

VOLKSWAGEN

GROUP OF AMERICA

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By Alameda County Environmental Health 2:22 pm, Apr 30, 2015

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

Christopher A. Hahn
Senior Manager
Real Estate & Facility Services
703-3647202
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NAME
TITLE
DEPARTMENT
PHONE
FAX
E-MAIL

DATE

April 23, 2015

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

Subject:
Submittal of the Well Decommissioning 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 well decommissioning report that was prepared by ARCADIS-US for Jones Lang LaSalle Corporate Solutions (JLL) on behalf of Volkswagen Group of America (VWGoA). The well destruction activities that were conducted at the Site in April 2015 are summarized therein. 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.

VWGoA, JLL, and ARCADIS appreciate the opportunity to submit the enclosed report to the ACEH as documentation required for certification of case closure. If you have any questions or comments, please call me at (703) 3647202 or James Bryson of ARCADIS at (518) 250-7307.

Sincerely,



Christopher Hahn
Senior Manager, Real Estate & Facility Services
VOLKSWAGEN Group of America

Attachment

Volkswagen Group of America, Inc.
in care of Jones Lang LaSalle Corporate Solutions

Well Decommissioning Report

Volkswagen Automobile Dealership
2740 Broadway Avenue
Oakland, California

April 29, 2015



A handwritten signature in black ink, appearing to read "Carl Edwards", written over a horizontal line.

Carl Edwards,
Geologist

A handwritten signature in blue ink, appearing to read "J.P. Bryson", written over a horizontal line.

James P. Bryson, P.G.
Principal Geologist

Well Decommissioning Report

Volkswagen Automobile
Dealership
2740 Broadway
Oakland, California

Prepared for:
Volkswagen Group of America, Inc.

Prepared by:
ARCADIS U.S., Inc.
855 Route 146
Suite 210
Clifton Park
New York, 12065
Tel 518.250.7300
Fax 518.250.7301

Our Ref.:
EM001048.0003

Date:
April 29, 2015

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Acronyms and Abbreviations

ACEH	Alameda County Environmental Health
ACPWA	Alameda County Public Works Agency, Water Resources Section
ARCADIS	ARCADIS U.S., Inc.
bgs	below ground surface
CDWR	California Department of Water Resources
COPBD	City of Oakland Planning and Building Department
Cruz	Cruz Brothers Locators
EM	electromagnetic transmitter and receiver
Gregg	Gregg Drilling and Testing, Inc.
MW	monitoring well
report	Well Decommissioning Report
site	Volkswagen Automobile Dealership located at 2740 Broadway in Oakland, California
SS-SV	sub-slab soil vapor probe
VW	vapor extraction well or soil vapor probe
VWGoA	Volkswagen Group of America
UST	underground storage tank



Well Decommissioning Report

Volkswagen Automobile Dealership
Oakland, California

1. Introduction

On behalf of Volkswagen Group of America, Inc. (VWGoA), ARCADIS U.S., Inc. (ARCADIS) prepared this Well Decommissioning Report (report) for the Volkswagen Dealership located at 2740 Broadway in Oakland, California (site; Figure 1). The site was issued “no further action” status by the ACEH under the California State Water Resources Control Board’s Low-Threat Underground Storage Tank Case Closure Policy (SWRCB 2012) in a letter dated October 14, 2014 (ACEH 2014). The October 2014 ACEH letter required that the remaining wells at the site be abandoned, and that this report, documenting the abandonment, be provided.

This report documents the decommissioning of five groundwater monitoring wells (MW-1, MW-3, and MW-7 through MW-9), three vapor extraction wells (VW-1 through VW-3), five sub-slab soil vapor probes (SS-SV-1 through SS-SV-5) and two soil vapor probes (VW-4 and VW-5). The wells were abandoned in accordance with the Alameda County Public Works Agency, Water Resources Section (ACPWA) requirements. Monitoring well destruction activities were conducted pursuant to California Well Standards Bulletin No. 74-81 and Supplement No. 74-90 (California Well Standards) (CDWR 1991), under the supervision and signed by an appropriately licensed California Professional Geologist.

2. Site Description

The site is currently an operating Volkswagen automobile dealership located on the southeast corner of the intersection of Broadway Avenue and 28th Street. Current on-site facilities include a three-story building housing multiple service bays and a showroom. There were ten monitoring wells associated with the site. Current site features are shown on Figure 2.

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); 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).

3. Well Decommissioning Activities

Five existing groundwater monitoring wells (MW-1, MW-3, and MW-7 through MW-9) three vapor extraction wells (VW-1 through VW-3), five sub-slab soil vapor probes (SS-SV-1 through SS-SV-5), and two soil vapor probes (VW-4 and VW-5) were identified at the site for decommissioning. A site plan showing the former well locations is included as Figure 2.

3.1 Pre-Field Activities

Prior to initiating field activities, ARCADIS updated the site-specific Health and Safety Plan in accordance with state and federal requirements for use during the field activities. ARCADIS obtained well destruction permits from ACPWA prior to initiating the drilling and grouting activities. An encroachment permit was acquired from the City of Oakland Planning and Building Department (COPBD) to perform well destruction activities at MW-1, MW-3, MW-7 through MW-9, and VW-1 through VW-3, which are located in a City of Oakland right-of-way.

3.2 Underground Utility Locating

On March 10, 2015, ARCADIS contacted Underground Service Alert of Northern California to identify any public utilities near the monitoring well locations. On March 24, 2015, Cruz Brothers Locators (Cruz), a private utility-locating company, conducted a utility mark out under direct supervision by ARCADIS. Cruz conducted the utility mark out using an electromagnetic transmitter and receiver (EM; Fisher TW-6 Pipe & Cable Locator and RD-8000 Electronic Locator) to clear proposed decommissioned monitoring well locations of conductive and nonconductive underground utilities. Cruz used a traceable rodder to locate the sewer lateral and inspected manholes and storm drains. ARCADIS staff also conducted a visual inspection of the site to identify potential subsurface obstructions.

3.3 Well Decommissioning by Pressure Grouting

From April 1 through April 2, 2015, five groundwater monitoring wells (MW-1, MW-3, and MW-7 through MW-9) and three vapor extraction wells (VW-1 through VW-3) were successfully decommissioned by pressure-grouting in place. Additionally, five sub-slab soil vapor probes (SS-SV-1 through SS-SV-5) and two soil vapor probes (VW-4 and VW-5) were removed. Gregg Drilling and Testing, Inc. (Gregg), a California-licensed drilling contractor (C-57 License No. 485165), performed the well abandonments in



Well Decommissioning Report

Volkswagen Automobile
Dealership
Oakland, California

accordance with ACPWA requirements and the California Well Standards. Available boring logs and well construction diagrams are included as Appendix A.

Prior to well decommissioning, the depth to groundwater and depth to bottom was measured to confirm well construction details (Table 1). The well collar and cover at all well locations were removed with a jackhammer.

Well locations were abandoned using neat cement grout pressurized at approximately 25 pounds per square inch (psi) for five minutes, with the exception of monitoring well MW-3 and vapor extraction wells VW-1 through VW-3, where pressure could not be maintained due to the presence of horizontal conveyances associated with the former dual-phase extraction and treatment system. The grout was delivered from the bottom of the well to the top using a tremie pipe. For wells MW-3 and VW-1 through VW-3, the grout was allowed to settle overnight and additional grout was added the following day until the vertical casings and horizontal conveyances were sealed, as directed by ACPWA.

Following grouting, a pressure test was completed by connecting the well casing to an air compressor and monitoring the pressure to ensure sufficient setting of the neat cement mixture without any leak or pressure drop. Following the initial pressure test, additional neat cement was pumped into the well casing as necessary to bring the neat cement level back to the top of the casing. For wells MW-1, MW-3, MW-7 and VW-1 through VW-3, annular materials were removed to approximately two feet bgs and the casing was subsequently cut. At wells MW-8 and MW-9, annular materials were removed to 1 foot bgs, due to the close proximity of subsurface electric utilities in 28th Street. Additional grout was added in the annular void from approximately 1 to 2 feet bgs. The surface at all well locations was restored according to the COPBD's permit specifications.

For the soil vapor probes and sub-slab soil vapor probes, the tubing, lid and support ring of the flush-mount well boxes was removed. The surface at each location was finished using concrete to match existing conditions.

4. Management of Investigation-Derived Waste

Construction waste generated as part of the well destruction activities was properly contained in one 55-gallon Department of Transportation (DOT) approved steel drum. The drum was labeled as non-hazardous construction debris and left onsite for removal. The drum will be transported offsite by Integrated Wastestream Management



Well Decommissioning Report

Volkswagen Automobile
Dealership
Oakland, California

to a Republic Services disposal facility in Livermore, California. A final copy of the waste manifest will be submitted under separate cover.

5. Well Completion Reports

As required by Section 13751 of the California Water Code, Well Completion Reports must be filed with the CDWR within 60 days of completion of the well destruction activities. Well Completion Reports were submitted to the California Department of Water Resources by ARCADIS on April 24, 2015. Copies of the Well Completion Reports are included as Appendix B.

6. Summary

ARCADIS oversaw the decommissioning of five groundwater monitoring wells, three vapor extraction wells, five sub-slab soil vapor probes and two soil vapor probes at the site in April 2015. The wells were decommissioned in accordance with ACPWA requirements and the California Well Standards. Once the waste disposal documentation has been received from the disposal facility, that information will be provided to ACEH under separate cover.



Well Decommissioning Report

Volkswagen Automobile Dealership
Oakland, California

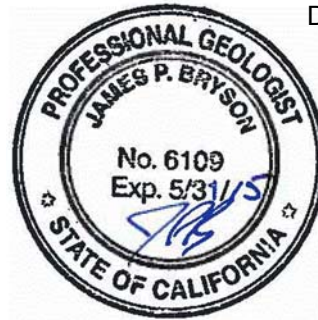
7. Certification

All hydrogeologic and geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by an ARCADIS California Professional Geologist.

James P. Bryson, P.G.
Principal Geologist

April 29, 2015

Date



A professional geologist's certification of conditions comprises a declaration of his or her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations, and ordinances.



Well Decommissioning Report

Volkswagen Automobile
Dealership
Oakland, California

8. References

ACEH, 2014. Well Destruction for Fuel Leak Case No. *RO0000400 and GeoTracker Global ID T0600100227, Broadway Volkswagen, 2740 Broadway, Oakland, CA 94612*. October 14.

California Department of Water Resources (CDWR), 1991. *California Well Standards, Bulletin 74-90, Supplement to Bulletin 74-81*. June.

California State Water Resources Control Board (SWRCB), 2012. *Low-Threat Underground Storage Tank Case Closure Policy*. April 19.

Engineering Services, Inc. 1989. *Removal of Four Underground Storage Tanks at Broadway Volkswagen, Oakland, California*. February 3.

Table

Table 1
Well Construction Details
VW Oakland
2740 Broadway
Oakland, California

Monitoring Well ID	Well Installation Date	Well Destruction Date	Borehole Diameter (inches)	PVC diameter (inches)	Total Depth (feet bgs)	Screen Interval (feet bgs)
MW-1	1/20/1989	4/2/2015	8	2	20	5-20
MW-3	1/19/1989	4/2/2015	8	2	20	5-20
MW-7	3/18/1994	4/2/2015	10	4	25	19.5-24.5
MW-8	6/13/2013	4/2/2015	8	2	20	16-20
MW-9	6/13/2013	4/2/2015	8	2	20	11-15
VW-1	3/18/1994	4/2/2015	10	4	20	14.5-19.5
VW-2	3/18/1994	4/2/2015	10	4	17	12-16.5
VW-3	3/18/1994	4/2/2015	10	4	16	5.5-15.5

Notes:

bgs = below ground surface

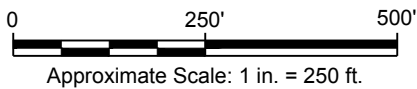
btoc = below top of casing



Figures



SOURCE: GOOGLE EARTH PRO

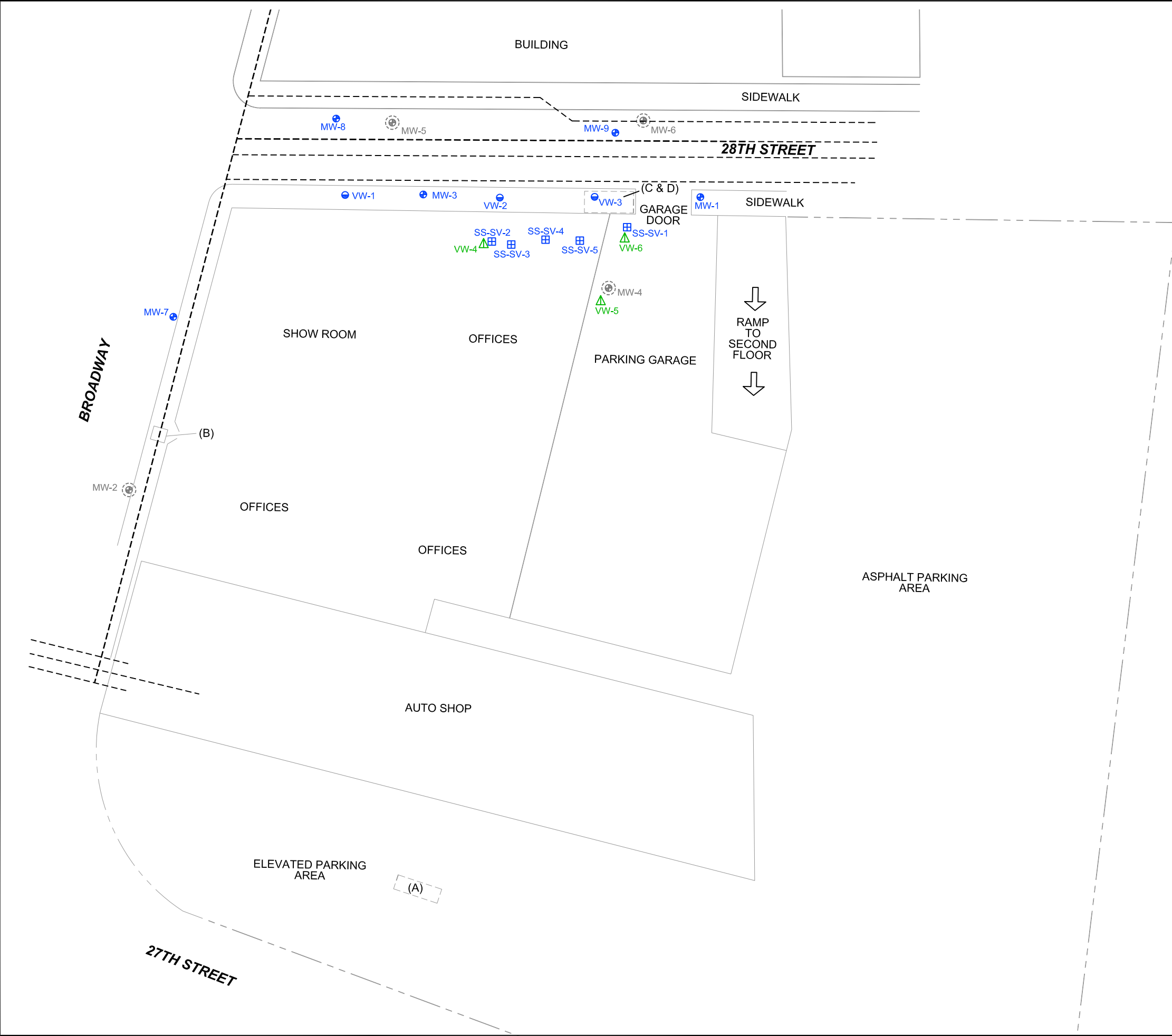


VW OAKLAND
2740 BROADWAY
OAKLAND, CALIFORNIA

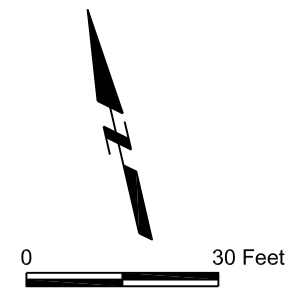
SITE LOCATION MAP




CITY:\Reed\DIV\GROUP\Reed\DB\Reed\LD\Opt\PIC\Opt\PM\Reed\TM\Reed\TYR\Opt\ON\OFF=REF*
 G:\ENVCAD\Emery\file\ACT\EM001048\0003\Well\Dest\Chs\DW\GEM001048 B02.dwg LAYOUT: 2 SAVED: 4/21/2015 2:32 PM ACADVER: 18.1S (LMS TECH) PAGES: 18 PAGES: 18 PLOT: 4/22/2015 2:49 PM BY: REYES, ALEC



- LEGEND**
- PROPERTY LINE
 - x-x-x- FENCE LINE
 - - - - - UTILITY LINE
 - [] 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
 - MW-3 (blue circle with cross) ABANDONED MONITORING WELL LOCATION (APRIL 2015)
 - MW-5 (grey circle with cross) PREVIOUSLY ABANDONED MONITORING WELL
 - VW-1 (blue circle with dot) ABANDONED VAPOR EXTRACTION WELL (APRIL 2015)
 - VW-6 (green triangle) ABANDONED SOIL VAPOR PROBE (APRIL 2015)
 - SS-SV-1 (grey square with cross) SUB-SLAB SOIL VAPOR 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 SHOWING ABANDONED WELLS	
	FIGURE 2



Appendix A

Boring Logs



597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637

LOG OF BORING NO. MW-1 PAGE 1 of 1

PROJECT NO: 02-258-003 DATE: 1/20/89
CLIENT: Semco/Broadway VW REF. ELEV.
SITE LOCATION: Broadway & 27th St., METHOD: Hollow-Stem
Oakland, Ca. Auger

BORING LOCATION: HOLE DIA: 8.25"

DRILLER: ASE
LOGGED BY: J. BRYSON
SUPERVISOR: S. WICKHAM R.G. #3851 *Susan Wickham*

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0		14		Ring @ 7'		4" Concrete at surface	
2					CL	CLAY, silty, brown, slightly moist, no odor	
4							
6							
8							
10						Odor detected at approx. 10'	
12					CL	As above	
14							
16							
18					CL	As above	
20					Total depth 20'		
22					Groundwater measured at 7.5 feet		
24					0.02" slotted 2" PVC 20-5', blank 2" PVC 5-0'/#3 sand 20-4', 0.5 bentonite 4-3', concrete (5% bentonite) 3-0.5', Allen key well box		



597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637

LOG OF BORING NO. MW-2 PAGE 1 of 1

PROJECT NO: 02-258-003 DATE: 1/19/89
CLIENT: Semco/Broadway VW REF. ELEV.
SITE LOCATION: Broadway & 27th St., METHOD: Hollow-Stem
Oakland, Ca. Auger
BORING LOCATION: HOLE DIA: 8.25"

DRILLER: ASE
LOGGED BY: J. BRYSON
SUPERVISOR: S. WICKHAM R.G. #3851 *Susan Wickham*

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0		12		Ring @ 5'		4" Concrete at surface	
2					CL	CLAY, dark brown, silty, soft, slightly moist, no odor	
4					CL	As above, with some medium sand	
6							
8							
10					CL	As above, light greenish-brown	
12							
14					CL	As above, light brown	
16							
18							
20					CL	As above	
22						Total depth 20' Groundwater measured at 11.1 feet	
24						0.02" slotted 2" PVC 20-5', blank 2" PVC 5-0'/#3 sand 20-4', 0.5 bentonite 4-3', concrete (5% bentonite) 3-0.5', Allen key well box	



597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637

LOG OF BORING NO. MW-3 PAGE 1 of 1

PROJECT NO: 02-258-003 DATE: 1/19/89
CLIENT: Semco/Broadway VW REF. ELEV.
SITE LOCATION: Broadway & 27th St., METHOD: Hollow-Stem
Oakland, Ca. Auger
BORING LOCATION: HOLE DIA: 8.25"

DRILLER: ASE
LOGGED BY: J. BRYSON
SUPERVISOR: S. WICKHAM R.G. #3851 *Susan Wickham*

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						4" Concrete at surface	
2					CL	CLAY, light brown, firm, slightly moist, no odor	
4					SP	SAND, light brown, medium dense, slightly moist, no odor	
6		23		Ring @ 7'	SP	As above, some gravel	
8							
10							
12							
14					CL	CLAY, silty, light brown, firm, moist, no odor	
16							
18					CL	CLAY, sandy, light brown, firm, wet, no odor	
20							
22						Total depth 20' Groundwater measured at 11.7 feet 0.02" slotted 2" PVC 20-5', blank 2" PVC 5-0'/#3 sand 20-4', 0.5 bentonite 4-3', concrete (5% bentonite) 3-0.5', Allen key well box	
24							



**Environmental
Science &
Engineering, Inc.**

BORING LOG AND WELL COMPLETION SUMMARY

MW7

WELL COMPLETION

Completion Depth: 25 Feet

Size/Type	From	To
Casing: 4" Diam. Blank PVC	0 Feet	19.5 Feet
4" Diam. Blank PVC	24.5 Feet	25.0 Feet
Screen: 4" Diam. Slotted (0.030") PVC	19.5 Feet	24.5 Feet
Filter: #3 Monterey Sand	18.5 Feet	25.0 Feet
Seal: Bentonite Pellets	16.5 Feet	18.5 Feet
Grout	1.0 Feet	16.5 Feet

Well Cap or Box: Emco-Wheaton (15/16-inch bolts)

Project Name: Vareloco

Project No: 6-93-5093

Location: 2740 Broadway
Oakland, California

Page 1 of 1

Driller: Exploration Geoservices, Inc
Method: Mobile B61 Hollow-Stem Auger
Hole Diameter: 10 Inches Total Depth: 25.0 Feet
Ref. Elevations:
Logged By: Bart Miller

Dates:
Start: 3-18-94
Finish: 3-18-94

Depth (ft)	Lithologic Description	USC	Graphic Log			Vapor	Remarks
			Sample Blows	Lithology	Well Installation		
0	CONCRETE						START 13:20
	FORMATIONAL SEDIMENTS						
	SILTY CLAY, reddish-brown, slightly moist, moderate plasticity, no odor	CL					
	SILT, some gravel fragments and sand, brown, slightly moist, low plasticity, no odor.	ML					
5							
	SILTY CLAY, brown, slightly moist, moderate plasticity, no odor.	CL					Minor perched water observed at 7.5-10 feet
10	SANDY SILT, greenish-grey, dry, low plasticity, no odor	ML					
	SILTY CLAY, grayish-green, dry, moderate plasticity, no odor.	CL					
15	SILT, grayish-green, dry, low plasticity, no odor.	ML	7 11 16 8 7 10 10 20 35			4.0	
	SILT, as above except becoming sandy.		9 20 28 10			5.0	
20	SILTY SAND, brown, slightly moist, well graded, fine to coarse grained, no odor.	SW	16 32 9 19 30			11.0	
	CLAY, brown, dry, moderate plasticity, no odor	CL				7.0	
25							Well installed to depth of 25 feet. Screened over target sand lens. No samples submitted for analysis.
30							
35							





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Engineering, Inc.**

**BORING LOG AND
WELL COMPLETION SUMMARY**

VW1

WELL COMPLETION

Completion Depth: 20 Feet

Size/Type	From	To
Casing: 4" Diam. Blank PVC	0 Feet	14.5 Feet
4" Diam. Blank PVC	19.5 Feet	20.0 Feet
Screen: 4" Diam. Slotted (0.030") PVC	14.5 Feet	19.5 Feet
Filter: #3 Monterey Sand	13.0 Feet	20.0 Feet
Seal: Bentonite Pellets	11.0 Feet	13.0 Feet
Grout	1.0 Feet	11.0 Feet

Well Cap or Box: Emco-Wheaton (15/16-inch bolts)

Project Name: Voreloo

Project No: 8-83-5093

Location: 2740 Broadway
Oakland, California

Page 1 of 1

Driller: Exploration Geoservices, Inc

Method: Mobile B81 Hollow-Stem Auger

Hole Diameter: 10 Inches Total Depth: 20.0 Feet

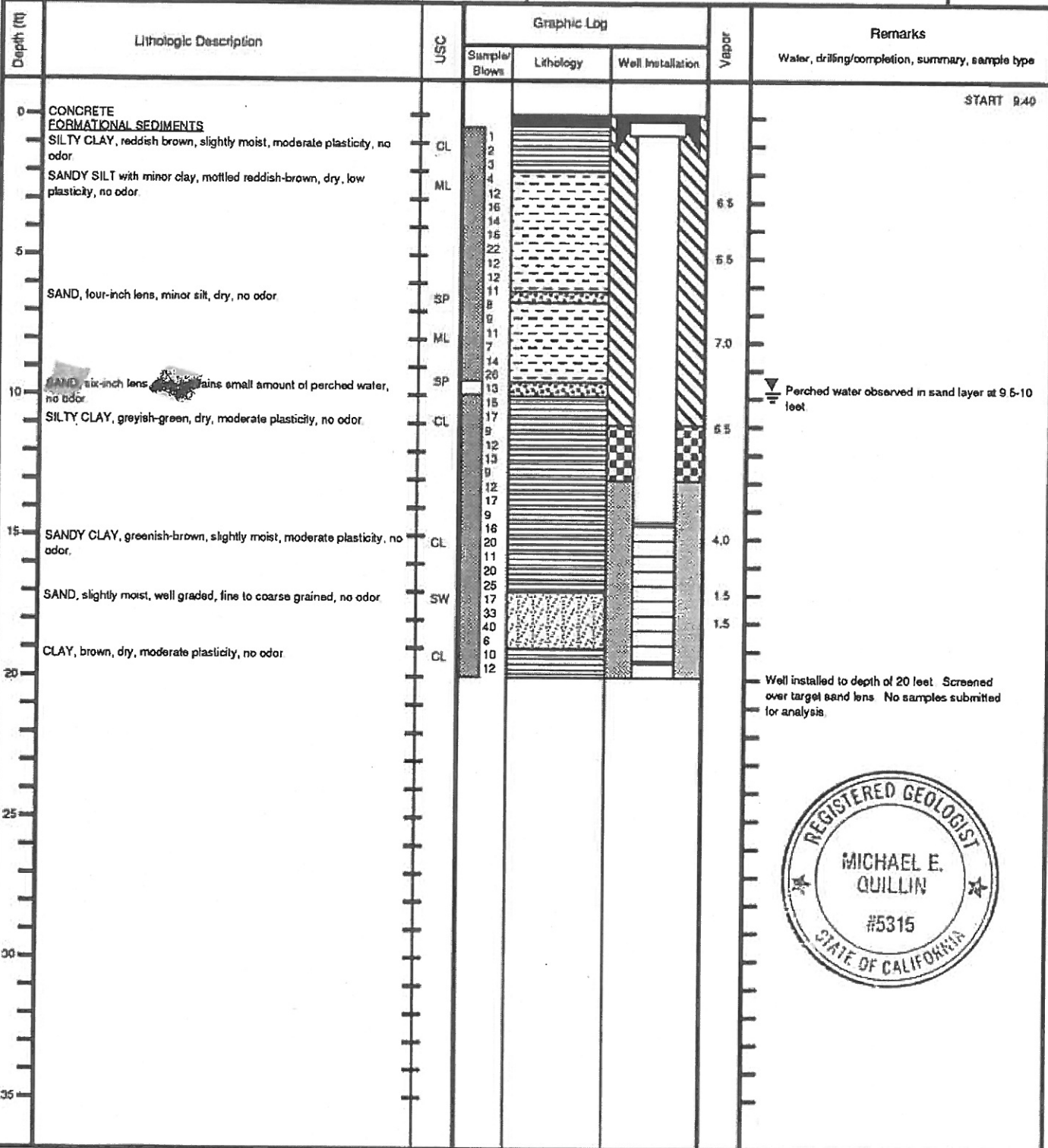
Ref. Elevations:

Logged By: Bart Miller

Dates:

Start: 3-17-84

Finish: 3-18-84





**Environmental
Science &
Engineering, Inc.**

**BORING LOG AND
WELL COMPLETION SUMMARY**

VW2

WELL COMPLETION

Completion Depth: 17 Feet

Size/Type	From	To
Casing: 4" Diam. Blank PVC	0 Feet	12.0 Feet
4" Diam. Blank PVC	16.5 Feet	17.0 Feet
Screen: 4" Diam. Slotted (0.030") PVC	12.0 Feet	16.5 Feet
Filter: #3 Monterey Sand	11.0 Feet	17.0 Feet
Seal: Bentonite Pellets	9.0 Feet	11.0 Feet
Grout	1.0 Feet	9.0 Feet

Well Cap or Box: Emco-Wheaton (15/16-inch bolts)

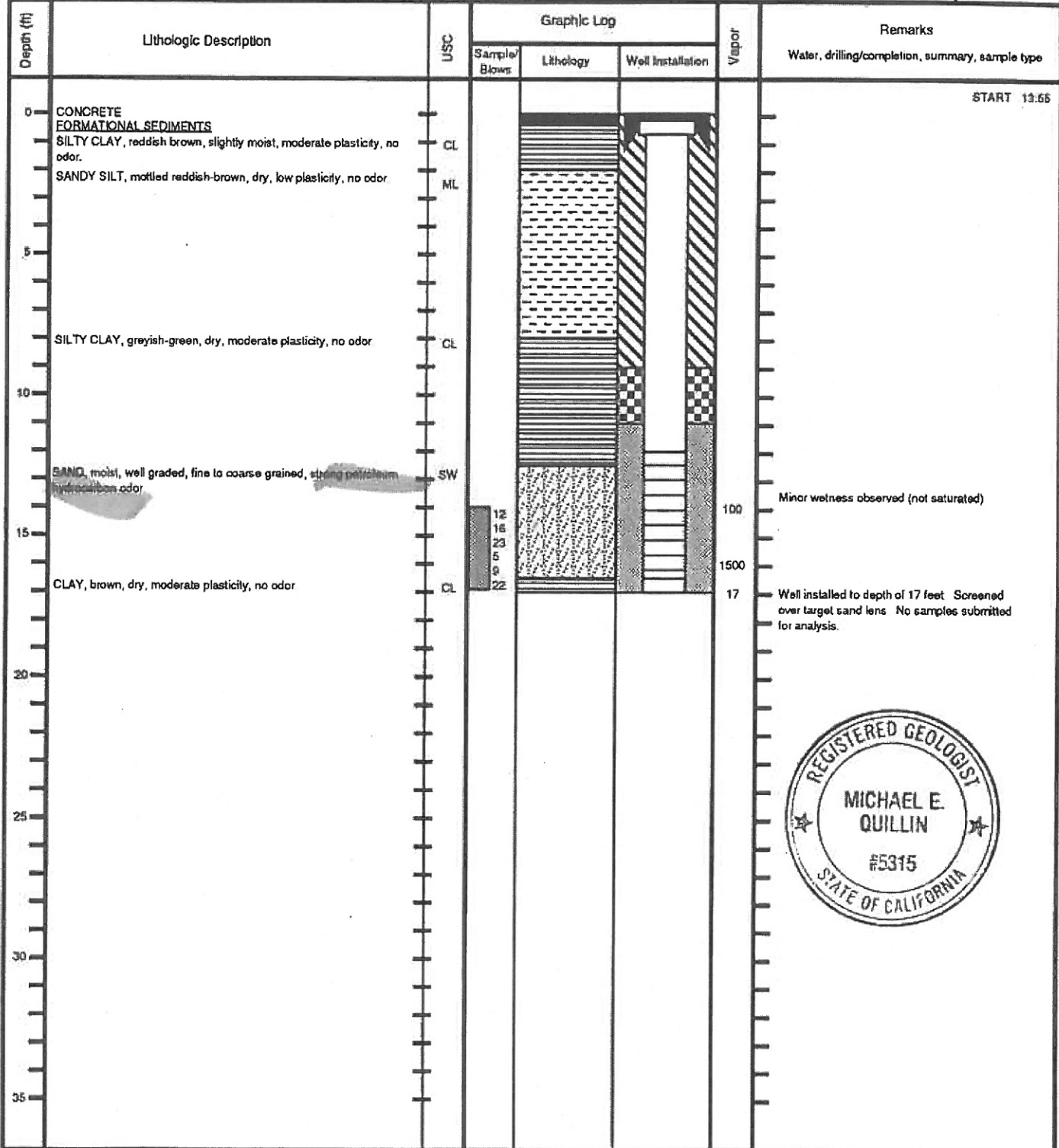
Project Name: Vorelec
Location: 2740 Broadway
Oakland, California

Project No: 8-83-5093

Driller: Exploration Geoservices, Inc.
Method: Mobile B61 Hollow-Stem Auger
Hole Diameter: 10 Inches Total Depth: 17.0 Feet
Ref. Elevations:
Logged By: Bart Miller

Page 1 of 1

Dates:
Start: 3-17-94
Finish: 3-18-94





**Environmental
Science &
Engineering, Inc.**

BORING LOG AND WELL COMPLETION SUMMARY

VW3

WELL COMPLETION

Completion Depth: 16 Feet

Size/Type	From	To
Casing: 4" Diam. Blank PVC	0 Feet	5.5 Feet
4" Diam. Blank PVC	15.5 Feet	16.0 Feet
Screen: 4" Diam. Slotted (0.030") PVC	5.5 Feet	15.5 Feet
Filter: #3 Monterey Sand	4.5 Feet	16.0 Feet
Seal: Bentonite Pellets	1.5 Feet	4.5 Feet
Grout	1.0 Feet	1.5 Feet

Well Cap or Box: Emco-Wheaton (15/16-inch bolts)

Project Name: Voreco
Location: 2740 Broadway
Oakland, California

Project No: 6-93-5093

Driller: Exploration Geoservices, Inc.
Method: Mobile B61 Hollow-Stem Auger
Hole Diameter: 10 Inches Total Depth: 16.0 Feet
Ref. Elevations:
Logged By: Bart Miller

Page 1 of 1

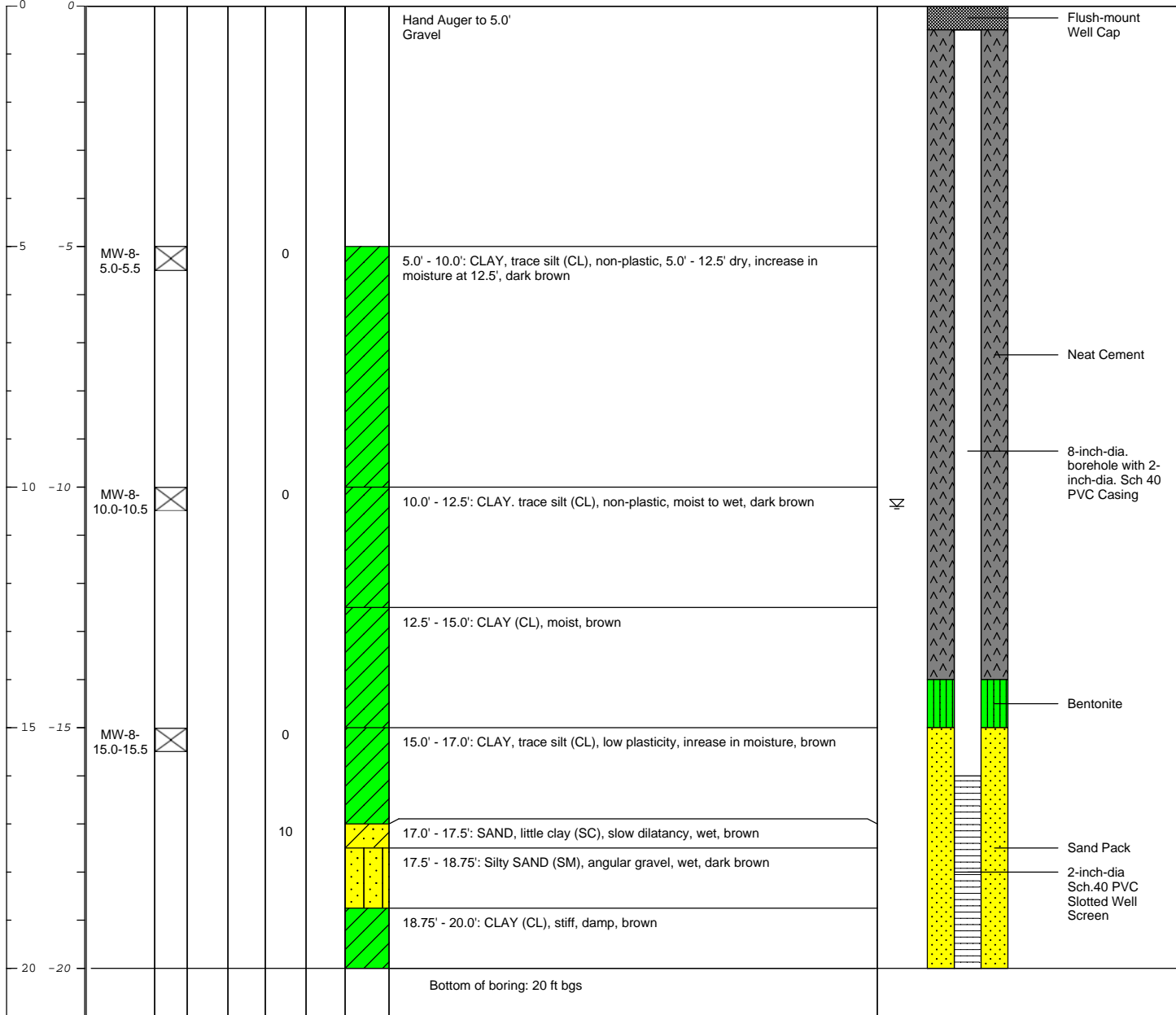
Dates:
Start: 3-17-94
Finish: 3-18-94


Depth (ft)	Lithologic Description	USC	Graphic Log			Vapor	Remarks
			Sample/Blows	Lithology	Well Installation		
0	CONCRETE FILL, rounded gravel fragments with clayey sand matrix, dry, no odor.						START 17:00
5							
10	FILL, pea gravel, no fines, dry, slight petroleum hydrocarbon odor.		2 2 3				Standing water with high concentration of dissolved product.
15	<u>FORMATIONAL SEDIMENTS</u> SAND, wet, well graded, fine to coarse grained, strong petroleum hydrocarbon odor.	SW	3 5 13 16 20 30				
20	CLAY, brown, dry, moderate plasticity, no odor.	CL					Well installed to depth of 16 feet in gasoline UST backfill. Screened over interval of impacted standing water. No samples submitted for analysis
25							
30							
35							



Date Start/Finish: 6/13/2013 Drilling Company: Penecore Driller's Name: Shawn Drilling Method: Hollow Stem Auger (HSA) Auger Size: 8-inches Rig Type: Sampling Method: Split Spoon OVA Equipment: PID	Northing: 2124505.31 (CA NAD83) Easting: 6052311.39 (CA NAD83) Casing Elevation: 32.70 (NAVD88) Surface Elevation: Borehole Depth: 20.5 ft bgs Descriptions By: SB	Well/Boring ID: MW-8 Client: Volkswagen Location: 2740 Broadway Ave. Oakland, California Reviewed By: C. Bell / R. Goloubow
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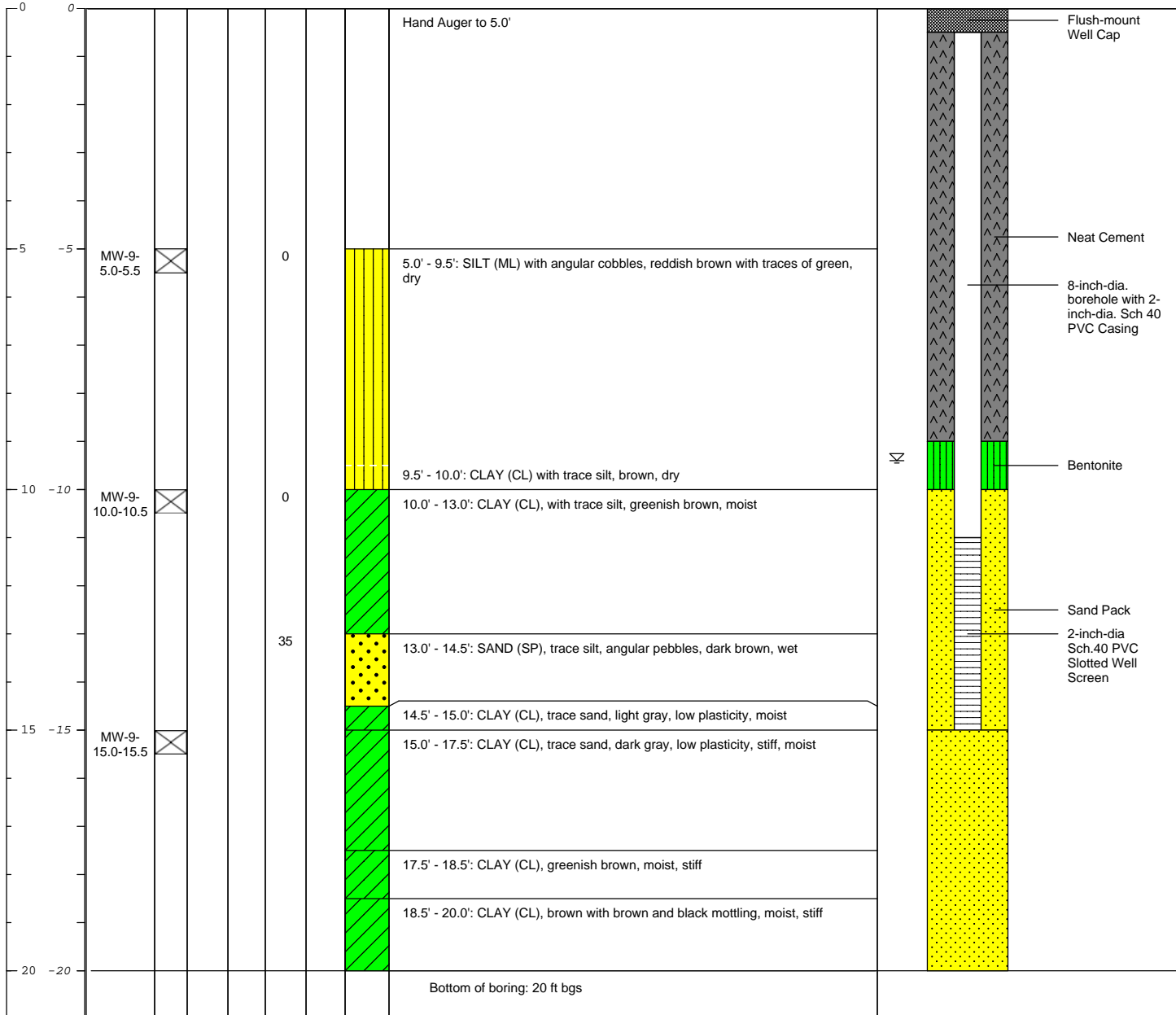
DEPTH	ELEVATION	Sample Run Number	Analytical Sample Interval	Blow Counts	N - Value	PID Headspace (ppm)	Recovery (inches)	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	Remarks: Abbreviations: ft bgs = feet below ground surface, PID = photoionization detector; ppm = parts per million
	∇ : Depth to water measured on June 8, 2013

Date Start/Finish: 6/13/2013 Drilling Company: Penecore Driller's Name: Shawn Drilling Method: Hollow Stem Auger (HSA) Auger Size: 8-inches Rig Type: Sampling Method: Split Spoon OVA Equipment: PID	Northing: 2124482.62 (CA NAD83) Easting: 6052391.03 (CA NAD83) Casing Elevation: 31.85 (NAVD88) Surface Elevation: Borehole Depth: 20 ft bgs Descriptions By: SB	Well/Boring ID: MW-9 Client: Volkswagen Location: 2740 Broadway Ave. Oakland, California Reviewed By: C. Bell / R. Goloubow
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DEPTH	ELEVATION	Sample Run Number	Analytical Sample Interval	Blow Counts	N - Value	PID Headspace (ppm)	Recovery (inches)	Geologic Column	Stratigraphic Description	Well/Boring Construction
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Remarks: Abbreviations: ft bgs = feet below ground surface, PID = photoionization detector; ppm = parts per million

∇ : Depth to water measured on June 8, 2013



Project/Client: VW, Oakland, CA EM001048.0001

Start Date: 2-11-14 End Date: 2-11-14 Total Depth: 5.5' Hole Diameter: 3" Depth to 1st Water: -

Sampling Device: _____ Length: _____ Diameter: _____ Sampling Interval: _____

Hammer Weight: _____ Hammer Drop: _____ Drilling Contractor: Confluence

Drilling Rig: _____ Drilling Method: Hand Auger Drilling Fluid Used: _____

Driller: Jason / Tony Helper(s): _____

Logged By: A. Shah Reviewed By: _____ Date Reviewed: _____

Depth (ft)	Drive Interval	Blows per 6"	Recovery (in.)	Time	Sample ID	Description <small>Depth: Principal Components, (angularity, plasticity, dilatency); Minor Components, (angularity, plasticity, dilatency); Sorting, Moisture Content, Consistency/Density, Color (Munsel Chart), Additional Comments.</small>	PID Reading
0'						0-9" - Concrete slab (3 slabs)	
1'						9"-12" - Sandy silt	
2'						2'-2' - SAA	
3'						2'-3' - SAA	
4'						3'-4' - SAA	
5'						4'-5' - SAA sandy silt and fill, some gravel	
6'						5'-5.5' - SAA, terminate at 5.5'	

Remarks/Notes:

Project/Client: VW, Oakland, CA EMOD1048.0001

Start Date: 2-11-14 End Date: 2-11-14 Total Depth: 5.5' Hole Diameter: 3'' Depth to 1st Water: -

Sampling Device: _____ Length: _____ Diameter: _____ Sampling Interval: _____

Hammer Weight: _____ Hammer Drop: _____ Drilling Contractor: Confluence

Drilling Rig: _____ Drilling Method: Hand Auger Drilling Fluid Used: _____

Driller: Jason / Tony Helper(s): _____

Logged By: A. Shah Reviewed By: _____ Date Reviewed: _____

Depth (ft)	Drive Interval	Blows per 6"	Recovery (in.)	Time	Sample ID	Description	PID Reading
						Depth: Principal Components, (angularity, plasticity, dilatency); Minor Components, (angularity, plasticity, dilatency); Sorting, Moisture Content, Consistency/Density, Color (Munsel Chart), Additional Comments.	
0'-3"						concrete slab	
3"-12"						dark clay	
1'-2'						dark clay	
2'-3'						light brown/orange silty sand	
3'-4'						light brown sandy silt	
4'-5'						orange sandy silt	
5'-5.5'						orange sandy silt, terminate @ 5.5'	

Remarks/Notes:



Boring/Well ID: VW-6 Page 3 of 3

Project/Client: VW, Oakland, CA EM001048.0001

Start Date: 2-11-14 End Date: 2-11-14 Total Depth: 5.5' Hole Diameter: 3'' Depth to 1st Water: -

Sampling Device: _____ Length: _____ Diameter: _____ Sampling Interval: _____

Hammer Weight: _____ Hammer Drop: _____ Drilling Contractor: Confluence

Drilling Rig: _____ Drilling Method: Hand Auger Drilling Fluid Used: _____

Driller: Jason/ Tony Helper(s): _____

Logged By: F. Nguyen Reviewed By: _____ Date Reviewed: _____

Depth (ft)	Drive Interval	Blows per 6'	Recovery (in.)	Time	Sample ID	Description	PID Reading
						Depth: Principal Components, (angularity, plasticity, dilatency); Minor Components, (angularity, plasticity, dilatency); Sorting, Moisture Content, Consistency/Density, Color (Munsel Chart), Additional Comments.	
0'						0-4" - concrete slab	
1'						4"-12" - dark clay	
2'						2'-2' - dark clay	
3'						2-3' dark clay	
4'						3'-3.5' - tight brown clay	
5'						3.5'-4' - silty sand, light brown	
6'						4'-5' - light brown silty sand terminate @ 5.5'	

Remarks/Notes:



Appendix B

Well Completion Reports

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

**STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)**

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED