SOMA
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February 27, 2017

**RECEIVED**
*By Alameda County Environmental Health 8:41 am, Feb 28, 2017*

Ms. Karel Detterman, PG
Alameda County
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Oakland, California 94502

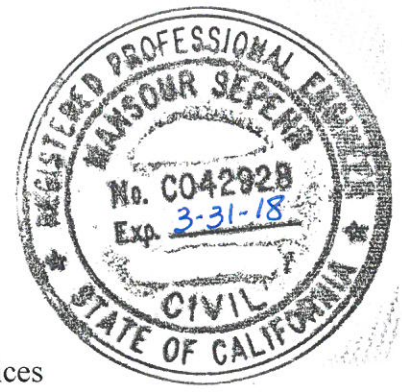
Subject: Fuel Leak Case#RO0000346
Site Location: 3519 Castro Valley Boulevard, Castro Valley

Dear Ms. Detterman:

SOMA's "Well Destruction Report" for the subject site has been uploaded to the State's GeoTracker database and to the Alameda County FTP site for your review.

If you have any questions or comments, please do not hesitate to call me. Your time is greatly appreciated in reviewing our report.

Sincerely,




Mansour Sepehr, Ph.D., PE
Principal Hydrogeologist

cc: Mr. Mirazim Shakoori w/enclosure
Ms. Dilan Roe, PE-Alameda County Env. Health Services

# Well Destruction Report

## 3519 Castro Valley Blvd
## Castro Valley, California

**February 27, 2017**

**Project 2762**

**Prepared for:**
**Mr. Mirazim Shakoori**
**4313 Mansfield Drive**
**Danville, California 94506**

SOMA ENVIRONMENTAL ENGINEERING, INC.
6620 Owens Drive Suite A Pleasanton CA 94588 Ph: 925.734.6400 F: 925.734-6401 www.somaenv.com

# ACKNOWLEDGEMENT STATEMENT

**Site Location:** 3519 Castro Valley Blvd., Castro Valley, CA

"I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's Geotracker website."

Mirazim Shakoori
4313 Mansfield Drive
Danville, California 94506
Responsible Party

## CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this technical report on behalf of Mr. Mirazim Shakoori, for property located at 3519 Castro Valley Boulevard, Castro Valley, California. This report has been prepared in response to the directive dated December 12, 2016 from the Alameda County Department of Environmental Health (ACDEH), which recommended case closure and destruction of site wells.

Mansour Sepehr, PhD, PE
Principal Hydrogeologist

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# 1. INTRODUCTION

## 1.1 Overview

SOMA Environmental Engineering, Inc. (SOMA) has prepared this report on behalf of Mr. Mirazim Shakoori, for property located at 3519 Castro Valley Boulevard, Castro Valley, California.

This report details SOMA's well decommissioning activities from February 15 to 17, 2017 in response to the directive from Alameda County Department of Environmental Health (ACDEH) dated December 12, 2016, which recommended case closure and requested destruction of all site wells.

## 1.2 Site Description

The site is located on the corner of Redwood Road and Castro Valley Boulevard (Figure 1). Prior to 1989, the site was a Mobil gasoline service station. In 1989, British Petroleum (BP) purchased and operated the station until ownership was transferred to Mr. Mirazim Shakoori in 1993. The station was operated under the Chevron brand until recently, and now operates as a Shell gasoline service station. Site features, including former and current USTs and former dispenser island, are shown in Figure 2.

In 1984, three single-walled fiberglass underground storage tanks (USTs) with capacities of 6,000 gallons, 8,000 gallons, and 10,000 gallons, were installed in the southeastern portion of the site. In 1988, a 1,000 gallon waste oil tank (WOT) was installed to replace the previous 380-gallon WOT. Holes were observed in the 380-gallon WOT. As a result, confirmation soil samples were collected from the bottom of the excavation and the analytical results confirmed contamination. Subsequently, groundwater monitoring wells were installed at the site and the site has been monitored since 1992. The other three USTs were removed and replaced in September 2003 with two new double-walled, fiberglass USTs with capacities of 12,000 gallons and 20,000 gallons. In addition, the dispensers, product lines, and vent lines were removed and replaced.

Petroleum hydrocarbon contamination has been detected in soils beneath the site and in groundwater beneath the site and in the downgradient areas and is related to a historical unauthorized release. A concise background of soil and groundwater investigations performed in connection with this case and an assessment of the residual impacts of chemicals of concern (COCs) for the site and the surrounding area are summarized in Appendix A.

# 2. SCOPE OF WORK

Per above-referenced correspondence from ACDEH, all existing groundwater monitoring and remedial wells were decommissioned in compliance with

California Well Standards and Alameda County specifications. Wastes generated during the well decommissioning process were properly disposed of and the site was cleared of all items related to present and historical environmental investigations and remedial activities. Boring logs for the decommissioned wells are included in Appendix B.

The following tasks were performed to implement the scope of work:

Task 1: Acquire Permits; Prepare Site Health and Safety Plan

Task 2: Well Decommissioning

Task 3: Waste Disposal

Task 4: Prepare Technical Report

## 2.1 Permit Acquisition, Health and Safety Plan, Utility Clearance

Before initiating field activities, SOMA obtained well permits from Alameda County Public Works Agency, ACPWA, (permits W2017-0054 through W2017-0068). ACPWA was first contacted on January 24, 2017 to schedule a well grouting inspection. On February 7, 2017, ACDEH was given the required 5 day advance notice in advance of drilling. A 24-hour notification to confirm scheduled dates was provided to ACPWA on February 14, 2017. Permit is included in Appendix C.

Before conducting field activities, a site-specific health and safety plan (HASP) was prepared by SOMA. The HASP is a requirement of the Occupational Safety and Health Administration (OSHA), "Hazardous Waste Operation and Emergency Response" guidelines (29 CFR 1910.120) and the California Occupational Safety and Health Administration (Cal/OSHA) "Hazardous Waste Operation and Emergency Response" guidelines (CCR Title 8, section 5192). It is designed to address safety provisions during field activities and protect the field crew from physical and chemical hazards resulting from drilling and sampling. It establishes personnel responsibilities, general safe work practices, field procedures, personal protective equipment standards, decontamination procedures, and emergency action plans. Field staff and contractors reviewed and signed the HASP prior to beginning field operations.

## 2.2 Well Decommissioning

From February 15 to 17, 2017, SOMA's field engineer oversaw decommissioning of fourteen groundwater monitoring wells (ESE-1R, ESE-2R, ESE-5R, MW-6R, MW-7R, SOMA-1 through SOMA-5, SOMA-7, SOMA-8, OB-1, and OB-2), five soil gas probes (SV-1 through SV-5) and three sub-slab soil gas probes (SSG-1 through SSG-3) by a C-57-licensed driller Cascade Drilling (license 938110) in accordance with California Well Standards. Well locations are shown in Figure 2. According to ACPWA permitting requirements and in accordance with approval from the ACPWA inspector, all wells and probes were decommissioned by

grouting the existing wells to the total depth. Well boxes were removed and wells were pressure grouted at 25 psi for 5 mins to the bottom of the well and by filling with neat cement to 3 feet below surface grade. For soil vapor probes, all tubing grout seal and fill material was removed prior to pressure grouting the hole. The sealing material was allowed to spill over the top of the casing to fill any annular space between casing and soil. State well completion reports (DWR) will be submitted to state and local agencies shortly. Appendix D includes a photographic documentation of the well decommissioning activities.

### 2.3 Waste Disposal

All wastes generated during these well decommissioning activities were temporarily stored on-site pending waste preapproval and waste disposal. On February 23, 2017, one drum, consisting of waste generated during the well decommissioning activities was removed from the site and transported to an appropriate waste disposal facility. A waste manifest and the waste preapproval documentation are included in Appendix E.

## 3. CONCLUSIONS

All existing groundwater monitoring wells and soil gas probes have been decommissioned in accordance with California Well Standards and requirements of Alameda County. No wells or other environmental equipment remains on-site. All wastes generated during the decommissioning process and previous environmental investigations have been removed from the site and properly disposed of in accordance with ACDEH's directive dated December 12, 2016.

# FIGURES


N

approximate scale in feet

0 60 120

Figure 1: Site vicinity map.

SOMA ENVIRONMENTAL ENGINEERING, INC.

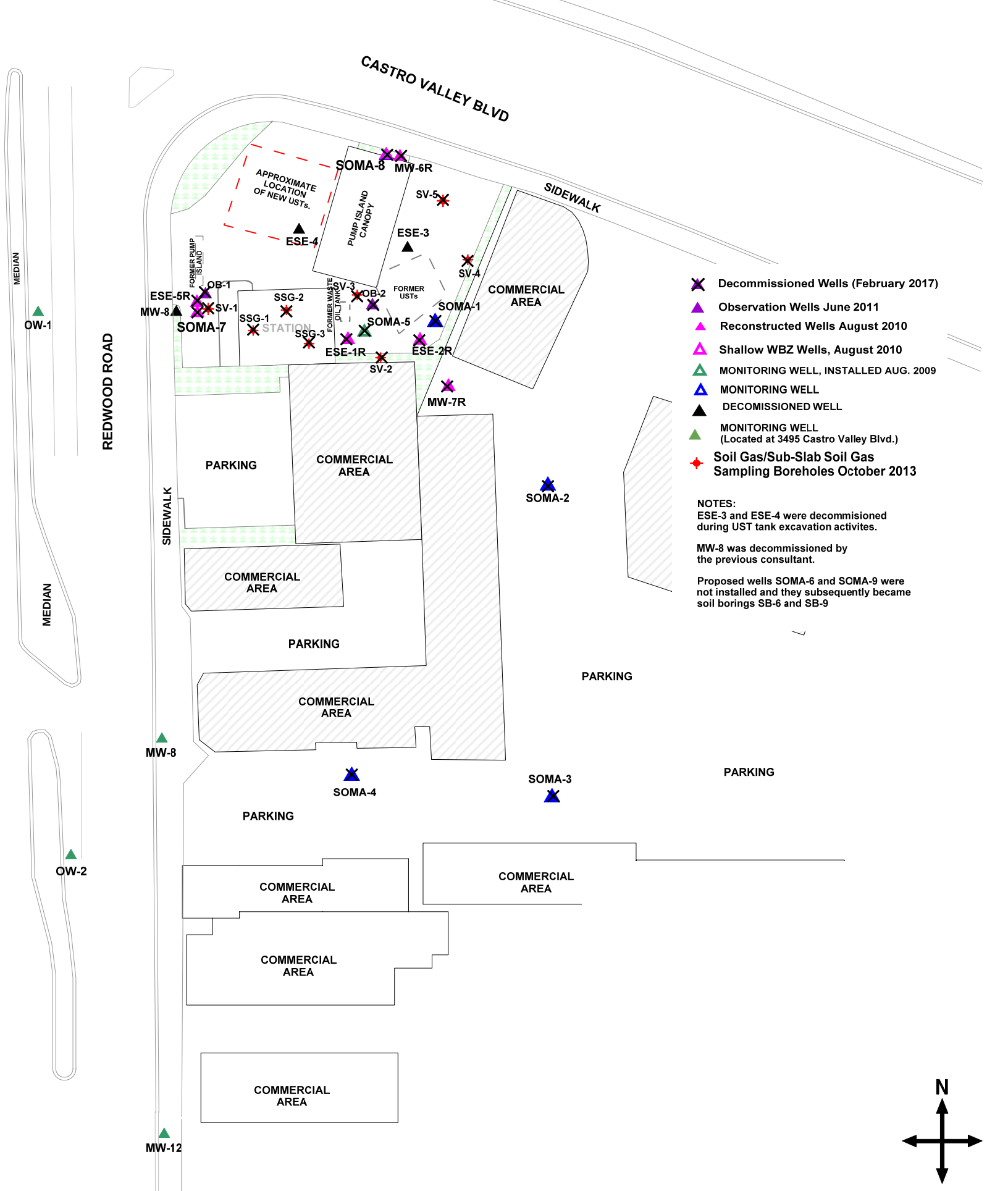


Figure 2: Site map showing locations of decommissioned wells

SOMA ENVIRONMENTAL ENGINEERING, INC.

# APPENDIX A
Site History

1984: Three single-walled fiberglass underground storage tanks (USTs) with capacities of 6,000 gallons, 8,000 gallons, and 10,000 gallons, were installed in the southeastern portion of the site. A former dispenser island reportedly existed on the west side of the site; however, there was no available information about the dispenser removal date.

1988: A 1,000-gallon, double-walled, fiberglass waste oil tank (WOT) was installed to replace the previous 380-gallon WOT. In September, Kaprealian Engineering, Inc. removed the original 380-gallon WOT and observed holes in this UST. As a result, confirmation soil samples were collected from the bottom of the excavation. The following analytical soil results were observed: benzene and toluene were detected at 6.8 µg/kg and 9.5 µg/kg, respectively; total petroleum hydrocarbons (TPH) and total oil and grease (TOG) constituents were not detected.

September and October 1992: Environmental Science & Engineering, Inc. (ESE) drilled five soil boreholes and converted them into monitoring wells (ESE-1 through ESE-5). Soil and groundwater samples were collected during well installation. In the soil samples, the maximum level of soil contamination was detected in monitoring well borehole ESE-5 at 220,000 µg/kg TPH as gasoline (TPH-g); 1,400 µg/kg benzene; 8,200 µg/kg toluene; 3,300 µg/kg ethylbenzene; and 18,000 µg/kg xylenes. In the groundwater samples collected from ESE-1, maximum concentrations were TPH-g at 2,300 µg/L; benzene at 370 µg/L; toluene at 160 µg/L; ethylbenzene at 17 µg/L; and xylenes at 110 µg/L.

July 1995: Three additional monitoring wells were installed: two on-site wells, MW-6 and MW-8, and one off-site well, MW-7.

April 1996: Well MW-8, located on the western margin of the site, was decommissioned to accommodate the road-widening project along Redwood Boulevard.

August 20, 2003: Prior to UST removal, SOMA oversaw drilling of two boreholes by Vironex. The boreholes were drilled in order to characterize the soil for landfill acceptance criteria.

September 2003: Three single-walled, fiberglass USTs, with capacities of 6,000 gallons, 8,000 gallons, and 10,000 gallons, were removed and replaced with two new double-walled, fiberglass USTs with capacities of 12,000 gallons and 20,000 gallons. In addition, the dispensers, product lines, and vent lines were removed and replaced. Soil below 5 feet bgs was disposed of off-site. Shallow soil was used as backfill material for the former UST pit after confirmation.

Third Quarter 2003: Two monitoring wells, ESE-3 and ESE-4, were decommissioned due to construction activities.

Fourth Quarter 2003: In December, SOMA oversaw drilling of off-site temporary well boreholes TWB-1 through TWB-5 to determine the horizontal extent of off-site petroleum hydrocarbon contamination.

June 2004: On June 10, SOMA installed on- and off-site monitoring wells: SOMA-1 in the southeastern section of the site, and SOMA-2 to SOMA-4 south and southeast of the site. Kier and Wright Engineers Surveyors, of Pleasanton, California, surveyed all site wells on June 21.

August 2006: SOMA conducted a sensitive receptor survey and it was concluded that no irrigation or domestic wells, and no sensitive groups or environments, evaluated during this sensitive receptor survey and located within ½-mile radius have the potential to be impacted by the site's contaminants at this time

Third Quarter 1993 to Present: On-going quarterly groundwater monitoring events have been conducted at the site.

September 2008: Shell Oil conducted a Phase II investigation. Elevated TPH-g concentrations 900 µg/L in groundwater and 720 mg/kg in soil were observed in the borings. Based on these elevated readings, Shell Oil filed a UST Unauthorized Release Report with Alameda County Environmental Health on September 24, 2008.

February 2009: Per ACEHD correspondence dated January 8, 2009, SOMA prepared a Site Conceptual Model and workplan to address data gaps at the site. SOMA proposed advancing soil borings to further define the lateral and horizontal extent of COC impact to vadose zone and the WBZ (up to 31 feet bgs). Per the ACEHD correspondence dated March 27, 2009, SOMA submitted a workplan addendum which was approved by the ACEHD on July 10, 2009 which reduced the number of DP borings from 9 to 7 and proposed the advancement of a shallow groundwater monitoring well within the vadose zone (screened across the potentiometric surface) to determine the appropriateness of the screening interval for existing wells at the site.

August 2009: SOMA conducted a soil and groundwater investigation at the site, advancing seven soil borings and installed shallow groundwater monitoring well SOMA-5 to determine if groundwater at the site is confined or semi-confined. TPH-g was elevated in groundwater samples from DP-1 and DP-2 (210 µg/L and 130 µg/L, respectively) along the northwestern portion of the site and in DP-5 and DP-6 (640 µg/L and 1,600 µg/L, respectively) along the eastern portion of the station (north of the former USTs). TPH-d was elevated in all groundwater samples, with concentrations between 130 µg/L and 980 µg/L (DP-7 and DP-4, respectively). TPH-mo was observed only along the western portion of the site, in DP-2 through DP-4, with concentrations ranging from 360 µg/L to 570 µg/L. Based on elevated TPH concentrations along the northwestern portion of the site

it appears that plume commingling might be occurring. It was determined that wells of ESE-1, ESE-2, ESE-5, MW-6 and MW-7 appear to be screened excessively long and are causing cross-contamination.

August 2010: SOMA replaced (reconstructed) ESE-1, ESE-2, ESE-5, MW-6 and MW-7 with wells screened within the confined WBZ and installed two additional groundwater monitoring wells (SOMA-7 and SOMA-9) adjacent to the reconstructed wells (within 5 feet) and completed within the shallow zone. No water was observed in SB-6 and SB-8, therefore the borings were not converted to wells.

March 2011: SOMA prepared a CAP/Feasibility Study proposing MPE Pilot Testing, Air Sparging, and aquifer testing at the site.

June/July 2011: Two observation wells (OB-1 and OB-2) were installed on the site. Under SOMA's oversight, Golden Gate Remediation Technology (GGRT) performed MPE pilot testing between June 20 and July 1, 2011, utilizing SOMA-5, SOMA-7 OB-1 and OB-2. The pilot test was performed using a self-contained mobile treatment system (MTS). Both soil vapor and groundwater were extracted from the subsurface. Due to relatively low water recovery rates observed during pilot testing, MPE configuration rather than dual phase extraction (DPE) was utilized. The estimated total mass of VOCs removed from soil vapor extracted from extraction wells was 7.05 pounds. The calculated average VOC mass removal rate was approximately 2.46 lbs/day.

July 2013: SOMA submitted a workplan for soil gas study for evaluation of soil vapor intrusion to the ACEH.

October 2013: Five permanent soil vapor sampling points and three semi-permanent sub-slab soil vapor sampling points were installed on-site and first round of sampling was conducted. Details and results were documented in SOMA's report dated November 21, 2013 along with an updated site conceptual model.

June 2014: All soil vapor sampling probes were sampled during spring 2014. A report was submitted to ACEH recommending an additional round of sampling during Fall 2014.

November 2014: A third round of soil vapor sampling was conducted in Fall 2014 and it was concluded that the site is ready for case closure.

# APPENDIX B

## Boring Logs and Well Construction Details

| ENVIRONMENTAL ENGINEERING, INC. | GEOLOGIC LOG OF BOREHOLE: ESE-1R | PAGE 1 OF 2 |
|---|---|---|

PROJECT: 2762

DATE DRILLED: August 10, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 180.20 Ft.

DRILLER: RSI Drilling

First Encountered GW: 9.95 Ft.
Stablized GW: 10.17 Ft.

DRILLING METHOD: HSA

T.O.C. TO SCREEN: 18 Ft.

BORING DIAMETER: 10-inch

SCREEN LENGTH: 7 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | 18-inch concrete core<br>Existing well over drilled with 8-inch auger and all casing and annular seal removed<br>Backfill 5 feet of hydrated bentonite<br>Re-advanced with 10-inch auger to 25 Ft. TD and casing installed<br>Sheen and odor observed in water within hole<br><br>See Boring Log for ESE-1 (9/29/92) for geologic discription | | | | | Cement Grout<br>2" Schedule 40 PVC Casing/Screen<br>Bentonite Plug<br>0.02 Slotted Screen<br>#3 Monterey Sand |
| | 5 | | | | | | | | |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |

COMMENTS:

PROJECT: 2762

DATE DRILLED: August 10, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 180.70 Ft.

DRILLER: RSI Drilling

First Encountered GW: 9.95 Ft.
Stablized GW: 10.17 Ft.

DRILLING METHOD: HSA

T.O.C. TO SCREEN: 18 Ft.

BORING DIAMETER: 10-inch

SCREEN LENGTH: 7 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 18-inch concrete core<br>Existing well over drilled with 8-inch auger and all casing and annular seal removed<br>Backfill 5 feet of hydrated bentonite<br>Re-advanced with 10-inch auger to 25 Ft. TD and casing installed<br>Sheen and odor observed in water within hole<br><br>See Boring Log for ESE-1 (9/29/92) for geologic discription | | | | | Bentonite Plug |

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COMMENTS:

ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: ESE-2R



PROJECT: 2762

DATE DRILLED: August 11, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 180.70 Ft.

DRILLER: RSI Drilling

First Encountered GW: 10.44 Ft.
Stablized GW: 10.61 Ft.

DRILLING METHOD: HSA

T.O.C. TO SCREEN: 22 Ft.

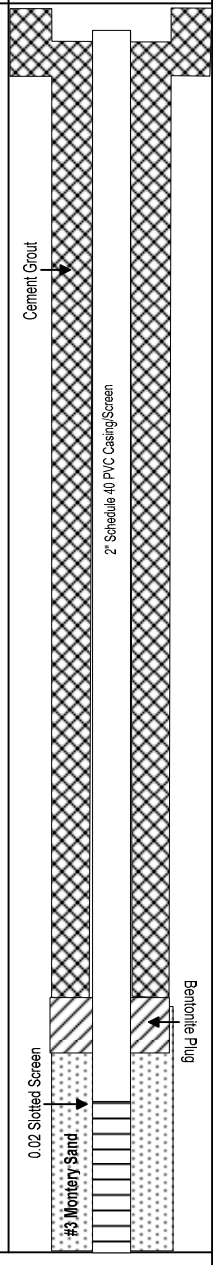
BORING DIAMETER: 10-inch

SCREEN LENGTH: 6 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | 18-inch concrete core<br>Existing well: over drilled to 30 Ft. with 8-inch auger and all casing and annular seal removed<br>Backfill 2 feet of hydrated bentonite<br>Re-advanced with 10-inch auger to 28 Ft. TD and casing installed<br><br>See Boring Log for ESE-2 (9/28/92) for geologic discription | | | | | |




COMMENTS:

PROJECT: 2762

DATE DRILLED: August 11, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 180.70 Ft.

DRILLER: RSI Drilling

First Encountered GW: 10.44 Ft.
Stablized GW: 10.61 Ft.

DRILLING METHOD: HSA

T.O.C. TO SCREEN: 22 Ft.

BORING DIAMETER: 10-inch

SCREEN LENGTH: 6 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 18-inch concrete core<br>Existing well: over drilled to 30 Ft. with 8-inch auger and all casing and annular seal removed<br>Backfill 2 feet of hydrated bentonite<br>Re-advanced with 10-inch auger to 28 Ft. TD and casing installed<br><br>See Boring Log for ESE-2 (9/28/92) for geologic discription | | | | | Bentonite Plug |

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COMMENTS:

| ENVIRONMENTAL ENGINEERING, INC. | GEOLOGIC LOG OF BOREHOLE: ESE-5R | PAGE 1 OF 1 |
|---|---|---|

PROJECT: 2762

DATE DRILLED: August 10, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 178.64 Ft.

DRILLER: RSI Drilling

First Encountered GW: 7.01 Ft.
Stablized GW: 8.97 Ft.

DRILLING METHOD: HSA

T.O.C. TO SCREEN: 18 Ft.

BORING DIAMETER: 10-inch

SCREEN LENGTH: 6 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | 5 | | CL | 18-inch concrete core<br>Existing well over drilled with 8-inch auger and all casing and annular seal removed<br>Re-advanced with 10-inch auger to 24 Ft. TD and casing installed<br><br>Hand auger top 5 Feet due to proximily of unknown metal utility<br>SANDY LEAN CLAY: Brownish-grey, petro staining, very fine- to fine-grained sand slow dilatancy, medium plastic, firm, medium tough. PHC odor to 3.5 Ft. bgs<br><br>See Boring Log for ESE-5 (9/29/92) for geologic discription | | | | | Cement Grout<br>2" Schedule 40 PVC Casing/Screen<br>Bentonite Plug<br>0.02 Slotted Screen<br>#3 Monterey Sand |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |

COMMENTS:

| ENVIRONMENTAL ENGINEERING, INC. | GEOLOGIC LOG OF BOREHOLE: MW-6R | PAGE 1 OF 2 |
|---|---|---|

PROJECT: 2762

DATE DRILLED: August 10, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 181.34 Ft.

DRILLER: RSI Drilling

First Encountered GW: 9.64 Ft.
Stablized GW: 9.55 Ft.

DRILLING METHOD: HSA

T.O.C. TO SCREEN: 22 Ft.

BORING DIAMETER: 10-inch

SCREEN LENGTH: 6 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | 5 | | | 18-inch concrete core<br>Existing well: over drilled to 30 Ft. with 8-inch auger and all casing and annular seal removed<br>Backfill 2 feet of hydrated bentonite<br>Re-advanced with 10-inch auger to 28 Ft. TD and casing installed<br><br>See Boring Log for MW-6 (7/18/95) for geologic discription | | | | | Cement Grout<br>2" Schedule 40 PVC Casing/Screen<br>Bentonite Plug<br>0.02 Slotted Screen<br>#3 Monterey Sand |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |

COMMENTS:

ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: MW-6R



PROJECT: 2762

DATE DRILLED: August 10, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 181.34 Ft.

DRILLER: RSI Drilling

First Encountered GW: 9.64 Ft.
Stablized GW: 9.55 Ft.

DRILLING METHOD: HSA

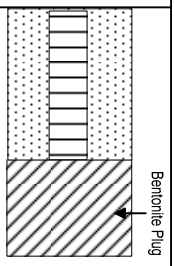
T.O.C. TO SCREEN: 22 Ft.

BORING DIAMETER: 10-inch

SCREEN LENGTH: 6 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 18-inch concrete core<br>Existing well: over drilled to 30 Ft. with 8-inch auger and all casing and annular seal removed<br>Backfill 2 feet of hydrated bentonite<br>Re-advanced with 10-inch auger to 28 Ft. TD and casing installed<br><br>See Boring Log for MW-6 (7/18/95) for geologic discription | | | | |  |



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COMMENTS:

| ENVIRONMENTAL ENGINEERING, INC. | GEOLOGIC LOG OF BOREHOLE: MW-7R | PAGE 1 OF 2 |
|---|---|---|

PROJECT: 2762

DATE DRILLED: August 11, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 179.14 Ft.

DRILLER: RSI Drilling

First Encountered GW: 9.11 Ft.
Stablized GW: 9.39 Ft.

DRILLING METHOD: HSA

T.O.C. TO SCREEN: 24 Ft.

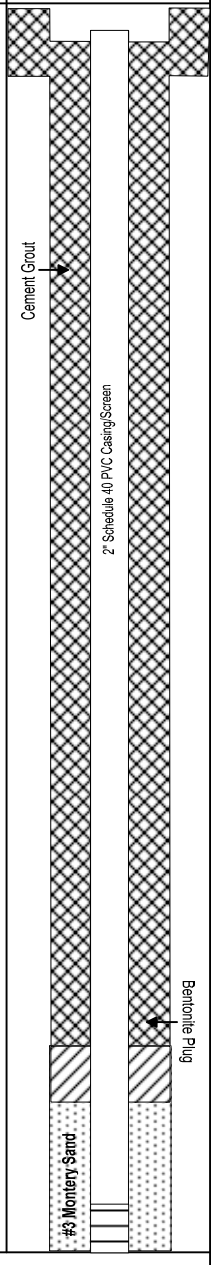
BORING DIAMETER: 10-inch

SCREEN LENGTH: 6 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | 18-inch concrete core<br>Existing well: over drilled to 30 Ft. with 8-inch auger and all casing and annular seal removed<br>Re-advanced with 10-inch auger to 30 Ft. TD and casing installed<br><br>See Boring Log for MW-7 (7/18/95) for geologic discription | | | | | |
| | 5 | | | | | | | | |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |




COMMENTS:

ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: MW-7R



PROJECT: 2762

DATE DRILLED: August 11, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 179.14 Ft.

DRILLER: RSI Drilling

First Encountered GW: 9.11 Ft.
Stablized GW: 9.39 Ft.

DRILLING METHOD: HSA

T.O.C. TO SCREEN: 24 Ft.

BORING DIAMETER: 10-inch

SCREEN LENGTH: 6 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 18-inch concrete core<br>Existing well: over drilled to 30 Ft. with 8-inch auger and all casing and annular seal removed<br>Re-advanced with 10-inch auger to 30 Ft. TD and casing installed<br><br>See Boring Log for MW-7 (7/18/95) for geologic discription | | | | | 0.02 Slotted Screen |

30

35

40

45

50

COMMENTS:

SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE SOMA-1



BORING LOCATION

SEE SITE MAP

PROJECT: 2762

SITE LOCATION: 3519 Castro Valley Blvd
Castro Valley, CA

DRILLING METHOD: Hollow Stem Auger.

DRILLER: Gregg Drilling & Testing

LOGGED BY: E Jennings

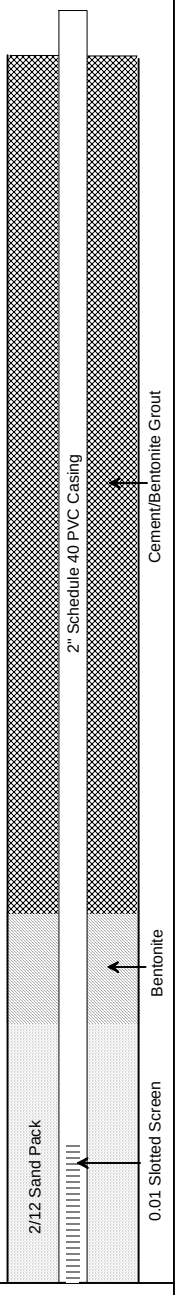
DATE DRILLED: June 10, 2004

CASING ELEVATION:

DEPTH TO 1ST GW: 22'

APPROVED BY: M Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS. | GEOLOGIC DESCRIPTION | SAMPLED (split spoon / core) | GW LEVEL | BLOWCOUNTS |
|---|---|---|---|---|---|---|---|
| | | | | 4" concrete over 4-6" base rock | HAND AUGERED TO 5' | | |
| | 5 | | CL | SILTY CLAY: dark brown, very soft, moist to very moist, high plasticity; Medium to high estimated permeability (MEK-HEK). No petroleum hydrocarbon (PHC) odor. | | | 3<br>7<br>9 |
| | 10 | | CL/ML | SILTY CLAY/ CLAYEY SILT: gray mottled orange brown, med. stiff to stiff, damp, slight plasticity; Low estimated permeability (LEK). No PHC odor. | | | 7<br>11<br>13 |
| | 15 | | CL/ML | As above. Becomes gray and slight bluish gray. Moderate to strong PHC odor. | | | 13<br>18<br>20 |
| | 20 | | ML/SM | SANDY SILT/SILTY SAND with some Clay: gray brown and slight orange brown, med. dense and med. stiff, moist; 40-60% fine to med. sand; LEK-MEK. No PHC odor. | | ▽ | 6<br>11<br>16<br>8<br>10<br>10<br>5<br>6<br>10 |
| | 25 | | | | | | |



ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE SOMA-1



BORING LOCATION

SEE SITE MAP

PROJECT: 2762

SITE LOCATION: 3519 Castro Valley Blvd
Castro Valley, CA

DRILLING METHOD: Hollow Stem Auger.

DRILLER: Gregg Drilling & Testing

LOGGED BY: E Jennings

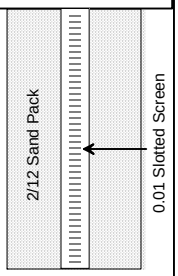
DATE DRILLED: June 10, 2004

CASING ELEVATION:

DEPTH TO 1ST GW: 22'

APPROVED BY: M Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS. | GEOLOGIC DESCRIPTION | SAMPLED (split spoon / core) | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|
| | | | SP/SM | SAND and SILTY SAND: gray brown and light orange brown, med. dense, saturated; 40-70% fine to med. sand; HEK. No PHC odor. | | | | |
| | | | ML/CL | CLAYEY SILT/ SILTY CLAY: dark brown, wet to saturated; HEK. No PHC odor. | | | | |
| | | | | SILTY CLAY: gray brown slightly mottled orange brown, med stiff, moist to very moist; LEK-MEK. No PHC odor. | | | | |
| | 30 | | | TOTAL DEPTH 30' | | | | |
| | | | | Groundwater first encountered at 22' and stabilized at 11.56' | | | | |
| | 35 | | | | | | | |
| | 40 | | | | | | | |
| | 50 | | | | | | | |
| | 55 | | | | | | | |



ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE SOMA-2



BORING LOCATION

SEE SITE MAP

PROJECT: 2762

SITE LOCATION: 3519 Castro Valley Blvd
Castro Valley, CA

DRILLING METHOD: Hollow Stem Auger.

DRILLER: Gregg Drilling & Testing

LOGGED BY: E Jennings

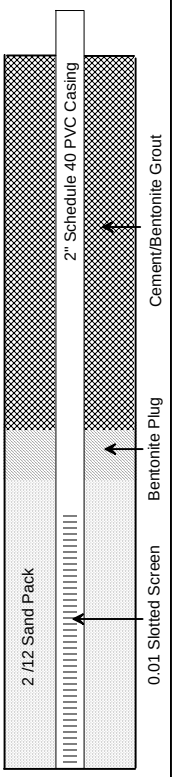
DATE DRILLED: June 10, 2004

CASING ELEVATION:

DEPTH TO 1ST GW: Approx 12'

APPROVED BY: M Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS. | GEOLOGIC DESCRIPTION | SAMPLED (split spoon / core) | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|
| | | | CL | 4" concrete over 4-6" base rock | HAND AUGERED TO 5' | | | |
| | 5 | | CL | SILTY CLAY with some FINE SAND: dark brown and gray brown slightly mottled orange brown, soft and med. stiff, moist, med. to high plasticity; <30% fine sand; Low to medium estimated permeability (LEK-MEK). No petroleum hydrocarbon (PHC) odor. | | | 2<br>7<br>8 | |
| | 10 | | | As above. Light gray and light gray brown and reddish orange brown with depth. | | ▽ | 10<br>13<br>26 | |
| | 15 | | SM | FINE SILTY SAND: reddish brown and light gray brown, med. dense, very moist; 40-60% fine sand; MEK to high estimated permeability (HEK). No PHC odor. | | | 7<br>6<br>7 | |
| | | | | TOTAL DEPTH 15' | | | | |
| | 20 | | | Groundwater first encountered at 12' and stabilized at 10.60' | | | | |
| | 25 | | | | | | | |



ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE SOMA-3



BORING LOCATION

SEE SITE MAP

PROJECT: 2762

SITE LOCATION: 3519 Castro Valley Blvd
Castro Valley, CA

DRILLING METHOD: Hollow Stem Auger.

DRILLER: Gregg Drilling & Testing

LOGGED BY: E Jennings

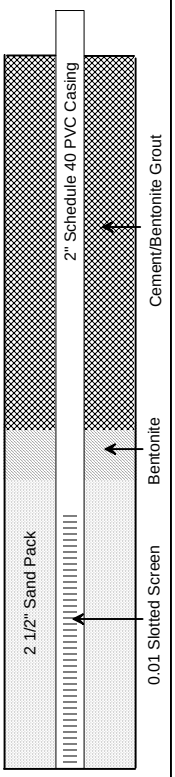
DATE DRILLED: June 10, 2004

CASING ELEVATION:

DEPTH TO 1ST GW: Approx 12'

APPROVED BY: M Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS. | GEOLOGIC DESCRIPTION | SAMPLED (split spoon / core) | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|
| | | | CL | 4" concrete over 4-6" base rock | HAND AUGERED TO 5' | | | |
| | 5 | | CL | SILTY CLAY with some FINE SAND: gray brown mottled orange brown, med. stiff dense, moist slightly plastic; <30% fine sand; Low estimated permeability (LEK). No petroleum hydrocarbon (PHC) odor. | | | 7<br>7<br>8 | |
| | 10 | | | As above. Reddish brown and moist with depth. | | ▽ | 9<br>8<br>9 | |
| | 15 | | SM | FINE SILTY SAND: reddish brown slightly mottled gray, med. dense, very moist to wet; 40-60% wery fine to fine sand; High estimated permeability (HEK). No PHC odor. | | | 5<br>5<br>6 | |
| | | | | TOTAL DEPTH 15' | | | | |
| | 20 | | | Groundwater first encountered at 12' and stabilized at 9.90' | | | | |
| | 25 | | | | | | | |



SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE SOMA-4



BORING LOCATION

SEE SITE MAP

PROJECT: 2762

SITE LOCATION: 3519 Castro Valley Blvd
Castro Valley, CA

DRILLING METHOD: Hollow Stem Auger.

DRILLER: Gregg Drilling & Testing

LOGGED BY: E Jennings

DATE DRILLED: June 10, 2004

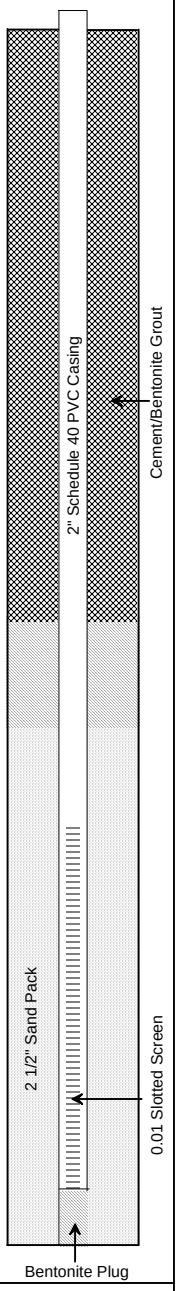
CASING ELEVATION:

DEPTH TO 1ST GW: Approx 16'-17'

APPROVED BY: M Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS. | GEOLOGIC DESCRIPTION | SAMPLED (split spoon / core) | GW LEVEL | BLOWCOUNTS |
|---|---|---|---|---|---|---|---|
| | | | | 4" concrete over 4-6" base rock | HAND AUGERED TO 5' | | |
| | 5 | | SM | FINE SILTY SAND with some CLAY: gray to grayish brown mottled orange brown, med. dense, damp to moist; 40-60% fine sand; Low to med. estimated permeability (LEK). No petroleum hydrocarbon (PHC) odor. | | | 26<br>50 |
| | 10 | | SM/CL | SILTY SAND/ SILTY CLAY: reddish brown, dense and med. stiff, damp; LEK. Slight PHC odor. | | | 11<br>14<br>23 |
| | 15 | | CL | SILTY CLAY: brown, med. stiff to stiff, damp to moist, slightly plastic; LEK. No PHC odor. | | ▽ | 9<br>9<br>9 |
| | | | SM | SILTY SAND with some CLAY: gray and slight yellow brown, med. dense, very moist to wet; <60% fine sand; MEK to high estimated permeability (HEK). No PHC odor. | | | |
| | 20 | | SM/ML | SILTY SAND/ SANDY SILT: gray brown slightly mottled orange, med. dense, wet to saturated; 40-60% fine sand; MEK-HEK. No PHC odor. | | | 7<br>11<br>6<br>8<br>8 |
| | | | CL | SILTY CLAY with some SAND: gray brown slightly mottled orange brown, med. stiff; moist; LEK-MEK. No PHC odor. | | | |
| | 25 | | | TOTAL DEPTH 24.5' | | | |

WELL DIAGRAM




Groundwater first encountered at 16-17' and stabilized at 9.32'

SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: SOMA-5



PROJECT: 2762

SITE LOCATION: 3519 Castro Valley Blvd.
Castro Valley

DRILLER: Gregg Drilling & Testing

DRILLING METHOD: DP

BORING DIAMETER: 8 in.

LOGGED BY: E. Hightower

DATE DRILLED: 8/18/2009

CASING ELEVATION:

DEPTH TO GW: Not Encountered
Stable GW: 10.48 Ft.

T.O.C. TO SCREEN: 5 Ft.

SCREEN LENGTH: 10 Ft.

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED (SPLIT SPOON / CORE) | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|
| | | | | Hand auger to 5 ft. | | | | |
| | 5 | | CL | SANDY LEAN CLAY: Dark brown, high dry strength, no dilatancy, medium toughness, moist, no HCl reaction, soft, low plasticity, no Petroleum Hydrocarbon (PHC) odor. | | | | |
| | | | ML | SANDY SILT: Brown, low dry strength, slow dilatancy, medium toughness, moist, no HCl reaction, hard, nonplastic, no PHC odor. | | | | |
| | | | CL-ML | SILTY CLAY: Brown, high dry strength, slow dilatancy, medium toughness, moist, no HCl reaction, hard, low plasticity, no PHC odor. | | | | |
| | 10 | | | Becomes greenish-brown with PHC odor at 10.5 ft. | | | | |
| | 15 | | | | | | | |
| | 20 | | | | | | | |
| | 25 | | | | | | | |

WELL DIAGRAM: Cement/Bentonite Grout; Bentonite Seal; Monterey #3 Sand; Schedule 40 PVC Screen 20 slot (0.020 inch)

COMMENTS: TD @ 15 Ft., Visual-Manual Method, ASTM 2488-09a

SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: SOMA-7



PROJECT: 2762

DATE DRILLED: August 9, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 178.54 Ft.

DRILLER: RSI Drilling

First Encountered GW: Not encountered
Stablized GW: 8.3 Feet

DRILLING METHOD: Hollow Stem Auger

T.O.C. TO SCREEN: 5 Feet

BORING DIAMETER: 8-inch

SCREEN LENGTH: 10 Feet

LOGGED BY: Erica Fisker

APPROVED BY: Mansour Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| 87.5 | 0 | | AC | 2-inch Asphalt | | | | | Cement Grout; 2" Schedule 40 PVC Casing/Screen; Bentonite Plug |
| | | | CL | Hand Auger top 5 feet<br>SANDY LEAN CLAY: Brown, gravelly fill with silt and sand to 1.4 feet bgs, Dark grey-black w/blue-green staining, soft, damp, fine- to coarse-grained sand, low to medium plastic, slow dilatancy, medium toughness, strong Petroleum Hydrocarbon (PHC) odor | X | | | | |
| 236.5 | | | | Some brown mottling starts at 4 feet bgs | | | | | |
| | 5 | | CL | SANDY LEAN CLAY: Blue-grey with black mottling and PHC staining, asphalt scattered througout core, fine- to coarse-grained sand, 5% gravel up to 1.5 inch, low to medium plastic, medium toughness, slow dilatancy, damp. | | | | | |
| 138.7 | | | | Moist at 9 feet, brown mottling at 10 feet | X | | ▼ | | 0.02 Slotted Screen; #3 Monterey Sand |
| | 10 | | SM | SILTY SAND: Light grey, damp, very fine- to fine-grained sand, brown mottling, loose, ~17% silt, low plastic, slow dilatancy, low toughness, low dry strength, PHC odor | X | | | | |
| 20.5 | | | CL | SANDY LEAN CLAY: Brown with grey mottling, fine- to coarse-grained sand (~20%), hard, dry to damp, slow dilatancy, medium toughness, medium plastic, no PHC odor below 12.5 feet. | | | | | |
| 630 | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |

COMMENTS: Left open with trench plate secured with 55-gallon drum, set well 8/10/2010.
DTW on 8/10/10: 8.39 feet bgs, sheen, PHC odor

SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: SOMA-8



PROJECT: 2762

DATE DRILLED: August 9, 2010

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 181.57 Ft.

DRILLER: RSI Drilling

First Encountered GW: Not encountered
Stablized GW: 9.86 Feet

DRILLING METHOD: Hollow Stem Auger

T.O.C. TO SCREEN: 5 Feet

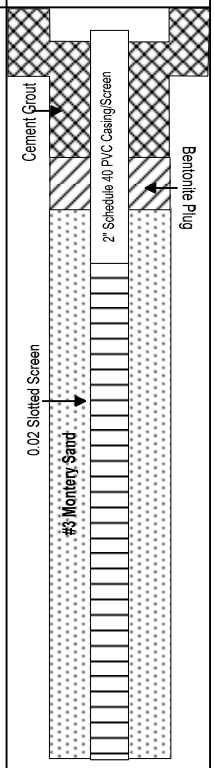
BORING DIAMETER: 8-inch

SCREEN LENGTH: 10 Feet

LOGGED BY: Erica Fisker

APPROVED BY: Mansour Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| 1.5 | | | SP | Hand Auger top 5 feet<br>POORLY GRADED SAND w/GRAVEL: Reddish-brown, dry to damp, loose, medium- to very coarse-grained sand, fine-grained rounded to sub-rounded gravel (~10%), no Petroleum Hydrocarbon (PHC) odor | | | | | |
| 1.2 | | | ML | SANDY SILT: Dark brown, soft, damp, medium to high plastic, slow dilatancy, low toughness, low dry strength, fine- to coarse-grained sand decreasing with depth, no PHC odor | | | | | |
| 1.1 | 5 | | ML | SANDY SILT: Dark brown, dry to damp, soft to firm, low to medium plastic, medium dry strength, medium toughness, slow dilatancy, fine- to medium-grained sand, no PHC odor.<br>Color change to light brown mottling at 7 ft.<br>dry at 9 feet, CaCO3 nodules with rust mottling | X | | | | |
| 1.2 | 10 | | SM | SILTY SAND: Reddish-brown, dry, loose, very fine- to fine-grained sand, ~25% silt: low plastic, low toughness, slow dilatancy, low dry strength, no PHC odor<br>Black speckling and mottling begins at 11 feet<br>Sand becomes fine- to coarse-grained at 14 feet | X | | ▼ | | |
| 1.4 | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |




COMMENTS: Left open with trench plate secured with 55-gallon drum, set well 8/10/2010.
DTW on 8/10/10: 9.86 feet bgs, sheen, PHC odor

SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: OB-1



PROJECT: 2762

DATE DRILLED: June 6, 2011

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 178.698 Ft.

DRILLER: Gregg Drilling & Testing

First Encountered GW: NA
Stablized GW: 7.8 Ft

DRILLING METHOD: Direct Push / Hollow Stem Auger

T.O.C. TO SCREEN: 5 Ft.

BORING DIAMETER: 8-inch

SCREEN LENGTH: 11 Ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

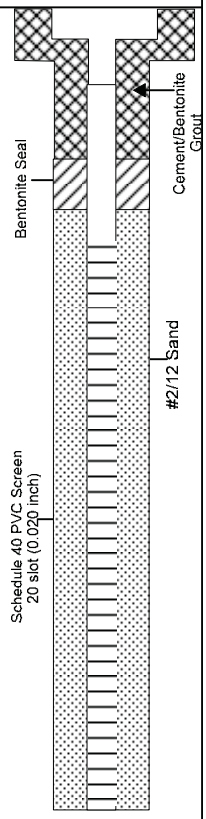
| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION |
|---|---|---|---|---|
| 35.4 4.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 | 0 | | CL | Hand Auger top 5 feet, 6-inches asphalt<br>LEAN CLAY: Black, soft, moist, ~10% very fine sand, medium toughness, high plastic, medium dry strength, slow dilatancy, slight to no Petroleum Hydrocarbon (PHC) odor |
| | 5 | | CL | LEAN CLAY: Black, soft, moist, ~10% very fine sand, medium toughness, high plastic, medium dry strength, slow dilatancy, slight PHC odor at 6 ft. bgs<br>Becomes grey with rust nodules at 7 ft. bgs<br>As above: no PHC odor<br>Becomes rust with grey mottling at 10 feet, damp to moist, CaCO3 nodules, strong HCl rxn. |
| | 10 | | CL-ML | SILTY CLAY: Reddish-brown w/grey mottling and black nodules, dry, soft, low dry strength, no dilatancy, low toughness, no HCl reaction, medium to low plasticity, no PHC odor.<br>As above: damp, no mottling, no PHC odor |
| | 15 | | CL/SC | SANDY LEAN CLAY to CLAYEY SAND: Reddish brown with grey mottling, moist, soft to firm, medium plastic, medium toughness, medium dry strength, slow dilatancy, ~30 % to 70% fine- to medium-grained sand (increases with depth), no PHC odor |
| | 20 | | CL | LEAN CLAY: Light brown with black nodules, moist to very moist, soft, ~5% fine- to coarse-grained sand, no PHC odor |
| | 25 | | | |

SAMPLED: SPLIT SPOON, CORE

GW LEVEL

BLOWCOUNTS

WELL DIAGRAM




COMMENTS: Total depth at 20 feet, well set to 16 feet bgs. Stablized groundwater at 7.8 ft on 6/7/2011

SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: OB-2



PROJECT: 2762

DATE DRILLED: June 6, 2011

SITE LOCATION: 3519 Castro Valley Blvd., Castro Valley

CASING ELEVATION: 180.227 Ft.

DRILLER: Gregg Drilling & Testing

First Encountered GW: 16 Ft.
Stablized GW: 9.53 Ft.

DRILLING METHOD: Direct Push / Hollow Stem Auger

T.O.C. TO SCREEN: 5 ft.

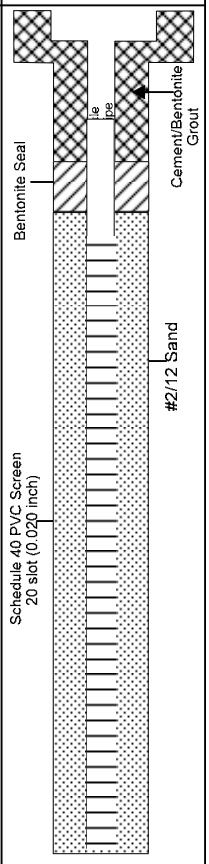
BORING DIAMETER: 8-inch

SCREEN LENGTH: 12 ft.

LOGGED BY: E. Fisker

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED (SPLIT SPOON / CORE) | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|
| 0.0 | 0 | | CL | Hand Auger top 5 feet, 7-inches concrete, 4-inch sand fill<br>SANDY LEAN CLAY: Brown with rust mottling, soft to firm, moist, ~20% fine- to coarse-grained sand, medium toughness, medium plastic, medium dry strength, slow dilatancy, very slight HCl reaction, no Petroleum Hydrocarbon (PHC) odor | | | | |
| 0.0 | | | | As above: soft, ~40% sand, no HCl reaction, medium to high plastic | | | | |
| 0.0 | 5 | | CL | LEAN CLAY: Dark brown w/rust mottling, soft to firm, damp to moist, ~5 to 10% very fine-grained sand, medium toughness, high plastic, medium dry strength, slow dilatancy, no HCl reaction, no PHC odor | | | | |
| 176.2 | | | | As above: dry | | | | |
| 930 | | | CL | LEAN CLAY: Grey with black mottling, becomes brown with grey mottling (10-12 ft), soft to firm, moist, slow dilatancy, medium toughness, medium dry strength, high plastic, CaCO3 mottling with strong HCl reaction (10-12 ft), PHC odor starts at 10 feet bgs | | | | |
| >2118 | 10 | | | | | | | |
| 159.3 | | | CL-ML | SILTY CLAY: Reddish-brown w/grey mottling and black nodules, moist, soft, low dry strength, no dilatancy, low toughness, no HCl reaction, medium to low plasticity, strong PHC odor. | | | | |
| 164.4 | | | | | | | | |
| 360 | | | CL-ML | SILTY CLAY: Brown w/grey mottling, moist, soft to firm, high dry strength, slow dilatancy, medium toughness, no HCl reaction, medium plasticity, no PHC odor. | | | | |
| 200.5 | 15 | | | | | | | |
| 334 | | | SM | SILTY SAND: Brown w/grey mottling, wet, soft to firm, high dry strength, slow dilatancy, medium toughness, no HCl reaction, medium plasticity, strong PHC odor. | | | | |
| 969 | | | CL | SANDY LEAN CLAY: Brown w/grey mottling, wet sand/gravel, hard, high dry strength, rapid dilatancy, medium toughness, no HCl reaction, medium plasticity, strong PHC odor. | | | | |
| 437 | | | CL | SANDY LEAN CLAY: Lt brown w/black and grey mottling, dry, hard, medium dry strength, slow dilatancy, high toughness, fine- to medium-graine sand, no HCl reaction, medium plasticity, no PHC odor. | | | | |
| 962 | | | | | | | | |
| 248 | | | | | | | | |
| 22.3 | | | | | | | | |
| 0.3 | | | | | | | | |
| 4.6 | 20 | | | | | | | |
| | 25 | | | | | | | |




COMMENTS: Total depth at 20 ft., well set at 17 feet. Stablized groundwater at 9.53 ft on 6/6/2011

ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: SV-1



PROJECT: 2762

DATE DRILLED: October 4, 2013

SITE LOCATION: 3519 Castro Valley Blvd.
Castro Valley, CA

CASING ELEVATION: NA

DRILLER: Vironex

First Encountered GW: NA
Stablized GW: NA

DRILLING METHOD: Direct Push

T.O.C. TO SCREEN: NA

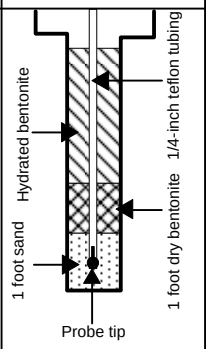
BORING DIAMETER: 3-inch

SCREEN LENGTH: NA

LOGGED BY: E. Hightower

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON / CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|
| | 0 | | CL | Hand Auger to 4 feet bgs<br>SANDY LEAN CLAY: Dark brown, firm, moist, ~40% fine to coarse-grained sand, medium toughness, medium plastic, medium dilatancy, medium dry strength, Petroleum Hydrocarbon (PHC) odor and green mottling begins at 1.5 feet<br><br>As above, black at 3 feet. | | | | |
| | 5 | | | | | | | |
| | 10 | | | | | | | |
| | 15 | | | | | | | |
| | 20 | | | | | | | |
| | 25 | | | | | | | |




COMMENTS:

SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: SV-2



PROJECT: 2762

DATE DRILLED: October 4, 2013

SITE LOCATION: 3519 Castro Valley Blvd.
Castro Valley, CA

CASING ELEVATION: NA

DRILLER: Vironex

First Encountered GW: NA
Stablized GW: NA

DRILLING METHOD: Direct Push

T.O.C. TO SCREEN: NA

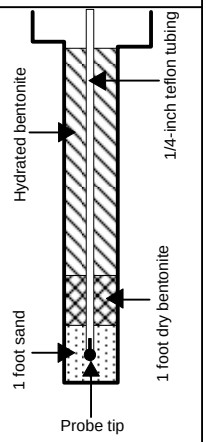
BORING DIAMETER: 3-inch

SCREEN LENGTH: NA

LOGGED BY: E. Hightower

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | | | CL | Hand Auger to 5 feet bgs<br>SANDY LEAN CLAY: Brown, soft, moist, ~30% fine to coarse-grained sand, medium toughness, medium plastic, slow dilatancy, medium dry strength, no Petroleum Hydrocarbon (PHC) odor. | | | | | |
| | | | CL | LEAN CLAY: Dark brown, moist, firm, high plasticity, medium toughness, medium dry strength, slow dilatancy, no PHC odor. | | | | | |
| | 5 | | CL | LEAN CLAY WITH SAND: Brown, moist, firm, ~15% fine- to coarse-grained sand, high plasticity, medium toughness, medium dry strength, slow dilatancy, no PHC odor. | | | | | |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |




COMMENTS:

ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: SV-3



PROJECT: 2762

DATE DRILLED: October 4, 2013

SITE LOCATION: 3519 Castro Valley Blvd.
Castro Valley, CA

CASING ELEVATION: NA

DRILLER: Vironex

First Encountered GW: NA
Stablized GW: NA

DRILLING METHOD: Direct Push

T.O.C. TO SCREEN: NA

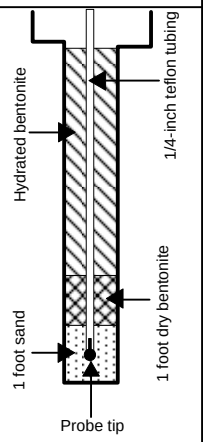
BORING DIAMETER: 3-inch

SCREEN LENGTH: NA

LOGGED BY: E. Hightower

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | | | CL | Hand Auger to 5 feet bgs<br>SANDY LEAN CLAY: Brown with some rust mottling, soft, moist, ~30% fine to coarse-grained sand, medium toughness, medium plastic, slow dilatancy, medium dry strength, no Petroleum Hydrocarbon (PHC) odor. | | | | | |
| | | | CL | LEAN CLAY: Dark brown, moist, firm, medium plasticity, medium toughness, medium dry strength, slow dilatancy, no PHC odor. | | | | | |
| | 5 | | CL | SANDY LEAN CLAY: Brown with some rust mottling, soft, moist, ~30% fine to coarse-grained sand, medium toughness, medium plastic, slow dilatancy, medium dry strength, no PHC odor. | | | | | |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |




COMMENTS:

SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: SV-4



PROJECT: 2762

DATE DRILLED: October 4, 2013

SITE LOCATION: 3519 Castro Valley Blvd.
Castro Valley, CA

CASING ELEVATION: NA

DRILLER: Vironex

First Encountered GW: NA
Stablized GW: NA

DRILLING METHOD: Direct Push

T.O.C. TO SCREEN: NA

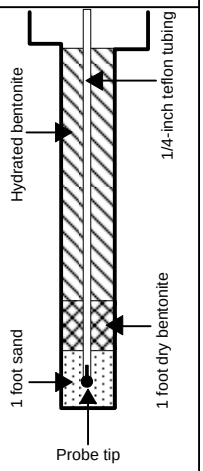
BORING DIAMETER: 3-inch

SCREEN LENGTH: NA

LOGGED BY: E. Hightower

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | | | CL | Hand Auger to 5 feet bgs<br>SANDY LEAN CLAY: Brown with some rust mottling, soft, moist, ~30% fine to coarse-grained sand, medium toughness, medium plastic, slow dilatancy, medium dry strength, no Petroleum Hydrocarbon (PHC) odor. | | | | | |
| | | | CL | LEAN CLAY: Dark brown, moist, firm, medium plasticity, medium toughness, medium dry strength, slow dilatancy, no PHC odor. | | | | | |
| | 5 | | CL | SANDY LEAN CLAY: Brown with some rust mottling, soft, moist, ~30% fine to coarse-grained sand, medium toughness, medium plastic, slow dilatancy, medium dry strength, no PHC odor. | | | | | |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |




COMMENTS:

SOMA ENVIRONMENTAL ENGINEERING, INC.

# GEOLOGIC LOG OF BOREHOLE: SV-5



PROJECT: 2762

DATE DRILLED: October 4, 2013

SITE LOCATION: 3519 Castro Valley Blvd.
Castro Valley, CA

CASING ELEVATION: NA

DRILLER: Vironex

First Encountered GW: NA
Stablized GW: NA

DRILLING METHOD: Direct Push

T.O.C. TO SCREEN: NA

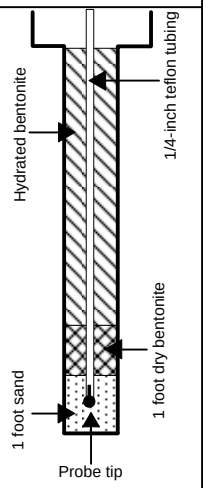
BORING DIAMETER: 3-inch

SCREEN LENGTH: NA

LOGGED BY: E. Hightower

APPROVED BY: M. Sepehr

| PID ppm | DEPTH | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | SAMPLED: SPLIT SPOON | SAMPLED: CORE | GW LEVEL | BLOWCOUNTS | WELL DIAGRAM |
|---|---|---|---|---|---|---|---|---|---|
| | 0 | | CL | Hand Auger to 5 feet bgs<br>SANDY LEAN CLAY: Brown with some rust mottling, soft, moist, ~30% fine to coarse-grained sand, medium toughness, medium plastic, slow dilatancy, medium dry strength, no Petroleum Hydrocarbon (PHC) odor. | | | | | |
| | | | | As above, moist, no PHC odor. | | | | | |
| | 5 | | CL | SANDY LEAN CLAY: Brown with some rust mottling, soft, moist, ~30% fine to coarse-grained sand, medium toughness, medium plastic, slow dilatancy, medium dry strength, no PHC odor. | | | | | |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |




COMMENTS:

# APPENDIX C

Drilling Permits

# Alameda County Public Works Agency - Water Resources Well Permit

Public Works Agency
Alameda County

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

**Application Approved on: 01/20/2017 By jamesy**

**Permit Numbers: W2017-0054 to W2017-0068**
**Permits Valid from 02/14/2017 to 02/16/2017**

**Application Id:** 1484245138672
**City of Project Site:** Castro Valley
**Site Location:** 3519 Castro Valley Blvd
**Project Start Date:** 01/31/2017
**Completion Date:** 02/03/2017
**Assigned Inspector:** Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org
**Extension Start Date:** 02/14/2017
**Extension End Date:** 02/16/2017
**Extension Count:** 2
**Extended By:** marcelino2

**Applicant:** SOMA Environmental Engineering, Inc. - Ruchi Mathur
6620 Owens Dr., Suite A, Pleasanton, CA 94588
**Phone:** 925-734-6400

**Property Owner:** Mirazim Shakoori
4313 Mansfield Dr, Danville, CA 94506
**Phone:** --

**Client:** ** same as Property Owner **

**Total Due:** $5823.00
**Receipt Number: WR2017-0042** **Total Amount Paid:** $5823.00
**Payer Name : Mansour Sepehr** Paid By: MC **PAID IN FULL**

**Works Requesting Permits:**

Well Destruction-Monitoring - 14 Wells
Driller: Cascade drilling L.P. - Lic #: 938110 - Method: press **Work Total: $5558.00**

**Specifications**

| Permit # | Issued Date | Expire Date | Owner Well Id | Hole Diam. | Casing Diam. | Seal Depth | Max. Depth | State Well # | Orig. Permit # | DWR # |
|---|---|---|---|---|---|---|---|---|---|---|
| W2017-0054 | 01/20/2017 | 05/01/2017 | ESE-1R | 10.00 in. | 2.00 in. | 16.00 ft | 30.00 ft | 3S/2W3P27 | W2010-0535 | 0945011 |
| W2017-0055 | 01/20/2017 | 05/01/2017 | ESE-2R | 10.00 in. | 2.00 in. | 20.00 ft | 30.00 ft | 3S/2W3P27 | W2010-0536 | 0945012 |
| W2017-0056 | 01/20/2017 | 05/01/2017 | ESE-5R | 10.00 in. | 2.00 in. | 16.00 ft | 24.00 ft | 3S/2W3P27 | W2010-0537 | 0945013 |
| W2017-0057 | 01/20/2017 | 05/01/2017 | MW-6R | 10.00 in. | 2.00 in. | 20.00 ft | 30.00 ft | 3S/2W3P27 | W2010-0538 | 0945014 |
| W2017-0058 | 01/20/2017 | 05/01/2017 | MW-7R | 10.00 in. | 2.00 in. | 21.00 ft | 30.00 ft | 3S/2W3P27 | W2010-0537 | 0945015 |
| W2017-0059 | 01/20/2017 | 05/01/2017 | OB-1 | 8.00 in. | 2.00 in. | 3.00 ft | 16.00 ft | 3S/2W3P23 | 95432 | No File |
| W2017-0060 | 01/20/2017 | 05/01/2017 | OB-2 | 8.00 in. | 2.00 in. | 3.00 ft | 17.00 ft | 3S/2W3P25 | 95342 | No File |
| W2017-0061 | 01/20/2017 | 05/01/2017 | SOMA-1 | 10.00 in. | 2.00 in. | 18.00 ft | 30.00 ft | 3S/2W3P27 | W04-0489 | No File |
| W2017-0062 | 01/20/2017 | 05/01/2017 | SOMA-2 | 10.00 in. | 2.00 in. | 9.00 ft | 15.00 ft | 3S/2W3P27 | W04-0490 | No File |
| W2017-0063 | 01/20/2017 | 05/01/2017 | SOMA-3 | 10.00 in. | 2.00 in. | 9.00 ft | 15.00 ft | 3S/2W3P27 | W04-0491 | No File |
| W2017-0064 | 01/20/2017 | 05/01/2017 | SOMA-4 | 10.00 in. | 2.00 in. | 12.00 ft | 24.50 ft | 3S/2W3P27 | W04-0492 | No File |
| W2017-0065 | 01/20/2017 | 05/01/2017 | SOMA-5 | 8.00 in. | 2.00 in. | 3.00 ft | 15.00 ft | 3S/2W3P27 | W2009-0701 | 0945464 |
| W2017-0066 | 01/20/2017 | 05/01/2017 | SOMA-7 | 8.00 in. | 2.00 in. | 3.00 ft | 15.00 ft | 3S/2W3P27 | W2010-0541 | 0945016 |
| W2017- | 01/20/2017 | 05/01/2017 | SOMA-8 | 8.00 in. | 2.00 in. | 3.00 ft | 15.00 ft | 3S/2W3P27 | W2010- | 0945017 |

# Alameda County Public Works Agency - Water Resources Well Permit

0067 0542

**Specific Work Permit Conditions**

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

3. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 30 days. Include permit number and site map.

4. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost and liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.

5. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

7. Remove the Christy box or similar structure.

Destroy well by grouting neat cement with a tremie pipe or pressure grouting (25 psi for 5min.) to the bottom of the well and by filling with neat cement to three (3-5) feet below surface grade. Allow the sealing material to spill over the top of the casing to fill any annular space between casing and soil.

After the seal has set, backfill the remaining hole with concrete or compacted material to match existing conditions.

8. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

9. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload

date should be on or prior to the regulatory due date.

---

Well Destruction-Vapor monitoring well - 5 Wells
Driller: Cascade drilling L.P. - Lic #: 938110 - Method: press **Work Total: $265.00**

**Specifications**

| Permit # | Issued Date | Expire Date | Owner Well Id | Hole Diam. | Casing Diam. | Seal Depth | Max. Depth | State Well # | Orig. Permit # | DWR # |
|---|---|---|---|---|---|---|---|---|---|---|
| W2017-0068 | 01/20/2017 | 05/01/2017 | SV-1 | 3.00 in. | 0.25 in. | 3.50 ft | 5.50 ft | 3S/2W3P27 | W2013-0828 | 90089 |
| W2017-0068 | 01/20/2017 | 05/01/2017 | SV-2 | 3.00 in. | 0.25 in. | 5.50 ft | 7.50 ft | 3S/2W3P27 | W2013-0828 | 90090 |
| W2017-0068 | 01/20/2017 | 05/01/2017 | SV-3 | 3.00 in. | 0.25 in. | 5.50 ft | 7.50 ft | 3S/2W3P27 | W2013-0828 | 90091 |
| W2017-0068 | 01/20/2017 | 05/01/2017 | SV-4 | 3.00 in. | 0.25 in. | 6.00 ft | 8.00 ft | 3S/2W3P27 | W2013-0828 | 90092 |
| W2017-0068 | 01/20/2017 | 05/01/2017 | SV-5 | 3.00 in. | 0.25 in. | 6.50 ft | 8.50 ft | 3S/2W3P27 | W2013-0828 | 90093 |

**Specific Work Permit Conditions**

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. Compliance with the above well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate state reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 30 days, including permit number and site map.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

5. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

6. No changes in construction procedures or well type shall change, as described on this permit application. This permit may be voided if it contains incorrect information.

7. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

8. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

9. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.

10. Vapor monitoring wells constructed with tubing shall be decomissioned by complete removal of tubing, grout seal, and fill material of sand or bentonite.  Fill material may be removed by hand auger if material can be removed completely.

Vapor monitoring wells constructed with pvc pipe less than 2" shall be overdrilled to total depth.

Vapor monitoring wells constructed with 2" pvc pipe or larger may be grouted by tremie pipe (any depth) or pressure grouted (less than 30', 25 psi for 5 min).

# APPENDIX D

## Photographic Documentation

**Plate1 Pouring Cement into the Well**

**Plate2 Gluing Connector to the Top of Casing for Applying Pressure**


**Plate3 Pouring Cement into the Well**

**Plate4 Applying Pressure to Complete Pressure Grouting**

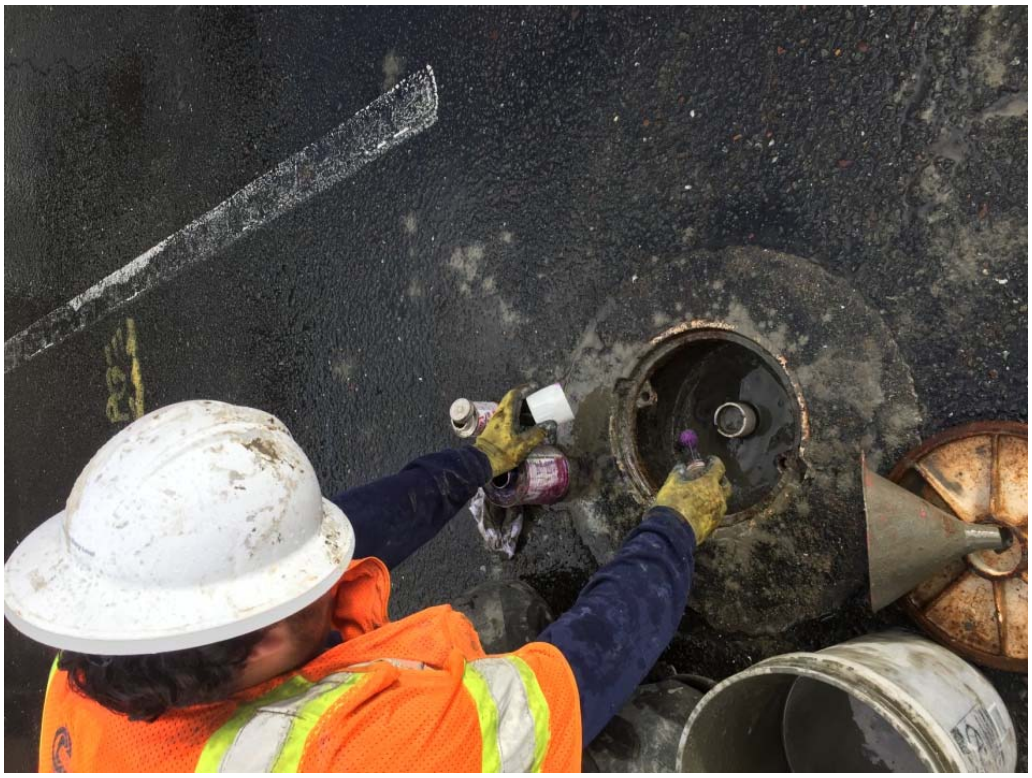


**Plate5 Gluing PVC Connector to the Top of Casing for Pressure Grouting**

**Plate6 After Pressure Grouting Removing Well Box**

**Plate7 Finished Decommissioned Well**

**Plate8 Another Decommissioned Well**

# APPENDIX E

## Waste Manifest

# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No.

Manifest Document No. SM17-0101

2. Page 1 of 1

3. Generator's Name and Mailing Address: SHELL # 17-1445, 3519 CASTRO VALLEY BLVD., CASTRO VALLEY CA

SOMA

4. Generator's Phone ( )

5. Transporter 1 Company Name: InStrat Inc

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone (707) 374-3834

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

**INSTRAT, INC.**
**1105 C AIRPORT RD.**
**RIO VISTA, CA 94571**

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone (707) 374-3834

| 11. WASTE DESCRIPTION | 12. Containers No. | 12. Containers Type | 13. Total Quantity | 14. Unit Wt./Vol. |
|---|---|---|---|---|
| a. Drill solids/Well destruction debris | 1 | DRUM | 500 | lbs. |
| b. | | | | |
| c. | | | | |
| d. | | | | |

GENERATOR

NON-HAZARDOUS WASTE

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name | Signature | Date: Month / Day / Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Jason Noble | Signature | Date: Month 2 / Day 23 / Year 17

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month / Day / Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Instrat Inc.

Printed/Typed Name: Ruben Gonzalez | Signature | Date: Month 2 / Day 23 / Year 17