

VOLKSWAGEN

GROUP OF AMERICA

November 20, 2013

Mr. Jerry Wickham, PG, CEG, CHG
Alameda County Health Care Services
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject:

Submittal of the Groundwater Monitoring Report for
Volkswagen Automobile Dealership
2740 Broadway Avenue, Oakland, California
Fuel Leak Case No. RO0000400 and GeoTracker Global ID T0600100227

Dear Mr. Wickham:

Enclosed please find the groundwater monitoring report that was prepared by ARCADIS-US (the "ARCADIS Letter") for CBRE – Global Corporate Services (CBRE) on behalf of Volkswagen Group of America (VWoA). The results of the groundwater monitoring activities that were conducted at the Site in September 2013 are summarized therein.

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

VWoA, CBRE, and ARCADIS appreciate the opportunity to submit the enclosed report to the ACEH for your consideration, and we look forward to working with you and your team to bring this project to regulatory case closure.

VOLKSWAGEN GROUP OF AMERICA, INC.
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HERNDON, VA 20171
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VOLKSWAGEN

GROUP OF AMERICA

If you have any questions or comments, please call me at (248) 754 4339 or
Ron Goloubow of ARCADIS at (510) 596-9550.

Sincerely,



Eric S. Carlson
Director, Group Marketing, Real Estate, and
Affiliate Operations

Attachment

VOLKSWAGEN GROUP OF AMERICA, INC.
2200 FERDINAND PORSCHE DRIVE
HERNDON, VA 20171
PHONE +1 703 364 7000



Mr. Jerry Wickham, PG, CEG, CHG
Alameda County Health Care Services
Environmental Health Services, Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject:

Submittal of the Environmental Groundwater Monitoring Report for
Volkswagen Automobile Dealership
2740 Broadway Avenue, Oakland, California
Fuel Leak Case No. RO0000400 and GeoTracker Global ID T0600100227

Dear Mr. Wickham:

ARCADIS U.S., Inc. (ARCADIS) was retained by CBRE – Global Corporate Services (CBRE) on behalf of Volkswagen Group of America (VWoA) to provide environmental consulting services for the Volkswagen Automobile Dealership located at 2740 Broadway Avenue, in Oakland, California (the Site). The environmental services are required at the Site in order to respond to the letter from the Alameda County Health Care Services Agency (ACEH) to CBRE dated November 15, 2012, requesting quarterly groundwater monitoring at the Site. The attached environmental groundwater monitoring report satisfies this requested scope of work. Per the instructions within the ACEH letter, this report is being submitted via the ACEH FTP site and the State Water Resources Control Board (SWRCB) GeoTracker website.

We look forward to working with you on this important project. If you have questions regarding this report, please call Ron Goloubow at 510-596-9550 or Jay Shipley at 562-496-3001.

Sincerely,

ARCADIS U.S., Inc.

Jay M. Shipley, PE
Senior Vice President

Ron Goloubow, PG
Principal Geologist

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Environment

Date:

November 25, 2013

Contact:

Ron Goloubow

Phone:

510.596.9550

Email:

ron.goloubow@arcadis-us.com

Our ref:

EM001048.0001.00001

Imagine the result

CBRE – Global Corporate Services

**Groundwater Monitoring
Report**

Volkswagen Automobile Dealership
2740 Broadway Avenue
Oakland, California

November 25, 2013

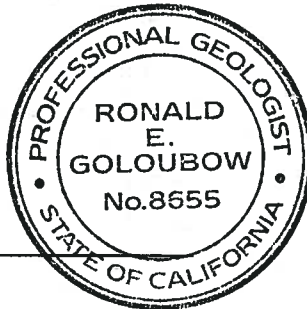


Caitlin Bell

Caitlin Bell, PE
Project Environmental Engineer

R. Goloubow

Ron Goloubow, PG
Principal Geologist
California Professional Geologist (8655)



Expires Nov. 30, 2015

JM Shipley

Jay M. Shipley, PE
Senior Vice President

Groundwater Monitoring Report

Volkswagen Automobile
Dealership
2740 Broadway Avenue
Oakland, California

CBRE – Global Corporate Services

Prepared by:
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Tel 510 652 4500
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Our Ref.:
EM001048.0001

Date:
November 25, 2013

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Groundwater Monitoring Report

Volkswagen Automobile Dealership
2740 Broadway Avenue
Oakland, California

1. Introduction

ARCADIS U.S., Inc. (ARCADIS) has prepared this groundwater monitoring report for CBRE – Global Corporate Services (CBRE) on behalf of Volkswagen Group of America for the Volkswagen Automobile Dealership located at 2740 Broadway Avenue, in Oakland, California (the Site; Figures 1 and 2). Groundwater monitoring and reporting is being conducted at the Site in response to the letter from the Alameda County Health Care Services Agency – Alameda County Environmental Health (ACEH) to CBRE dated November 15, 2012 (ACEH 2012).

This report presents the data from groundwater samples collected from July 1 to September 30, 2013 (the Reporting Period) and provides the historical chemical concentration data.

2. Background

Based on a review of available historical reports acquired from the ACEH website, soil and groundwater investigation activities have taken place at this Site since 1988 when four underground storage tanks (USTs) were removed from the Site (Engineering Services 1989): one 1,000-gallon capacity UST (Tank A) used to store waste oil (formerly located near the garage near 27th Street); one 300-gallon capacity UST (Tank B) used to store waste oil (formerly located along Broadway Avenue); and one 550-gallon capacity UST (Tank C) and one 1,500-gallon capacity UST (Tank D) both used to store gasoline (formerly located along 28th Street). Figure 2 illustrates the locations of the former USTs, groundwater monitoring wells, and soil vapor extraction wells, as adapted from historical reports (Environmental Science and Engineering Inc. [ESE] 1991b and QST Environmental 1999) and recent site reconnaissance. The soil vapor extraction wells contain groundwater and groundwater samples have been collected and analyzed from these wells.

Based on the soil samples collected and observations made during the removal of the USTs, a total of six groundwater monitoring wells (MW-1 and MW-3 through MW-7) were installed to a total depth of between 20 and 30 feet below grade in the sidewalk and 28th Street near the former USTs C and D. Groundwater monitoring well MW-2 was installed near the former waste oil UST located near Broadway Avenue (Tank B). Reportedly, three wells (MW-4, MW-5, and MW-6) were abandoned in 1994. Additionally, well MW-2 was indicated as an abandoned well in a map included in an ESE report (ESE 1991a) and does not appear in the recent data summary tables. The highest concentrations of total petroleum hydrocarbons as gasoline (TPHg) and

benzene, toluene, ethylbenzene, and total xylenes (BTEX) have historically been detected in groundwater samples collected from well VW-3 located approximately adjacent to former USTs C and D located along 28th Street (Mactec 2003).

A soil vapor and groundwater extraction system reportedly operated at the Site from February 1996 through March 1998. The extraction system was comprised of four vapor and groundwater extraction wells (SV-1 through SV-3 and MW-3; Mactec 2003). The details regarding the operational history of this extraction system were not provided (i.e., flow rates, mass of contaminants removed).

In June 2012, ARCADIS coordinated the redevelopment and sampling of the remaining groundwater monitoring and vapor extraction wells on site (ARCADIS 2012). Groundwater monitoring wells MW-1, MW-3, and MW-7 and former soil vapor extraction wells VW-1, VW-2, and VW-3 were redeveloped and sampled (Figure 2). In July 2013 ARCADIS coordinated the installation of wells MW-8 and MW-9 (ARCADIS 2013).

3. Groundwater Elevation

ARCADIS retained Confluence Environmental Inc. to conduct groundwater sampling at the Site on September 26, 2013. Prior to commencement of groundwater sampling, each well was inspected and a depth to groundwater measurements was collected at each well using a water level meter (Table 1). The depth to water level measurement from each well was recorded in the field and the field data are included in Appendix A. The groundwater elevations measured at the Site were used to produce a groundwater elevation contour map (Figure 3). From this information, groundwater direction was determined to be towards the west-northwest under a gradient of 0.01 feet per foot between wells MW-1 and MW-8. This groundwater flow direction and gradient is consistent with the measurements conducted in June 2012 (ARCADIS 2012). A groundwater flow direction to the north has also been reported at the Site (ESE 1991b).

4. Well Sampling

Groundwater purging and sampling was completed using conventional low-flow techniques in accordance with the United States Environmental Protection Agency's (USEPA's) protocol (USEPA 1996). A low-flow peristaltic pump was used to minimize the drawdown during purging. Water quality parameters were monitored during well purging using an in-line monitoring device. Groundwater samples were collected after

the water quality parameters had stabilized for at least three successive readings (Table 2). These water quality parameters were recorded in the field and the field data are included in Appendix A.

Groundwater samples were collected using a low-flow pump into the appropriate laboratory-supplied groundwater sample containers. The sample containers were stored on ice and delivered under chain of custody procedure to Curtis & Tompkins Laboratory located in Berkeley, California. Groundwater samples and a duplicate sample were submitted for the analyses below. An equipment blank and trip blank were collected and submitted to the laboratory, but were not analyzed unless other results were identified as inconsistent.

- TPHg and BTEX using USEPA Method 8260B
- TPH as diesel (TPHd) and TPH as motor oil (TPHmo) using USEPA Method 8015

All investigation-derived waste is currently stored on site in an appropriately labeled 55-gallon drum for later characterization and disposal.

5. Groundwater Monitoring Results

Analytical results for groundwater samples collected at the Site indicate that detectable concentrations of petroleum-related compounds are present in the vicinity of the former gasoline USTs formerly located near 28th Street. A summary of the analytical results for groundwater samples collected at the Site from historical and recent monitoring events is included in Table 3 and the laboratory analytical report for the samples collected in September 2013 is provided as Appendix B. Concentration contour maps for TPHg and benzene are provided as Figures 4 and 5.

TPHg was detected above laboratory reporting limits in samples collected from wells MW-8, MW-9, VW-2, and VW-3 at concentrations ranging from 850 to 8,300 micrograms per liter ($\mu\text{g/L}$). TPHd was detected above laboratory reporting limits in the samples collected from wells MW-1, MW-8, MW-9, VW-2, and VW-3 at concentrations ranging from 120 to 2,900 $\mu\text{g/L}$. TPHmo was only detected above the laboratory reporting limit in the sample collected from former vapor extraction well VW-3 at a concentration of 370 $\mu\text{g/L}$. Benzene was detected above laboratory reporting limits in the samples collected from wells MW-3, MW-8, MW-9, VW-2, and VW-3 at concentrations ranging from 2.6 to 650 $\mu\text{g/L}$. Toluene was detected above laboratory reporting limits in the samples collected from wells MW-8 and VW-2 at concentrations



Groundwater Monitoring Report

Volkswagen Automobile
Dealership
2740 Broadway Avenue
Oakland, California

of 3.3 µg/L and 38 µg/L, respectively. Ethylbenzene was detected above laboratory reporting limits in the samples collected from wells MW-8, MW-9, and VW-2 at concentrations ranging from 56 to 690 µg/L. Total xylenes was detected above laboratory reporting limits in wells MW-8, MW-9, VW-2, and VW-3 at concentrations ranging from 8.3 to 610 µg/L.

Detected concentrations were compared to the Tier I Environmental Screening Levels (ESLs) for groundwater that is a current or potential source of drinking water (California Regional Water Quality Control Board 2013). These screening levels were chosen as a conservative comparison. Concentrations of TPHg, TPHd, TPHmo, and/or BTEX, in wells MW-1, MW-8, MW-9, VW-2, and/or VW-3 were detected above the applicable ESL. Table 3 compares the detected groundwater concentrations with the applicable ESL.

6. Conclusion and Further Actions

The results for the September 2013 groundwater monitoring event are consistent with the analytical results for groundwater samples previously collected at the Site. The data suggest that affected groundwater at the Site is located near the former gasoline USTs (C and D) and the north side of 28th Street (Figures 4 and 5). Fuel and fuel-related compounds were detected above the applicable ESLs for groundwater samples collected from wells MW-1, MW-8, MW-9, VW-2, and VW-3.

The April 2012 letter from ACEH requested the preparation of a work plan to evaluate whether there is a complete vapor intrusion pathway present at the Site. To this end, a Soil Vapor Sampling Plan was submitted to ACEH in September 2013. Pending ACEH approval of the work plan, this scope will be implemented to assess the potential for a complete vapor intrusion pathway. In the interim, quarterly groundwater monitoring and reporting will continue with the next groundwater monitoring event to take place in December 2013 and the report for that event to be submitted by February 15, 2014.

7. References

- ACEH. 2012. Work Plan Approval and Request for Additional Work for Fuel Leak Case No. RO0000400 and GeoTracker Global ID T0600100227, Broadway Volkswagen, 2740 Broadway Oakland, California. April 6.
- ACEH. 2012. Work Plan Approval and Request for Additional Work for Fuel Leak Case No. RO0000400 and GeoTracker Global ID T0600100227, Broadway Volkswagen, 2740 Broadway Oakland, California. November 15.
- ARCADIS. 2012. Groundwater Monitoring Report, Volkswagen Automobile Dealership, 2740 Broadway Avenue, Oakland, California. July 2.
- ARCADIS. 2013. Soil and Groundwater Investigation Report. September 10.
- California Regional Water Quality Control Board – San Francisco Bay Region. 2008. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Interim Final – Revised 2013.
- Engineering Services, Inc. 1989. Removal of Four Underground Storage Tanks at Broadway Volkswagen, Oakland, California. February 3.
- ESE. 1991a. Report of Quarterly Activities, Broadway Volkswagen, 2740 Broadway, Oakland, California. July 10.
- ESE. 1991b. Report of Quarterly Activities, Broadway Volkswagen, 2740 Broadway, Oakland, California. 2740 Broadway, Oakland, California. November 12.
- Mactec. 2003. Sampling and Closure Report, Broadway Volkswagen, 2740 Broadway, Oakland, California. April 21.
- QST Environmental. 1999. Site Closure Report, Property No. 4286, Broadway Volkswagen, 2740 Broadway, Oakland, California. March 1.
- USEPA. 1996. Ground Water Issue: Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures. Office of Solid Waste and Emergency Response. EPA/540/S-95/504. April.

Tables

Table 1
Groundwater Elevation Data
Volkswagen Automobile Dealership
2740 Broadway Avenue
Oakland, California

Well	Well Casing Elevation ⁽¹⁾⁽²⁾	Screen Interval feet below ground surface	Well Diameter (inches)	Total Well Depth (feet)	Depth to Product ⁽³⁾ 26-Sep-13	Depth to Water ⁽³⁾ 26-Sep-13	Groundwater Elevation ⁽²⁾ 26-Sep-13
MW-1	31.28	5 to 20	2	19.20	NM	8.17	23.11
MW-3	31.68	5 to 20	2	18.60	NM	9.60	22.08
MW-7	31.53	20 to 25	4	23.50	NM	9.76	21.77
MW-8	32.70	16 to 20	2	20.04	NM	10.67	22.03
MW-9	31.85	11 to 15	2	14.94	NM	9.59	22.26
VW-1	31.67	14.5 to 19.5	4	18.55	NM	9.69	21.98
VW-2	31.71	12 to 16.5	4	16.93	NM	9.55	22.16
VW-3	31.11	5 to 15.5	4	NM	NM	8.66	22.45

Notes:

- (1) Survey conducted by PLS Surveys Inc. on July 1, 2013. April 21 and field measurements.
 - (2) In reference to feet above mean sea level.
 - (3) In feet below top of casing (approximately at ground surface).
- NM = Not measured

Table 2
Groundwater Water Quality Parameters
 Volkswagon Automobile Dealership
 2740 Broadway Avenue
 Oakland, California

Well ID	Sample Date	Temp. (Celsius)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mV)
MW-1	09/26/13	18.6	6.59	0.90	6.5	62
MW-3	09/26/13	18.7	420	7.1	7.5	165
MW-7	09/26/13	19.0	346	1.0	7.1	169
MW-8	09/26/13	19.3	702	2.6	7.0	161
MW-9	09/26/13	19.4	991	1.74	7.1	72
VW-1	09/26/13	18.2	340	2.6	6.8	162
VW-2	09/26/13	18.3	538	1.5	6.9	21
VW-3	09/26/13	18.7	610	1.81	7.7	159

Notes:

NA = not analyzed

mg/L = milligrams per liter

Temp. = temperature

Cond. = specific conductance

mS/cm =microSiemens per centimeter

DO = dissolved oxygen

ORP = oxidation-reduction potential

mV = millivolts

Table 3
Summary of Groundwater Analytical Results
 Volkswagen Automobile Dealership
 2740 Broadway Avenue, Oakland, CA

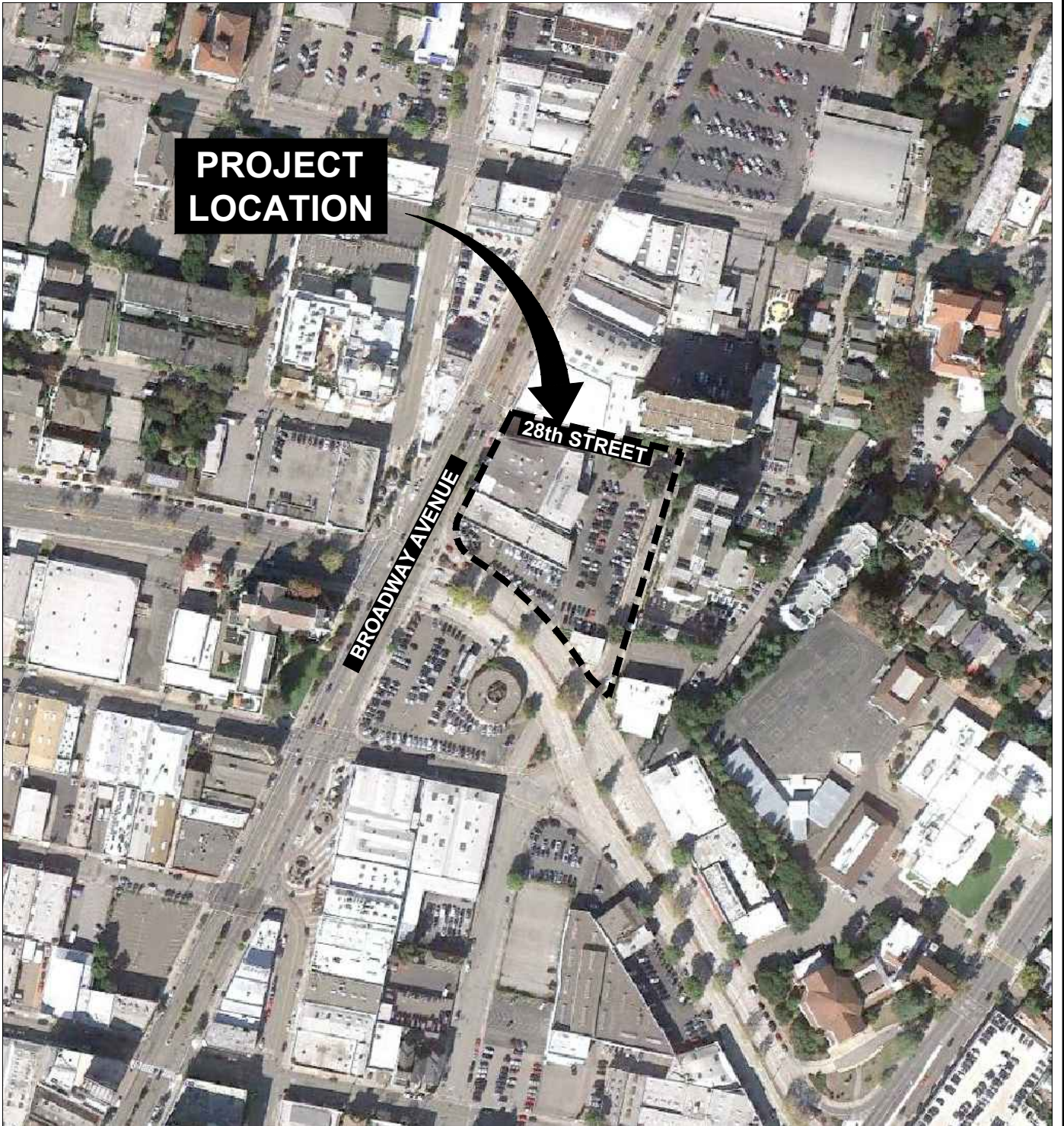
Well Number	Sample Date	TPHg µg/L (C7-C12)	TPHd µg/L (C10 - C24)	TPHmo µg/L (C24-C36)	Benzene µg/L	Toluene µg/L	Ethyl benzene µg/L	Total Xylenes µg/L	MTBE µg/L	TCE µg/L	cDCE µg/L	1,1- Dichloroethene µg/L	1,2- Dichloroethane µg/L	1,3,5- Trimethyl benzene µg/L	1,2,4- Trimethyl benzene µg/L	n-Butyl benzene µg/L	Naphthane µg/L	trans-1,2- Dichloroethene µg/L	TDS µg/L
Tier I ESL µg/L		100	100	100	1	40	30	20	5	5	6	5	0.5	na	na	na	17	na	na
VI ESL (Fine-Coarse Mix) µg/L		No Value	No Value	No Value	270	Sample Soil Gas	3,100	Sample Soil Gas	100,000	1,300	No Value	130,000	1,000	No Value	No Value	No Value	1,600	120,000	No Value
MW-1	01/21/89	ND	na	na	53	13	1.4	8.2	---	na	na	---	na	na	na	na	na	---	na
	05/13/91	130	na	na	ND	ND	ND	ND	---	58	na	---	ND	na	na	na	na	---	na
	10/18/91	ND	na	na	ND	ND	ND	ND	---	120	na	---	ND	na	na	na	na	---	na
	10/27/91	ND	na	na	ND	ND	ND	ND	---	11	na	---	ND	na	na	na	na	---	na
	07/13/93	ND	na	na	ND	ND	ND	ND	---	6.4	na	---	ND	na	na	na	na	---	na
	06/27/96	ND	na	na	ND	ND	ND	ND	---	na	na	---	na	na	na	na	na	---	na
	09/19/96	ND	na	na	ND	ND	ND	ND	---	na	na	---	na	na	na	na	na	---	na
	12/13/96	ND	na	na	ND	ND	ND	ND	---	na	na	---	na	na	na	na	na	---	na
	10/07/97	ND	na	na	ND	ND	ND	ND	ND	na	na	---	na	na	na	na	na	---	na
	08/03/99	ND	na	na	ND	ND	ND	ND	ND	na	na	---	na	na	na	na	na	---	na
	06/08/12	<50	290 Y	<300	<0.5	<0.5	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	---
06/19/13	<50	290 Y	<300	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	na
09/26/13	<50	120 Y	<310	<0.5	<0.5	<0.5	<0.5	<0.5	na	na	---	na	na	na	na	na	<2.0	<0.5	na
MW-2*	01/21/89	ND	na	na	ND	ND	ND	ND	---	na	na	---	na	na	na	na	na	---	na
MW-3	01/21/89	32,000	na	na	9,600	8,200	1,800	6,200	---	na	na	---	na	na	na	na	na	---	na
	05/13/91	81,000	na	na	7,800	12,000	1,200	4,000	---	14	na	---	380	na	na	na	na	---	na
	10/18/91	73,000	na	na	9,400	8,600	750	3,300	---	14	na	---	8.3	na	na	na	na	---	na
	10/27/91	37,000	na	na	7,100	4,900	970	3,500	---	ND	na	---	170	na	na	na	na	---	na
	07/13/93	41,000	na	na	8,100	6,200	8,100	4,400	---	14	na	---	150	na	na	na	na	---	na
	06/27/96	370	na	na	120	75	6.2	47	---	na	na	---	na	na	na	na	na	---	na
	09/19/96	15,000	na	na	6,000	2,700	450	2,180	---	na	na	---	na	na	na	na	na	---	na
	12/13/96	ND	na	na	30	10	2	7.4	---	na	na	---	na	na	na	na	na	---	na
	10/07/97	ND	na	na	21	7	1	4.9	---	na	na	---	na	na	na	na	na	---	na
	08/03/99	21,000	na	na	5,500	2,300	470	990	---	na	na	---	na	na	na	na	na	---	na
	06/08/12	<50	56	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	---
06/19/13	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	na
09/26/13	<50	<51	<310	2.6	<0.50	<0.50	<0.50	na	na	na	---	na	na	na	na	na	<2.0	<0.5	na
MW-4*	01/21/89	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05/13/91	13,000	---	---	160	690	250	1,100	---	490	---	---	ND	---	---	---	---	---	---
	10/18/91	ND	---	---	11	11	ND	15	---	450	---	---	3.9	---	---	---	---	---	---
	10/27/91	180	---	---	6.4	2.8	1.2	6.2	---	520	---	---	ND	---	---	---	---	---	---
	07/13/93	320	---	---	36	4.4	1.8	5.3	---	550	---	---	ND	---	---	---	---	---	---
MW-5*	01/21/89	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05/13/91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10/18/91	16,000	---	---	3,500	530	670	1,100	---	120	---	---	32	---	---	---	---	---	---
	10/27/91	87	---	---	ND	ND	ND	ND	---	410	---	---	ND	---	---	---	---	---	---
	07/13/93	90	---	---	ND	ND	ND	ND	---	530	---	---	ND	---	---	---	---	---	---

Table 3
Summary of Groundwater Analytical Results
 Volkswagen Automobile Dealership
 2740 Broadway Avenue, Oakland, CA

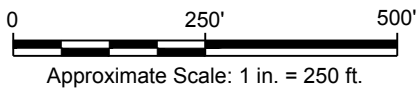
Well Number	Sample Date	TPHg µg/L (C7-C12)	TPHd µg/L (C10 - C24)	TPHmo µg/L (C24-C36)	Benzene µg/L	Toluene µg/L	Ethyl benzene µg/L	Total Xylenes µg/L	MTBE µg/L	TCE µg/L	cDCE µg/L	1,1- Dichloroethene µg/L	1,2- Dichloroethane µg/L	1,3,5- Trimethyl benzene µg/L	1,2,4- Trimethyl benzene µg/L	n-Butyl benzene µg/L	Naphthane µg/L	trans-1,2- Dichloroethene µg/L	TDS µg/L
Tier I ESL µg/L		100	100	100	1	40	30	20	5	5	6	5	0.5	na	na	na	17	na	na
MW-6*	01/21/89	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05/13/91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10/18/91	28,000	---	---	640	2,700	1,100	4,500	---	230	---	---	60	---	---	---	---	---	---
	10/27/91	1,300	---	---	48	130	55	230	---	2,000	---	---	ND	---	---	---	---	---	---
	07/13/93	1,100	---	---	5.1	30	30	230	---	2,100	---	---	ND	---	---	---	---	---	---
MW-7	06/27/96	ND	na	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na
	09/19/96	67	na	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na
	12/13/96	ND	na	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na
	10/07/97	ND	na	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na
	06/08/12	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	0.5	---	1.2	<0.5	<0.5	<0.5	<2.0	---	290
	06/19/13	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	3.2	0.3 J	<0.5	0.5	<0.5	<0.5	<0.5	<2.0	<0.5	na
Dup	06/19/13	<50	<50	<300	3.1	<0.5	<0.5	<0.5	<0.5	<0.5	0.3 J	<0.5	0.5	<0.5	<0.5	<0.5	<2.0	<0.5	na
	09/26/13	<50	<49	<290	<0.5	<0.5	<0.5	<0.5	<0.5	na	na	na	na	na	na	na	na	na	na
Dup	09/26/13	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	na	na	na	na	na	na	na	na	na	na	na
MW-8	06/19/13	1,800 Y	650	<300	360	2.3 J	16	2.2 J	1.3 J	<2.5	19	<2.5	2.3 J	<2.5	<2.5	<2.5	<10	<2.5	na
	09/26/13	890	370 Y	<290	330	3.3	66	8.3	na	na	na	na	na	na	na	na	na	na	na
MW-9	06/19/13	5,400	1,100	<300	1,500	19	110	37	<8.3	13	14	<8.3	<8.3	<8.3	10	<8.3	42	<8.3	na
	09/26/13	8,300	2,300	<310	650	<6.3	690	610	na	na	na	na	na	na	na	na	na	na	na
VW-1	06/08/12	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<2.0	---	210
Dup	06/08/12	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<2.0	---	210
	06/19/13	<50	70 Y	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	na
	09/26/13	<50	<52	<310	<0.5	<0.5	<0.5	<0.5	na	na	na	na	na	na	na	na	na	na	na
VW-2	06/08/12	36,000	3,400 Y	<300	1,800	3,000	1,200	4,900	<25	<25	<25	---	<25	240	960	70	480	---	370
	06/19/13	4,300	830	<300	270	58	280	430	<1.7	<1.7	<1.7	<1.7	1.7	16	260	<1.7	22 J	<1.7	na
	09/26/13	850	240 Y	<310	26	38	56	118	na	na	na	na	na	na	na	na	na	na	na
VW-3	06/08/12	120,000 Y	9,300	2,000	54	<20	84	640	<20	<20	<20	---	<20	650	2,000	83	240	---	370
	06/19/13	13,000	6,200	650	72	<7.1	16	119.7	<7.1	<7.1	<7.1	<7.1	<7.1	300	1,000	58	70	<7.1	na
	09/26/13	6,000	2,900	370	100	<1.3	<1.3	43.1	na	na	na	na	na	na	na	na	na	na	na
MIP-1	04/05/13	630 Y	590	<300	52	1.0	0.5 J	0.7	1.6	18	40	0.3 J	2.8	<0.5	<0.5	<0.5	<2.0	0.3 J	---
MIP-2	04/05/13	510 Y	450	<300	140	1.1	<1.0	0.7 J	<1.0	42	4.4	<1.0	1.5	<1.0	<1.0	<1.0	<4.0	<1.0	---
MIP-3	04/05/13	1,800	600	<300	270	2.1	120	135	1.2 J	270	17	<1.7	1.1 J	<1.7	1.5 J	3.0	17	<1.7	---
MIP-4	04/05/13	13,000	4,300	320	15	5.7	510	1,490	<5.0	960	11	<5.0	<5.0	290	850	57	150	<5.0	---
Dup	04/05/13	14,000	1,700	<300	29	8.5	670	1,970	<6.3	750	7.0	<6.3	<6.3	340	1,000	73	200	<6.3	---
MIP-5	04/05/13	4,200	1,000	<300	9.0	18	46	189	<1.3	170	10	<1.3	1.2 J	58	170	19	18	<1.3	---

Notes:
 Tier I ESL Tier I Environmental Screening Levels (ESLs) for shallow soils of less than 3 meters below ground surface and groundwater that is a current or potential source of drinking water.
 TPHg Total Petroleum Hydrocarbons as gasoline
 TPHd Total Petroleum Hydrocarbons as diesel
 TPHmo Total Petroleum Hydrocarbons as motor oil
 MTBE Methyl tertiary butyl ether
 cDCE cis-1,2-Dichloroethene
 EDC 1,2-Dichloroethane (ethylene dichloride)
 TCE Trichloroethene
 TDS Total dissolved solids
 µg/L micrograms per liter
 ND Not detected at or above detection limits (historical limits unknown).
 --- Not analyzed
 na historical data not available
 Dup Duplicate sample
 * Wells abandoned
 < Not detected at or above the laboratory detection limit noted.
 Y Laboratory reports the sample exhibits chromatographic pattern which does not resemble standard.
 J Laboratory reports estimated value.
 VI ESL Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion for Fine to Coarse Media for Commercial/Industrial Land Use
 Bolded values are above the Tier I ESL
 Italicized values are above the VI ESL

Figures



SOURCE: GOOGLE EARTH PRO

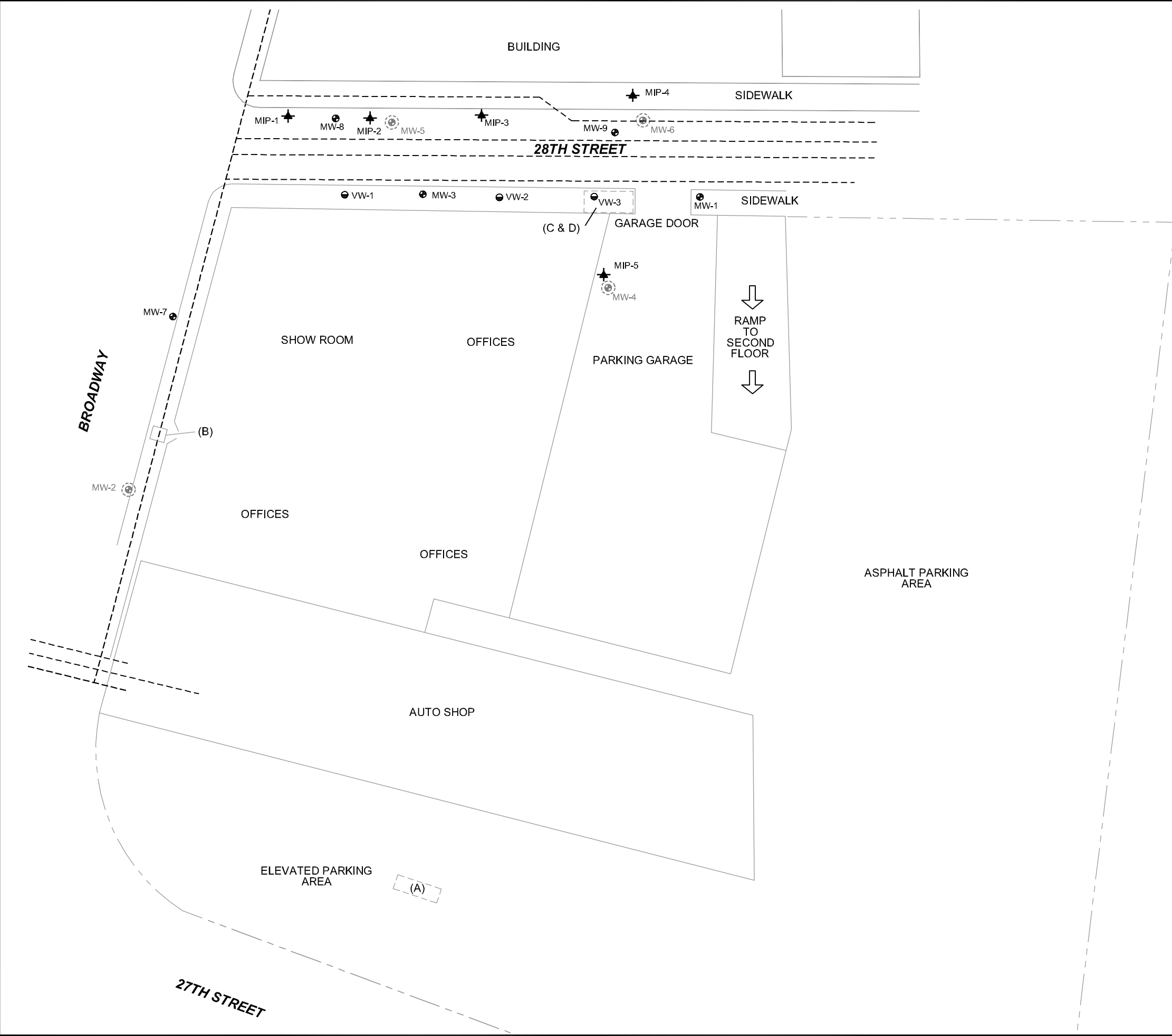


VW OAKLAND
2740 BROADWAY
OAKLAND, CALIFORNIA

SITE LOCATION MAP



CITY:\Read\ DIV\GROUP\F\Read\ DB\Read\ LD\Op\ PIC\Op\ PM\Read\ TM\Op\ Lyr\Option\OFF\REF*
 G:\ENVCAD\emery\jill\ACT\EM001\048\0001\00003\GVMR 3\2013\DWG\EM001\048 B02.dwg LAYOUT: 2 SAVED: 10/17/2013 4:14 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 10/28/2013 11:31 AM BY: REYES, ALEC



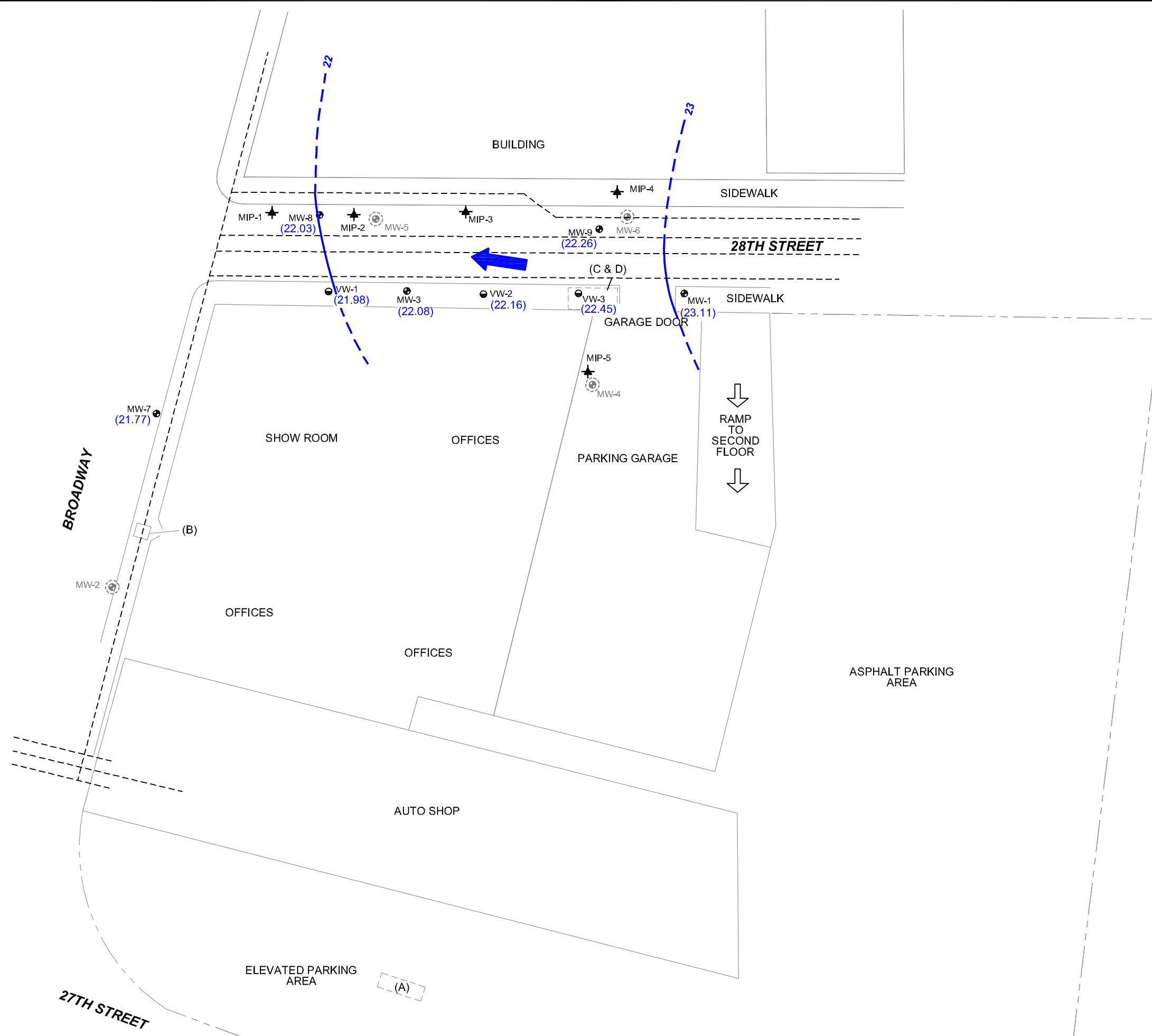
LEGEND

- PROPERTY LINE
- x-x-x- FENCE LINE
- - - - - UTILITY LINE
- MW-3 ● MONITORING WELL LOCATION
- MW-5 ⊕ ABANDONED MONITORING WELL
- VW-1 ● VAPOR EXTRACTION WELL
- ⊠ FORMER UNDERGROUND STORAGE TANK LOCATION
- (A) WASTE OIL (1,000 GAL); TANK REMOVED, SITE CLEAN
- (B) WASTE OIL (550 GAL); TANK REMOVED
- (C&D) WASTE OIL (550 GAL) AND UNLEADED GASOLINE (3,000 GAL); TANKS REMOVED
- MIP-1 ⚡ SOIL BORING LOCATIONS WITH EC/MIP CAPABILITIES
- EC/MIP ELECTRICAL CONDUCTIVITY / MEMBRANE INTERFACE PROBE

REFERENCES:
 MAP DIGITIZED FROM A SITE PLAN BY ENVIRONMENTAL SCIENCE & ENGINEERING (6/91) AND A SITE PLAN BY QST ENVIRONMENTAL (12/02/96 - REVISED 12/28/98)

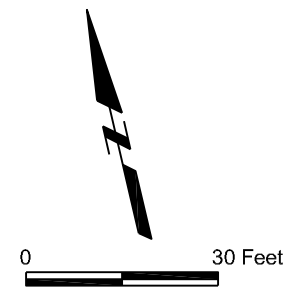
VW OAKLAND 2740 BROADWAY OAKLAND, CALIFORNIA	
SITE PLAN	
	FIGURE 2

CITY:\Read\DIV\GROUP\F\Read\ DB\Read\ LD\Op\ PIC\Op\ PM\Read\ TMI\Op\ Lyr\Option\OFF\REF* G:\EN\CAD\emeryville\ACT\EM001\048\000\1000\03\GWINR 3\2013\DWG\EM001\048\W03.dwg LAYOUT: 3 SAVED: 10/17/2013 4:24 PM ACADVER: 18.1S (LMS TECH) PAGES: 10/28/2013 1:04 AM BY: REYES, ALEC



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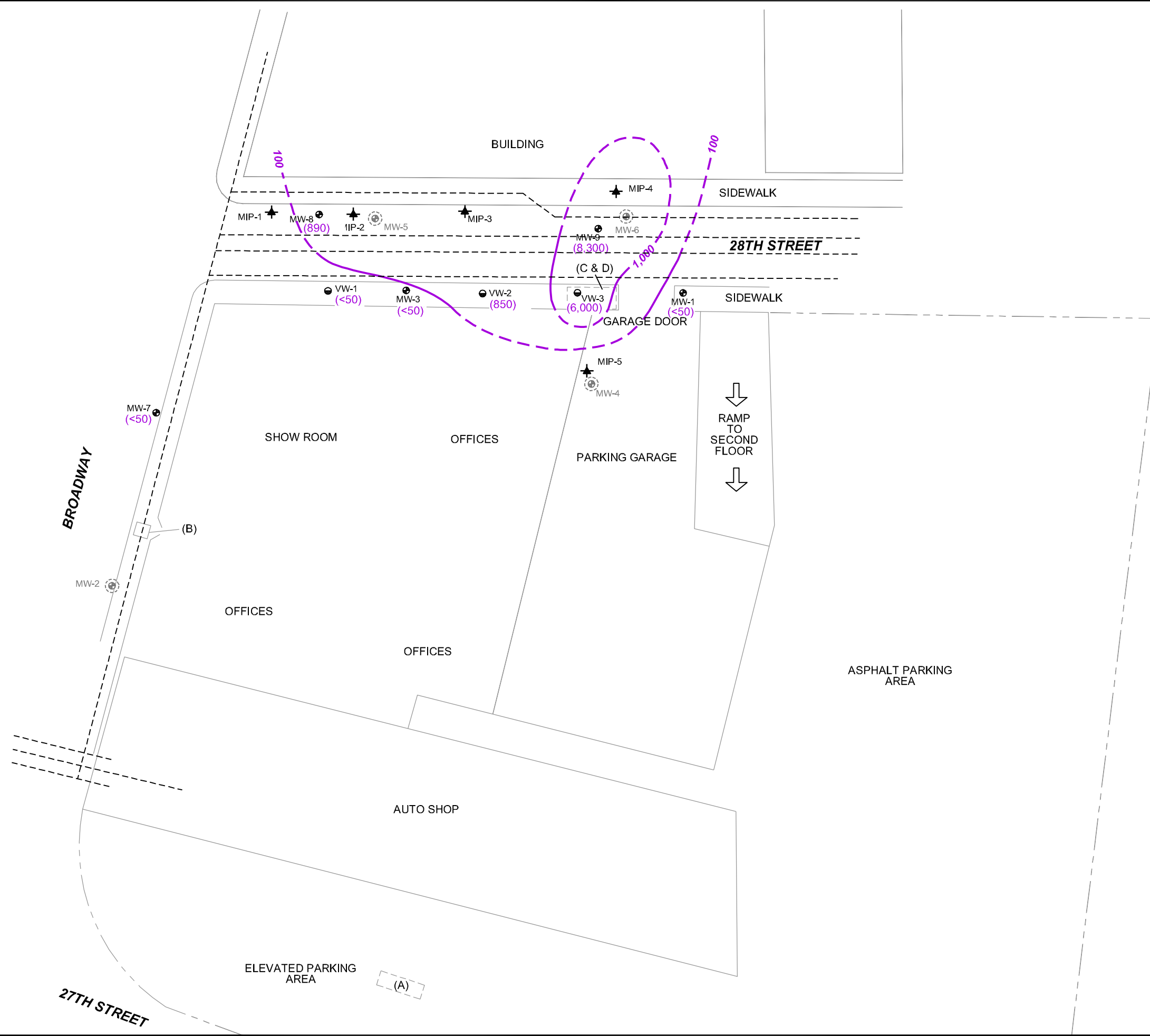
- PROPERTY LINE
- x-x-x- FENCE LINE
- - - - - UTILITY LINE
- MW-3 ● MONITORING WELL LOCATION
- MW-5 ● ABANDONED MONITORING WELL
- VW-1 ● VAPOR EXTRACTION WELL
- FORMER UNDERGROUND STORAGE TANK LOCATION
- (A) WASTE OIL (1,000 GAL); TANK REMOVED, SITE CLEAN
- (B) WASTE OIL (550 GAL); TANK REMOVED
- (C&D) WASTE OIL (550 GAL) AND UNLEADED GASOLINE (3,000 GAL); TANKS REMOVED
- MIP-1 ★ SOIL BORING LOCATIONS WITH EC/MIP CAPABILITIES
- EC/MIP ELECTRICAL CONDUCTIVITY / MEMBRANE INTERFACE PROBE
- (22.16) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 22 — CONTOUR OF CONSTANT GROUNDWATER ELEVATION
- ← INFERRED GROUNDWATER FLOW DIRECTION



REFERENCES:
 MAP DIGITIZED FROM A SITE PLAN BY ENVIRONMENTAL SCIENCE & ENGINEERING (6/91)
 AND A SITE PLAN BY QST ENVIRONMENTAL (12/02/96 - REVISED 12/28/98)

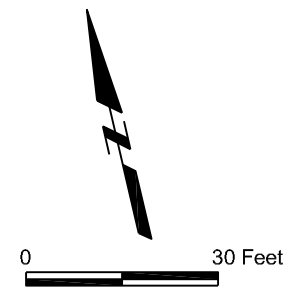
VW OAKLAND 2740 BROADWAY OAKLAND, CALIFORNIA	
GROUNDWATER CONTOUR MAP	
	FIGURE 3

CITY:\Read\ DIV\GROUP\F\Read\ DB\Read\ LD\Op\ PIC\Op\ PM\Read\ TM\Op\ LYR\OPTION\OFF\REF* G:\EN\CAD\Emeryville\ACT\EM001\048\000\1000\3\GWINR 3\2013\DWG\EM001\048\W04.dwg LAYOUT: 4 SAVED: 10/18/2013 1:22 PM ACADVER: 18.1S (LMS TECH) PAGES: 10282013 1:11 AM BY: REYES, ALEC



LEGEND

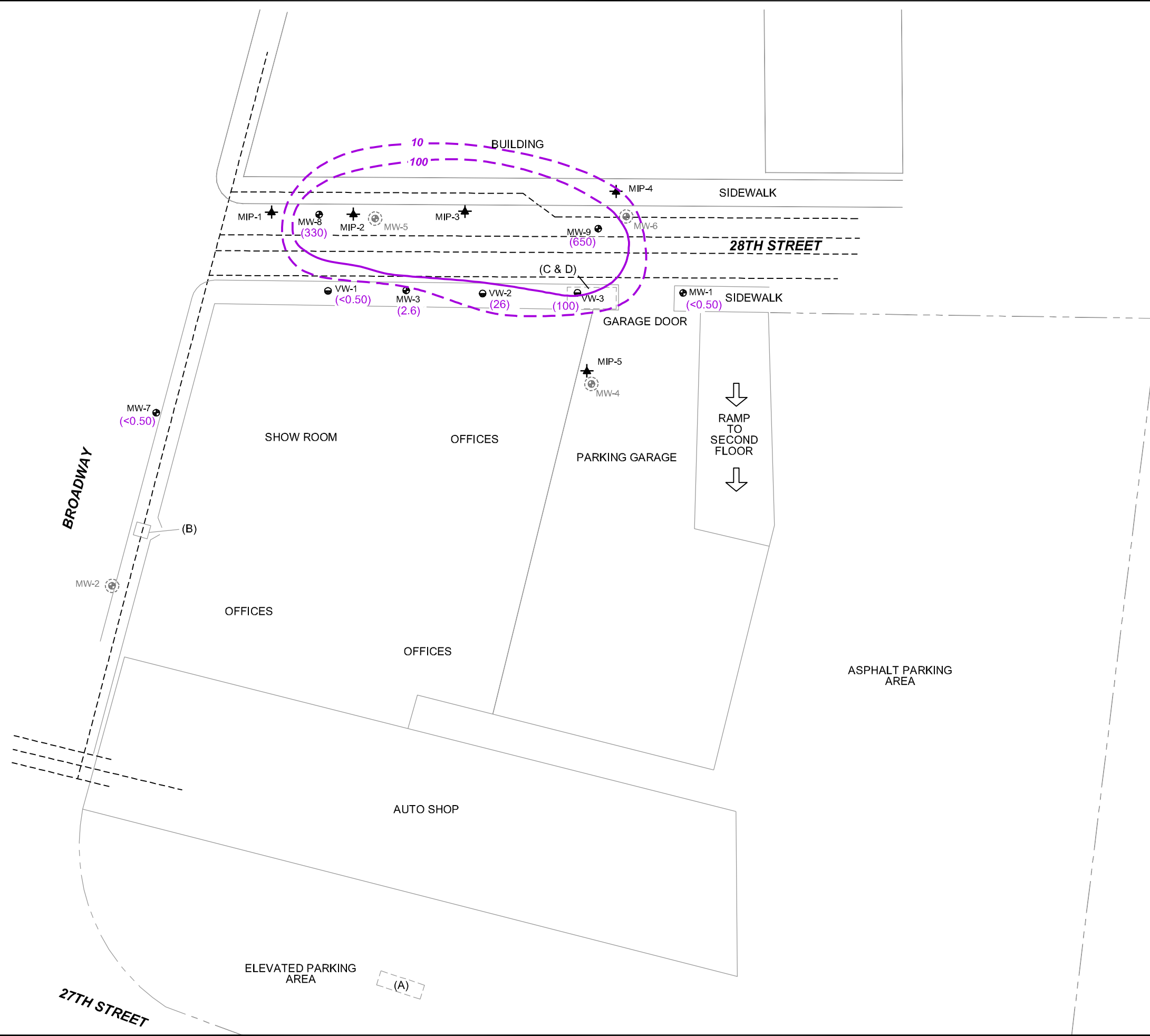
- PROPERTY LINE
- x-x-x- FENCE LINE
- - - - - UTILITY LINE
- MW-3 ● MONITORING WELL LOCATION
- MW-5 ● ABANDONED MONITORING WELL
- VW-1 ● VAPOR EXTRACTION WELL
- FORMER UNDERGROUND STORAGE TANK LOCATION
- (A) WASTE OIL (1,000 GAL); TANK REMOVED, SITE CLEAN
- (B) WASTE OIL (550 GAL); TANK REMOVED
- (C&D) WASTE OIL (550 GAL) AND UNLEADED GASOLINE (3,000 GAL); TANKS REMOVED
- MIP-1 ★ SOIL BORING LOCATIONS WITH EC/MIP CAPABILITIES
- EC/MIP ELECTRICAL CONDUCTIVITY / MEMBRANE INTERFACE PROBE
- (6,500) TPHg CONCENTRATION IN MICROGRAMS PER LITER (µg/L) (SEPTEMBER 2013)
- 10,000 APPROXIMATE EXTENTS OF CONCENTRATION CONTOUR (DASHED WHERE INFERRED)
- TPHg GASOLINE-RANGE TOTAL PETROLEUM HYDROCARBONS



REFERENCES:
 MAP DIGITIZED FROM A SITE PLAN BY ENVIRONMENTAL SCIENCE & ENGINEERING (6/91) AND A SITE PLAN BY QST ENVIRONMENTAL (12/02/96 - REVISED 12/28/98)

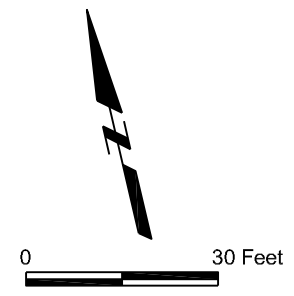
VW OAKLAND 2740 BROADWAY OAKLAND, CALIFORNIA	
TPHg GROUNDWATER CONCENTRATION CONTOUR MAP	
	FIGURE 4

CITY:\Read\DIV\GROUP\F\Read\ DB\Read\ LD\Op\ PIC\Op\ PM\Read\ TMI\Op\ Lyr\Option\OFF\REF*
 G:\ENVCAD\emeryville\ACT\EM001\048\000\1000\03\GWMR\3\2013\DWG\EM001\048\W05.dwg LAYOUT: 5. SAVED: 10/17/2013 4:42 PM ACADVER: 18.1S (LMS TECH) PAGES: 10/28/2013 11:12 AM BY: REYES, ALEC



LEGEND

- PROPERTY LINE
- x-x-x- FENCE LINE
- - - - - UTILITY LINE
- MW-3 ● MONITORING WELL LOCATION
- MW-5 ● ABANDONED MONITORING WELL
- VW-1 ● VAPOR EXTRACTION WELL
- FORMER UNDERGROUND STORAGE TANK LOCATION
- (A) WASTE OIL (1,000 GAL); TANK REMOVED, SITE CLEAN
- (B) WASTE OIL (550 GAL); TANK REMOVED
- (C&D) WASTE OIL (550 GAL) AND UNLEADED GASOLINE (3,000 GAL); TANKS REMOVED
- MIP-1 ★ SOIL BORING LOCATIONS WITH EC/MIP CAPABILITIES
- EC/MIP ELECTRICAL CONDUCTIVITY / MEMBRANE INTERFACE PROBE
- (1,330) GROUNDWATER CONCENTRATION OF BENZENE IN MICROGRAMS PER LITER (µg/L) (JUNE 2013)
- 100 APPROXIMATE EXTENTS OF CONCENTRATION CONTOUR (DASHED WHERE INFERRED)
- [50] CONCENTRATION OF BENZENE FROM GRAB GROUNDWATER SAMPLES IN µg/L (APRIL 2013)



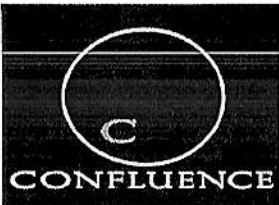
REFERENCES:
 MAP DIGITIZED FROM A SITE PLAN BY ENVIRONMENTAL SCIENCE & ENGINEERING (6/91) AND A SITE PLAN BY QST ENVIRONMENTAL (12/02/96 - REVISED 12/28/98)

VW OAKLAND 2740 BROADWAY OAKLAND, CALIFORNIA	
BENZENE GROUNDWATER CONCENTRATION CONTOUR MAP	
	FIGURE 5



Appendix A

Field Sampling Notes



Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 #148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com

Chain of Custody

Project Name: VW Dealership, Oakland

Job Number: F1-130926

TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: Curtis & Tompkins	Site Address: 2740 Broadway, Oakland	Confluence PM: Jason Brown
Address: 2323 Fifth St, Berkeley, CA	California Global ID No.: TQ6001002227	Phone / Fax: 916-760-7641 / 916-473-8617
Contact:	Include EDF w/ Report: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Confluence Log Code: CESC
Phone/ Fax: 510-486-0900	Consultant / PM: Arcadis / Ron Golobouw	Report to: Ron Golobouw & Caitlin Bell
	Phone / Fax: 510-596-9550	Invoice to: Arcadis

Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis				Notes and Comments	
			Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260)	TPH-D & MO (8015)				
MW-1	1030	9/26	X			51	2			3			X	X				
MW-3	0915					51	2			3			X	X				
MW-7	0745					51	2			3			X	X				
MW-8	0800					51	2			3			X	X				
MW-9	0959					51	2			3			X	X				
VW-1	0840					51	2			3			X	X				
VW-2	0935					51	2			3			X	X				
VW-3	1045					51	2			3			X	X				
EB	1055					51	2			3			X	X				
DUP	0750					51	2			3			X	X				

Sampler's Name: <u>A. Feeney</u>	Relinquished By / Affiliation:	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Confluence Environmental	<u>A. Feeney / Confluence</u>					
Shipment Date:						
Shipment Method:						

Special Instructions:

Drum Log

Site: 2740 Broadway Oakland VW

Drum(s) Location On Site: Inside NE Bay garage Door between MW-1 & VW-3

Date		# of drums			total	contents (spec w/water mixed ?=unknown)	labeled (y or n)	label legible (y or n)	tech initial	Notes:
		full	partial	empty						
6/6/12	Arrival	—	—	—	0	—	—	—	BN	
6/6/12	Departure	3	1	1	5	W	Y	Y	BN	
6/13/13	Arrival	4 3	1	0	5	W	Y	Y	BN	
6/13/13	Departure	5	1	1	7	W	Y	Y	BN	
6/17/13	Arrival	10	1	1	12	W/S	Y	Y	BN	
6/17/13	Departure	11		1	12	W/S	Y	Y	BN	
6/19/13	Arrival	11		1	12	W/S	Y	Y	BN	
6/19/13	Departure	11	1		12	W/S	Y	Y	BN	
9/26/13	Arrival	0	0	0	0	-	-	-	ABZ	
9/26/13	Departure	0	1	0	1	W	Y	Y	ABZ	
	Arrival									
	Departure									
	Arrival									
	Departure									
	Arrival									
	Departure									
	Arrival									
	Departure									

Purging And Sampling Data Sheet

Job#: F1-130926	Sampler: A Feeney	Client: Arcadis
Well ID: MW-7	Date: 9/26/13	Site: VW Dealership, Oakland
Well diam: 1/4" 1" 2" 3" (4") 6" Other:	DTW: 9.76 Total Depth: 23.50	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other:	Tubing: OD: New Dedicated NA	
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = _____ X 3 = _____ (Total Purge) 80% = _____

Time	Temp (°C/°F)	pH	Cond (mS/µS)	Turbidity (NTU)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	DO (mg/l)	ORP (mv)	DTW	Notes
0727	18.3	8.9	356.7	7	200ml	600ml	5.8	159	9.93	
0730	18.5	7.5	349	6		1.2L	2.3	168	10.01	
0733	19.2	7.1	348	6		1.8L	1.7	171	10.02	
0736	19.1	7.1	346	5		2.4L	1.1	169	10.01	
0739	19.1	7.1	345	5		3L	1.0	168	10.01	
0742	19.0	7.1	346	5		4.2	1.0	169	10.01	

Did well dewater? YES <input type="radio"/> NO <input checked="" type="radio"/>	Total volume removed: 4.2 (gal/L)	
Sample method: Disp Bailer <input type="radio"/> Ded. Tubing <input checked="" type="radio"/> New Tubing <input type="radio"/> Ext. Port <input type="radio"/> Other: _____		
Sample date: 9/26/13	Sample time: 0745	DTW at sample: 10.01
Sample ID: MW-7	Lab: C&T	Number of bottles: 5
Analysis: TPH-G, BTEX, TPH-D & MO		
Equipment blank ID @	Field blank ID @	
Duplicate ID: Dup @ 0750	Pre-purge DO:	Post purge DO:
Fe ²⁺ :	Pre-purge ORP:	Post purge ORP:
NAPL depth:	Volume of NAPL:	Volume removed: ml

Purging And Sampling Data Sheet

Job#: F1-130926	Sampler: A Feeney	Client: Arcadis
Well ID: MW-8	Date: 9/26/13	Site: VW Dealership, Oakland
Well diam: 1/4" 1" (2") 3" 4" 6" Other:	DTW: 10.67 Total Depth: 20.01	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other:		
Tubing: OD: New Dedicated NA		
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = _____ X 3 = _____ (Total Purge) 80% = _____

Time	Temp (°C/°F)	pH	Cond (mS/µS)	Turbidity (NTU)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	DO (mg/l)	ORP (mv)	DTW	Notes
0800	18.7	6.7	687	7	200	600ml	3.5	168	10.88	
0803	19.1	6.8	694	6		1.2L	2.6	163	10.88	
0806	19.1	6.8	706	4		1.8L	2.6	168	10.91	
0809	19.3	7.0	699	4		2.4L	2.6	161	10.92	
0812	19.3	7.0	701	4		3L	2.6	161	10.92	
0815	19.3	7.0	702	4		3.6L	2.6	161	10.92	

Did well dewater? YES (NO)		Total volume removed: 3.6 (gal/L)	
Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:			
Sample date: 9/26/13	Sample time: 0820	DTW at sample: 10.92	
Sample ID: MW-8	Lab: C&T	Number of bottles: 5	
Analysis: TPH-G, BTEX, TPH-D & MO			
Equipment blank ID @	Field blank ID @		
Duplicate ID:	Pre-purge DO:	Post purge DO:	
Fe2 ⁺ :	Pre-purge ORP:	Post purge ORP:	
NAPL depth:	Volume of NAPL:	Volume removed:	ml

Purging And Sampling Data Sheet

Job#: F1-130926	Sampler: A Feeney	Client: Arcadis
Well ID: MW-9	Date: 9/26/13	Site: VW Dealership, Oakland
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>9.59</u> Total Depth:	
Purge equip: ES - diam: Bladder <u>Peri</u> Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other: Tubing: OD: New <u>Dedicated</u> NA		
Purge method: 3-5 Case Volume <u>Micro/Low-Flow</u> Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = _____ X 3 = _____ (Total Purge) 80% = _____

Time	Temp (°C/°F)	pH	Cond (mS / μS)	Turbidity (NTU)	Purge Rate (gal or mL/ min)	Volume Removed (gal / l)	DO (mg/l)	ORP (mv)	DTW	Notes
0940	19.1	7.3	947	7	200	600ml	2.15	65	9.98	
0943	19.4	7.2	986	6		1.2L	1.85	71	10.01	
0946	19.4	7.1	990	5		1.8L	1.75	72	10.01	
0949	19.3	7.1	991	5		2.4L	1.74	73	10.01	
0952	19.4	7.1	991	5		3L	1.74	72	10.01	

Did well dewater? YES (NO) Total volume removed: 3 (gal / l)

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 9/26/13 Sample time: 0955 DTW at sample: 10.01

Sample ID: MW-9 Lab: C&T Number of bottles: 5

Analysis: TPH-G, BTEX, TPH-D & MO

Equipment blank ID @ Field blank ID @

Duplicate ID: Pre-purge DO: Post purge DO:

Fe²⁺: Pre-purge ORP: Post purge ORP:

NAPL depth: Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: F1-130926	Sampler: A Feeney	Client: Arcadis
Well ID: VW-1	Date: 9/26/13	Site: VW Dealership, Oakland
Well diam: 1/4" 1" 2" 3" 4" 6" Other:	DTW: 9.69 Total Depth: 18.55	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other:	Tubing: OD: New Dedicated NA	
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = _____ X 3 = _____ (Total Purge) 80% = _____

Time	Temp (°C/°F)	pH	Cond (µS/cm)	Turbidity (NTU)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	DO (mg/l)	ORP (mv)	DTW	Notes
0827	18.0	6.9	321	8	200	6000	4.2	170	9.85	
0830	18.1	6.8	345	6		1.20	3.0	166	9.91	
0833	18.2	6.7	340	5		1.80	2.7	164	9.92	
0836	18.2	6.8	341	5		2.40	2.6	160	9.93	
0839	18.2	6.8	340	5		3.00	2.6	162	9.93	
						3.60	2.7	160	9.93	

Did well dewater? YES <input type="radio"/> NO <input checked="" type="radio"/>		Total volume removed: 3.6 (gal/L)
Sample method: Disp Bailer <input type="radio"/> Ded. Tubing <input checked="" type="radio"/> New Tubing <input type="radio"/> Ext. Port <input type="radio"/> Other: <input type="radio"/>		
Sample date: 9/26/13	Sample time: 0840	DTW at sample: 9.93
Sample ID: VW-1	Lab: C&T	Number of bottles: 5
Analysis: TPH-G, BTEX, TPH-D & MO		
Equipment blank ID @	Field blank ID @	
Duplicate ID:	Pre-purge DO:	Post purge DO:
Fe ²⁺ :	Pre-purge ORP:	Post purge ORP:
NAPL depth:	Volume of NAPL:	Volume removed: _____ ml

Purging And Sampling Data Sheet

Job#: F1-130926	Sampler: A Feeney	Client: Arcadis
Well ID: VW-7	Date: 9/26/13	Site: VW Dealership, Oakland
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: <u>9.55</u> Total Depth: <u>16.93</u>	
Purge equip: ES - diam: Bladder <input type="checkbox"/> Peri <input checked="" type="checkbox"/> Waterra <input type="checkbox"/> Positive Air Displacement <input type="checkbox"/> Ext. System <input type="checkbox"/>		
disp bailer <input type="checkbox"/> teflon bailer <input type="checkbox"/> other: <input type="checkbox"/> Tubing: OD: New <input checked="" type="checkbox"/> Dedicated <input type="checkbox"/> NA <input type="checkbox"/>		
Purge method: 3-5 Case Volume <input checked="" type="checkbox"/> Micro/Low-Flow <input type="checkbox"/> Extraction <input type="checkbox"/> Other: <input type="checkbox"/>		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume) 80% Recovery (TD - DTW X 0.20 + DTW)		

1 Volume = _____ X 3 = _____ (Total Purge) 80% = _____

Time	Temp (°C / °F)	pH	Cond (mS / μS)	Turbidity (NTU)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	DO (mg/l)	ORP (mv)	DTW	Notes
0921	18.2	7.2	542	7	20	600 mL	1.1	65	9.78	
0924	18.3	7.0	539	6		1.2	0.98	28	9.81	
0927	18.3	6.9	538	5		1.8	1.6	20	9.81	
0930	18.3	6.9	538	5		2.4	1.5	21	9.81	
							6.4			

Did well dewater? YES NO Total volume removed: 2.4 (gal / L)

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 9/26/13 Sample time: 0935 DTW at sample: 9.81

Sample ID: VW-7 Lab: C&T Number of bottles: 5

Analysis: TPH-G, BTEX, TPH-D & MO

Equipment blank ID @ Field blank ID @

Duplicate ID: Pre-purge DO: Post purge DO:

Fe²⁺: Pre-purge ORP: Post purge ORP:

NAPL depth: Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: F1-130926	Sampler: A Feeney	Client: Arcadis
Well ID: VW-3	Date: 9/26/13	Site: VW Dealership, Oakland
Well diam: 1/4" 1" 2" 3" (4") 6" Other:	DTW: 8.66 Total Depth: 14.10	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = _____ X 3 = _____ (Total Purge) 80%= _____

Time	Temp (°C / °F)	pH	Cond (mS / µS)	Turbidity (NTU)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	DO (mg/l)	ORP (mv)	DTW	Notes
* checked		w/	IP	Probe	prior	to	purging,	no	SPH	detected
1034	18.6	7.8	607	6	2w.	6wml	2.60	175	8.67	Strong odor
1037	18.8	7.7	609	5		1.2L	1.87	161	8.67	
1040	18.7	7.7	610	5		1.8L	1.81	159	8.67	
1043	18.7	7.7	610	5		2.4L	1.81	159	8.67	

Did well dewater? YES (NO)	Total volume removed: 2.4 (gal / L)
Sample method: Disp Bailer (Ded. Tubing) New Tubing Ext. Port Other:	
Sample date: 9/26/13	Sample time: 1045 DTW at sample: 8.67
Sample ID: VW-3	Lab: C&T Number of bottles: 5
Analysis: TPH-G, BTEX, TPH-D & MO	
Equipment blank ID EB @ 1035	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml



Appendix B

Laboratory Analytical Report



Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878



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

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


Laboratory Job Number 249459
ANALYTICAL REPORT

Arcadis
2000 Powell St.
Emeryville, CA 94608

Project : EM001048.0001-0001
Location : VW Dealership, Oakland
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
MW-1	249459-001
MW-3	249459-002
MW-7	249459-003
MW-8	249459-004
MW-9	249459-005
VW-1	249459-006
VW-2	249459-007
VW-3	249459-008
EB	249459-009
DUP	249459-010
TB	249459-011

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: 
Isabelle Choy
Project Manager
isabelle.choy@ctberk.com

Date: 10/07/2013

CASE NARRATIVE

Laboratory number: 249459
Client: Arcadis
Project: EM001048.0001-0001
Location: VW Dealership, Oakland
Request Date: 09/27/13
Samples Received: 09/27/13

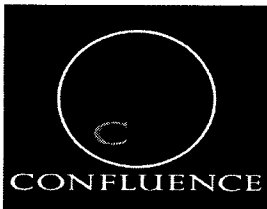
This data package contains sample and QC results for nine water samples, requested for the above referenced project on 09/27/13. The samples were received cold and intact.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

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

High surrogate recoveries were observed for 1,2-dichloroethane-d4 in MW-7 (lab # 249459-003) and VW-1 (lab # 249459-006); no target analytes were detected in these samples. No other analytical problems were encountered.



Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 # 148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com

Chain of Custody

249459

Project Name: VW Dealership, Oakland
 Job Number: FI-130926
 TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: Curtis & Tompkins	Site Address: 2740 Broadway, Oakland	Confluence PM: Jason Brown
Address: 2323 Fifth St, Berkeley, CA	California Global ID No.: TQ6001002227	Phone / Fax: 916-760-7641 / 916-473-8617
Contact:	Include EDF w/ Report: <u>Yes</u> No	Confluence Log Code: CESC
Phone/ Fax: 510-486-0900	Consultant / PM: Arcadis / Ron Golobouw	Report to: Ron Golobouw & Caitlin Bell
	Phone / Fax: 510-596-9550	Invoice to: Arcadis

Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis		Notes and Comments	
			Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260)	TPH-D & MO (8015)		
1	MW-1	1020	9/26	X			5	2			3			X	X	
2	MW-3	0915					5	2			3			X	X	
3	MW-7	0745					5	2			3			X	X	
4	MW-8	0800					5	2			3			X	X	
5	MW-9	0955					5	2			3			X	X	
6	VW-1	0840					5	2			3			X	X	
7	VW-2	0935					5	2			3			X	X	
8	VW-3	1045					5	2			3			X	X	
9	EB	1055					5	2			3			X	X	
10	DUP	0750					5	2			3			X	X	

Sampler's Name: <u>A. Frew</u>	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Confluence Environmental	<u>[Signature]</u> / Confluence	9/27/13	1330	<u>[Signature]</u> / C&T	9/27/13	1330
Shipment Date:	<u>[Signature]</u> / C&T	9/27/13	1630	<u>[Signature]</u> / B&N	9/27/13	1630
Shipment Method:						

Special Instructions:

3 of 34



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Sacramento, CA 95821
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916-473-8617 - fax
www.confluence-env.com

Chain of Custody

249459

Page 2 of 2

Project Name: VW Dealership, Oakland
Job Number: FL-130926
TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: Curtis & Tompkins	Site Address: 2740 Broadway, Oakland	Confluence PM: Jason Brown
Address: 2323 Fifth St, Berkeley, CA	California Global ID No.: TQ6001002227	Phone / Fax: 916-760-7641 / 916-473-8617
Contact:	Include EDF w/ Report: <u>Yes</u> No	Confluence Log Code: CESC
Phone/ Fax: 510-486-0900	Consultant / PM: Arcadis / Ron Golobouw	Report to: Ron Golobouw & Caitlin Bell
	Phone / Fax: 510-596-9550	Invoice to: Arcadis

Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis		Notes and Comments
			Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260)	TPH-D & MO (8015)	
TB		9/26	X			3						X			

Sampler's Name: <u>A. Feeney</u>	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Confluence Environmental	<u>Arcadis / Confluence</u>		9/27/13	1330	<u>Jason Brown</u> / <u>CT</u>	9/27/13	1330
Shipment Date:	<u>May 27 CT</u>		9/27/13	1630	<u>Jason Brown</u> / <u>CT</u>	9-27-13	1630
Shipment Method:							

Special Instructions:

initial et cold etc

Subject: RE: EM001048.0001-0001 - C&T Login Summary (249459)
From: "Goloubow, Ron" <Ron.Goloubow@arcadis-us.com>
Date: 9/29/2013 8:02 PM
To: Tracy Babjar <tracy.babjar@ctberk.com>
CC: "Bell, Caitlin" <Caitlin.Bell@arcadis-us.com>

Please place the equipment blank & trip blank on hold.

Ron.

Ron Goloubow | Principal Geologist | ron.goloubow@arcadis-us.com
ARCADIS U.S., Inc. | 2000 Powell Street, Suite 700 | Emeryville, CA 94608
T: 510 596 9550 | M: 510 501 1789 | F: 510 652 4906
Connect with us! www.arcadis-us.com | [LinkedIn](#) | [Twitter](#) | [Facebook](#)
ARCADIS, Imagine the result

From: Tracy Babjar [mailto:tracy.babjar@ctberk.com]
Sent: Friday, September 27, 2013 6:49 PM
To: Goloubow, Ron
Subject: EM001048.0001-0001 - C&T Login Summary (249459)

C&T Login Summary for 249459

Project: EM001048.0001-0001	Report To: Arcadis	Bill To: Arcadis
Site: VW Dealership, Oakland	2000 Powell St.	630 Plaza Drive
Lab Login #: 249459	7th Floor	Suite 600
Report Level: II	Emeryville, CA 94608	Highlands Ranch, CO 80129
Report Due: 10/04/13	ATTN: Ron Goloubow	ATTN: Accounts Payable
PO#:	(510) 652-4500	(720) 344-3500
C&T Proj Mgr: Tracy Babjar		

Client ID Lab ID Sampled Received Matrix Analyses COC # Comments

MW-1	001	09/26	09/27	Water MSTVH Water TEHM
MW-3	002	09/26	09/27	Water MSTVH Water TEHM
MW-7	003	09/26	09/27	Water MSTVH Water TEHM
MW-8	004	09/26	09/27	Water MSTVH Water TEHM
MW-9	005	09/26	09/27	Water MSTVH Water TEHM
VW-1	006	09/26	09/27	Water MSTVH Water TEHM

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 249459 Date Received 9.27.13 Number of coolers 1
 Client Arcadis Project VW Dealership Oakland

Date Opened 9.27.13 By (print) PV (sign) [Signature]
 Date Logged in 9/27/13 By (print) TR (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO
 Shipping info _____

2A. Were custody seals present? YES (circle) on cooler on samples NO
 How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO N/A

3. Were custody papers dry and intact when received? _____ YES NO

4. Were custody papers filled out properly (ink, signed, etc)? _____ YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) _____ YES NO

6. Indicate the packing in cooler: (if other, describe) _____

- Bubble Wrap Foam blocks Bags None
- Cloth material Cardboard Styrofoam Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C) 2.1

Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO
 If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? _____ YES NO

10. Are there any missing / extra samples? _____ YES NO

11. Are samples in the appropriate containers for indicated tests? _____ YES NO

12. Are sample labels present, in good condition and complete? _____ YES NO

13. Do the sample labels agree with custody papers? _____ YES NO

14. Was sufficient amount of sample sent for tests requested? _____ YES NO

15. Are the samples appropriately preserved? _____ YES NO N/A

16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A

17. Did you document your preservative check? _____ YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A

21. Was the client contacted concerning this sample delivery? _____ YES NO

If YES, Who was called? _____ By _____ Date: _____

COMMENTS

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 3520C
Project#:	EM001048.0001-0001	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	203651
Units:	ug/L	Prepared:	10/02/13
Diln Fac:	1.000	Analyzed:	10/05/13

Type: BS Cleanup Method: EPA 3630C
 Lab ID: QC710164

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,087	83	59-120

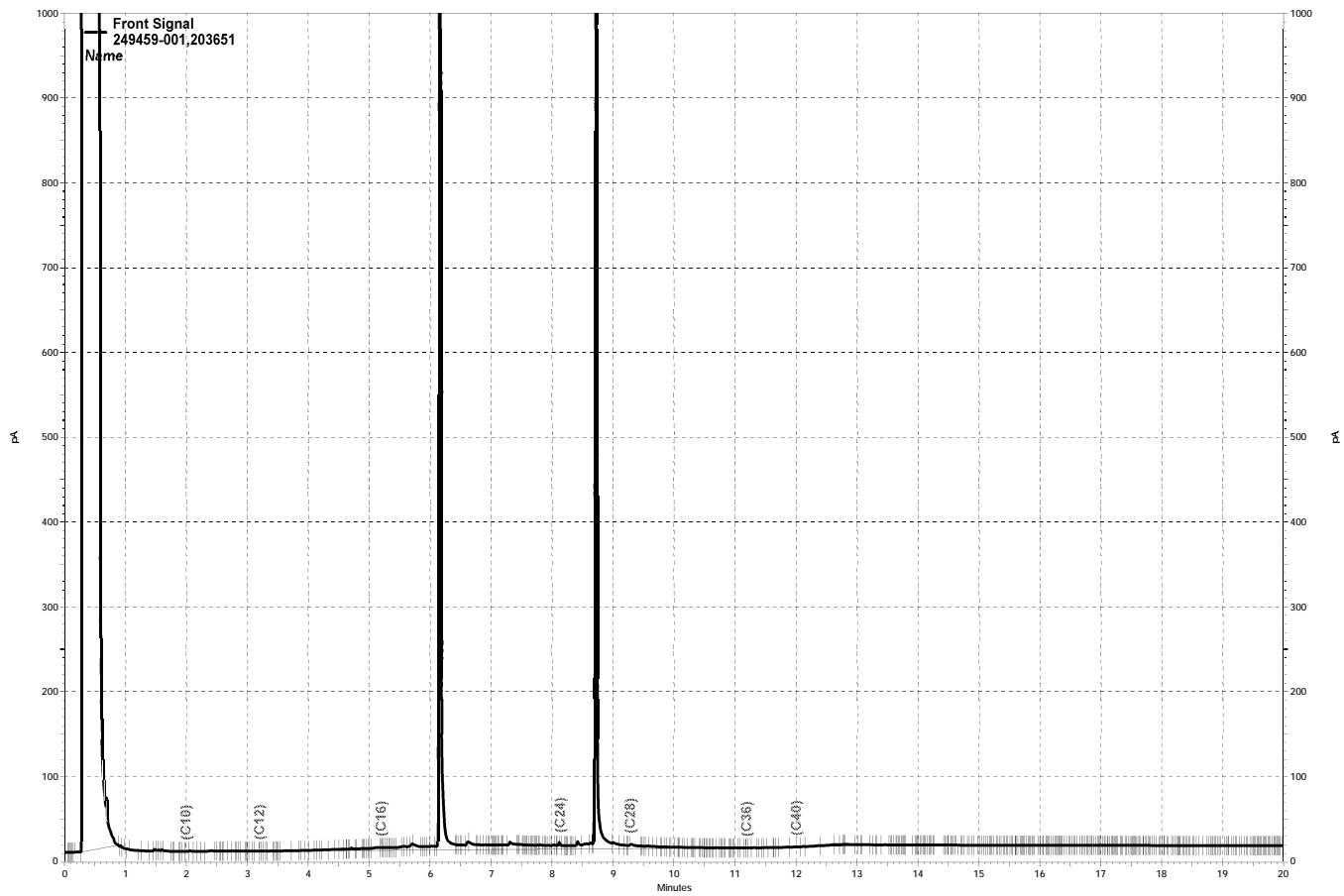
Surrogate	%REC	Limits
o-Terphenyl	91	62-133

Type: BSD Cleanup Method: EPA 3630C
 Lab ID: QC710165

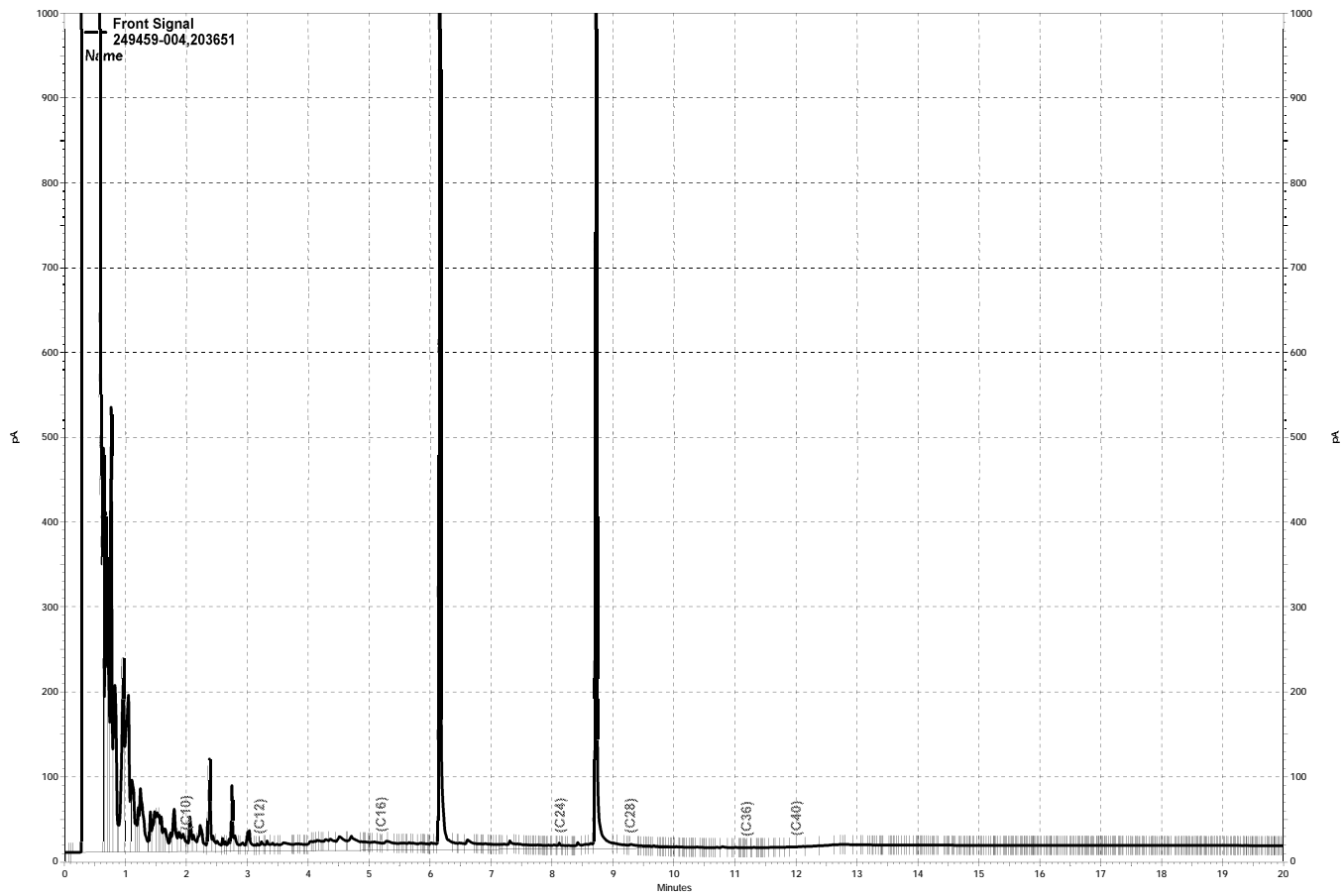
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,095	84	59-120	0	46

Surrogate	%REC	Limits
o-Terphenyl	90	62-133

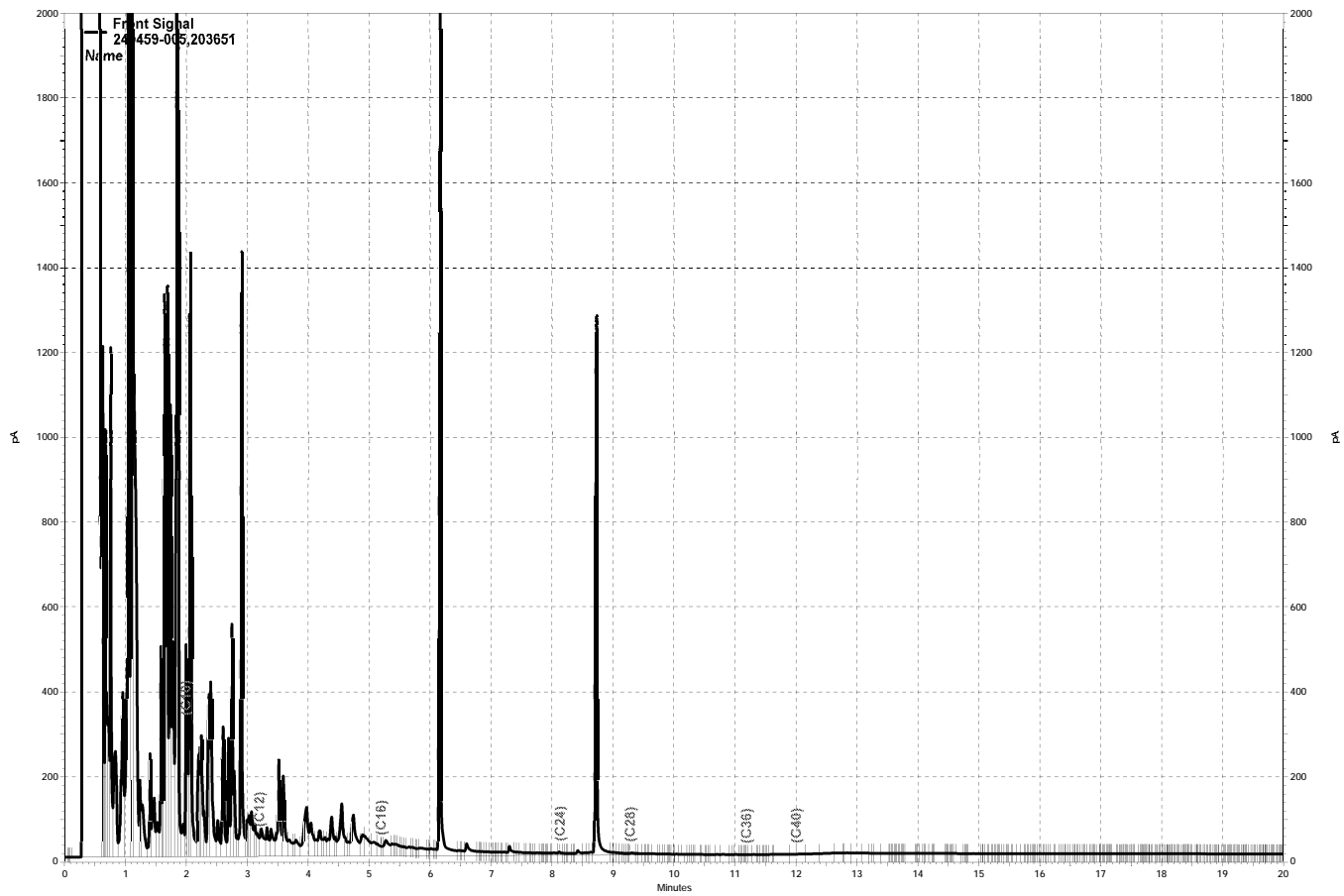
RPD= Relative Percent Difference



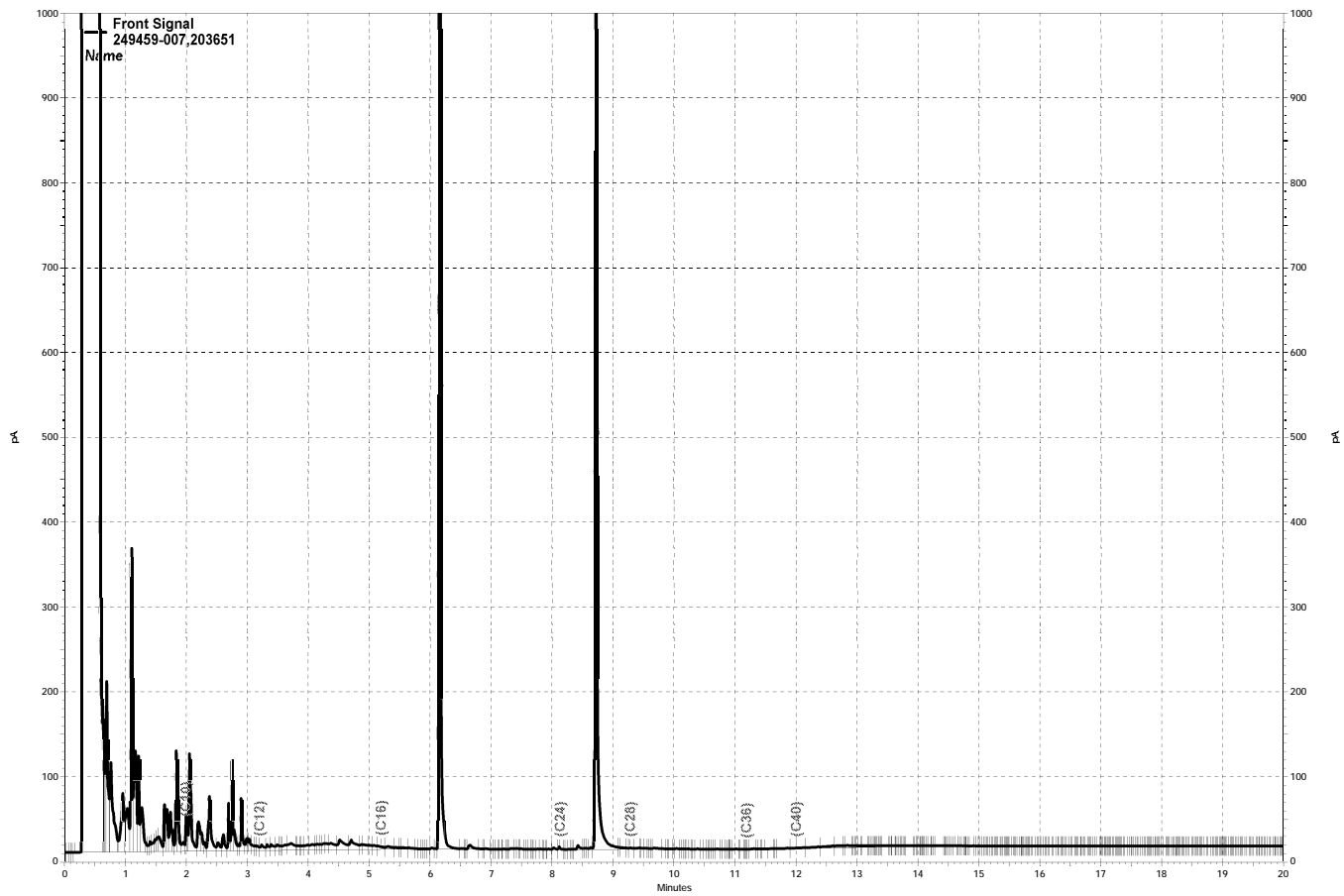
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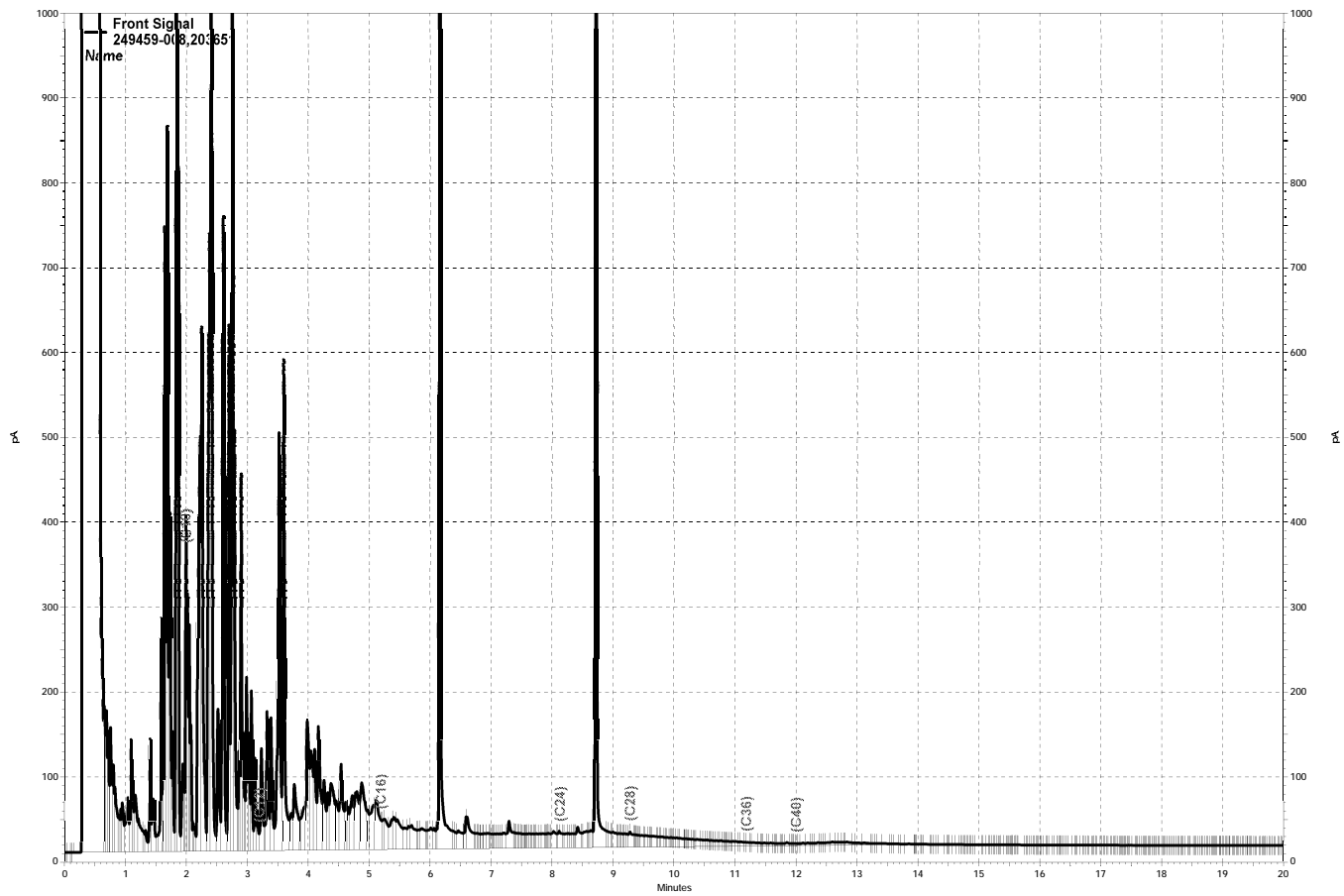
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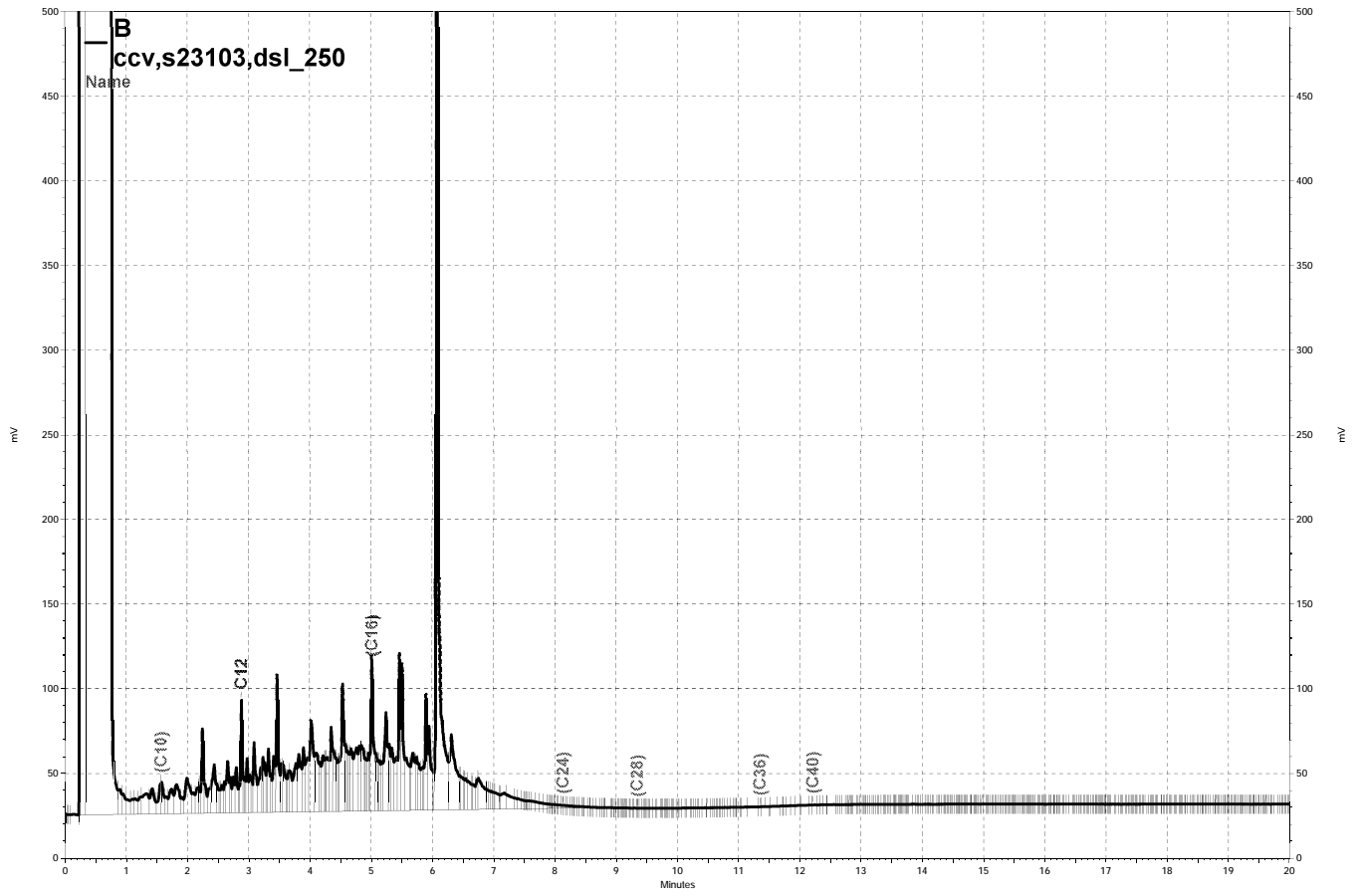
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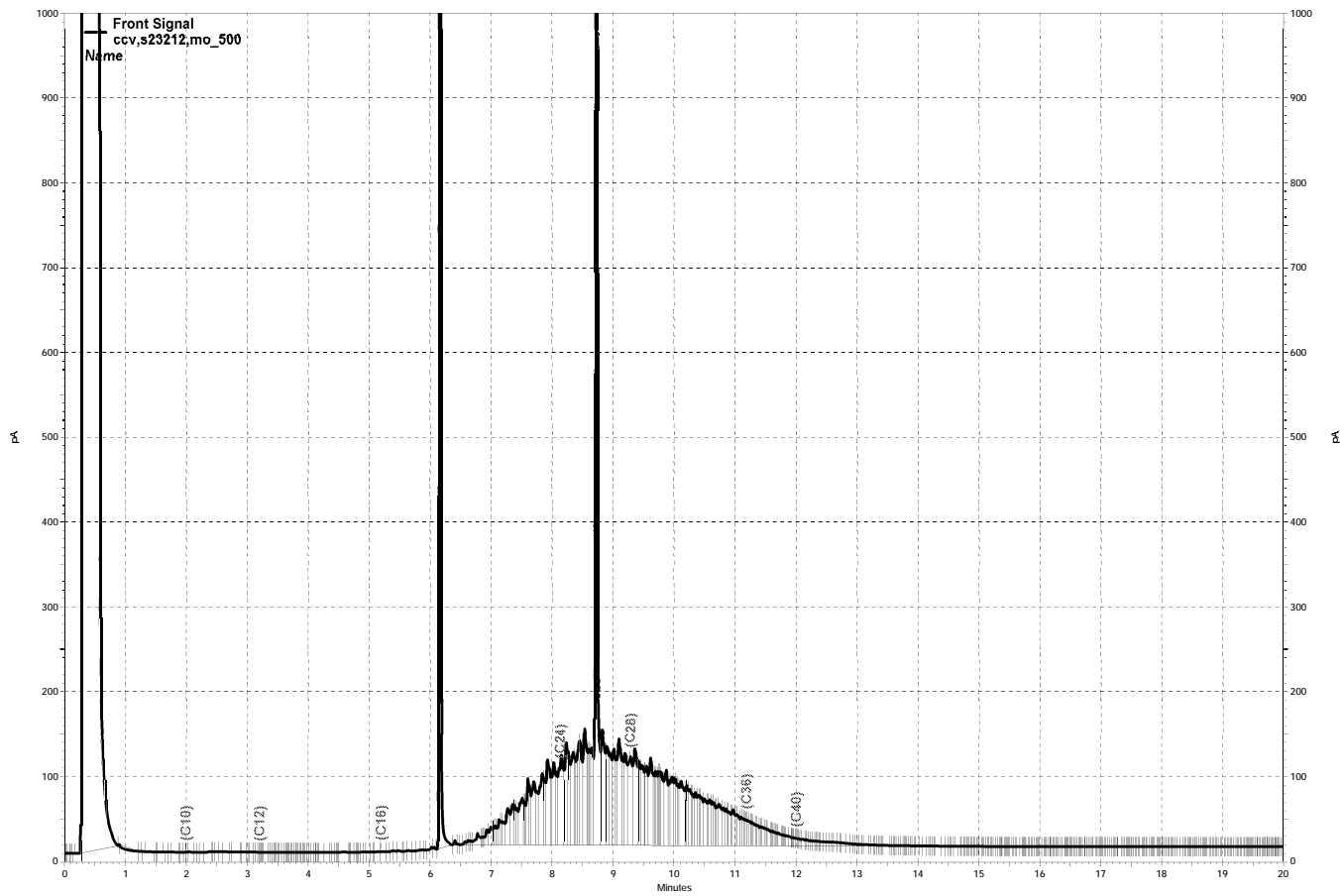
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Purgeable Organics by GC/MS

Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	EM001048.0001-0001	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/26/13
Units:	ug/L	Received:	09/27/13

Field ID:	MW-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	203507
Lab ID:	249459-001	Analyzed:	09/30/13

Analyte	Result	RL
Gasoline C7-C12	ND	50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	117	77-134
1,2-Dichloroethane-d4	136	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	91	80-120

Field ID:	MW-3	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	203615
Lab ID:	249459-002	Analyzed:	10/02/13

Analyte	Result	RL
Gasoline C7-C12	ND	50
Benzene	2.6	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	92	77-134
1,2-Dichloroethane-d4	97	72-140
Toluene-d8	88	80-120
Bromofluorobenzene	91	80-120

*= Value outside of QC limits; see narrative

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	EM001048.0001-0001	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/26/13
Units:	ug/L	Received:	09/27/13

Field ID:	MW-7	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	203507
Lab ID:	249459-003	Analyzed:	09/30/13

Analyte	Result	RL
Gasoline C7-C12	ND	50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	117	77-134
1,2-Dichloroethane-d4	144 *	72-140
Toluene-d8	94	80-120
Bromofluorobenzene	97	80-120

Field ID:	MW-8	Diln Fac:	4.000
Type:	SAMPLE	Batch#:	203615
Lab ID:	249459-004	Analyzed:	10/02/13

Analyte	Result	RL
Gasoline C7-C12	890	200
Benzene	330	2.0
Toluene	3.3	2.0
Ethylbenzene	66	2.0
m,p-Xylenes	8.3	2.0
o-Xylene	ND	2.0

Surrogate	%REC	Limits
Dibromofluoromethane	91	77-134
1,2-Dichloroethane-d4	91	72-140
Toluene-d8	91	80-120
Bromofluorobenzene	92	80-120

*= Value outside of QC limits; see narrative

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	EM001048.0001-0001	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/26/13
Units:	ug/L	Received:	09/27/13

Field ID:	MW-9	Diln Fac:	12.50
Type:	SAMPLE	Batch#:	203615
Lab ID:	249459-005	Analyzed:	10/02/13

Analyte	Result	RL
Gasoline C7-C12	8,300	630
Benzene	650	6.3
Toluene	ND	6.3
Ethylbenzene	690	6.3
m,p-Xylenes	600	6.3
o-Xylene	10	6.3

Surrogate	%REC	Limits
Dibromofluoromethane	94	77-134
1,2-Dichloroethane-d4	96	72-140
Toluene-d8	88	80-120
Bromofluorobenzene	90	80-120

Field ID:	VW-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	203507
Lab ID:	249459-006	Analyzed:	09/30/13

Analyte	Result	RL
Gasoline C7-C12	ND	50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	124	77-134
1,2-Dichloroethane-d4	145 *	72-140
Toluene-d8	105	80-120
Bromofluorobenzene	93	80-120

*= Value outside of QC limits; see narrative

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS			
Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	EM001048.0001-0001	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/26/13
Units:	ug/L	Received:	09/27/13

Field ID: VW-2 Diln Fac: 10.00
 Type: SAMPLE Batch#: 203507
 Lab ID: 249459-007 Analyzed: 09/30/13

Analyte	Result	RL
Gasoline C7-C12	850	500
Benzene	26	5.0
Toluene	38	5.0
Ethylbenzene	56	5.0
m,p-Xylenes	99	5.0
o-Xylene	19	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	112	77-134
1,2-Dichloroethane-d4	139	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	89	80-120

Field ID: VW-3 Diln Fac: 2.500
 Type: SAMPLE Batch#: 203671
 Lab ID: 249459-008 Analyzed: 10/03/13

Analyte	Result	RL
Gasoline C7-C12	6,000	130
Benzene	100	1.3
Toluene	ND	1.3
Ethylbenzene	11	1.3
m,p-Xylenes	39	1.3
o-Xylene	4.1	1.3

Surrogate	%REC	Limits
Dibromofluoromethane	90	77-134
1,2-Dichloroethane-d4	92	72-140
Toluene-d8	90	80-120
Bromofluorobenzene	90	80-120

*= Value outside of QC limits; see narrative
 ND= Not Detected
 RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	EM001048.0001-0001	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	09/26/13
Units:	ug/L	Received:	09/27/13

Field ID:	DUP	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	203615
Lab ID:	249459-010	Analyzed:	10/02/13

Analyte	Result	RL
Gasoline C7-C12	ND	50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	92	77-134
1,2-Dichloroethane-d4	94	72-140
Toluene-d8	88	80-120
Bromofluorobenzene	91	80-120

Type:	BLANK	Batch#:	203507
Lab ID:	QC709599	Analyzed:	09/30/13
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	111	77-134
1,2-Dichloroethane-d4	131	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	92	80-120

*= Value outside of QC limits; see narrative

ND= Not Detected

RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	EM001048.0001-0001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	203507
Units:	ug/L	Analyzed:	09/30/13
Diln Fac:	1.000		

Type: BS Lab ID: QC709614

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	960.5	96	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	125	72-140
Toluene-d8	98	80-120
Bromofluorobenzene	93	80-120

Type: BSD Lab ID: QC709615

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	908.5	91	80-120	6	20

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	129	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	88	80-120

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	EM001048.0001-0001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	203615
Units:	ug/L	Analyzed:	10/02/13
Diln Fac:	1.000		

Type: BS Lab ID: QC710030

Analyte	Spiked	Result	%REC	Limits
Benzene	25.00	25.91	104	78-125
Toluene	25.00	26.12	104	79-123
Ethylbenzene	25.00	25.92	104	80-126
m,p-Xylenes	50.00	56.63	113	80-123
o-Xylene	25.00	28.61	114	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	92	77-134
1,2-Dichloroethane-d4	91	72-140
Toluene-d8	88	80-120
Bromofluorobenzene	92	80-120

Type: BSD Lab ID: QC710031

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	25.00	24.20	97	78-125	7	20
Toluene	25.00	24.01	96	79-123	8	20
Ethylbenzene	25.00	25.22	101	80-126	3	20
m,p-Xylenes	50.00	52.59	105	80-123	7	20
o-Xylene	25.00	26.98	108	75-120	6	20

Surrogate	%REC	Limits
Dibromofluoromethane	90	77-134
1,2-Dichloroethane-d4	89	72-140
Toluene-d8	90	80-120
Bromofluorobenzene	92	80-120

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	EM001048.0001-0001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	203615
Units:	ug/L	Analyzed:	10/02/13
Diln Fac:	1.000		

Type: BS Lab ID: QC710033

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	917.8	92	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	90	77-134
1,2-Dichloroethane-d4	89	72-140
Toluene-d8	87	80-120
Bromofluorobenzene	91	80-120

Type: BSD Lab ID: QC710034

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	843.2	84	80-120	8	20

Surrogate	%REC	Limits
Dibromofluoromethane	90	77-134
1,2-Dichloroethane-d4	88	72-140
Toluene-d8	89	80-120
Bromofluorobenzene	87	80-120

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	249459	Location:	VW Dealership, Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	EM001048.0001-0001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	203671
Units:	ug/L	Analyzed:	10/03/13
Diln Fac:	1.000		

Type: BS Lab ID: QC710268

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	910.1	91	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	90	77-134
1,2-Dichloroethane-d4	89	72-140
Toluene-d8	90	80-120
Bromofluorobenzene	89	80-120

Type: BSD Lab ID: QC710269

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	873.3	87	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	89	77-134
1,2-Dichloroethane-d4	86	72-140
Toluene-d8	87	80-120
Bromofluorobenzene	90	80-120

RPD= Relative Percent Difference

Date : 02-OCT-2013 19:30

Client ID: DYNA P&T

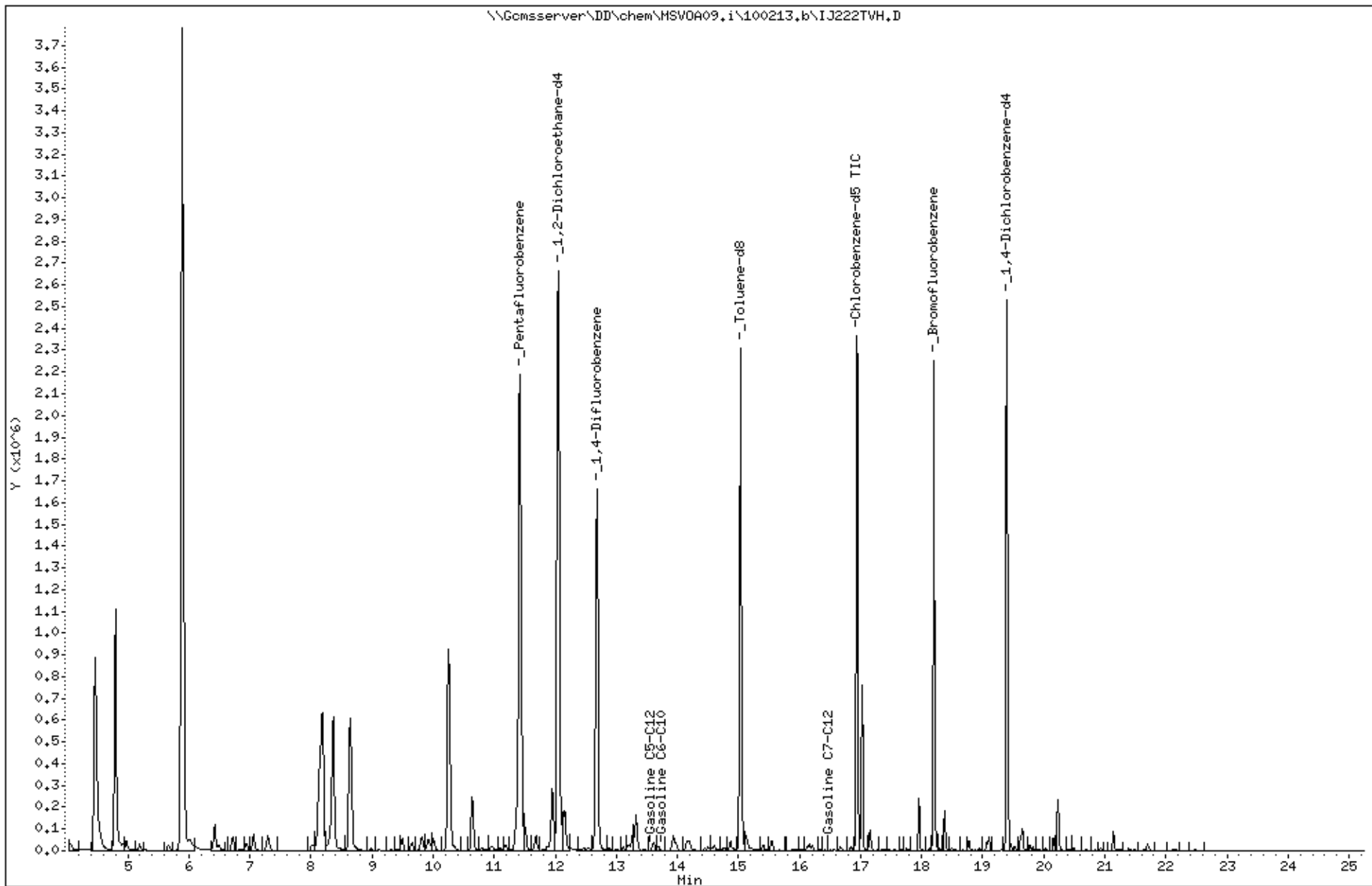
Sample Info: S,249459-004

Instrument: MSV0A09,i

Operator: VOC

Column diameter: 2.00

Column phase:

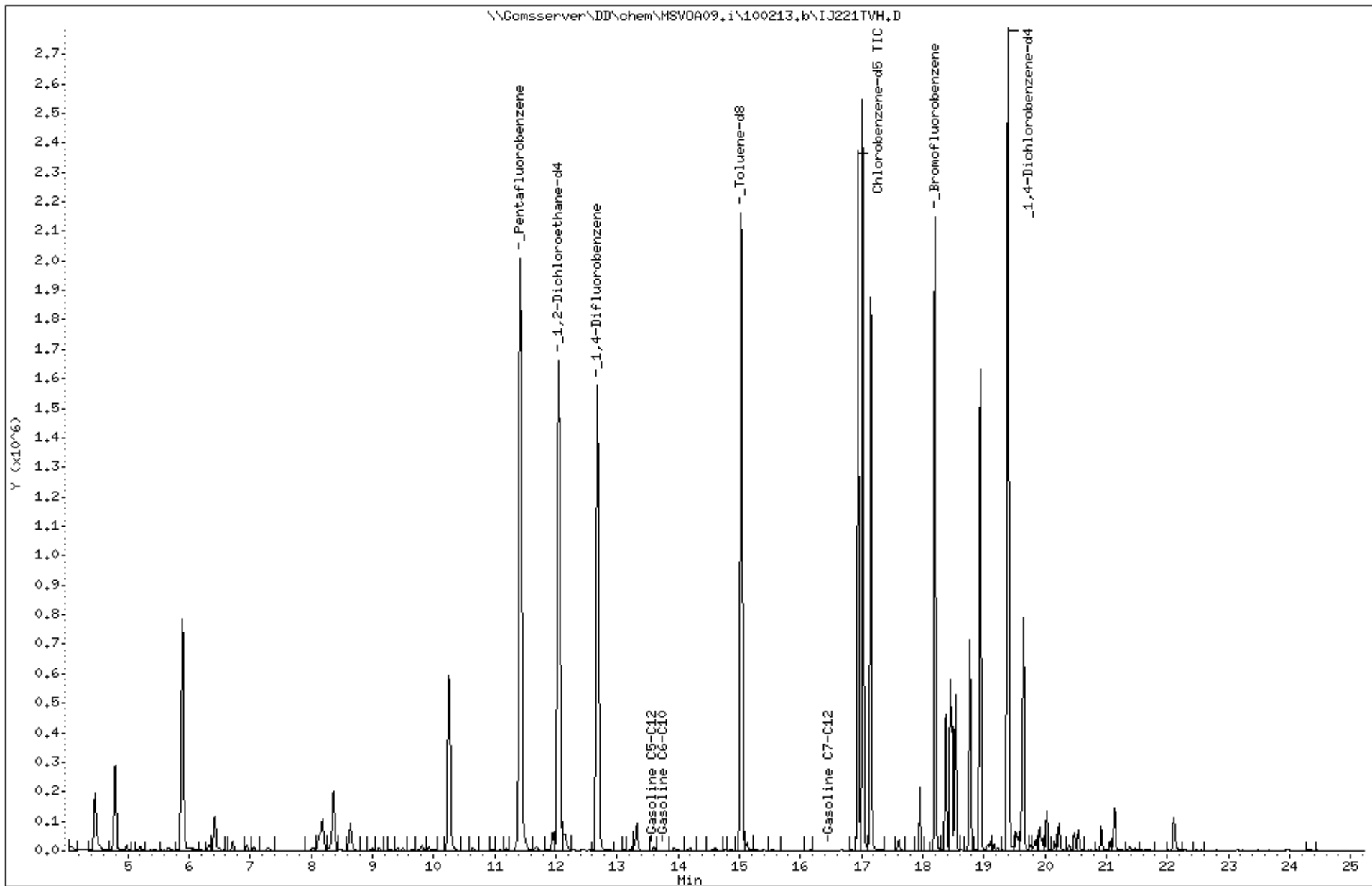


Date : 02-OCT-2013 18:56
Client ID: DYNA P&T
Sample Info: S,249459-005

Instrument: MSV0A09.i

Operator: VOC
Column diameter: 2.00

Column phase:

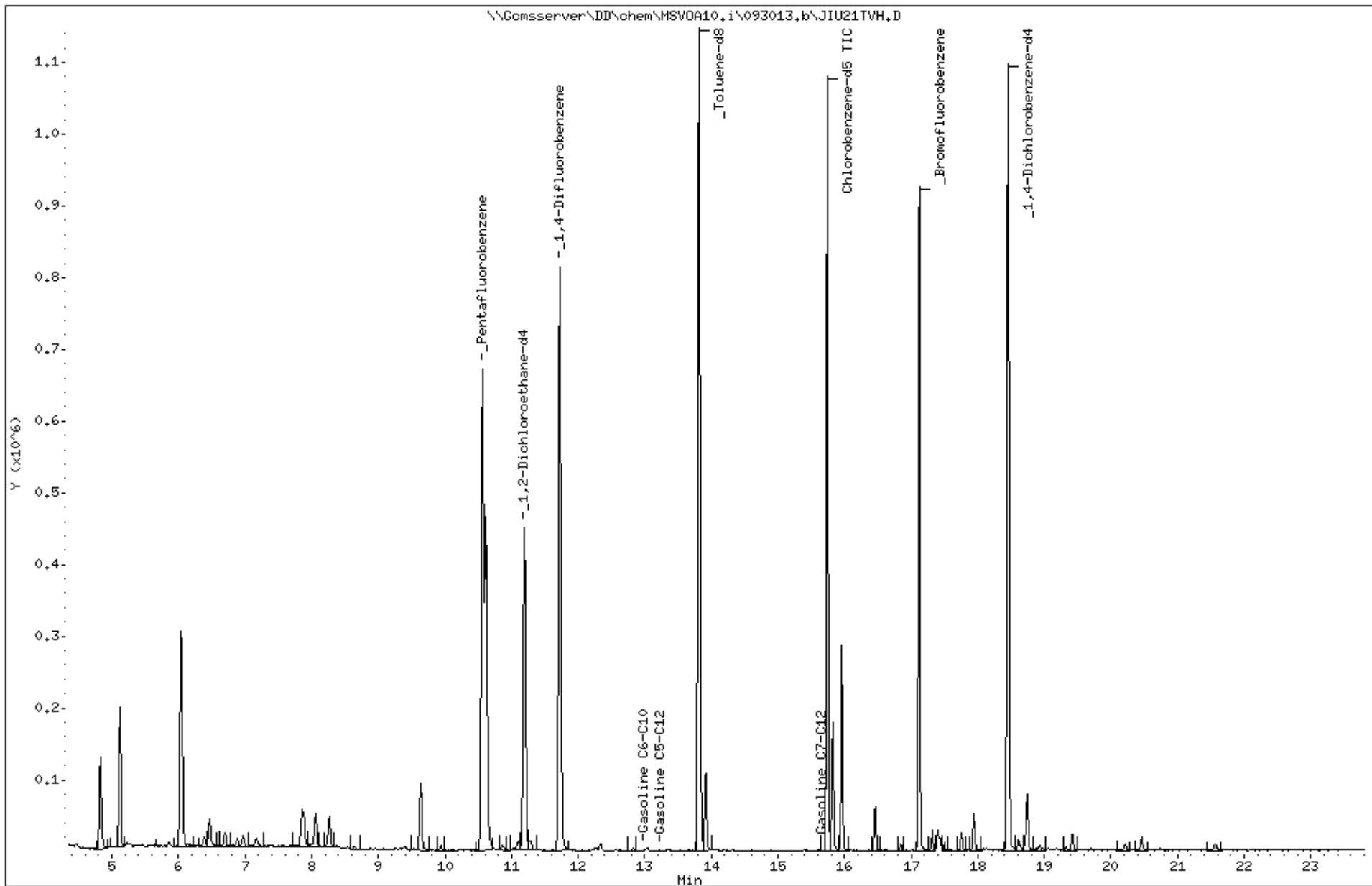


Date : 30-SEP-2013 20:29
Client ID: DYNA P&T
Sample Info: S,249459-007

Instrument: MSV0A10.i

Operator: VOA
Column diameter: 2.00

Column phase:



Date : 03-OCT-2013 13:52

Client ID: DYNA P&T

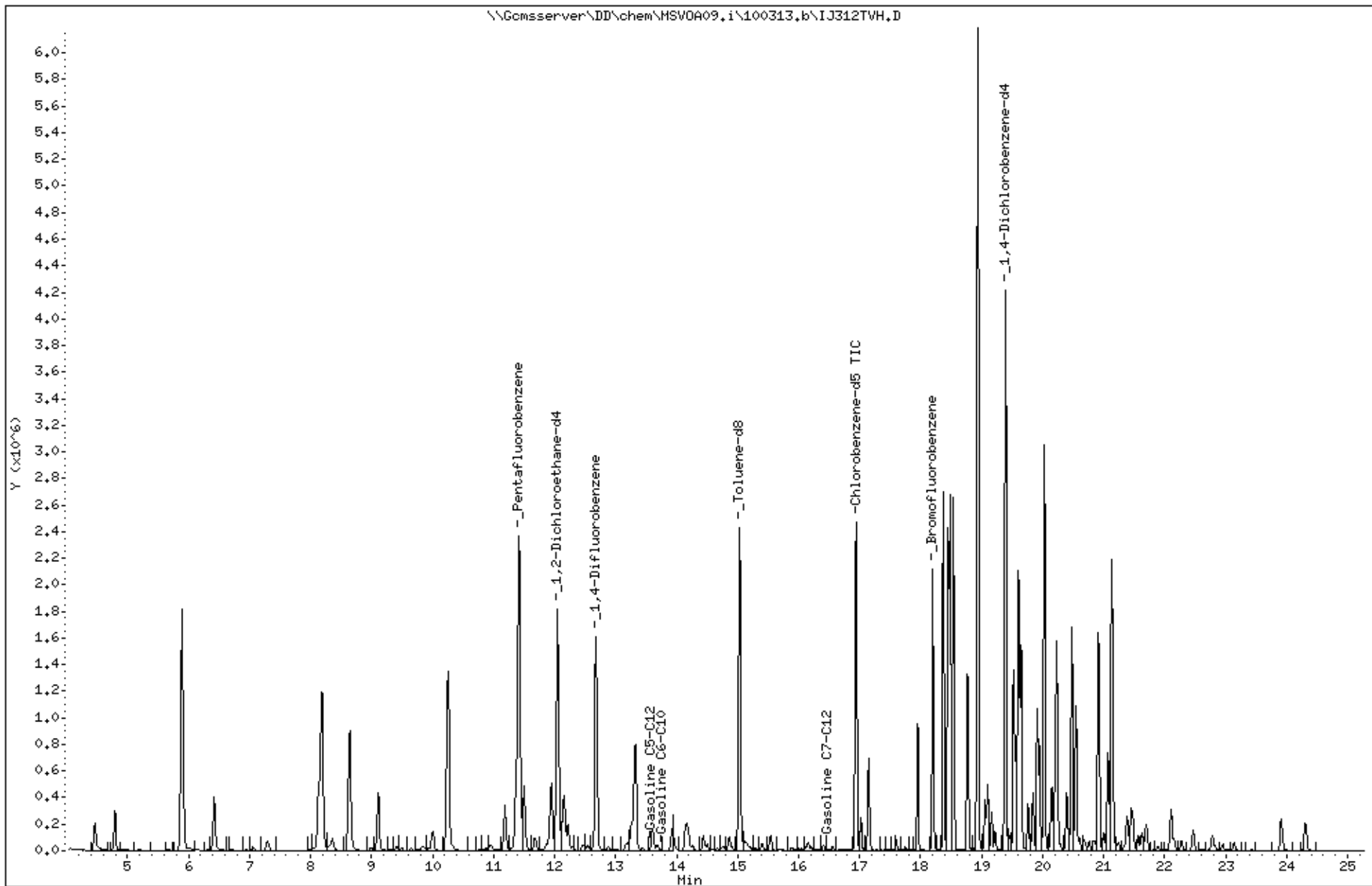
Sample Info: S,249459-008

Instrument: MSV0A09.i

Operator: VOC

Column diameter: 2.00

Column phase:



Date : 02-OCT-2013 10:59

Client ID: DYNA P&T

Sample Info: CCV/BS,QC710033,203615,S23229,,01/100

Instrument: MSV0A09.i

Operator: VOC

Column diameter: 2.00

Column phase:

