, and recommendations will be incorporated into a report and submitted to EMES and ACEH. The report will be signed by a State of California professional geologist.

SCHEDULE

Cardno anticipates initiating the permitting process following approval of this work plan.

CONTACT INFORMATION

The responsible party contact is Ms. Jennifer C. Sedlachek, ExxonMobil Environmental Services Company, 4096 Piedmont Avenue #194, Oakland, California, 94611. The consultant contact is Mr. Scott Perkins, Cardno, 601 North McDowell Boulevard, Petaluma, California, 94954. The agency contact is Ms. Karel Detterman, Alameda County Environmental Health Services, 1131 Harbor Bay Parkway, Suite 250, Alameda, California, 94502-6577.

LIMITATIONS

For documents cited that were not generated by Cardno, the data taken from those documents is used "as is" and is assumed to be accurate. Cardno does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

This document and the work performed have been undertaken in good faith, with due diligence and with the expertise, experience, capability, and specialized knowledge necessary to perform the work in a good and workmanlike manner and within all accepted standards pertaining to providers of environmental services in California at the time of investigation. No soil engineering or geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.

Cardno 2783C.W03 Former Mobil Service Station 99105, Oakland, California

Please contact Mr. Scott Perkins, Cardno's project manager for this site, at scott.perkins@cardno.com or at (707) 766-2000 with any questions or comments regarding this work plan.

Sincerely,



Scott Perkins Senior Project Manager for Cardno 707 766 2000

Email: scott.perkins@cardno.com



David R. Daniels P.G. 8737 for Cardno 707 766 2000

Email: david.daniels@cardno.com

Enclosures:

References

Acronym List

Plate 1 Site Vicinity Map

Plate 2 Generalized Site Plan

Table 1A Cumulative Groundwater Monitoring and Sampling Data

Table 1B Additional Cumulative Groundwater Monitoring and Sampling Data

Table 2 Well Construction Details

Table 3 Cumulative Soil Analytical Results

Table 4 Cumulative Soil Vapor Analytical Data

Table 5 Cumulative PID Readings, Vapor Wells

Appendix A Field Protocol

Cardno 2783C.W03 Former Mobil Service Station 99105, Oakland, California

cc: Ms. Karel Detterman, Alameda County Environmental Health Services, 1131 Harbor Bay Parkway, Second Floor, Alameda, California, 94502

Mr. Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa, Suite 3341, Oakland, California, 94612

Messrs. On Dan and Nathan Lam, 200 El Dorado Terrace, San Francisco, California, 94112

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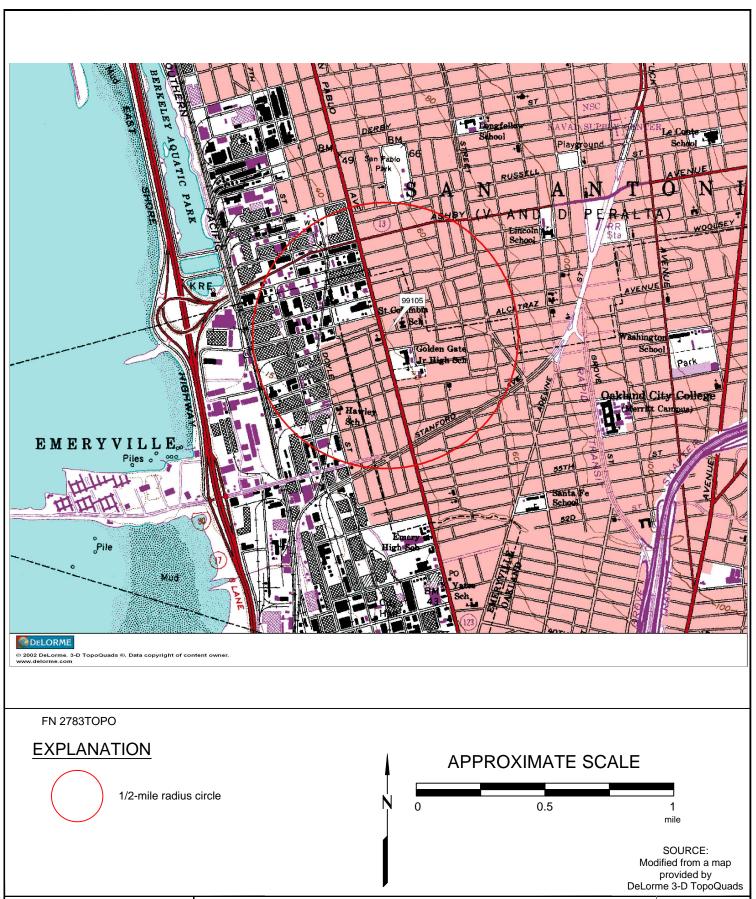
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ACRONYM LIST

ACRONI	IVI LIST		
μg/L	Micrograms per liter	NEPA	National Environmental Policy Act
μs	Microsiemens	NGVD	National Geodetic Vertical Datum
1,2-DCA	1,2-dichloroethane	NPDES	National Pollutant Discharge Elimination System
acfm	Actual cubic feet per minute	O&M	Operations and Maintenance
AS	Air sparge	ORP	Oxidation-reduction potential
bgs	Below ground surface	OSHA	Occupational Safety and Health Administration
BTEX	Benzene, toluene, ethylbenzene, and total xylenes	OVA	Organic vapor analyzer
CEQA	California Environmental Quality Act	P&ID	Process & Instrumentation Diagram
cfm	Cubic feet per minute	PAH	Polycyclic aromatic hydrocarbon
COC	Chain of Custody	PCB	Polychlorinated biphenyl
CPT	Cone Penetration (Penetrometer) Test	PCE	Tetrachloroethene or perchloroethylene
DIPE		PID	Photo-ionization detector
DO	Di-isopropyl ether	PLC	
-	Dissolved oxygen	_	Programmable logic control
DOT	Department of Transportation	POTW	Publicly owned treatment works
DPE DTW	Dual-phase extraction	ppmv PQL	Parts per million by volume
	Depth to water		Practical quantitation limit
EDB	1,2-dibromoethane	psi	Pounds per square inch
EPA	Environmental Protection Agency	PVC	Polyvinyl chloride
ESL	Environmental screening level	QA/QC	Quality assurance/quality control
ETBE	Ethyl tertiary butyl ether	RBSL	Risk-based screening levels
FID	Flame-ionization detector	RCRA	Resource Conservation and Recovery Act
fpm	Feet per minute	RL	Reporting limit
GAC	Granular activated carbon	scfm	Standard cubic feet per minute
gpd	Gallons per day	SSTL	Site-specific target level
gpm	Gallons per minute	STLC	Soluble threshold limit concentration
GWPTS	Groundwater pump and treat system	SVE	Soil vapor extraction
HVOC	Halogenated volatile organic compound	SVOC	Semivolatile organic compound
J	Estimated value between MDL and PQL (RL)	TAME	Tertiary amyl methyl ether
LEL	Lower explosive limit	TBA	Tertiary butyl alcohol
LPC	Liquid-phase carbon	TCE	Trichloroethene
LRP	Liquid-ring pump	TOC	Top of well casing elevation; datum is msl
LUFT	Leaking underground fuel tank	TOG	Total oil and grease
LUST	Leaking underground storage tank	TPHd	Total petroleum hydrocarbons as diesel
MCL	Maximum contaminant level	TPHg	Total petroleum hydrocarbons as gasoline
MDL	Method detection limit	TPHmo	Total petroleum hydrocarbons as motor oil
mg/kg	Milligrams per kilogram	TPHs	Total petroleum hydrocarbons as stoddard solvent
mg/L	Milligrams per liter	TRPH	Total recoverable petroleum hydrocarbons
mg/m³	Milligrams per cubic meter	UCL	Upper confidence level
MPE	Multi-phase extraction	USCS	Unified Soil Classification System
MRL	Method reporting limit	USGS	United States Geologic Survey
msl	Mean sea level	UST	Underground storage tank
MTBE	Methyl tertiary butyl ether	VCP	Voluntary Cleanup Program
MTCA	Model Toxics Control Act	VOC	Volatile organic compound
NAI	Natural attenuation indicators	VPC	Vapor-phase carbon
NAPL	Non-aqueous phase liquid		•



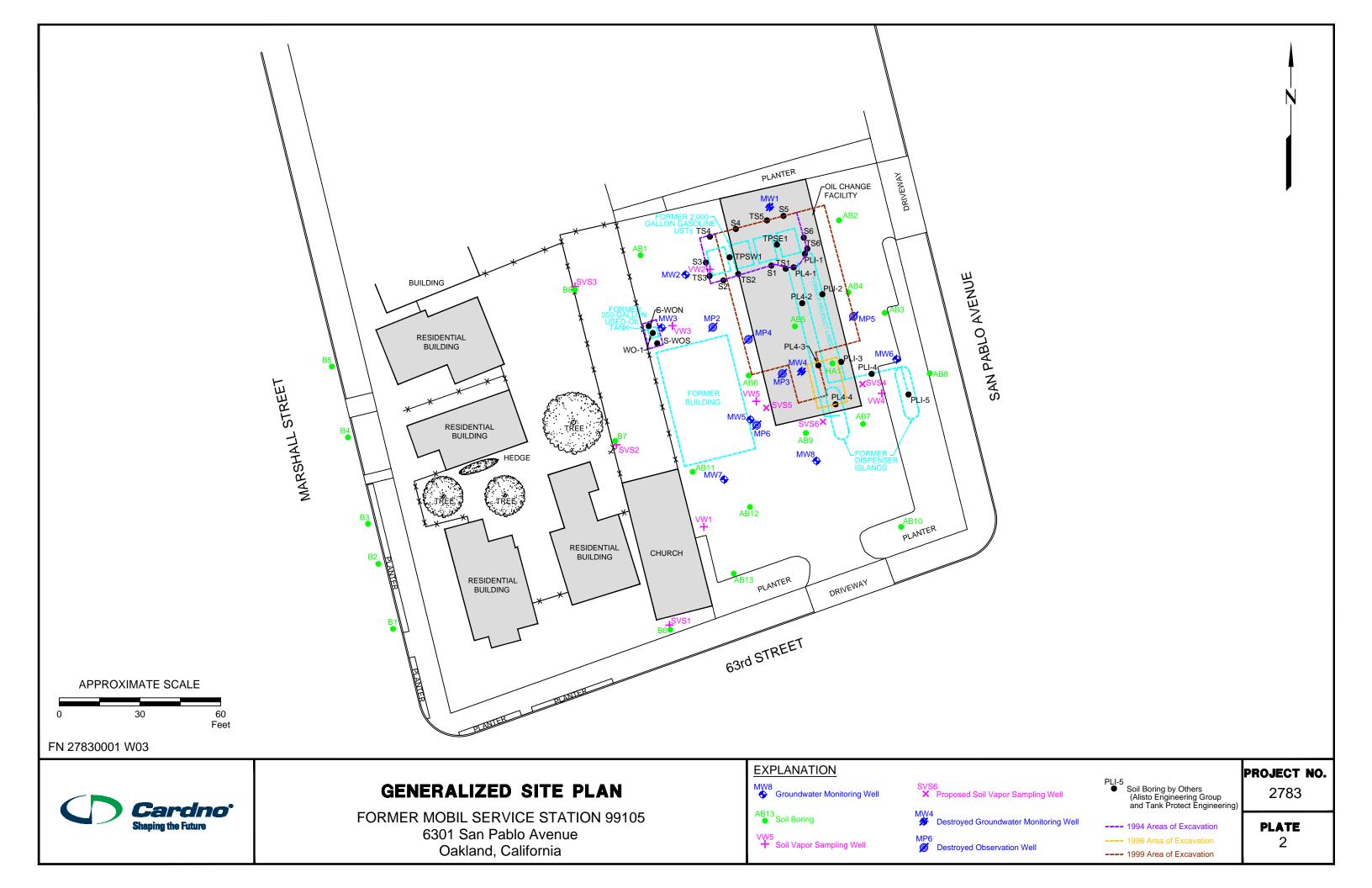


SITE VICINITY MAP

FORMER MOBIL SERVICE STATION 99105 6301 San Pablo Avenue Oakland, California PROJECT NO. 2783

PLATE

1



Former Mobil Service Station 99105 6301 San Pablo Avenue Oakland, California (Page 1 of 7)

Well	Sampling		TOC Elev.	DTW	GW Elev.	NAPL	TPHd	TPHg	MTBE 8020/8021	MTBE 8240/8260	В	Т	Е	Х
ID	Date		(feet)	(feet)	(feet)	(feet)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ironmental So	creening Levels	(Febru	ary 2016)											
1							100	100	5	5	1	40	13	20
MW1	03/14/96		32.79	4.50	28.29	No	450	610			0.75	0.54	1.5	59
MW1	05/21/96		32.79	5.64	27.15	No	ND	ND			ND	ND	ND	ND
MW1	08/13/96		32.79	9.76	23.03	No	ND	ND			ND	ND	ND	ND
MW1	11/08/96		32.79	10.24	22.55	No	ND	ND	ND		ND	0.92	ND	2.1
MW1	01/31/97		32.79	3.83	28.96	No	ND	ND	2.6	ND	ND	0.85	ND	ND
MW1	04/22/97		32.79	9.14	23.65	No	ND	ND	ND		ND	ND	ND	ND
MW1	07/29/97	а	32.79	10.18	22.61	No	60e	ND	36		0.84	0.95	ND	1.6
MW1	10/09/97	а	32.79	10.46	22.33	No	56e	ND	ND		ND	ND	ND	ND
MW1	01/23/98	а	32.79	3.95	28.84	No	33	ND	ND		ND	ND	ND	ND
MW1	04/22/98		32.79	5.33	27.46	No	ND	ND	ND		ND	ND	ND	ND
MW1	07/21/98		32.79	9.17	23.62	No		ND	ND		ND	ND	ND	ND
MW1	10/20/98		32.79	10.41	22.38	No		ND	ND		ND	ND	ND	ND
MW1	01/27/99		32.79	5.51	27.28	No		ND	ND		ND	ND	ND	ND
MW1	Apr-99	D	estroyed during	g construction	n activities.									
MW2	03/14/96		32.80	4.51	28.29	No	250	560			2.0	0.96	4.3	11
MW2	05/21/96		32.80	5.65	27.15	No	560	730			5.1	1.4	6.7	5.9
MW2	08/13/96		32.80	10.14	22.66	No	380b	490			25	3.5	7.2	13
MW2	11/08/96		32.80	10.70	22.10	No	160d	520	6.1		80	2.7	14	66
MW2	01/31/97		32.80	3.84	28.96	No	130b	74	ND		ND	ND	ND	ND
MW2	04/22/97		32.80	9.61	23.19	No	430	260	ND		2.7	ND	2.5	ND
MW2	07/29/97	а	32.80	10.53	22.27	No	150d	320	ND		28	1.2	10	ND
MW2	10/09/97	а	32.80	10.87	21.93	No	160b	460	2.6		43	2.8	2.0	2.6
MW2	01/23/98	а	32.80	3.75	29.05	No	54	ND	ND		ND	ND	ND	ND
MW2	04/22/98		32.80	5.36	27.44	No	540	180	ND		1.2	0.3	0.4	ND
MW2	07/21/98		32.80	9.55	23.25	No		80	ND		8.9	2.1	0.6	2.5
MW2	10/20/98		32.80	10.75	22.05	No		50	ND		0.8	0.7	ND	0.8
MW2	01/27/99		32.80	5.53	27.27	No		ND	ND		0.6	ND	ND	ND
MW2	07/27/99		32.80	6.20	26.60	No		ND	ND		ND	0.6	ND	ND
MW2	12/08/99		32.80	9.98	22.82	No		ND	ND		1.2	0.43	ND	ND
MW2	10/25/00		39.34	11.30	28.04	No		<20	< 0.30		2.0	0.59	0.46	1.3
MW2	01/15/01		39.34	9.41	29.93	No		<20	< 0.30		< 0.20	0.46	< 0.20	< 0.60
MW2	04/10/01		39.34	6.16	33.18	No		23	<1.0		0.28	< 0.20	<0.20	< 0.60
MW2	07/24/01		39.34	10.70	28.64	No		<50	< 0.30		< 0.20	0.93	< 0.20	0.82
MW2	11/27/01		39.34	10.15	29.19	No		<50	< 0.30		1.2	0.22	< 0.20	< 0.60
MW2	01/18/02		41.99	5.46	36.53	No		<50.0	1.40		< 0.50	< 0.50	< 0.50	< 0.50
MW2	04/10/02		41.99	6.48	35.51	No		<50.0	1.80		< 0.50	< 0.50	< 0.50	< 0.50
MW2	07/12/02		41.99	10.45	31.54	No		<50.0	<0.50		< 0.50	<0.50	< 0.50	<0.50

Former Mobil Service Station 99105 6301 San Pablo Avenue Oakland, California (Page 2 of 7)

Well	Sampling	TOC Elev.	DTW	GW Elev.	NAPL	TPHd	TPHg	MTBE 8020/8021	MTBE 8240/8260	В	Т	Е	Х
ID	Date	(feet)	(feet)	(feet)	(feet)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ironmental So	creening Levels (F	ebruary 2016)											
1						100	100	5	5	1	40	13	20
MW2	10/14/02	41.99	11.46	30.53	No		<50.0	<0.5		<0.5	4.1	0.6	4.0
MW2	01/20/03	41.99	5.39	36.60	No		<50.0	0.6		<0.50	< 0.50	< 0.50	< 0.50
MW2	04/28/03	41.99	5.87	36.12	No		<50.0	<0.50		<0.50	<0.50	< 0.50	<0.50
MW2	07/15/03	41.99	10.31	31.68	No		<50	<0.5		<0.5	<0.5	<0.5	<0.5
MW2	10/08/03	41.99	11.20	30.79	No		<50	<0.5		<0.5	< 0.5	<0.5	< 0.5
MW2	01/15/04	41.99	5.36	36.63	No		63.3	1.0		0.70	<0.5	<0.5	<0.5
MW2		led from 2004 to 20											
MW2	09/17/10	41.99	10.72	31.27	No	<50	<50		<0.50	<0.50	<0.50	< 0.50	<0.50
MW2	12/15/10	42.24	Well resurve										
MW2	09/14/11	42.24	10.02	32.22	No	110g	<50		<0.50	<0.50	< 0.50	< 0.50	<0.50
MW2	01/18/12	42.24	11.24	31.00	No		<50		<0.50	<0.50	<0.50	< 0.50	<0.50
MW2	01/27/12	42.24	9.65	32.59	No	<50							
MW2	07/09/12	42.24	10.07	32.17	No	<50	<50		< 0.50	<0.50	< 0.50	< 0.50	<0.50
MW2	01/25/13	42.24	5.62	36.62	No	<50	<50		< 0.50	< 0.50	<0.50	< 0.50	<0.50
MW2	08/23/13	42.24	10.76	31.48	No	<50	<50		<0.50	<0.50	<0.50	< 0.50	<0.50
MW2	01/10/14	42.24	11.42	30.82	No	<50	<50		<0.50	<0.50	<0.50	< 0.50	<0.50
MW2	07/14/14	42.24	10.52	31.72	No	<49	<50		< 0.50	<0.50	<0.50	<0.50	0.52
MW2	08/18/14	42.24	11.06	31.18	No								
MW2	11/06/14	42.24											
MW2	01/23/15	42.24	6.10	36.14	No	<50	62g		<0.50	<0.50	< 0.50	< 0.50	<0.50
MW2	06/26/15	42.24											
MW2	08/14/15	42.24	11.45	30.79	No	<50	<50		<0.50	<0.50	< 0.50	< 0.50	<0.50
MW2	03/25/16	42.24	4.62	37.62	No	<45	<50		< 0.50	<0.50	<0.50	<0.50	<0.50
MW2	07/12/16	42.24	10.37	31.87	No	<50	<50		<0.50	<0.50	<0.50	<0.50	<0.50
101002	07/12/10	72.27	10.07	01.07	110	100	100		νο.σο	٧٥.٥٥	٧٥.٥٥	٧٥.٥٥	٧٥.٥٥
MW3	03/14/96	32.80	9.55	23.25	No	1,200	4,200			220	30	140	520
MW3	05/21/96	32.80	10.16	22.64	No	2,800	8,500			710	110	440	1,700
MW3	08/13/96	32.80	11.18	21.62	No	2,300c	5,000			430	ND	200	360
MW3	11/08/96	32.80	11.51	21.29	No	2,900b	8,400	73	ND	890	82	790	1,700
MW3	01/31/97	32.80	7.90	24.90	No	7,500b	16,000	ND		660	85	960	1,800
MW3	04/22/97	32.80	10.64	22.16	No	2.700	8,000	200	ND	340	33	400	490
MW3		a 32.80	11.36	21.44	No	2,300b	9,800	ND		330	ND	530	530
MW3		a 32.80	11.52	21.28	No	2,600b	7,300	270	ND	300	ND	430	460
MW3		a 32.80	7.50	25.30	No	2,300	6,100	ND		190	23	330	320
MW3	04/22/98	32.80	6.81	25.99	No	2,600	4,900	ND	ND	140	12	250	230
MW3	07/21/98	32.80	10.65	22.15	No		7,400	74	ND	250	16	400	370
MW3	10/20/98	32.80	11.57	21.23	No		6,700	ND	ND	200	18	350	350
MW3	01/27/99	32.80	9.11	23.69	No		3,100	13		74	4	94	39

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Well	Sampling	TOC Elev.	DTW	GW Elev.	NAPL	TPHd	TPHg	MTBE 8020/8021	MTBE 8240/8260	В	Т	E	Х
ID	Date	(feet)	(feet)	(feet)	(feet)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
vironmental S	creening Levels (F	ebruary 2016)	, ,	•	, , ,								
er 1						100	100	5	5	1	40	13	20
MW3	07/27/99	32.80	7.27	25.53	No		8,900	ND		170	21	360	440
MW3	12/08/99	32.80	10.63	22.17	No		4,800	ND		94	13	170	210
MW3	10/25/00	39.27	12.08	27.19	No		3,800	<50	<5	63	2.9	100	65
MW3	01/15/01	39.27	10.29	28.98	No		4,300	<5.0		76	9.5	47	76
MW3	04/10/01	39.27	10.11	29.16	No		2,700	<20		55	4.4	100	37
MW3	07/24/01	39.27	11.57	27.70	No		3,100	<1.0		110	6.9	110	81
MW3	11/27/01	39.27	10.93	28.34	No		2,400	< 0.30		47	8.9	25	35
MW3	01/18/02	41.71	9.47	32.24	No		1,130	13.6		15.3	2.30	42.0	24.6
MW3	04/10/02	41.71	10.14	31.57	No		916	11.2		35.1	3.00	22.5	13.8
MW3	07/12/02	41.71	11.34	30.37	No		2,330	15.4		60.5	2.90	39.8	50.9
MW3	10/14/02	41.71	12.10	29.61	No		2,550	<0.5		36.9	3.8	20.3	48.0
MW3	01/20/03	41.71	9.20	32.51	No		1,750	10.7		20.4	304.0	60.7	22.0
MW3	04/28/03	41.71	9.37	32.34	No		2,730	11.2		10.0	2.7	42.7	20.1
MW3	07/15/03	41.71	11.15	30.56	No		1,790	5.6		68.8	3.6	39.0	44.7
MW3	10/08/03	41.71	11.89	29.82	No		1,320	7.1		35.1	4.0	23.6	31.8
MW3	01/15/04	41.71	9.16	32.55	No		791	3.4		24.4	1.3	40.1	14.7
MW3		led from 2004 to 20		02.00	110			0.1			1.0		
MW3	09/17/10	41.71	11.46	30.25	No	99	2,500		< 0.50	2.6	0.31f	1.8	1.8
MW3	12/15/10	42.18	Well resurve		110	00	2,000		10.00	0	0.011	1.0	1.0
MW3	09/14/11	42.18	11.37	30.81	No	270g	1,200		<0.50	18	0.95	1.7	1.3
MW3	01/18/12	42.18	12.11	30.07	No		910g		<0.50	0.89	< 0.50	<0.50	0.88
MW3	01/27/12	42.18	10.18	32.00	No	1,000g							
MW3	07/09/12	42.18	11.15	31.03	No	420g	350q		<0.50	7.9	< 0.50	< 0.50	<0.50
MW3	01/25/13	42.18	9.41	32.77	No	120g	390g		< 0.50	2.8	<0.50	<0.50	<0.50
MW3	08/23/13	42.18	11.67	30.51	No	310g	640		<0.50	1.1	< 0.50	<0.50	<0.50
MW3	01/10/14	42.18	12.13	30.05	No	160g	720g		< 0.50	< 0.50	< 0.50	<0.50	<0.50
MW3	07/14/14	42.18	11.55	30.63	No	320g	1,100g		< 0.50	1.8	<0.50	<0.50	0.53
MW3	08/18/14	42.18	11.83	30.35	No								
MW3	11/06/14	42.18											
MW3	01/23/15	42.18	10.19	31.99	No	440g	750g		<0.50	5.6	1.7	0.79	1.0
MW3	06/26/15	42.18				440g 	730g 		<0.50 			0.79	1.0
MW3	08/14/15	42.18 42.18	12.25	29.93	No	120g	710q		<0.50	2.0	0.50	<0.50	1.3
MW3	03/25/16	42.18 42.18	8.05	29.93 34.13	No	120g 190g	710g 320g		<0.50	2.0 1.6	<0.50	0.91	<0.50
				34.13 30.71	No	_	•			2.0	<0.50	<0.50	
MW3	07/12/16	42.18	11.47	30.71	INO	230g	340g		<0.50	2.0	<0.50	<0.50	<0.50
MW4	03/14/96	31.50	4.92	26.58	No	3,500	12,000			2,200	140	880	2,000
MW4	05/21/96	31.50	8.60	22.90	No	4,200	11,000			1,700	ND	930	470
MW4	08/13/96	31.50	10.02	21.50	0.02								

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								MTBE	MTBE				
Well	Sampling	TOC Elev.	DTW	GW Elev.	NAPL	TPHd	TPHg	8020/8021	8240/8260	В	Т	Е	X
ID	Date	(feet)	(feet)	(feet)	(feet)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
nvironmental S	creening Levels (F	February 2016)											
er 1						100	100	5	5	1	40	13	20
MW4	11/08/96	31.50	10.28	21.33	0.15								
MW4	01/31/97	31.50	7.88	23.62	No	8,200b	23,000	ND		980	68	1,100	1,400
MW4	04/22/97	31.50	7.40	24.10	No	4,500	8,800	ND		950	ND	610	130
MW4	07/29/97	31.50	9.85	21.74	0.12								
MW4	10/09/97	31.50	10.35	21.38	0.30								
MW4	01/23/98	31.50	4.68	27.51	0.92								
MW4	04/22/98	31.50	6.39	25.22	0.14								
MW4	07/21/98	31.50	7.10	24.55	0.20								
MW4	10/20/98	31.50	9.03	22.60	0.17								
MW4	01/27/99	31.50	5.37	26.18	0.07								
MW4	Apr-99	Destroyed durin	g constructio	n activities.									
N 41 A / E	40/05/00	00.40	40.00	00.00	NI-		0.500	20		70	0.0		00
MW5	10/25/00	39.18	10.92	28.26	No		2,500	<20		79	3.8	66	<20
MW5	01/15/01	39.18	8.32	30.86	No		3,900	<5.0		120	7.9	280	52
MW5	04/10/01	39.18	7.21	31.97	No		8,000	<50	<5	280	4.4	410	100
MW5	07/24/01	39.18	9.54	29.64	No		7,000	<1.0		360	7.4	380	67
MW5	11/27/01	39.18	8.84	30.34	No		5,000	8.9	<2	64	11	340	52
MW5	01/18/02	41.59	6.52	35.07	No		6,330	21.8		99.1	2.30	103	19.6
MW5	04/10/02	41.59	7.20	34.39	No		2,140	<2.50		275	8.00	183	24.5
MW5	07/12/02	41.59	8.83	32.76	No		3,940	20	<0.50	350	<0.50	268	14
MW5	10/14/02	41.59	10.74	30.85	No		4,040	<2.5		98.5	9.0	169	29.0
MW5	01/20/03	41.59	6.45	35.14	No		7,660	59	<0.50	421	10.0	743	96.0
MW5	04/28/03	41.59	6.68	34.91	No		7,510	47	<0.50	403	5.5	524	50.5
MW5	07/15/03	41.59	8.68	32.91	No		6,080	52.9	<2.5	406	19.8	412	34.7
MW5	10/08/03	41.59	10.56	31.03	No		2,460	54.3	<0.5	160	12.8	173	31.7
MW5	01/15/04	41.59	6.56	35.03	No		4,630	37.4	<0.5	181	6.0	312	38.5
MW5		pled from 2004 to 20											
MW5	09/17/10	41.59	9.99	31.60	No	5,700	6,600		<5.0	19	<5.0	16	1.4f
MW5	12/15/10	41.86	Well resurve	•									
MW5	09/14/11	41.86	7.33	34.53	No	1,600g	7,200		<2.0	23	<2.0	8.6	<2.0
MW5	01/18/12	41.86	9.46	32.40	No		3,600g		<1.0	14	<1.0	7.6	<1.0
MW5	01/27/12	41.86	8.81	33.05	No	3,100g							
MW5	07/09/12	41.86	8.91	32.95	Sheen	29,000g	9,300g		<2.5	21	<2.5	6.9	<2.5
MW5	01/25/13	41.86	6.01	35.85	Sheen	22,000g	4,900g		<2.0	46	<2.0	4.5	<2.0
MW5	08/23/13	41.86	9.12	32.74	No	34,000g	17,000		<2.0	17	<2.0	6.3	<2.0
MW5	01/10/14	41.86	10.30	31.56	No	36,000g	62,000		<2.0	4.7	<2.0	3.5	<2.0
MW5	07/14/14	41.86	8.70	33.16	No	88,000g	90,000g		<5.0	100	< 5.0	12	<5.0
MW5	08/18/14	41.86	9.40	32.46	No								

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·								MTBE	MTBE				
Well	Sampling	TOC Elev.	DTW	GW Elev.	NAPL	TPHd	TPHg	8020/8021	8240/8260	В	Т	Е	Χ
ID	Date	(feet)	(feet)	(feet)	(feet)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Environmental S	creening Levels (F	ebruary 2016)											
Tier 1						100	100	5	5	1	40	13	20
MW5	08/22/14	41.86	9.60	32.26	No	5,800g	5,100		<5.0	520	<5.0	320	81
MW5	11/06/14	41.86											
MW5	01/23/15	41.86	7.30	34.56	No	19,000g	3,300g		<5.0	130	<5.0	65	26
MW5	06/26/15	41.86											
MW5	08/14/15	41.86	9.87	31.99	Sheen	4,900g	10,000g		<2.0	27	<2.0	24	17
MW5	03/25/16	41.86	5.67	36.19	No	2,300g	4,500g		<2.0	91	<2.0	23	8.3
MW5	07/12/16	41.86	8.90	32.96	Sheen	2,800g	1,500g		<2.0	54	<2.0	12	6.0
MW6	08/18/14	42.00	Well surveyed										
MW6	08/18/14	42.00	13.12	28.88	No	350g	410g		0.60	< 0.50	< 0.50	< 0.50	< 0.50
MW6	08/22/14	42.00	11.20	30.80	No	1,000g	1,500g		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW6	11/06/14	42.00	10.77	31.23	No	640g	840g		0.80	< 0.50	< 0.50	< 0.50	< 0.50
MW6	01/23/15	42.00	7.38	34.62	No	170g	120g		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW6	06/26/15	42.00	9.11	32.89	No	160g	170g		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW6	08/14/15	42.00	9.89	32.11	No	91g	120g		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW6	03/25/16	42.00	6.06	35.94	No	82g	<50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW6	07/12/16	42.00	9.09	32.91	No	130g	<50		<0.50	<0.50	<0.50	<0.50	<0.50
MW7	08/18/14	41.34	Well surveyed										
MW7	08/18/14	41.34	13.81	27.53	No	<51	<50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW7	08/22/14	41.34	Dry										
MW7	11/06/14	41.34	11.73	29.61	No	<50	<50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW7	01/23/15	41.34	10.81	30.53	No	57g	140		< 0.50	4.2	2.8	6.4	6.1
MW7	06/26/15	41.34	10.28	31.06	No	49g	<50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW7	08/14/15	41.34	11.41	29.93	No	<47	58g		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW7	03/25/16	41.34	9.72	31.62	No	55g	<50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW7	07/12/16	41.34	10.66	30.68	No	88g	<50		<0.50	<0.50	<0.50	<0.50	<0.50
MW8	08/18/14	41.30	Well surveyed										
MW8	08/18/14	41.30	12.18	29.12	No	440g	1,600		< 0.50	39	< 0.50	19	44
MW8	08/22/14	41.30	13.10	28.20	No	350g	950g		<0.50	5.7	<0.50	4.2	6.4
MW8	11/06/14	41.30	10.96	30.34	No	260g	910g		< 0.50	54	< 0.50	25	11
MW8	01/23/15	41.30	6.83	34.47	No	440g	1,000g		< 0.50	110	1.8	19	10
MW8	06/26/15	41.30	8.46	32.84	No	650g	1,100		<2.0	100	<2.0	24	6.2
MW8	08/14/15	41.30	9.85	31.45	No	770g	2,000g		< 0.50	92	1.2	14	13
MW8	03/25/16	41.30	8.18	33.12	No	1,200g	4,000g		< 0.50	160	1.6	130	37
MW8	07/12/16	41.30	7.96	33.34	Sheen	1,500g	2,000		<2.5	160	<2.5	84	11
IVIVV8	07/12/16	41.30	7.96	33.34	Sneen	1,500g	2,000		<2.5	160	<2.5	84	11

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		T00 51	5711	011/ 51				MTBE	MTBE		_	_	.,
Well	Sampling	TOC Elev.	DTW	GW Elev.	NAPL	TPHd	TPHg	8020/8021	8240/8260	В (1)	Τ " `	Ε	X
ID ID	Date	(feet)	(feet)	(feet)	(feet)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Environmental So	reening Levels (F	ebruary 2016)						_	_	_			
Tier 1						100	100	5	5	1	40	13	20
Grab Groundwate	er Samples												
Former Gasoline T	ank Cavity												
TW1	01/04/96		6.00		No	700	ND			ND	ND	ND	ND
Used-Oil Tank Cav	vity												
WW1	01/04/96		3.00		No		ND			ND	ND	ND	ND
AB1	03/05/98		4.5		No		1,600	ND		31	5.3	79	130
					No		1, 600 ND			ND	5.3 2.9	0.9	5.7
AB2	03/05/98		8.0		No			ND		680	2.9 100		
AB3	03/05/98		5.5				6,800	230				1,500	2,300
AB4	03/05/98		4.0		No		8,500	ND		240	ND	260	720
AB6	03/05/98		4.5		No		12,000	ND		350	ND	310	100
AB9	03/05/98		6.0		No		1,000	ND		57	12	44	93
AB10	03/05/98		2.0		No		200	ND		3.0	1.2	3.2	2.8
AB11	03/05/98		8.5		No		ND	ND		ND	ND	ND	ND
AB12	03/05/98		6.0		No		8,800	37		660	50	630	940
AB13	03/05/98		8.0		No		210	ND		11	8.0	10	15
HA1	01/25/00						<500	<5.0		<0.3	<0.3	<0.3	<0.6
B1	11/18/10		Dry										
B2	11/19/10		Dry										
В3	11/19/10		8.45			<50	<50		<0.50	< 0.50	< 0.50	0.053f	0.21f
B4	11/19/10		Dry										
B5	11/18/10		8.95			<50	<50		<0.50	<0.50	<0.50	0.047f	0.21f
W-15-B6	06/19/12		15			<50	<50		<0.50	<0.50	<0.50	<0.50	<0.50
W-15-B7	06/19/12		15			<50	<50		<0.50	< 0.50	<0.50	<0.50	<0.50
W-9.5-B8	06/19/12		9.5			230g	<50		<0.50	<0.50	<0.50	<0.50	<0.50

TABLE 1A

CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA

Former Mobil Service Station 99105 6301 San Pablo Avenue Oakland, California (Page 7 of 7)

Notes:	Adapted from	m ETIC's Report of Groundwater Monitoring, Third Quarter 2010.
TOC Elev.	=	Top of casing elevation.
DTW	=	Depth to water.
GW Elev.	=	Groundwater elevation.
NAPL	=	Non-aqueous phase liquid.
TPHd	=	Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE 8020/8021	=	Methyl tertiary butyl ether analyzed using EPA Method 8020 or 8021B.
MTBE 8240/8260	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B or 8240.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
DIPE	=	Di-isopropyl ether analyzed using EPA Method 8260B.
ETBE	=	Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	=	Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	=	Tertiary butyl alcohol analyzed using EPA Method 8260B.
1,2-DCA	=	1,2-dichloroethane analyzed using EPA Method 8260B.
EDB	=	1,2-dibromoethane analyzed using EPA Method 8260B.
Ethanol	=	Ethanol analyzed using EPA Method 8260B.
ND	=	Not detected at or above the laboratory reporting limit.
μg/L	=	Micrograms per liter.
<	=	Less than the stated laboratory reporting limit.
	=	Not analyzed/Not applicable.
а	=	Well sampled using no-purge method.
b	=	Diesel and unidentified hydrocarbons <c15.< td=""></c15.<>
С	=	Diesel and unidentified hydrocarbons <c15>C25.</c15>
d	=	Diesel and unidentified hydrocarbons >C20.
е	=	Unidentified hydrocarbons >C18.
f	=	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit.
g	=	Chromatographic pattern does not match that of the specified standard.

TABLE 1B
ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA

Former Mobil Service Station 99105 6301 San Pablo Avenue Oakland, California (Page 1 of 4)

Well	Sampling	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	Ethanol
ID	Date	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
nvironmental Scree	ning Levels (February 2016)							
ier 1					12	0.50	0.05	
MW1	03/14/96 - 01/27/	Not analyzed for the	se analytes					
MW1	Apr-99	Destroyed during co	•					
	•	,						
MW2	03/14/96 - 01/15/	Not analyzed for the	ese analytes					
MW2	09/17/10	< 0.50	< 0.50	< 0.50	<10	< 0.50	<0.50	
MW2	09/14/11	< 0.50	< 0.50	< 0.50	<5.0	< 0.50	<0.50	<50
MW2	01/18/12	< 0.50	< 0.50	< 0.50	<5.0	< 0.50	<0.50	<50
MW2	01/27/12							
MW2	07/09/12	< 0.50	< 0.50	< 0.50	<5.0	< 0.50	<0.50	
MW2	01/25/13	< 0.50	< 0.50	< 0.50	<5.0	< 0.50	<0.50	
MW2	08/23/13	< 0.50	< 0.50	< 0.50	<5.0	< 0.50	<0.50	
MW2	01/10/14	< 0.50	< 0.50	<0.50	<5.0	<0.50	<0.50	
MW2	07/14/14	< 0.50	< 0.50	<0.50	<5.0	<0.50	<0.50	
MW2	08/18/14							
MW2	08/22/14							
MW2	11/06/14							
MW2	01/23/15	< 0.50	< 0.50	<0.50	<5.0	<0.50	<0.50	
MW2	06/26/15							
MW2	08/14/15	< 0.50	< 0.50	<0.50	<5.0	< 0.50	<0.50	
MW2	03/25/16	< 0.50	< 0.50	<0.50	<5.0	<0.50	<0.50	
MW2	07/12/16	<0.50	<0.50	< 0.50	<5.0	<0.50	<0.50	
MW3	03/14/96 - 01/15/	Not analyzed for the	se analytes					
MW3	09/17/10	0.17f	< 0.50	<0.50	9.8f	1.9	<0.50	
MW3	09/14/11	< 0.50	< 0.50	<0.50	<5.0	<0.50	<0.50	<50
MW3	01/18/12	< 0.50	< 0.50	<0.50	23	<0.50	<0.50	<50
MW3	01/27/12							
MW3	07/09/12	< 0.50	< 0.50	< 0.50	9.1	1.1	<0.50	
MW3	01/25/13	< 0.50	< 0.50	< 0.50	9.6	1.1	<0.50	
MW3	08/23/13	< 0.50	< 0.50	< 0.50	7.2	0.90	<0.50	
MW3	01/10/14	< 0.50	< 0.50	< 0.50	12	1.1	<0.50	
MW3	07/14/14	< 0.50	< 0.50	<0.50	11	1.1	<0.50	
MW3	08/18/14							
MW3	08/22/14							
MW3	11/06/14							
MW3	01/23/15	< 0.50	< 0.50	<0.50	8.1	0.70	<0.50	
MW3	06/26/15							
MW3	08/14/15	<0.50	< 0.50	<0.50	<5.0	1.3	<0.50	
MW3	03/25/16	<0.50	<0.50	< 0.50	<5.0	1.0	<0.50	

TABLE 1B
ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA

Former Mobil Service Station 99105 6301 San Pablo Avenue Oakland, California (Page 2 of 4)

Well	Sampling	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	Ethanol
ID	Date	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
onmental Screer	ning Levels (February 2016)	, <u>, , , , , , , , , , , , , , , , , , </u>			,, <u>,</u>	,, <u> </u>	" ,	" "
					12	0.50	0.05	
MW3	07/12/16	<0.50	<0.50	<0.50	5.5	1.1	<0.50	
MW4	03/14/96 - 01/27/99	Not analyzed for thes	se analytes					
MW4	Apr-99	Destroyed during cor	•					
MW5	10/25/00 - 01/15/04	Not analyzed for thes	se analytes					
MW5	09/17/10	<5.0	<5.0	<5.0	<100	<5.0	<5.0	
MW5	09/14/11	<2.0	<2.0	<2.0	25	<2.0	<2.0	<200
MW5	01/18/12	<1.0	<1.0	<1.0	37	<1.0	<1.0	<100
MW5	01/27/12							
MW5	07/09/12	<2.5	<2.5	<2.5	36	<2.5	<2.5	
MW5	01/25/13	<2.0	<2.0	<2.0	45	<2.0	<2.0	
MW5	08/23/13	<2.0	<2.0	<2.0	42	<2.0	<2.0	
MW5	01/10/14	<2.0	<2.0	<2.0	36	<2.0	<2.0	
MW5	07/14/14	<5.0	<5.0	<5.0	<50	<5.0	<5.0	
MW5	08/18/14							
MW5	08/22/14	<5.0	<5.0	<5.0	<50	<5.0	<5.0	
MW5	11/06/14							
MW5	01/23/15	<5.0	<5.0	<5.0	<50	<5.0	<5.0	
MW5	06/26/15							
MW5	08/14/15	<2.0	<2.0	<2.0	23	<2.0	<2.0	
MW5	03/25/16	<2.0	<2.0	<2.0	<20	<2.0	<2.0	
MW5	07/12/16	<2.0	<2.0	<2.0	<20	<2.0	<2.0	
MW6	08/18/14	<0.50	<0.50	<0.50	14	1.1	<0.50	
MW6	08/22/14	<0.50	<0.50	<0.50	12	<0.50	<0.50	
MW6	11/06/14	<0.50	<0.50	<0.50	14	1.3	<0.50	
MW6	01/23/15	<0.50	<0.50	<0.50	6.7	<0.50	<0.50	
MW6	06/26/15	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	
MW6	08/14/15	<0.50	<0.50	<0.50	<5.0	0.59	<0.50	
MW6	03/25/16	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	
MW6	07/12/16	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	
MW7	08/18/14	<0.50	<0.50	<0.50	21	3.1	<0.50	
MW7	08/22/14	Dry						
MW7	11/06/14	<0.50	<0.50	<0.50	15	3.9	<0.50	
MW7	01/23/15	<0.50	<0.50	< 0.50	23	5.1	<0.50	
MW7	06/26/15	<0.50	<0.50	< 0.50	11	3.4	<0.50	
MW7	08/14/15	< 0.50	< 0.50	< 0.50	6.6	2.5	<0.50	

TABLE 1B
ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA

Former Mobil Service Station 99105 6301 San Pablo Avenue Oakland, California (Page 3 of 4)

Well	Sampling	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	Ethanol
ID	Date	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Environmental Screen	ing Levels (February 2016)							
Tier 1					12	0.50	0.05	
MW7	03/25/16	<0.50	<0.50	<0.50	9.5	1.9	<0.50	
MW7	07/12/16	<0.50	<0.50	<0.50	10	2.0	<0.50	
MW8	08/18/14	<0.50	<0.50	<0.50	20	0.78	<0.50	
MW8	08/22/14	<0.50	<0.50	< 0.50	31	< 0.50	<0.50	
MW8	11/06/14	<0.50	<0.50	<0.50	34	2.8	<0.50	
MW8	01/23/15	<0.50	<0.50	<0.50	20	<0.50	<0.50	
MW8	06/26/15	<2.0	<2.0	<2.0	20	<2.0	<2.0	
MW8	08/14/15	<0.50	<0.50	< 0.50	15	< 0.50	<0.50	
MW8	03/25/16	<0.50	<0.50	< 0.50	17	< 0.50	<0.50	
MW8	07/12/16	<2.5	<2.5	<2.5	29	<2.5	<2.5	
Grab Groundwater Sa	mples							
Not analyzed for these a	analytes prior to 2010.							
B1	11/18/10							
B3	11/19/10					8.7		
B4	11/19/10							
B5	11/18/10					0.099f		
W-15-B6	06/19/12	<0.50	<0.50	<0.50	<5.0			
W-15-B7	06/19/12	<0.50	<0.50	<0.50	<5.0			
W-9.5-B8	06/19/12	<0.50	<0.50	<0.50	<5.0			

TABLE 1B

ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA

Former Mobil Service Station 99105 6301 San Pablo Avenue Oakland, California (Page 4 of 4)

Notes:	Ada	pted from ETIC's Report of Groundwater Monitoring, Third Quarter 2010.
TOC Elev.	=	Top of casing elevation.
DTW	=	Depth to water.
GW Elev.	=	Groundwater elevation.
NAPL	=	Non-aqueous phase liquid.
TPHd	=	Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE 8020/8021	=	Methyl tertiary butyl ether analyzed using EPA Method 8020 or 8021B.
MTBE 8240/8260	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B or 8240.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
DIPE	=	Di-isopropyl ether analyzed using EPA Method 8260B.
ETBE	=	Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	=	Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	=	Tertiary butyl alcohol analyzed using EPA Method 8260B.
1,2-DCA	=	1,2-dichloroethane analyzed using EPA Method 8260B.
EDB	=	1,2-dibromoethane analyzed using EPA Method 8260B.
Ethanol	=	Ethanol analyzed using EPA Method 8260B.
ND	=	Not detected at or above the laboratory reporting limit.
μg/L	=	Micrograms per liter.
<	=	Less than the stated laboratory reporting limit.
	=	Not analyzed/Not applicable.
a	=	Well sampled using no-purge method.
b	=	Diesel and unidentified hydrocarbons <c15.< td=""></c15.<>
С	=	Diesel and unidentified hydrocarbons <c15>C25.</c15>

= Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit.

= Diesel and unidentified hydrocarbons >C20.

= Chromatographic pattern does not match that of the specified standard.

= Unidentified hydrocarbons >C18.

d

е

g

TABLE 2 WELL CONSTRUCTION DETAILS

Former Mobil Service Station 99105 6301 San Pablo Avenue Oakland, California (Page 1 of 1)

Well ID	Well Installation Date	Well Destruction Date	TOC Elevation (feet)	Well Casing Material	Total Depth (feet)	Well Depth (feet)	Borehole Diameter (inches)	Casing Diameter (inches)	Screened Interval (feet)	Slot Size (inches)	Filter Pack Interval (feet)	Filter Pack Material
MW1	03/01/96	Apr-99	32.79	PVC	21.5	21.5	10	4	5-20	0.010	4.5-21.5	#12 Sand
MW2	03/01/96		42.24	PVC	21.5	21.5	10	4	5-20	0.010	4.5-21.5	#12 Sand
MW3	03/01/96		42.18	PVC	21.5	21.5	10	4	5-20	0.010	4.5-21.5	#12 Sand
MW4	03/01/96	Apr-99	31.50	PVC	26.5	25	10	4	5-25	0.010	4.5-21.5	#12 Sand
MW5	09/06/00		41.86	PVC	21.5	21.5	10	4	5-20	0.010	4-21.5	#2/12 Sand
MW6	08/11/14		42.00	PVC	18	15	12	4	5-15	0.020	4-15	#2/12 Sand
MW7	08/11/14		41.34	PVC	16	15	10	2	5-15	0.020	4-15	#2/12 Sand
MW8	08/15/14		41.30	PVC	16	15	12	4	5-15	0.020	4-15	#2/12 Sand
VW1	11/01/10			Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
VW2	11/02/10			Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
VW3	11/01/10			Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
VW4	11/02/10			Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
VW5	11/02/10			Stainless Steel	6	6	4	0.25	5.25-5.75	0.0057	5-6	#2/12 Sand
MP1	11/16/98	1998		PVC	23	23	1.5	1	4-23	0.020	2.5-23	#3 Sand
MP2	11/16/98	1998		PVC	20	20	1.5	1	5-20	0.020	4-20	#3 Sand
MP3	11/16/98	1998		PVC	18	18	1.5	1	3-18	0.020	2-18	#3 Sand
MP4	11/16/98	1998		PVC	18	18	1.5	1	3-18	0.020	2-18	#3 Sand
MP5	11/16/98	1998		PVC	18	18	1.5	1	3-18	0.020	2-18	#3 Sand
MP6	11/16/98	1998		PVC	17.5	17.5	1.5	1	3.5-17.5	0.020	2.5-17.5	#3 Sand
SVS1	06/18/12		38.78	PVC/Stainless Steel	5.5	5	3.25	0.25	4.75-5	0.010	4.5-5	#3 Sand
SVS2	06/18/12		41.05	PVC/Stainless Steel	5.5	5	3.25	0.25	4.75-5	0.010	4.5-5	#3 Sand
SVS3	06/18/12		42.64	PVC/Stainless Steel	5.5	5	3.25	0.25	4.75-5	0.010	4.5-5	#3 Sand

Notes:

TOC = Top of casing.

PVC = Polyvinyl chloride.

--- = Not applicable/Not available.

Former Mobil Service Station 99105 6301 San Pablo Avenue Oakland, California (Page 1 of 4)

Sample	Sample	Depth	TPHd	TPHg	MTBE 8021	MTBE 8260B	В	Т	Е	Х	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB	Naphthalene	Lead	TOG
ID	Date	(feet bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Environmental	Screening Lev	els, Tier 1 (F	•	•															
Tier 1			240	100	0.023	0.023	0.044	2.9	1.4	2.3	0.075				0.0045	0.00033	0.023	80	
Monitoring, Re	emediation, and	l Soil Vapor \	Well Samp	les															
MW1	03/01/96	5 - 5.5	3.4	<1.0			<0.0050	< 0.0050	< 0.0050	< 0.0050								<2.5	
MW1	03/01/96	10 - 10.5	<1.0	<1.0			< 0.0050	< 0.0050	< 0.0050	< 0.0050								<2.5	
MW1	03/01/96	15 - 15.5	4.2	<1.0			<0.0050	<0.0050	<0.0050	<0.0050								<2.5	
MW2	03/01/96	5 - 5.5	2.4	<1.0			<0.0050	<0.0050	<0.0050	<0.0050								<2.5	
MW2	03/01/96	10 - 10.5	57	220			1.2	1.4	2.7	14								<2.5	
MW2	03/01/96	15 - 15.5	<1.0	<1.0			<0.0050	<0.0050	0.0063	0.035								<2.5	
MW3	03/01/96	5.5 - 6	1.1	<1.0			<0.0050	<0.0050	<0.0050	<0.0050								<2.5	9
MW3	03/01/96	10.5 - 11	72	53			0.032	0.43	0.65	0.93								<2.5	290
MW3	03/01/96	15.5 - 16	<1.0	<1.0			<0.0050	<0.0050	<0.0050	<0.0050								<2.5	10
MW4	03/01/96	5.5 - 6	34	280			1.2	1	4.1	19								<2.5	
MW4	03/01/96	10.5 - 11	7.7	6			0.11	<0.0050	0.11	0.093								<2.5	
MW4	03/01/96	15.5 - 16	2.1	6			0.076	0.023	0.083	0.07								<2.5	
S-5-MW6	08/11/14	5	83b,c	<0.53		<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0099	<0.0099	<0.0099	<0.0049	<0.0049	<0.049		
S-10-MW6	08/11/14	10	47b,c	4.4c		< 0.0052	< 0.0052	< 0.0052	< 0.0052	< 0.0052	< 0.052	< 0.010	< 0.010	< 0.010	<0.0052	<0.0052	<0.052		
S-15-MW6	08/11/14	15	<4.9b	2.2c		<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.048	<0.0095	<0.0095	<0.0095	<0.0048	<0.0048			
S-5-MW7	08/11/14	5	<5.0b	<0.48		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.050		
S-10-MW7	08/11/14	10	<5.0b	< 0.49		< 0.0049	< 0.0049	< 0.0049	< 0.0049	< 0.0049	< 0.049	<0.0098	<0.0098	<0.0098	<0.0049	<0.0049	< 0.049		
S-15-MW7	08/11/14	15	<5.0b	<0.49		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050			
S-5-MW8	08/15/14	5	<5.0b	<0.50		<0.0048	0.0051	<0.0048	<0.0048	<0.0048	<0.048	<0.0096	<0.0096	<0.0096	<0.0048	<0.0048	<0.048		
S-8-MW8	08/15/14	8	41b,c	22		< 0.50	< 0.50	< 0.50	3.4	2.1	<5.0	< 0.99	< 0.99	< 0.99	<0.50	<0.50	<5.0		
S-10-MW8	08/15/14	10	<5.0b	3.3		< 0.0051	0.044	< 0.0051	0.17	0.15	<0.051	<0.010	<0.010	<0.010	<0.0051	<0.0051	0.15		
S-15-MW8	08/15/14	15	<5.0b	<0.48		<0.0052	0.032	<0.0052	<0.0052	<0.0052	<0.052	<0.010	<0.010	<0.010	<0.0052	<0.0052	<0.052		
VW1	11/01/10	5.5-6	<5.0b	<0.50		<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050			
VW2	11/02/10	5.5-6	<5.0b	<0.50		<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050			
VW3	11/01/10	5.5-6	<5.0b	<0.50		<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050			
V V V O	1 1/0 1/ 10	5.5-0	\J.UU	\0.50		<u> </u>	<0.0000	<u> </u>	<0.0000	\0.010	\0.030	\0.010	\0.010	\0.010	\0.0030	~0.0030			
VW4	11/02/10	5.5-6	<5.0b	3.7c		<0.0050	<0.0050	<0.0050	0.0050	0.0050a	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050			
VW5	11/02/10	5.5-6	<5.0b	<0.50		<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050			
S-5-SVS1	06/18/12	5	<5.0b	<0.50		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010					
S-5-SVS2	06/18/12	5	<5.0b	<0.50		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010					
S-5-SVS3	06/18/12	5	<5.0b	<0.50		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010					
3 0 0 0 0 0 0	00/10/12	3	\J.UD	~0.00		~0.0000	.0.0000	-0.0000	.0.0000	.0.0000	~0.000	~0.010	~0.010	~0.010					

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Sample	Sample	Depth	TPHd	-		MTBE 8260B	В	T	E	X	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB	Naphthalene	Lead	TOG
ID Environmental	Date Screening Lev	(feet bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Tier 1	Screening Lev	reis, litt i (F	240	100	0.023	0.023	0.044	2.9	1.4	2.3	0.075				0.0045	0.00033	0.023	80	
Borings AB-1	03/05/98	5 - 6		ND	ND		ND	ND	ND	ND									
AB-2	03/05/98	4 - 5		ND	ND		ND	ND	ND	ND									
AB-3	03/05/98	5.5		ND	ND		ND	ND	ND	ND									
AB-4	03/05/98	5 - 6		18	ND		ND	ND	ND	ND									
AB-5	03/05/98	3 - 4		170	ND		ND	ND	0.65	ND									
AB-6	03/05/98	5		230	ND		ND	ND	ND	ND									
AB-7	03/05/98	4-5		19	ND		ND	ND	0.032	ND									
AB-8	03/05/98	5		ND	ND		ND	ND	ND	ND									
AB-9	03/05/98	4		16	ND		0.006	ND	0.028	ND									
AB-10	03/05/98	4		ND	ND		ND	ND	ND	ND									
AB-11	03/05/98	5 - 6		3.9	ND		ND	ND	ND	ND									
AB-12	03/16/98	5 - 6		ND	ND		ND	ND	ND	ND									
AB-13	03/16/98	5 - 6		ND	ND		ND	ND	ND	ND									
MP-1	11/16/98	7.5		10	ND		ND	0.007	0.013	ND									
MP-2	11/16/98	7		270	ND		ND	0.03	0.29	2.1									
MP-2	11/16/98	10.5		140	0.15		0.08	ND	0.31	ND									
MP-3	11/16/98	7.5		230	0.28		ND	0.1	1.6	ND									
MP-4	11/16/98	5		120	0.19		ND	ND	0.35	ND									
MP-4	11/16/98	10		18	ND		ND	0.013	0.07	0.086									
MP-5	11/16/98	6.5		6.4	ND		ND	ND	0.015	0.022									
MP-5	11/16/98	10.5		220	0.52		ND	ND	1.4	3									
MP-6	11/16/98	7		ND	ND		ND	ND	ND	ND									
MP-6	11/16/98	10		240	0.92	ND	ND	ND	1.6	4.2									
HA-1	01/25/00	5		<0.50	<0.025		<0.0050	<0.0050	<0.0050	<0.010									
B1	11/17/10	5-5.5	<5.0b	<0.50		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050			

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Sample	Sample	Depth	TPHd	TPHg	MTRE 9024	MTBE 8260B	В	Т	E	Х	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB	Naphthalene	Lead	TOG
ID	Date	(feet bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
	Screening Lev	` ,		, , ,	(IIIg/kg)	(Hig/kg)	(Hig/kg)	(Hig/kg)	(IIIg/kg)	(Hig/kg)	(IIIg/kg)	(mg/kg)							
Tier 1	Screening Lev	eis, Hei i (F	240	100	0.023	0.023	0.044	2.9	1.4	2.3	0.075				0.0045	0.00033	0.023	80	
ilei i			240	100	0.023	0.023	0.044	2.3	1.4	2.0	0.073				0.0043	0.00033	0.023	00	
B1	11/18/10	9.5-10	<5.0b	<0.50		<0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	< 0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050			
B1	11/18/10	14.5-15	<5.0b	<0.50		<0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050		<0.010	< 0.010	< 0.010	< 0.0050	< 0.0050			
B1	11/18/10	19.5-20	<5.0b	< 0.50		<0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050		< 0.010	< 0.010	< 0.0050	< 0.0050			
B1	11/18/10	24.5-25	<5.0b	< 0.50		<0.0050	< 0.0050			< 0.0050		<0.010	< 0.010	< 0.010	<0.0050	< 0.0050			
	,, .		10.00	10.00		10.0000	10.0000	10.0000	10.0000	10.0000	10.000	10.0.0	101010	10.0.0	10.0000	10.0000			
B2	11/17/10	5-5.5	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	<0.0050	<0.0050	< 0.050	<0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B2	11/18/10	8.5-9	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B2	11/19/10	14.5-15	<5.0b	< 0.50		< 0.0050	< 0.0050	<0.0050	< 0.0050	<0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B2	11/19/10	19.5-20	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	<0.0050	<0.0050		< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
В3	11/17/10	5-5.5	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
В3	11/18/10	9.5-10	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050		< 0.010	< 0.010	<0.0050	<0.0050			
В3	11/19/10	12-12.5	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
В3	11/19/10	14.5-15	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
В3	11/19/10	17-17.5	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B3	11/19/10	19.5-20	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	<0.0050	< 0.0050	< 0.050	<0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B4	11/17/10	5-5.5	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	<0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B4	11/18/10	9.5-10	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B4	11/19/10	14.5-15	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B4	11/19/10	19.5-20	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	<0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B5	11/17/10	5-5.5	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B5	11/18/10	9.5-10	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B5	11/19/10	14.5-15	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	<0.0050	<0.0050			
B5	11/19/10	19.5-20	<5.0b	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	<0.0050	< 0.050	<0.010	<0.010	<0.010	<0.0050	<0.0050			
Tank Excavation	on Samples																		
S-1	08/05/94	11		6.5			0.18	0.082	0.37	1.2									
S-2	08/05/94	11		3.2			0.11	< 0.050	0.16	0.21									
S-3	08/05/94	11		540			<1.5	4.1	24	72									
S-4	08/05/94	11		73			<0.067	0.21	1.5	6.8									
S-5	08/05/94	11		0.84			<0.050	< 0.050	<0.050	0.031									
S-6	08/05/94	11		40			<0.014	0.059	0.25	0.6									
TS-1	01/04/96	4	21	3.8			<0.005	0.0085	<0.005	<0.005								<2.5	
TS-2	01/04/96	4	20	<1.0			<0.005	< 0.005	< 0.005	0.0053								<2.5	
TS-3	01/04/96	4	44	9.5			0.11	0.28	0.019	0.021								160	
TS-4	01/04/96	5	1.8	1.7			<0.005	0.014	0.0081	0.0086								<2.5	
TS-5	01/04/96	5	2.0	<1.0			<0.005	<0.005	<0.005	<0.005								<2.5	
TS-6	01/04/96	4	2.0	<1.0			<0.005	0.0095	<0.005	0.015								86	
TPSW-1	02/14/96		160	640			<0.0050		6.5	36								5.3	
TPSE-1	02/14/96		160	93			<0.0050	<0.0050	0.43	2.7								5.8	
	Excavation San	-																	
WO-1	08/05/94	6	1.2	21			<0.015	0.11	0.34	1.5								4.3	94
S-WON	01/04/96	3	2.9	<1.0			< 0.005	< 0.005	< 0.005	< 0.005								30	8.5

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0	0	Danil	TDILL	TDII	MTDE 0004	MTDE 00000	<u> </u>	-	_	V	TDA	DIDE	ETDE	T A B 4 F	4.0.00.	EDE	NI I- II I -	1 1	TOO
Sample	Sample	Depth	TPHd	•		MTBE 8260B	B	T	E	X	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB	Naphthalene	Lead	TOG
ID	Date	(feet bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Environmental So	creening Le	eveis, Her 1 (F			0.000	0.000	0.044	0.0	4.4	0.0	0.075				0.0045	0.00000	0.000	00	
Tier 1			240	100	0.023	0.023	0.044	2.9	1.4	2.3	0.075				0.0045	0.00033	0.023	80	
S-WOS	01/04/96	3	1.6	<1.0			<0.005	<0.005	<0.005	0.095								28	10
Product Line San	nples																		
PL1-1	02/14/96	3.0	14	<1.0			<0.0050	< 0.0050	<0.005	< 0.0050								11	
PL1-2	02/14/96	2.5	<1.0	<1.0			<0.0050	< 0.0050	<0.0050	< 0.0050								5.0	
PL1-3	02/15/96	2.5	37	240			0.24	0.59	1.1	1.3								6.5	
PL1-5	02/15/96	2	4.9	63			0.30	0.42	0.31	0.41								8.2	
PL4-1	02/14/96	3.0	7.7	1.4			0.056	0.078	0.0073	0.0420								9.9	
PL4-2	02/15/96	2.5	<1.0	<1.0			< 0.0050	<0.0050	< 0.0050	< 0.0050								5.5	
PL4-3	02/15/96	5	3.0	4.3			0.0086	0.0075	0.040	0.058								6.3	
PL4-4	02/15/96	5.0	3.2	<1.0			<0.0050	<0.0050	<0.0050	<0.0050								4.6	
Soil Stockpile Sa	mples																		
WO-(1-2) d	01/04/96		38	<1.0			< 0.005	< 0.005	< 0.005	< 0.005								20	240
SPPL4-(1-4)	03/01/96		11	9			0.013	0.03	0.13	0.054								<2.5	
Comp-1	01/25/00			< 0.50	< 0.025		< 0.0050	< 0.0050	< 0.0050	< 0.010								8.04	
S-SP1-1	06/19/12		< 5.0	< 0.50		< 0.0050	< 0.0050		< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.0050		16.1	
S-SP1-2	06/19/12		<5.0	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.0050		24.4	
S-SP1-3	06/19/12		5.7	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	< 0.0050			12.7	
S-SP1-4	06/19/12		<5.0	< 0.50		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.0050		21.5	
SP1	08/11/14		<4.9b	0.91c		<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0098	<0.0098	<0.0098	<0.0049	<0.0049	<0.049	9.74	
Notes:																			
TPHd	=	Total petrole	um hydrod	arbons as	diesel analy	zed using EPA	Method 80)15B.											
TPHg	=	Total petrole	um hydrod	arbons as	gasoline and	alyzed using EP	A Method	8015B.											
MTBE 8021	=	Methyl tertiar	y butyl eth	er analyze	d using EPA	Method 8020 o	r 8021B.												
MTBE 8260B	=	Methyl tertiar	y butyl eth	er analyze	d using EPA	Method 8260B.													
BTEX	=	Benzene, toli	uene, ethyl	benzene,	and total xyle	enes analyzed u	sing EPA	Method 82	60B.										
TBA	=	Tertiary butyl	alcohol ar	nalyzed us	ing EPA Met	hod 8260B.													
DIPE	=	Di-isopropyl e	ether analy	zed using	EPA Method	8260B.													
ETBE	=	Ethyl tertiary	butyl ether	analyzed	using EPA N	lethod 8260B.													
TAME	=	Tertiary amyl	methyl eth	ner analyze	ed using EPA	A Method 8260E	3.												
1,2-DCA	=	1,2-dichloroe																	
EDB	=	1,2-dibromoe	thane ana	lyzed usin	g EPA Metho	od 8260B.													
TOG	=	Total oil and	grease.																
Green	=	Soil has beer	n excavate	d.															
ND	=	Not detected			ratory reporti	ng limit.													
feet bgs	=	Feet below g																	
mg/kg	=	Milligrams pe																	
<	=	Less than the		-															
	=	Not analyzed			•														
a	=					the reporting li			ooratory m	ethod dete	ection limit	t. Reported	d value is	estimated.					
b	=	•		•		I treatment prior	•												
С	=	The chromate	ographic p	attern doe	s not match t	that of the speci	fied standa	ard.											

Additional analysis: cadmium (<0.0250 mg/kg), chromium (12 mg/kg), lead (4.3 mg/kg), nickel (38 mg/kg), and zinc (71 mg/kg).

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Well		Sample	Depth	O ₂ + A	Methane	CO ₂	Helium	Vacuum	TPHg	MTBE	В	т	Е	X	1,2-DCA	EDB	TBA	Ethanol	Add'l VOCs
ID		Date	(feet bgs)	(%V)	(%V)	(%V)	(%V)	(%V)	(µa/m³)	(µg/m ³)	(µg/m ³)	(µg/m³)	(µg/m ³)	(µg/m ³)			(µg/m ³)	(µg/m ³)	(µg/m³)
	menta	I Screening			/		, ,	, ,	(μg/π)	(µg/III)	(µg/III)	(µg/III)	(µg/III)	(µg/III)	(µg/III)	(µg/III)	(µg/III)	(µg/III)	(µg/III)
Residen		_							300,000	5,400	48	160,000	560	52,000	54	2.3			
		dustrial Land	Use						2,500,000	47,000	420	1,300,000	4,900	440,000	470	20			
-										·			·	·					
SVS1		06/25/12		11	< 0.500	0.817	0.0107	-5.00	8,200	<7.2	11	12	6.2	26	<2.0	<3.8	<6.1	<9.4	18g, 4.8h, 2.8i, 7.0j, 2.7k, 1.1l
SVS2		06/25/12		15.5	< 0.500	3.27	<0.0100	-5.00	<7,000	<7.6	5.7	4.6	4.1	25	<2.1	<4.1	<6.4	<10	15g, 15i, 5.7j, 8.9k
SVS3		06/25/12		20.3	<0.500	1.69	<0.0100	-5.00	<7,000	<7.2	9.6	4.5	<2.2	13	<2.0	<3.8	<6.1	<9.4	3.1a, 18g, 16i, 13j, 6.8k, 37n, 6.9o
VW1		11/09/10	5-6	2.75	<0.895	110			100.000	-10	10	17	90	100	<3.6	<6.9	-11		
VW1		06/26/12	5-6	3.75 7.76	0.514	14.0 11.2	0.0688	 -5.00	190,000 8,100	<13 <8.0	10 47	33	80 9.4	84	<3.6 <2.2		<11 <6.7	39	120 12h 110 16d 27g 0.4h 9.9i 52i 2.7m
									•							<4.3			12a, 12b, 4.1c, 16d, 37g, 9.4h, 8.8i, 53j, 3.7m
VW1		06/26/15 q	5-6																
VW2		11/09/10	5-6	18.5	<0.680	3.02			20,000	<9.8	<2.2	<2.6	<3.0	<12	4.8	<5.2	<8.2		
VW2		06/26/12	5-6	16.9	< 0.500	4.28	< 0.0100	-5.00	<7,000	<7.2	2.2	3.0	<2.2	<8.7	<2.0	<3.8	<6.1	25	4.2e, 6.1g, 4.0j, 300k, 4.7n, 8.1o
VW2		06/26/15 p	5-6						<7,000	<7.2	4.7	2.6	1.2	29	<2.0	<3.8	<15		8.9h
VW3		11/09/10	5-6	1.55	<0.765	16.6			120,000	<11	9.7	25	9.0	36	4.2	<5.9	<9.3		
VW3		06/26/15 p	5-6						260,000	<14	6.0	<38	84	68	<4.0	<7.7	<30		76c, 180d, 46m
VW4		11/09/10	5-6	1.59	14.2	14.1	<0.00164		250.000.000	<10.000	16.000	9,200	71.000	60,000	<2,900	<5,400	<8,500		
VW4		06/26/12	5-6	2.27	40.4	18.0	<0.0100	-5.00	220,000,000	<7,200	30,000	<1,900	95,000	20,000	<2,000	<3,800	<6,100	<9,400	29,000c, 72,000d, 15,000m
VW4	Dup	06/26/12 f	5-6	21.6	1.36	<0.500	1.98	-5.00	4,500,000	<720	900	<190	2,300	<870	<200	<380	<610	<940	530c, 1,100d, 310m
VW4	Бир	06/26/15 p							140,000,000	<7,200	18.000	<19,000	50,000	21,000	<2,000		<15,000		15,000c, 30,000d, 11,000m
****		00/20/10 P	0.0						140,000,000	<1 ,200	10,000	110,000	30,000	21,000	\2 ,000	\3,000	110,000		10,0000, 00,0000, 11,00011
VW5		11/09/10	5-6	10.3	6.61	12.5	<0.00164		31,000,000	<2,300	1,000	<590	<680	<2,700	<640	<1,200	<1,900		
VW5	Dup	11/09/10	5-6	9.10	6.44	13.1	< 0.00164		30,000,000	<2,200	740	<570	<660	<2,600	<610	<1,200	<1,800		
VW5		06/26/12	5-6	14.6	5.36	7.95	< 0.0100	-5.00	4,300,000	<720	370	<190	<220	<870	<200	<380	<610	<940	ND
VW5		06/26/15 q	5-6																

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Notes:

 $O_2 + A$ = Oxygen plus argon analyzed using ASTM D-1946.

Methane = Methane analyzed using ASTM D-1946.

CO₂ = Carbon dioxide analyzed using ASTM D-1946.

Helium = Helium analyzed using ASTM D-1946. Vacuum = Vacuum collected using a vacuum gauge.

TPHg = Total petroleum hydrocarbons analyzed using EPA Method TO-3M.

MTBE = Methyl tertiary butyl ether analyzed using EPA Method TO-15.

BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method TO-15.

1,2-DCA = 1,2-dichloroethane analyzed using EPA Method TO-15.
 EDB = 1,2-dibromoethene analyzed using EPA Method TO-15.
 TBA = Tertiary butyl alcohol analyzed using EPA Method TO-15.

Ethanol = Ethanol analyzed using EPA Method TO-15.

Add'l VOCs = Additional volatile organic carbons analyzed using EPA Method T0-15.

feet bgs = Feet below ground surface.

%V = Percent by volume.

 $\mu g/m^3$ = Micrograms per cubic meter.

--- = Not analyzed.

a = 1,2-dichlorobenzene.
b = 1,4-dichlorobenzene.
c = 1,3,5-trimethylbenzene.
d = 1,2,4-trimethylbenzene.
e = Bromodichloromethane.

f = Leak detection compound reported, biased low.

g = Acetone.
h = 2-Butanone.
i = Carbon disulfide.
j = Chlorobenzene.
k = Chloroform.
l = Chloromethane.
m = 4-ethyltoluene.
n = Trichloroethene.
o = Tetrachloroethene.

p = Samples collected in a tedlar bag.

q = Unable to sample well due to wet conditions.

TABLE 5 CUMULATIVE PID READINGS, VAPOR WELLS

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Sample	VW1	VW2	VW3	VW4	VW5
Date	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
08/01/14	559	118	146	>7,000	500
08/18/14	317	1.9	85.8	1,780	395
08/22/14	62	0.4	122	>9,000	473
12/31/14	75.2	Wet	178.1	1,499	165.4
01/23/15	1.2	2.2	64	3,680	18
06/26/15	Wet	0.7	79.5	2,319	Wet
08/14/15	Wet	6.2	16.6	2,740	Wet
03/25/16	18.3	Wet	69.3	1,447	Wet
07/12/16	7.5	1.1	46.2	2,244	Wet

Notes:

ppm = Parts per million.

APPENDIX A

FIELD PROTOCOL



Soil Vapor Sampling Well Installation and Sampling Field Protocol

Preliminary Activities

Prior to the onset of field activities at the site, Cardno obtains the appropriate permit(s) from the governing agency(s). Advance notification is made as required by the agency(s) prior to the start of work. Cardno marks the borehole locations and contacts the local one call utility locating service at least 48 hours prior to the start of work to mark buried utilities. Borehole locations may also be checked for buried utilities by a private geophysical surveyor. Prior to drilling, the borehole location is cleared in accordance with the client's procedures. Fieldwork is conducted under the advisement of a registered professional geologist and in accordance with an updated site-specific safety plan prepared for the project, which is available at the job site during field activities.

Well Construction

The borehole is advanced to the desired depth using either a direct-push rig, hand auger, or air vacuum rig. Lithologic conditions are recorded on a boring log during borehole advancement, and select soil matrix sampling may be conducted based on soil characteristics.

Each soil vapor sampling (SVS) well is constructed using inert screen material attached to ½-to ½-inch outer diameter inert tubing. A gas-tight vacuum fitting or valve is attached to the top of each length of tubing using a female compression fitting. Each screen is set within a minimum of a 12-inch thick appropriately sized sand pack, with a minimum of 3 inches of sand pack above the top of the screen. A minimum of 4 inches of dry granular bentonite is set above each screen and associated sand pack. In SVS wells with multiple and separate casings and screens, the annular space between the top of the dry granular bentonite above the deep screen and the bottom of the sand pack associated with the shallow screen is sealed with a minimum of 18 inches of hydrated bentonite. The remainder of the annular space of the well is sealed with hydrated bentonite to 1 foot below ground surface. Wellheads are finished with traffic-rated well boxes set in concrete flush with the surrounding grade. No glues, chemical cements, or solvents are used in well construction.

A boring log is completed with the construction details for each well, including the materials of construction, depth of the borehole, screen length, and annular seal thickness.

Soil Vapor Sampling

Samples are collected using a soil vapor purging and sampling manifold consisting of a flow regulator, vacuum gauges, vacuum pump, shroud, and laboratory-prepared, gas-tight, opaque containers such as Summa™ canisters. Samples may also be collected using a syringe and analyzed by a mobile laboratory. Prior to use, Summa™ canisters are checked to ensure they are under the laboratory induced vacuum between 31 and 25 inches of mercury (in. Hg). New inert tubing is used to purge and sample each well. Prior to purging and sampling each SVS well, the sampling manifold is connected to the gas-tight vacuum fitting or valve at the wellhead, and the downstream tubing and fittings are vacuum tested at approximately 24 to 28 in. Hg. Purging and sampling are conducted only on SVS wells when the tubing and fittings hold the applied vacuum for 5 minutes per vacuum gauge reading.

When required, Cardno conducts a purge volume versus constituent concentration test on at least one SVS well prior to purging and sampling activities. The purge volume test well is selected based on the location of the anticipated source of chemical constituents at the site and on the location of anticipated maximum soil vapor concentrations based on lithologic conditions. If the SVS well has been in place for more than 1 week, it is assumed that soil vapor in the sand pack has equilibrated with the surrounding soil, and only the screen and tubing volumes are included in the purge volume calculation. If the SVS well has been in place for less than 1 week, the volume of the sand pack around the screen is included in the purge volume calculation. A photo-ionization detector (PID) or on-site mobile laboratory is used to evaluate concentrations of chemical constituents in the vapor stream after 1, 3, and 10 volumes of vapor have been purged from the SVS well. Purging is conducted at a rate of 100 to 200

milliliters per minute (ml/min). The purge volume exhibiting the highest concentration is the volume of vapor purged from each SVS well prior to sampling. If the three separate purge volumes produce equal concentrations a default of 3 purge volumes is extracted prior to sampling.

Prior to sampling, a helium leak test is performed at each SVS well, including a summa canister and its fittings, to check for leaks in the SVS annulus. To assess the potential for leaks in the SVS well annulus, a shroud is placed over the SVS well and summa canister and the shroud is filled with a measured amount of helium. Helium screening is performed in the field by drawing soil gas into a Tedlar bag via a lung-box and screening the contents of the Tedlar bag with a helium meter. The concentration of helium in the sample divided by the concentration of helium in the shroud provides a measure of the proportion of the sample attributable to leakage. A leak that comprises less than 5% of the sample is insignificant. Helium screening is also performed using laboratory analysis of the contents of the summa canister collected under the shroud. Sampling is conducted at approximately the same rate of purging, at 100 to 200 ml/min. Soil vapor samples are submitted under chain-of-custody protocol for the specified laboratory analyses.

At a minimum, weather conditions (temperature, barometric pressure and precipitation), the sampling flow rate, the purge volume, the helium leak detection percentage results, the sample canister identification number, the method of sample collection, and the vacuum of the sampling canister at the start and end of sample collection (if applicable) are recorded on a log for each SVS well purged and sampled.

Decontamination Procedures

If soil samples are collected, Cardno or the contracted driller decontaminates the soil sampling equipment between each sampling interval using a non-phosphate solution, followed by a minimum of two tap water rinses. De-ionized water may be used for the final rinse. Downhole drilling equipment is steam-cleaned or triple-rinsed prior to advancing each borehole.

Waste Treatment and Disposal

Soil cuttings generated from the well installation are stored on site in labeled, Department of Transportation-approved, 55-gallon drums or other appropriate storage container. The soil is removed from the site and transported under manifest to a client- and regulatory-approved facility for recycling or disposal. Decontamination water is stored on site in labeled, regulatory-approved storage containers, and is subsequently transported under manifest to a client- and regulatory-approved facility for disposal or treated with a permitted mobile or fixed-base carbon treatment system.