

# **Revised Remedial Design and Implementation Plan for Groundwater Remediation**

Joe's Cleaners  
2890 Cochran Street  
Simi Valley, California  
SCP NO. 1197, Site ID NO. 2040254

CONVERSE Project No. 10-41-222-06

July 12, 2012

Revised April 29, 2015

## **Prepared For:**

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April 29, 2015

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**Subject: REVISED REMEDIAL DESIGN AND IMPLEMENTATION  
PLAN FOR GROUNDWATER REMEDIATION**  
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Mr. Strauss:

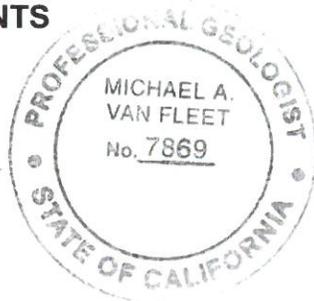
Converse Consultants is pleased to submit the attached workplan that outlines the design and implementation of proposed remedial systems and activities to address contaminated groundwater beneath the referenced Site.

We appreciate the opportunity to be of service. Should you have any questions or comments regarding this report, please contact Michael Van Fleet at (626) 930-1267 or Norman Eke at (626) 930-1260.

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# 1.0 Introduction

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## 1.1 Background

The subject property is located at 2890 Cochran Street in Simi Valley, Ventura County, California (Site). The Site is an active dry cleaning facility (Joe's Discount Cleaners) within the Sycamore Plaza Shopping Center, located on the south side of Cochran Street, between Sycamore Drive and Galena Avenue. The Site is bounded by shopping center sidewalks and asphalt parking areas and a Wells Fargo Bank to the north with Cochran Street further north; asphalt covered parking, landscaping, and Racine Street to the south with residential development further to the south; a restaurant suite (currently vacant), an alleyway and a Smoke Shop store to the east; and a Staples office supply store to the west. The general location of the Site is indicated on Figure 1.

Multiple investigations have been conducted at the Site between 1998 and 2012, related to the operation of the Site as a dry cleaning facility, and contamination identified related to this operation. Available information reviewed by Converse Consultants (Converse) indicated the following:

A Phase I Environmental Site Assessment (ESA), Phase II ESA, and Subsurface Investigations were previously conducted by Glenfos, Inc. (Glenfos) for the Site and summarized in reports dated July 15, 1988, April 6, 2001, and August 27, 2001, respectively. A Subsurface Investigation of Soils, Subsurface Soils Assessment, Groundwater/Soil Vapor Extraction (SVE) Well Installation, and Additional Subsurface Assessment were subsequently conducted by The Reynolds Group (TRG) and summarized in reports dated May 10, 2002, May 4, 2004, July 21, 2005, and September 1, 2010, respectively. Results of these assessments have indicated that the soil, soil vapor, and groundwater beneath the Site are impacted with tetrachloroethene (tetrachloroethylene; PCE) and other volatile organic compounds (VOCs). The area of impact appears to be roughly centered on a storm drain located in a parking area behind the dry cleaning suite. A summary regarding PCE at the Site is provided in the background section of Converse's Semi-Annual Groundwater Monitoring (2nd Half 2011) and Additional Site Assessment Report, dated February 2, 2012.

Following the review of the Amendment to the Revised Workplan for Additional Subsurface Assessment, prepared by TRG dated June 26, 2009, the Regional Water Quality Control Board (RWQCB) issued an Order, dated July 28, 2009, requiring the submittal of an additional Workplan to delineate the vertical and lateral extent of PCE in the soil, soil vapor, and groundwater.

In a meeting between RWQCB staff, the property owner and manager, and Converse personnel on October 28, 2010, it was agreed that Converse would prepare and submit two (2) separate Workplans; one (1) to outline the further assessment required by the RWQCB Order for further delineation, and one (1) to outline initial



remedial activities to be initiated using existing wells prior to the completion of additional assessment activities.

A Workplan for Interim Soil Vapor and Groundwater Remediation (Workplan), dated December 15, 2010, was prepared by Converse and submitted to the RWQCB for review. In a letter, dated March 29, 2011, the RWQCB approved the Workplan with comments for soil vapor extraction (SVE) system startup. It was recommended that the proposed groundwater extraction and treatment (GET) system for remediation of VOC impacted soil and groundwater not be installed and operated until the groundwater flow direction and the extent of the source zone are adequately assessed with new well installations. It is noted that operation of the SVE system was initiated on April 30, 2012, and discontinued on January 7, 2014. Rebound testing activities were completed on March 10 and September 11, 2014, and results were presented in a report dated November 11, 2014. Based on the results of the soil vapor rebound testing, Converse presented the conclusion that no further action appears warranted with regard to reducing the concentrations of VOCs in the soil and soil vapor beneath the Site.

Converse installed new wells at four (4) locations (MW5, MW6, MW7, and MW8), in June 2011 and December 2011, and at two (2) additional locations (MW9 and MW10) in April 2013. Co-located wells were installed at each location, with one (1) well screened across the initial depth at which groundwater was encountered, and the other with a slightly deeper screen interval. These wells were sampled following their installation, and along with the existing onsite well (MW1), have subsequently been monitored and sampled on a semi-annual basis in accordance with a RWQCB letter, dated November 2, 2011. Assessment findings have been presented in semi-annual groundwater monitoring reports.

In a letter, dated March 30, 2012, the RWQCB indicated that results of the additional investigations indicate that adequate groundwater source zone and gradient data have now been collected and evaluated for the Site and immediate vicinity, and requested that a Remedial Design and Implementation Plan (RDIP) be prepared to describe groundwater remediation goals; operation and maintenance; implementation schedule; and a monitoring and reporting program. Requests for additional information to be included in the RDIP were received from the RWQCB in letters dated December 5, 2012 and December 10, 2014. A summary of water level measurements in onsite groundwater wells is presented in Table 1. The locations of all groundwater wells associated with the Site, and the calculated direction of groundwater flow, are presented on Figure 2.

Prior assessment activities conducted at the Site have consistently indicated the direction of groundwater flow to be towards the northwest (see Figure 2). PCE has only been detected at concentrations above the Maximum Contaminant Level (MCL) of 5 milligrams per liter (mg/L) in samples from proposed extraction wells (MW1 and MW5-88) in the source zone, but concentrations of PCE in well MW-1 have decreased since 2010 and were less than the MCL in the samples collected on November 21, 2014. All PCE detections in the wells located cross-gradient and approximately 100 feet from the source zone (MW6 and MW7), have been less than



the MCL. PCE has not been detected in any samples collected from the up-gradient wells (MW8) located approximately 100 feet from the source zone, or in the down-gradient wells (MW9) located approximately 300 feet from the source zone. Therefore, the plume of groundwater impacted with PCE at concentrations that exceed the MCL is considered to be limited to an approximate 50 to 100-foot radius around well location MW5 (an aerial extent of up to 11,000 square feet) as is indicated on Figure 3. Additionally, the vertical extent of impact appears to be limited to the initial 15-foot thick sandy aquifer encountered between approximately 75 and 90 feet bgs at both locations MW5 and MW6 because all PCE concentrations from well MW5-101 have been less than the MCL. Table 2 presents a summary of the VOCs detected in groundwater samples collected from the onsite monitoring wells.

## **1.2 Geology and Hydrogeology**

The elevation of the Site is approximately 940 feet above mean sea level (msl), and located within the west-central portion of Simi Valley. The Simi-Santa Rosa Fault Zone traverses the northern portion of the valley from west to east. Simi Valley is an east-west trending syncline bound at the north and east by the Santa Susana Mountains and to the south by the Simi Hills.

The Site is underlain by Quaternary alluvium consisting of gravel, sand, silt, and clay, and further underlain by Paleocene and Eocene non-marine and marine conglomerate, sandstone, and siltstone. The soils observed in samples collected from Converse's previous assessments were generally alternating layers or combinations of clay, silt, and very fine to fine grained sand. It was noted that significantly more clay was present in the upper 30 feet in borings MW5, MW6, and MW8 than in MW7, which was primarily sand and silty sand in that interval. Soil types were noted to be sand, silty sand, or gravelly sand beginning at 70 to 75 feet bgs (around where groundwater was initially encountered), and these soil types extended to approximately 80 to 90 feet bgs where soil types changed to silt, clay, clayey silt, or silty clay. No significant sandy soils were encountered below these silty and clayey soils to the total depths drilled (between 100 and 110 feet bgs). The soil samples were generally brown in color and varied from moist to dry. No staining, odors, or other signs of contamination were noted in any of the samples. Boring logs for the wells completed at the Site by Converse are presented in Appendix A and provide a complete description of the lithology. Various Physical parameters were analyzed for select samples, and a summary of those data are presented in Table 3.

The Site is located within the Simi Valley Groundwater Basin, which underlies Simi Valley in southeastern Ventura County and collects water through runoff and infiltration from a 78 square mile watershed. The basin is bounded on the north and northeast by the Santa Susana Mountains and the Simi fault and on the south and southwest by the Simi Hills. Ground surface elevation of the valley ranges from 700 to 1,100 feet above sea level (California Department of Water Resources, Bulletin 118, 2003). Groundwater beneath the Site measures approximately 70 to



80 feet bgs (approximately 865 feet above msl) based on previous and current assessment data (see Table 1).

Groundwater generally moves westward through the basin following the course of Arroyo Simi (DWR 2003). Groundwater recharging the basin migrates from the eastern, unconfined regions of the basin to the west end of Simi Valley and becomes confined to semi-confined in less permeable strata. However, during periods of overdraft, the slope of the groundwater surface can reverse in the western part of the basin and groundwater may flow in an easterly direction. According to recent information obtained from the State's Geotracker database for nearby properties, groundwater in the immediate vicinity of the Site has generally traveled in a westerly (southwest to northwest) direction. Hydrographs of wells in the Simi Valley Groundwater Basin show that water levels have typically remained the same or risen since 1980.

The primary water-bearing unit in this basin is alluvium. Groundwater is generally unconfined but as grain size decreases towards the western end of the basin, clay lenses in the alluvium cause localized confinement. The alluvium consists of gravels, sands, and clays with a maximum thickness of 730 feet (DWR 2003). The alluvium becomes shallow and constricted at the point where Arroyo Simi exits the western part of the valley (DWR 2003).

Based on reports reviewed by Converse, two (2) active municipal production wells (2N/18W-10A02, known as Sycamore #3, and 2N/18W-10H03, known as Niles Well) are on record with the Southern California Water Company to be located within ½-mile of the Site at approximately 1,600 and 2,000 feet southwest of the Site, respectively. The groundwater quality in this basin is generally poor due to elevated total dissolved solids. Due to the poor quality, water extracted from these wells is blended with water from the Calleguas Basin for municipal use.



## 2.0 Scope of Services

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### 2.1 Objective

The objective of the proposed scope of work is to reduce concentrations of VOCs in groundwater beneath the Site to levels less than their respective MCL values. PCE is the only VOC that has been detected during groundwater assessment activities at the Site at concentrations that exceed MCLs.

### 2.2 Cleanup Goals

The proposed cleanup goals (CGs) for VOCs in groundwater are their respective MCL values. The MCL value for PCE is currently 5 ug/L.

### 2.3 Remedial Alternatives Evaluation

A Remediation Technologies Screening Matrix (RTSM) was developed by several Federal Agencies participating in the Federal Remediation Technology Roundtable (FRTR). The FRTR was established in 1991 as an interagency committee to exchange information and to provide a forum for joint action regarding the development and demonstration of innovative technologies for hazardous waste remediation. The RTSM is available online at [www.frtr.gov/matrix2](http://www.frtr.gov/matrix2). Table 2-2 of the RTSM lists a total of 25 technologies available for the treatment of PCE (a halogenated VOC) in groundwater. These technologies are divided into 5 categories; insitu physical/chemical, insitu biological, exsitu physical/chemical, exsitu biological, and containment. Each of these technologies are rated based on their availability, applicability, reliability, and cleanup time.

There are numerous insitu treatment technologies including Enhanced Bioremediation, Chemical Oxidation, Air Sparging, Thermal Treatment, and Natural Attenuation. The implementation of many of these technologies would require additional wells to be installed within the area of the contaminant plume for injecting chemicals, or to monitor the effects of injected chemicals. However, the installation of additional well in this area is not economically feasible due to the presence of the structures over the majority of the plume, so most of these technologies were excluded from consideration. Dual Phase Extraction and Bioslurping are insitu chemical treatment technologies that involve the extraction of groundwater and soil vapor. These technologies excluded from consideration since remediation of the soil vapor has already been completed.

Given the need to remove the contamination from the groundwater, Containment technologies were not considered.



Of the numerous exsitu treatment technologies listed, Air Stripping and Liquid Phase Carbon Adsorption are identified as the most commonly used for the treatment of halogenated VOCs in groundwater. Both of these methods require that impacted water be pumped up to ground surface for treatment. With Air Stripping the contaminant is transferred from the water to air. Since discharge of impacted air would not be allowed at the Site, it would first need to be treated to remove the contaminant using a technology like activated carbon (similar to the SVE system currently onsite). The Liquid Phase Carbon Adsorption using Granulated Activated carbon is similar to Air Stripping, but it involves the transfer of contaminants to carbon directly from the groundwater.

Liquid Phase Carbon Adsorption is the treatment method that has been selected for use at the Site. It is considered to be a widely available technology with better than average rating for applicability and reliability, but a worse than average rating for cleanup time. However, based on the relatively small size of our impacted plume, we don't feel that cleanup time will be a significant concern.

## **2.4 Groundwater Extraction and Treatment (GET) System**

Results of the previous investigations have identified concentrations of PCE in excess of the CG in samples from only wells MW1 and MW5-88, but concentrations of PCE in well MW-1 have decreased since 2010 and were less than the MCL in the samples collected on November 21, 2014. Therefore, the extent of impact is believed to be limited to the upper 15 feet of the shallow aquifer (approximately 75 to 90 feet bgs) within a radius of approximately 50 to 100 feet from well location MW5. Assuming an average porosity of 43% in these impacted soils, the total volume of impacted groundwater is estimated to be on the order of 100,000 cubic feet (750,000 gallons).

Remediation of the groundwater is proposed to be completed by pumping groundwater from existing wells MW1 and MW5-88 and treating the extracted water at ground surface using activated carbon. The down-well pumps will direct extracted groundwater into a pre-treatment tank. A transfer pump will move water from the pre-treatment tank through a filter to remove sediment, then through a series of carbon treatment vessels, and then into a post-treatment storage tank. Treated water is proposed to be discharged from the post-treatment tank in the local sewer system. Figure 4 shows details on the proposed layout of the GET system components (wells, tanks, pumps, and discharge piping).

### *2.4.1 System Components and Operation*

#### 2.4.1.1 Groundwater Wells

Existing groundwater wells are constructed with Scheduled 40 polyvinylchloride (PVC) casings, as follows:



Well ID	Casing Diameter (inches)	Casing Length (feet)	Screen Interval (feet bgs)
MW1	4	100	70 – 100
MW5	4	88.5	73 – 88
	4	102	91.5 – 101.5
MW6	4	88.5	73 – 88
	4	103.5	93 – 103
MW7	4	85.5	70 – 85
	4	101	90.5 – 100.5
MW8	4	86.5	71 – 86
	4	102.5	92 - 102
MW9	2	100.5	90 – 100
	2	120.5	110 - 120
MW10	2	95.5	85 – 95
	2	115.5	105 - 115

Wells MW1 and MW5-88 are the only wells to have had PCE at concentrations in excess of the MCL of 5 ug/L during recent assessments. These two (2) wells will be used as groundwater extraction wells, and all other wells may be used as monitoring wells. Based on the drawdown of water levels observed during the previous purging of proposed groundwater extraction wells (MW1 and MW5-88), it is assumed that these wells can support the continuous extraction of groundwater at maximum rates of approximately 5 to 10 gallons per minute (gpm). At these rates the total volume of water to be extracted would range from 14,400 to 28,800 gallons per day.

#### 2.4.1.2 Down-Well Pumps

Each of the groundwater extraction wells (MW1 and MW5-88) will be equipped with dedicated submersible pumps capable of extraction rates of at least 20 gpm from a depth of 80 feet bgs (Grundfos Redi-Flo 3 [model no. 25s075] or similar). These pumps will have variable speed motors which will allow the operator to adjust the rate of extraction using a controller that will be located within the treatment compound area. The pumps will be operated in conjunction with controllers which will shut off the pumps when water levels drop below the pumps' suction line, and restart the pumps when water levels have sufficiently recovered. The discharge line from each extraction well will be equipped with totalizing flow meters to track the volume of water purged, and a port from which grab samples can be collected.

#### 2.4.1.3 Treatment System

The above grade GET system components (tanks, filters, carbon vessels, transfer pumps) are proposed to be located adjacent to the existing SVE



system components. The fencing around the existing components will be expanded to accommodate the additional equipment. During the installation of the SVE system, a 2-inch diameter PVC discharge line was plumbed in a trench from MW1 leading into the treatment compound. MW5-88 is located within the treatment system compound area and will not require additional subsurface plumbing.

Extracted water will be temporarily stored in a pre-treatment holding tank made of polyethylene, which will have a capacity between 500 and 1,000 gallons. The pre-treatment holding tank will be equipped with high and low level sensors to control an automatic pumping system and the capability to shut-off the down-well pumps, to prevent overflow. The pre-treatment tank will be located in a secondary containment structure with a capacity equal to or greater than the capacity of the tank. A transfer pump (1½ HP capable of 40 gpm at 20 psi, or similar) will be used to pump water from the pre-treatment tank, through a filter to remove sediment, then through a series of carbon-containing vessels for treatment, and finally into a post-treatment containment tank.

The carbon will be contained in tank- or drum-based vessels. Each vessel will be filled with between 200 and 1,000 pounds of liquid granular activated carbon (LGAC).

#### 2.4.1.4 Post-Treatment and Disposal Systems

Treated water will be temporarily stored in a post-treatment containment tank made of polyethylene, which will have a capacity between 250 and 1,000 gallons. The post-treatment tank will have a high level sensor and the capability to shut-off the transfer pumps to prevent overflow. The line coming into the post-treatment tank from the carbon vessels will be equipped with a totalizing flow meter to track the volume of water treated.

Water in the post-treatment tank will discharge to the local sewer system. The tank will be connected to the sewer by a 4-inch diameter PVC line which will be installed in a trench. The connection to the sewer will be completed in compliance with requirements of the City of Simi Valley. A port will be installed on this discharge line from which grab samples can be collected. The 4-inch discharge line should be capable of transmitting water at rates up to 100 gpm under gravity feed, although the average discharge rate will not exceed the extraction rate which is anticipated to average between 10 and 20 gpm.

If the extraction rate exceed the rate of discharge into the sewer, then water will begin to backup in the post-treatment tank. To prevent a release of treated water to ground surface from the post-treatment tank a high level sensor will be installed in this tank and configured to shut off the transfer pump that pushes water through the carbon vessels. The transfer pump will



automatically resume operation once the sensors indicate that water levels in the post-treatment tank have sufficiently decreased.

Electricity needed to operate the GET system will be obtained from the panel that was previously installed for the SVE system.

#### *2.4.2 Monitoring and Reporting Program (MRP)*

Converse has been conducting groundwater monitoring at the Site on a semi-annual basis in accordance with requirements presented in a letter from the RWQCB dated March 22, 2011. Once operation of the GET system begins, this semi-annual monitoring and reporting will be discontinued and replaced by the monitoring and reporting frequencies proposed herein for the GET system.

The following section presents the proposed Monitoring and Reporting Program (MRP) for the GET system. Monitoring and Reporting activities will be conducted to evaluate remedial progress and compliance with discharge requirements. At a minimum, activities will be completed in accordance with the requirements of the Simi Valley Sewer Use Ordinance (No. 1170) and Special Wastewater Discharge Permit requirements.

A schedule outlining the proposed MRP field activities is presented in Table 5, and details regarding these activities are provided in the following sections. Monitoring and sampling will continue as outlined below until a decision is made in consultation with RWQCB to modify sampling frequencies or to shut-down the GET system. Any changes that need to be made to the sampling frequencies and/or sample analyses for compliance with the discharge permit will be communicated to the RWQCB.

##### **2.4.2.1 Baseline Testing**

The most recent data generated from the ongoing semi-annual groundwater monitoring activities will serve as the baseline data.

##### **2.4.2.2 Startup Testing**

The GET system will initially be activated to generate between 500 and 1,000 gallons of water to test the functionality of the extraction and treatment portions of the system. The system will be inspected to check for leaks, and system responses to high and low level sensors will be tested. Extracted water will be passed through the treatment system and contained in the post-treatment tank. A sample will be collected from the post-treatment tank and analyzed for VOCs in accordance with EPA Test Method 8260B, as well as chemicals regulated under the Sewer Use Ordinance (ammonia, biological oxygen demand, boron, chemical oxygen demand, chloride, cyanide, metals, methylene blue active substances, oil and grease, pH, and sulfate). No water will be discharged into the sewer until analytical results have been reviewed, and the treated water is determined to be sufficiently clean (all VOCs less than



their respective MCLs, and other chemicals less than their respective maximum concentration limits listed in the Ordinance).

Once the treatment functionality has been confirmed, the discharge portion of the GET system will be tested. The valve on the discharge line from the post-treatment tank will be opened to allow water to drain into the sewer. The total flow discharged will be measured and flow rates will be measured or calculated.

During the discharge test, water will be discharged under gravity feed to the sewer system and the flow rate will be measured or calculated. The extraction wells will be set to pump at a combined rate that is less than or equal to the maximum determined discharge rate.

#### 2.4.2.3 Routine Operation and Monitoring

Daily Site visits will be conducted during the first week of operation of the GET system. After the initial week of operation, Site visits to record system readings and monitor water levels will be conducted on a weekly basis for the remainder of the initial month, and then monthly thereafter. Details regarding the routine operation and monitoring activities to be completed are provided below:

- System Monitoring – The following information will be recorded during each Site visit:
  - Flow readings (total and/or instantaneous) from the meters installed on the extraction wells and treatment system
  - Measurements of water levels in the extraction, and in the monitoring wells at locations MW-5, MW-6, and MW-10.

Adjustments to pumping rates may be made based on measured water levels in the extraction wells in order to keep water levels above the pump intakes.

- Discharge Compliance Sampling – Samples of the treated water will be collected from a sample port on the line exiting the post-treatment tank on a frequency that complies with the discharge permit. These samples will be submitted for laboratory analysis of VOCs in accordance with EPA Test Method 8260B and any other compounds as required under the Sewer Use Ordinance, and will also be monitored in the field for parameters of temperature, oxygen reduction potential (ORP), dissolved oxygen (DO), conductivity, turbidity, and total dissolved solids (TDS) to evaluate that the water being re-injected has been satisfactorily remediated.
- Monthly Sampling – Grab samples will be collected on a monthly basis from sample ports on the discharge lines of each extraction well to monitor remedial progress in the extraction wells. These samples will be analyzed for VOCs in accordance with EPA Test Method 8260B to evaluate the concentrations of VOCs remaining in the groundwater.



A grab sample will also be collected from a port between the two carbon vessels on a monthly basis. This sample will be analyzed for VOCs in accordance with EPA Test Method 8260B to evaluate when the carbon in the initial treatment tank has become saturated and requires replacement.

- Semi-annual Sampling – Additional sampling will be conducted on a semi-annual basis to evaluate potential migration of the PCE-impacted plume, by collecting groundwater samples from monitoring wells MW5-101, MW6-88, MW7-85, MW9-90, MW9-110, MW-10-85, and MW10-105. These samples will be collected in a manner consistent with current semi-annual sampling techniques (3 volume purge with submersible pump, and collection with disposable bailer). Water quality parameters of temperature, oxygen reduction potential (ORP), dissolved oxygen (DO), conductivity, turbidity, and total dissolved solids (TDS) will be monitored during purging, and the samples will be submitted for laboratory analysis of VOCs in accordance with EPA Test Method 8260B. Purge water generated during these sampling events will be treated and disposed of using the onsite treatment system.

#### 2.4.2.4 Reporting

Following the installation, activation, and initial week of operation of the GET system, a report will be prepared documenting the system installation, background concentrations, and initial sampling.

Update reports will subsequently be prepared documenting system readings and monitoring and sampling results on a quarterly basis until remediation activities are completed.

Once rebound test results for the groundwater indicate that VOC concentrations have been successfully remediated, and assuming that current operation of the VES system has sufficiently remediated concentrations of VOCs in the soil vapor, a closure report will be prepared and submitted to the RWQCB.

#### 2.4.2.5 Rebound Testing

System monitoring and sampling will continue until concentrations of all VOCs in samples from the extraction and monitoring wells are less than the CGs (their respective MCL values; 5 ug/L for PCE). At that time a rebound test will be conducted. However, if it is determined that the system as designed and operated may not be capable of achieving the CG within a reasonable timeframe and justifiable cost, then the system may be temporarily shut down while modifications to the system and/or remedial technologies are evaluated.

The purpose of conducting a rebound test is to assess concentrations of residual contaminants remaining in the aquifer. During the process of extracting groundwater, the majority of the flow comes from the most permeable soils near the extraction wells. It is therefore possible that when



contaminant concentrations in the extracted waters have decreased to acceptable levels, elevated levels of contaminants may still be present in soils that are less permeable or located at greater distances from the extraction wells. While the system is off, any remaining contaminants in the aquifer are allowed to re-equilibrate.

The rebound test will consist of shutting down the GET system, and then following periods of approximately 3 and 6 months samples will be collected from all wells at the Site in which PCE concentrations have ever been detected in excess of the CG (currently only wells MW1 and MW5-88). Samples will be analyzed for VOCs in accordance with EPA Test Method 8260B. If PCE concentrations in the samples remain below the CG, then the Site will be considered sufficiently remediated. If PCE concentrations in rebound samples exceed the CG, then operation of the GET system will be resumed.

#### 2.4.2.6 Spill Contingency Plan

The treatment system will be located near existing buildings and only a minor amount of surface/storm water is anticipated to pass through areas where PCE-impacted water will be stored. The topography of the Site is such that any spill from the GET system would drain towards the storm drain located adjacent to well MW1. Based on the location of the system, no Site occupants are considered reasonably likely to come into contact with any non-treated water that may potentially be spilled.

A spill response kit will be maintained at the Site which, at a minimum, will contain a drain seal and/or spill berm to be placed over/around the storm drain, and enough sorbent booms/socks to absorb up to approximately 50 gallons of spilled water.

The pre-treatment storage tank will be situated on or within a secondary containment tank as an initial measure to prevent uncontrolled releases of PCE-impacted water from the Site. Both of these primary and secondary storage tanks will be equipped with high level sensors and the capability to shut-off the down-well pumps, to prevent overflow.

The following is a summary of the response actions to be implemented in the case of non-treated water being spilled. Details regarding response actions are presented in the Spill Contingency Plan included in Appendix B. Personnel dealing with a spill shall have proper HAZWOPER training, and shall wear appropriate personal protective equipment.

- The pumps in the extraction wells will be turned off to prevent the generation of additional impacted-water.
- The system will be inspected and additional steps will be taken as necessary to prevent the further release of impacted-water.



- Spilled water will be prevented from flowing into the storm drain located adjacent to well MW1 using the drain seal and/or spill berm stored in the spill response kit.
- Spilled water will be absorbed using the sorbent booms/socks stored in the spill response kit. Used sorbent booms/socks will be containerized for disposal. Or, if the volume of water spilled exceeds the capacity to be dealt with using the onsite spill kit, a hazardous-materials response contractor will be contacted to respond. Converse currently has a contract with Patriot Environmental Services (805-921-1112) to provide these services within a response time of 4 hours.
- The response team will notify the City of Simi Valley Environmental Compliance Division at 805-583-6429, or 911.

Treated groundwater will be stored in a post-treatment tank and discharged to the local sewer. A sensor will be installed in the post-treatment tank and configured to shut off the transfer pump if water begins backing up within the tank in order to prevent treated water from overflowing out of the top of the tank onto the ground surface. The transfer pump will automatically resume operation once the sensor indicates that water levels in the post-treatment tank have sufficiently decreased.



### 3.0 Implementation Schedule

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The following table is the anticipated schedule of implementation and monitoring for this project.

<b>Schedule of Tasks</b>	
<b>Monitoring Event</b>	<b>Anticipated Dates</b>
Submittal of RDIP	April 29, 2015
Begin permitting process with City of Simi Valley and Air Pollution Control District	May 1, 2015
Approval of RDIP	June 12, 2015
Begin installation of GET system	July 20, 2015
Functionality test of GET system	August 3, 2015
Start continuous operation of GET system	August 17, 2015
Conduct quarterly Plume-Evaluation sampling	
1 <sup>st</sup> Quarter of operation	November 16, 2015
2 <sup>nd</sup> Quarter of operation	February 15, 2016
3 <sup>rd</sup> Quarter of operation	May 16, 2016
4 <sup>th</sup> Quarter of operation	August 15, 2016



## 4.0 Reporting

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Following the installation, activation, and initial week of operation of the GET system, a report will be prepared documenting the system installation, background concentrations, and initial sampling. Update reports will subsequently be prepared documenting system readings and monitoring and sampling results on a quarterly basis until remediation activities are completed. Additional reporting will be conducted as required in accordance with applicable discharge permits. Once rebound test results for the groundwater indicate that VOC concentrations have been successfully remediated, and assuming that current operation of the VES system has sufficiently remediated concentrations of VOCs in the soil vapor, a request for closure will be submitted to the RWQCB. All reports will be uploaded to Geotracker for RWQCB review.

All work will be completed under the responsible charge of a Professional Geologist (PG) or Professional Engineer (PE).

The following table is the anticipated schedule of reporting for this project.

<b>Schedule of Tasks</b>	
<b>Monitoring Event/Report Period</b>	<b>Report Due Date</b>
System Startup – August 2015	September 25, 2015
1 <sup>st</sup> Quarter / November 2015	December 18, 2015
2 <sup>nd</sup> Quarter / February 2016	March 18, 2015
3 <sup>rd</sup> Quarter / May 2016	June 17, 2016
4 <sup>th</sup> Quarter / August 2016	September 16, 2016
Continue monitoring reporting quarterly as necessary	Same as above



## 5.0 Closure and Decommissioning

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System monitoring and sampling will continue until concentrations of VOCs in samples from the extraction and monitoring wells are less than their respective CGs (5 ug/L for PCE), or until such a time that it is concluded in consultation with RWQCB that closure will be considered on:

- Pollutant sources having been remediated to the extent feasible;
- unacceptable risks to human health, ecological health, and sensitive receptors, having been mitigated;
- Unacceptable threats to groundwater, considering existing and potential beneficial uses, having mitigated;
- Groundwater plumes shown to be decreasing;
- Cleanup standards projected to be met within a reasonable timeframe; and
- Risk management measures being appropriate, documented, and not requiring future RWQCB oversight.

Following approval by the RWQCB that no further remedial activities are required with regard to the soil vapor and groundwater, the SVE and GET systems will be decommissioned. All soil vapor extraction and groundwater monitoring wells will be abandoned under appropriate permit by pressure grouting each well casing, and soil vapor monitoring probes will be removed by over drilling to remove all casing, tubing, probes, and sand packs.



**TABLE 1**  
**Groundwater Level Measurements**

Joe's Cleaners  
Simi Valley, California

Boring Location	Screen Interval (feet bgs)	Screen Length (feet)	Top of Casing Elevation (feet amsl)	Date	Depth to Water (feet bgs)	Water Elevation (feet amsl)
MW1	70 - 100	30	940.96	07/05/11	76.42	864.54
				07/26/11	75.48	865.48
				12/21/11	75.55	865.41
				01/30/12	75.41	865.55
				02/29/12	75.35	865.61
				03/29/12	75.30	865.66
				04/27/12	75.08	865.88
				5/24/12*	75.05	865.91
				6/15/12*	74.32	866.64
				10/22/12*	74.66	866.30
				4/17/2013*	75.45	865.51
				5/22/13*	75.76	865.20
				10/30/13	76.72	864.24
				05/29/14	77.65	863.31
11/21/14	78.44	862.52				
MW5	73 - 88	15	941.92	07/05/11	76.40	865.52
				07/26/11	76.58	865.34
				12/21/11	76.65	865.27
				01/30/12	76.50	865.42
				02/29/12	76.45	865.47
				03/29/12	76.41	865.51
				04/27/12	76.20	865.72
				5/24/12*	76.30	865.62
				6/15/12*	75.90	866.02
				10/22/12*	75.79	866.13
				4/17/13*	76.89	865.03
				5/23/13*	76.91	865.01
				10/30/13	77.61	864.31
				05/29/14	78.71	863.21
	11/21/14	79.52	862.40			
	91 - 101	10	941.67	07/05/11	76.05	865.62
				07/26/11	76.23	865.44
				12/21/11	76.31	865.36
				01/30/12	76.20	865.47
				02/29/12	76.17	865.50
				03/29/12	76.14	865.53
				04/27/12	75.90	865.77
				5/24/12*	76.00	865.67
				6/15/12*	75.92	865.75
				10/22/12*	75.43	866.24
				5/23/13*	77.90	863.77
				10/30/13	77.46	864.21
				05/29/14	78.47	863.20
11/21/14				79.24	862.43	
MW6	73 - 88	15	942.07	07/05/11	76.48	865.59
				07/26/11	76.65	865.42
				12/21/11	76.72	865.35
				01/30/12	76.58	865.49
				02/29/12	76.55	865.52
				03/29/12	76.53	865.54
				04/27/12	76.25	865.82
				5/25/12*	76.30	865.77
				6/15/12*	75.95	866.12
				10/22/12*	75.82	866.25
				5/22/13*	76.93	865.14
				10/29/13	77.76	864.31
				05/29/14	78.8	863.27
				11/21/14	79.59	862.48
	93 - 103	10	942.13	07/05/11	76.30	865.83
				07/26/11	76.49	865.64
				12/21/11	76.56	865.57
				01/30/12	76.51	865.62
				02/29/12	76.40	865.73
				03/29/12	76.35	865.78
				04/27/12	76.11	866.02
				5/25/12*	76.18	865.95
				6/15/12*	76.40	865.73
				10/22/12*	75.71	866.42
				5/22/13*	79.01	863.12
				10/29/13	77.76	864.37
				05/29/14	78.9	863.23
				11/21/14	79.77	862.36

**TABLE 1**  
**Groundwater Level Measurements**

Joe's Cleaners  
Simi Valley, California

Boring Location	Screen Interval (feet bgs)	Screen Length (feet)	Top of Casing Elevation (feet amsl)	Date	Depth to Water (feet bgs)	Water Elevation (feet amsl)
MW7	70 - 85	15	936.60	07/01/11	70.94	865.66
				07/26/11	71.14	865.46
				12/21/11	71.2	865.40
				01/30/12	71.06	865.54
				02/29/12	71.01	865.59
				03/29/12	71.00	865.60
				04/27/12	70.80	865.80
				5/23/12*	70.90	865.70
				6/15/12*	70.73	865.87
				10/22/12*	70.33	866.27
				5/22/13*	71.61	864.99
				10/29/13	72.28	864.32
	05/29/14	73.34	863.26			
	11/21/14	74.11	862.49			
	91 - 101	10	936.34	07/05/11	70.6	865.74
				07/26/11	70.69	865.65
				12/21/11	70.75	865.59
				01/30/12	70.58	865.76
				02/29/12	70.57	865.77
				03/29/12	70.53	865.81
				04/27/12	70.23	866.11
				5/23/12*	70.48	865.86
6/15/12*				70.30	866.04	
10/22/12*				69.88	866.46	
5/22/13*				71.19	865.15	
10/29/13				72.00	864.34	
05/29/14	72.96	863.38				
11/21/14	73.73	862.61				
MW8	71 - 86	15	936.6	12/21/11	70.75	865.85
				01/30/12	70.50	866.10
				02/29/12	70.55	866.05
				03/29/12	70.52	866.08
				04/27/12	70.22	866.38
				5/23/12*	70.43	866.17
				6/15/12*	70.28	866.32
				10/22/12*	69.83	866.77
				5/22/13*	70.96	865.64
				10/29/13	71.88	864.72
				05/29/14	73.14	863.46
				11/21/14	73.89	862.71
	92 - 102	10	936.3	12/21/11	70.4	865.94
				01/30/12	70.20	866.14
				02/29/12	70.30	866.04
				03/29/12	70.25	866.09
				04/27/12	69.78	866.56
				5/23/12*	69.85	866.49
				6/15/12*	69.80	866.54
				10/22/12*	69.54	866.80
				5/22/13*	71.13	865.21
				10/29/13	72.00	864.34
05/29/14				73.00	863.34	
11/21/14				73.62	862.72	
MW9	75 - 90	15	940.9	4/17/13*	76.00	864.89
				5/22/13*	76.03	864.86
				10/29/13	76.75	864.14
				05/29/14	77.77	863.12
	11/21/14	78.56	862.33			
	100 - 110	10	940.63	4/17/13*	76.42	864.21
				5/22/13*	76.32	864.31
				10/29/13	76.96	863.67
05/29/14				78.00	862.63	
11/21/14	78.70	861.93				
MW10	70 - 85	15	941.36	4/17/13*	76.17	865.19
				5/23/13*	76.41	864.95
				10/29/13	76.65	864.71
				05/29/14	78.06	863.30
	11/21/14	78.85	862.51			
	95 - 105	10	941.42	4/17/13*	75.85	865.57
				5/23/13*	76.30	865.12
				10/29/13	77.01	864.41
05/29/14				78.03	863.39	
11/21/14	78.76	862.66				

TOC = Top of Casing

bgs = Below Ground Surface

amsl = above mean sea level

\* = measured water level data affected by the operation of the soil vapor extraction system at the Site.

**TABLE 2**  
**Groundwater Sample Analytical Results - VOCs**

Joe's Cleaners  
 Simi Valley, California

Boring Location	Screen Interval (feet bgs)	Date	Depth to Water (feet below TOC)	Notes	Volatile Organic Compounds (µg/L)					
					PCE	Bromodichloro-methane	Dichlorodifluoro-methane	Dibromochloro-methane	Carbon Disulfide	All Other VOCs
MW1	70 - 100	05/24/05	74.90		90.0	ND	ND	ND	ND	ND
		05/10/10	74.68		419.5	ND	ND	ND	ND	ND
		07/05/11	76.42		253	ND	ND	ND	ND	ND
		12/22/11	75.55		185	ND	ND	ND	ND	ND
		05/24/12	75.05		67.4	ND	4.62	ND	ND	ND
		10/23/12	74.66	*	21.8	ND	NR	ND	ND	ND
		04/17/13	75.45		38.0	ND	ND	ND	ND	ND
		05/22/13	75.76	Duplicate	19.8	ND	ND	ND	ND	ND
		10/30/13	76.72	Duplicate	24.0	ND	ND	ND	ND	ND
		05/29/14	77.65		6.77	ND	ND	ND	ND	ND
		11/21/14	78.44		0.620	ND	ND	ND	ND	ND
				0.570	ND	ND	ND	ND	ND	
MW5	73 - 88	07/05/11	76.40		198	ND	ND	ND	ND	ND
		12/22/11	76.65		366	ND	ND	ND	ND	ND
		05/24/12	76.30		301	ND	2.24	ND	ND	ND
		10/23/12	75.79	*	214	ND	NR	ND	ND	ND
		04/17/13	76.89		202	ND	ND	ND	ND	ND
		05/23/13	76.91		124	ND	ND	ND	ND	ND
		10/30/13	77.61		219	ND	ND	ND	ND	ND
		05/29/14	78.71		162	ND	ND	ND	ND	ND
		11/21/14	79.52		114	ND	ND	ND	ND	ND
	91 - 101	07/05/11	76.05		4.87	0.520	ND	1.42	ND	ND
		12/22/11	76.31		1.96	ND	ND	ND	ND	ND
		05/24/12	76.00		2.01	ND	4.42	ND	ND	ND
		10/23/12	75.43		1.94	ND	ND	ND	ND	ND
		05/23/13	77.90		ND	ND	ND	ND	ND	ND
		10/30/13	77.46		2.63	ND	ND	ND	ND	ND
		05/29/14	78.47		ND	ND	ND	ND	ND	ND
		11/21/14	79.24		ND	ND	ND	ND	ND	ND

**TABLE 2**  
**Groundwater Sample Analytical Results - VOCs**  
 Joe's Cleaners  
 Simi Valley, California

Boring Location	Screen Interval (feet bgs)	Date	Depth to Water (feet below TOC)	Notes	Volatile Organic Compounds (µg/L)						
					PCE	Bromodichloro-methane	Dichlorodifluoro-methane	Dibromochloro-methane	Carbon Disulfide	All Other VOCs	
MW6	73 - 88	07/05/11	76.48		1.23	ND	ND	ND	ND	ND	
		12/22/11	76.72		0.680	ND	ND	ND	ND	ND	
		05/25/12	76.30	Duplicate	ND	ND	ND	ND	ND	ND	
		10/24/12	75.82	*	ND	ND	NR	ND	ND	ND	
		05/22/13	76.93		ND	ND	ND	ND	ND	ND	
		10/29/13	77.76		ND	ND	ND	ND	0.590	ND	
		05/29/14	78.80		ND	ND	ND	ND	ND	ND	
	11/21/14	79.59		ND	ND	ND	ND	ND	ND		
	93 - 103	07/05/11	76.30		ND	ND	ND	ND	ND	ND	
		12/22/11	76.56		ND	ND	ND	ND	ND	ND	
		05/25/12	76.18		ND	ND	ND	ND	ND	ND	
		10/24/12	75.71		ND	ND	ND	ND	ND	ND	
	MW7	70 - 85	07/05/11	70.94		1.81	ND	ND	ND	ND	ND
			12/22/11	71.20		3.160	ND	ND	ND	ND	ND
05/23/12			70.90		2.17	ND	ND	ND	ND	ND	
10/22/12			70.33		4.12	ND	ND	ND	ND	ND	
05/22/13			71.61		1.80	ND	ND	ND	ND	ND	
10/29/13			72.28		1.78	ND	ND	ND	ND	ND	
05/29/14			73.34		0.550	ND	ND	ND	ND	ND	
11/21/14		74.11		ND	ND	ND	ND	ND	ND		
91 - 101		07/05/11	70.60	Duplicate	ND	ND	ND	ND	ND	ND	
		12/22/11	70.75	Duplicate	ND	ND	ND	ND	ND	ND	
		05/23/12	70.48		ND	ND	ND	ND	ND	ND	
		10/22/12	69.88		ND	ND	ND	ND	ND	ND	
MW8		71-86	12/22/11	70.75		ND	ND	ND	ND	ND	ND
			05/23/12	70.43		ND	ND	ND	ND	ND	ND
	10/22/12		69.83		ND	ND	ND	ND	ND	ND	
	92-102	12/22/11	70.40		ND	ND	ND	ND	ND	ND	
		05/23/12	69.85		ND	ND	ND	ND	ND	ND	
		10/22/12	69.54		ND	ND	ND	ND	ND	ND	

**TABLE 2**  
**Groundwater Sample Analytical Results - VOCs**

Joe's Cleaners  
Simi Valley, California

Boring Location	Screen Interval (feet bgs)	Date	Depth to Water (feet below TOC)	Notes	Volatile Organic Compounds (µg/L)					
					PCE	Bromodichloro-methane	Dichlorodifluoro-methane	Dibromochloro-methane	Carbon Disulfide	All Other VOCs
MW9	75-90	04/17/13	76.00		ND	<i>0.570</i>	ND	ND	ND	ND
		05/22/13	76.03		ND	ND	ND	ND	ND	ND
		10/29/13	76.75		ND	ND	ND	ND	ND	ND
		05/29/14	77.77		ND	ND	ND	ND	ND	ND
		11/21/14	78.56		ND	ND	ND	ND	ND	ND
	100-110	04/17/13	76.42		ND	ND	ND	ND	ND	ND
		05/22/13	76.32		ND	ND	ND	ND	ND	ND
		10/29/13	76.96		ND	ND	ND	ND	ND	ND
		05/29/14	78.00		ND	ND	ND	ND	ND	ND
		11/21/14	78.70		ND	ND	ND	ND	ND	ND
MW10	70-85	04/17/13	76.17		<b>4.77</b>	<b>1.25</b>	ND	ND	ND	ND
		05/23/13	76.41		<b>3.03</b>	ND	ND	<b>0.520</b>	ND	ND
		10/29/13	76.65		<b>4.76</b>	ND	ND	ND	ND	ND
		05/29/14	78.06		<b>3.56</b>	ND	ND	ND	ND	ND
		11/21/14	78.85		<b>1.13</b>	ND	ND	ND	ND	ND
	95-105	04/17/13	75.85		<b>2.62</b>	<b>1.02</b>	ND	ND	ND	ND
		05/23/13	76.30		<b>0.630</b>	ND	ND	ND	ND	ND
		10/29/13	77.01		ND	ND	ND	ND	ND	ND
		05/29/14	73.03		ND	ND	ND	ND	ND	ND
		11/21/14	78.76		ND	ND	ND	ND	ND	ND
<b>Guidance Levels</b>										
<b>MCL</b>					<b>5</b>	<b>80</b>	<b>-</b>	<b>80</b>	<b>-</b>	

Samples analyzed for VOCs + oxygenates in accordance with EPA Test Method 8260B

\* = Sample analyzed for Purgeable VOCs in accordance with EPA Test Method 624

µg/L = Micrograms per Liter

bgs = Below Ground Surface

ND = Not Detected at or above reporting limit

NR = Not Reported

*Italicized Value* = Indicates analyte was detected. However, Analyte concentration is an estimated value which is between the MDL and the PQL

MCL = Maximum Contaminant Level

TOC = Top of Casing

VOCs = Volatile Organic Compounds

PCE = Tetrachloroethene

**TABLE 3**  
**Site Soil Physical Parameters**  
 Joe's Cleaners  
 Simi Valley, California

Boring No.	MW5	MW5	MW5	MW5	MW7	MW7	Average
Depth (ft)	5	15	40	60	5	15	
Descriptions	Lean Clay	Sandy Clay	Lean Clay	Silty Sand	Lean Clay W/ Sand	Sandy Lean Clay	
SPECIFIC GRAVITY	2.7	2.71	2.65	2.68	2.69	2.69	2.69
MOISTURE, %	28.60	10.86	36.00	12.17	25.37	24.4	22.89
DRY DENSITY (pcf)	89.65	109.4	84.24	106.19	86.04	99.96	95.91
DRY DENSITY (g/cm <sup>3</sup> )	1.44	1.75	1.35	1.70	1.38	1.60	1.54
Wt of water (g/cm <sup>3</sup> )	0.4107	0.1740	0.5766	0.1949	0.4064	0.3900	0.36
Volume of solid (cm <sup>3</sup> )	0.5319	0.6466	0.5092	0.6347	0.5123	0.5952	0.57
Volume of Void (cm <sup>3</sup> )	0.4681	0.3534	0.4908	0.3653	0.4877	0.4048	0.43
Void Ratio, e	0.8802	0.5465	0.9639	0.5756	0.9518	0.6800	0.77
Total Porosity, n	46.81	35.34	49.08	36.53	48.77	40.5	42.83
Saturation	87.73	53.85	98.97	56.66	71.70	96.3	77.54
Water Porosity, %	41.07	19.03	48.58	20.70	34.96	39.0	33.89
Water Porosity cm <sup>3</sup> /cm <sup>3</sup>	0.4107	0.1740	0.5766	0.1949	0.4064	0.3900	0.36
Permeability (cm/s)	1.37E-07	2.66E-07	3.59E-07	7.87E-08	4.65E-06	2.45E-09	9.16E-07

pcf = pounds per cubic foot

g = grams

cm = centimeter

cm<sup>3</sup> = cubic centimeter

**TABLE 4**  
**Schedule of Proposed MRP Field Activities**  
 Joe's Cleaners  
 Simi Valley, California

Description	Baseline Sampling	Startup Testing	System Monitoring			Quarterly Testing	Rebound Testing (3 and 6 months following shutdown of the system)
			Daily (Week 1)	Weekly (Weeks 2 through 4)	Monthly (after 1 month)		
Monitor water levels, purge, and sample wells MW1, MW5-88, MW5-101, MW6-88, MW7-85, MW9-90, MW9-110, MW10-85, and MW10-105, and analyze samples for VOCs.	<b>X</b>						<b>X</b>
Record flow meter readings.		<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>		
Measure water levels in wells: MW1, MW5-88, MW5-101, MW6-88, MW6-103, MW10-95, and MW10-115.		<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>		
Remedial Progress Sampling - Collect samples from discharge lines of wells MW1 and MW5-88, and analyze them for VOCs.					<b>X</b>		
Treatment System Evaluation - Collect sample from the port between the carbon treatment vessels and analyze it for VOCs.					<b>X</b>		
Discharge Compliance Monitoring - Collect sample from the port on the discharge line of the post-treatment tank and monitor it in the field for parameters of temperature, conductivity, turbidity, ORP, DO, and TDS.				<b>X</b>	<b>X</b>		
Discharge Compliance Sampling - Collect sample from the port on the discharge line of the post-treatment tank. Submit sample for laboratory analysis of VOCs and any other parameters required by under the terms of the discharge permit.		<b>X</b>				<b>X</b>	
Plume Evaluation - Purge and sample wells MW5-101, MW6-88, MW7-85, MW9-90, MW9-110, MW10-85, and MW10-105, and analyze samples for VOCs.						<b>X</b>	

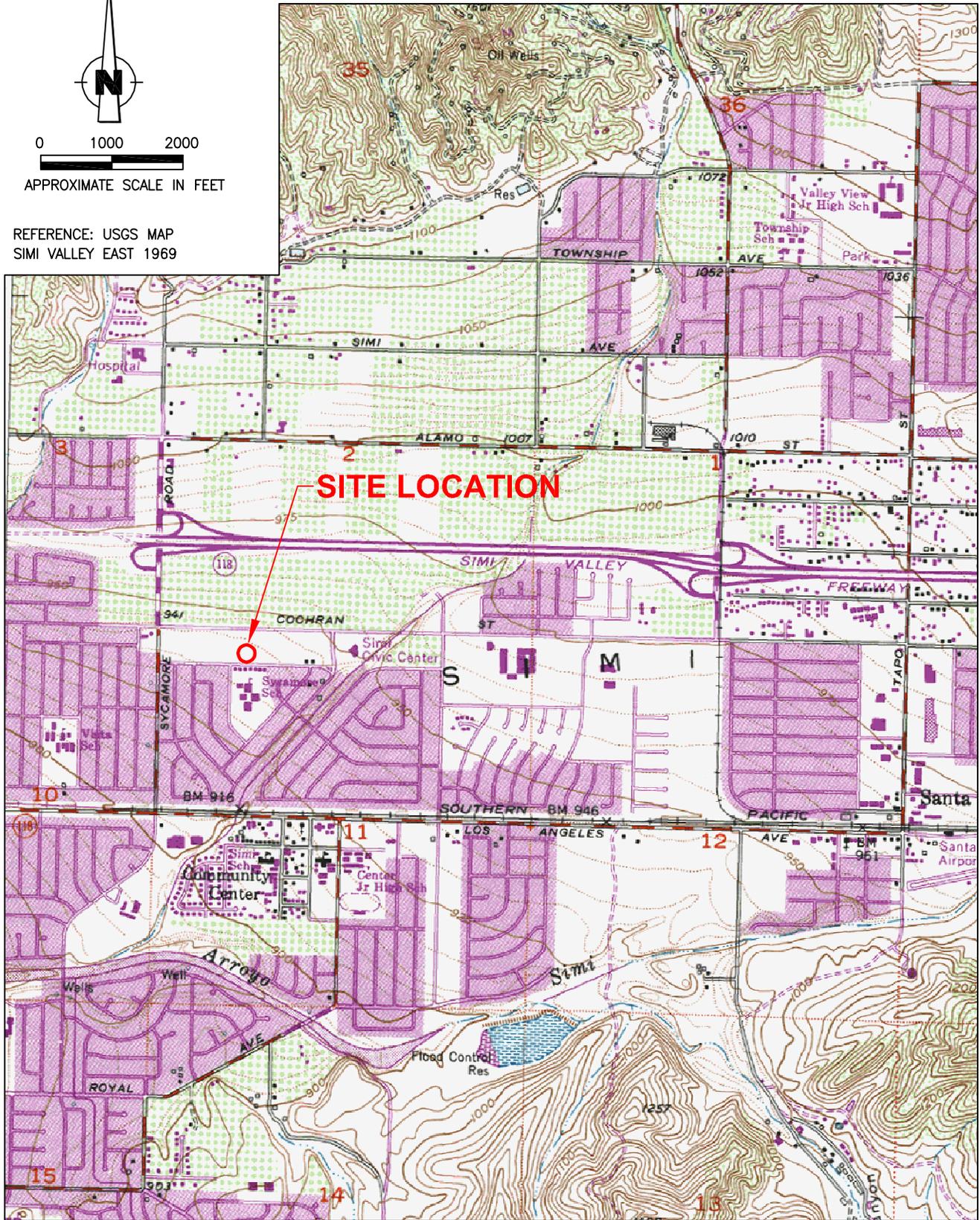
ORP = oxygen reduction potential  
 DO = dissolved oxygen  
 TDS = total dissolved solids  
 NA = frequency not yet determined



0 1000 2000

APPROXIMATE SCALE IN FEET

REFERENCE: USGS MAP  
SIMI VALLEY EAST 1969



## SITE LOCATION MAP



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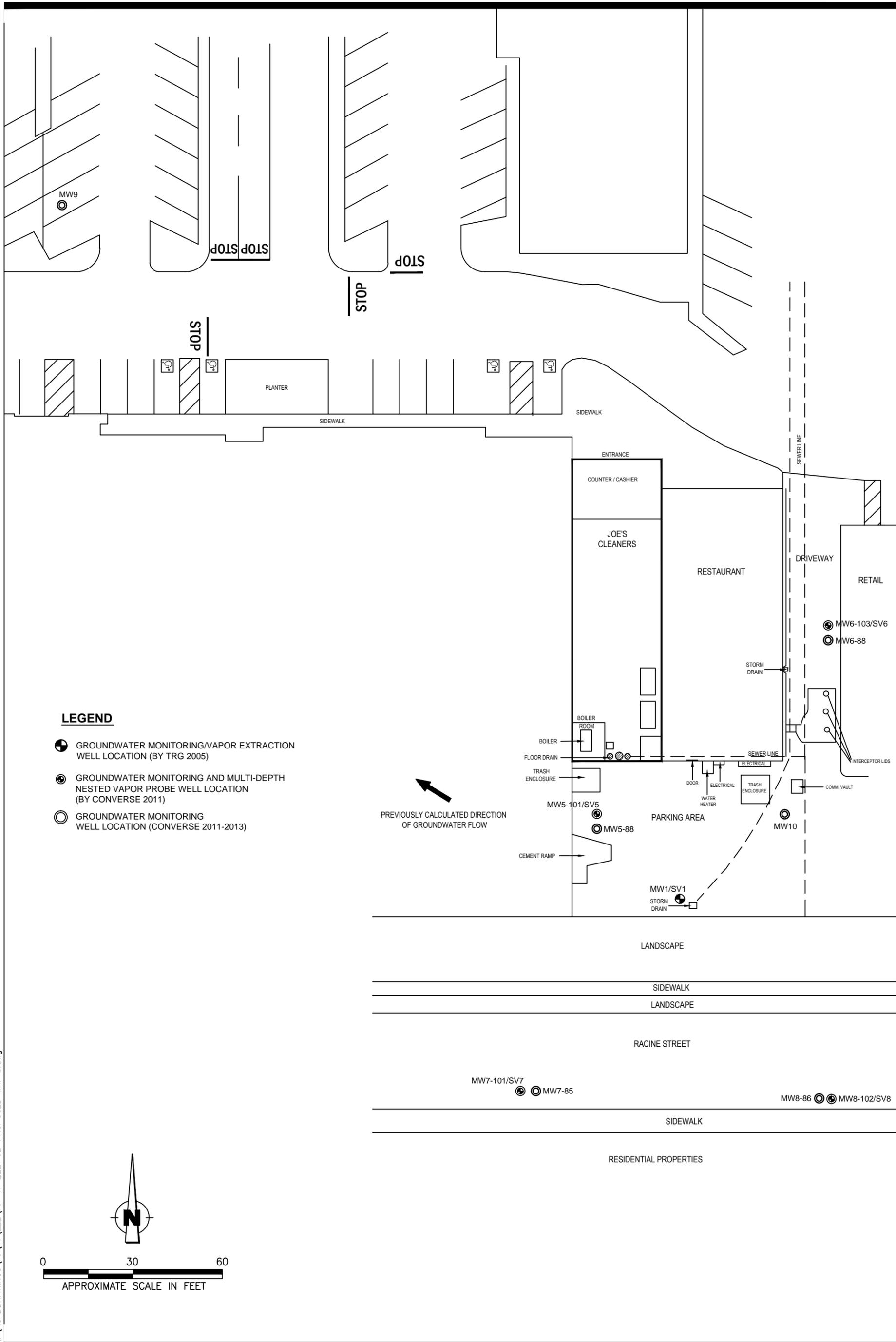
JOE'S DISCOUNT CLEANERS  
2890 COCHRAN ST.  
SIMI VALLEY, CA

Project No.  
10-41-222-05

Figure No.

**1**

I:\ACADDRAWINGS\10\41\222\10-41-222-02-PROPOSED-MW-8.dwg



# SITE PLAN AND WELL LOCATION MAP



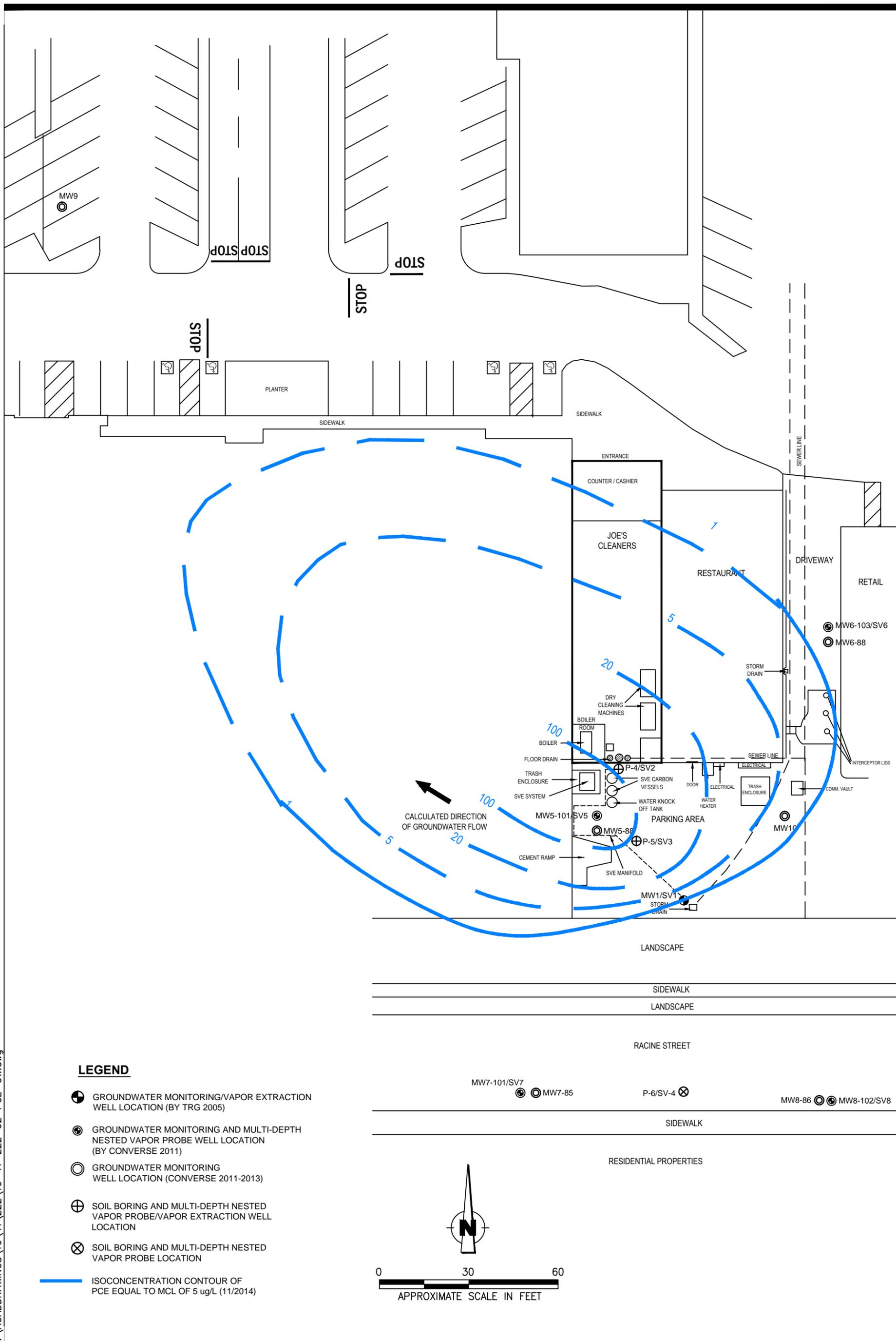
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SIMI VALLEY, CA

Project No.  
10-41-222-05

Figure No.  
**2**

i:\ACADDRAWINGS\10\41\222\10-41-222-02-PCE-GW.dwg



**LEGEND**

- ⊕ GROUNDWATER MONITORING/VAPOR EXTRACTION WELL LOCATION (BY TRG 2005)
- ⊙ GROUNDWATER MONITORING AND MULTI-DEPTH NESTED VAPOR PROBE WELL LOCATION (BY CONVERSE 2011)
- GROUNDWATER MONITORING WELL LOCATION (CONVERSE 2011-2013)
- ⊕ SOIL BORING AND MULTI-DEPTH NESTED VAPOR PROBE/VAPOR EXTRACTION WELL LOCATION
- ⊗ SOIL BORING AND MULTI-DEPTH NESTED VAPOR PROBE LOCATION
- ISOCENTRATION CONTOUR OF PCE EQUAL TO MCL OF 5 ug/L (11/2014)

**ISOCENTRATION CONTOURS OF PCE IN GROUNDWATER**

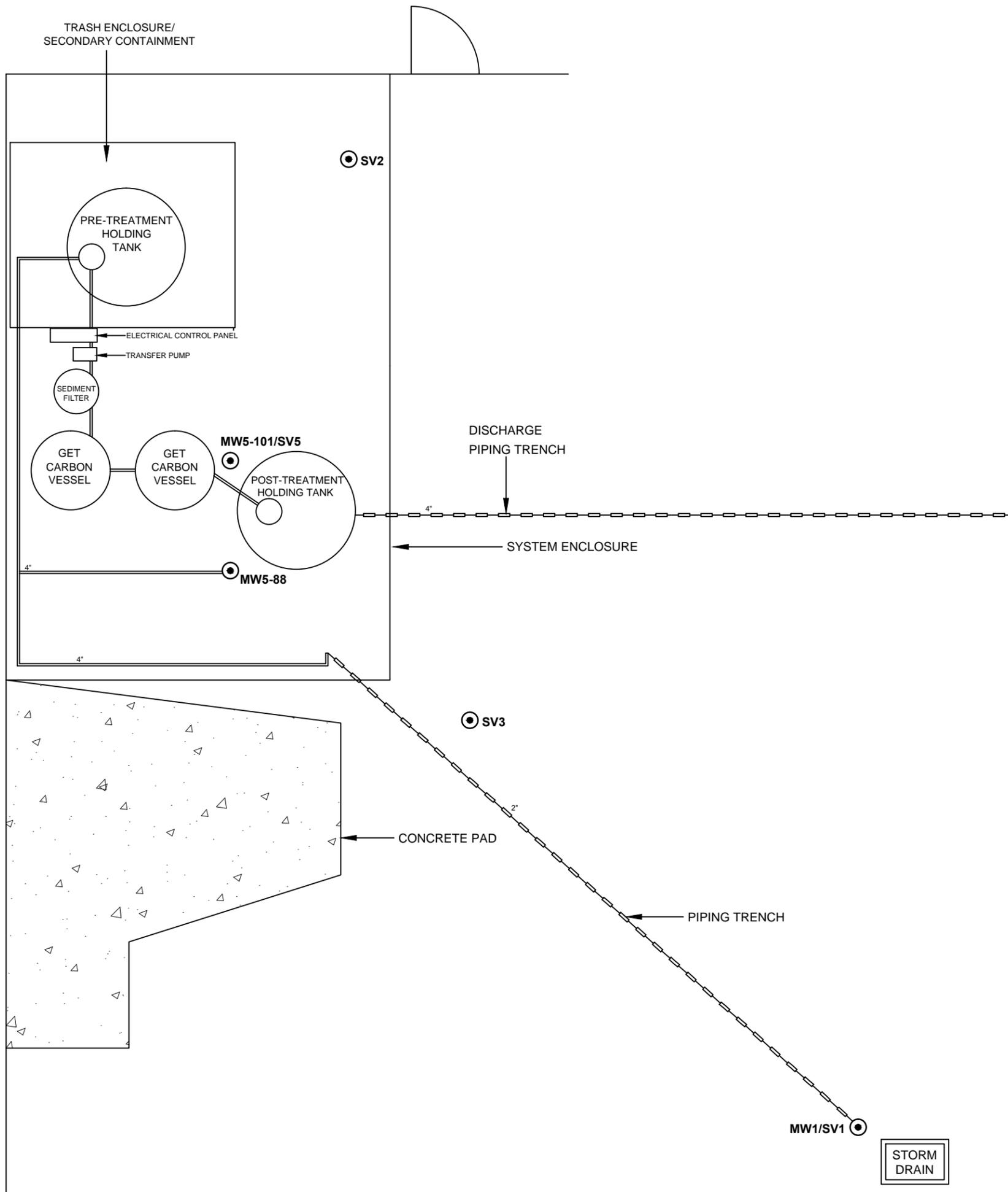


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Project No.  
10-41-222-06

Figure No.  
**3**



## PROPOSED GET SYSTEM LAYOUT



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Project No.  
10-41-222-06

Figure No.  
**4**

# **APPENDIX A**

## **BORING LOGS**



# Log of Boring No. MW5

Dates Drilled: 6/8/2011      Logged by: AL      Checked By: MVF

Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A      Depth to Water (ft): 77

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		VOC'S (PPM)	OTHER
			DRIVE	BULK		
	<b>0-0.25 ASPHALT</b>					
5	<b>CLAY (CL):</b> brown, very soft, moist, high plasticity.	X		21.4		
10	<b>SANDY CLAY (CL):</b> brown, very soft, moist, high plasticity, very fine to fine grained sand.	X		127		
15	<b>SAND (SP):</b> brown, very fine to fine grained, minor silt and clay, moderately sorted, slightly moist.	X		13.9		
20	<b>SANDY CLAY (CL):</b> dark yellowish brown, moderately soft, moist, moderately plasticity, very fine to fine grained sand.	X		209		
25	<b>SAND (SP):</b> brown, very fine to medium grained, minor silt and clay, moderately sorted, moderately moist.	X		40.1		
30	<b>SILTY CLAY (CL):</b> brown, very soft, moist, high plasticity.	X		9.2		



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Project Name  
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Project No.      Drawing No.  
 10-41-222-04      MW5a

# Log of Boring No. MW5

Dates Drilled: 6/8/2011 Logged by: AL Checked By: MVF

Equipment: HOLLOW STEM AUGER Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A Depth to Water (ft): 77

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		VOC'S (PPM)	OTHER
			DRIVE	BULK		
40	[Hatched Pattern]	<b>SILTY CLAY (CL):</b> brown, very soft, moist, high plasticity.	X		5.9	
45	[Hatched Pattern]	<b>CLAY (CL):</b> brown, very soft, high plasticity, trace silt.	X		25.1	
50	[Hatched Pattern]	-dark brown	X		25.3	
55	[Hatched Pattern]	<b>SANDY CLAY (CL):</b> dark yellowish brown, moderately stiff, moist, very fine to fine grained sand and minor silt.	X		42.8	
60	[Hatched Pattern]	-increased sand, very fine to medium grained, trace gravel, moderately dry	X		37.6	
65	[Hatched Pattern]		X		216	
			X		65	



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 SIMI VALLEY, CALIFORNIA

Project No. 10-41-222-04 Drawing No. MW5b

# Log of Boring No. MW5

Dates Drilled: 6/8/2011      Logged by: AL      Checked By: MVF  
 Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A  
 Ground Surface Elevation (ft): N/A      Depth to Water (ft): 77

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		VOC'S (PPM)	OTHER
			DRIVE	BULK		
75		<b>CLAYEY SILT (ML):</b> brown, moderately dry, minor very fine grained sand, moderately stiff to loose.	X		11.3	
80		<b>SILTY SAND (SM):</b> brown, very fine to fine grained, moderately sorted, wet.  -slightly coarser grained sand with minor clay, poorly sorted	X		16.9	
85		<b>SILTY CLAY (CL):</b> brown, very soft, wet, moderately plasticity.	X		19.4	
90		<b>SILTY CLAY (CL):</b> brown, very soft, wet, moderately plasticity.	X		12.6	
95		<b>CLAYEY SILT (ML):</b> brown, very soft to loose, wet, interbeds of very fine to medium grained sand.	X		12.8	
100		<b>SILTY CLAY (CL):</b> brown, stiff, very moist, minor gravel and very fine grained sand.  -less silt and sand, moderately stiff	X		10.2	
100			X		10.9	



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Project Name  
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Project No.      Drawing No.  
 10-41-222-04      MW5c

# Log of Boring No. MW5

Dates Drilled: 6/8/2011      Logged by: AL      Checked By: MVF  
 Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A  
 Ground Surface Elevation (ft): N/A      Depth to Water (ft): 77

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS		SAMPLES		VOC'S (PPM)	OTHER
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	DRIVE	BULK			
		<p>                     Total depth 105 feet.                      Groundwater encountered at 77 ft bgs.                      Perforated 4" casing installed at 91.5-101.5 and 73-88 ft bgs.                      Soil vapor probes set at 5, 15, 25, 50, and 68 ft bgs.                      12" diameter well cover set in black-dyed concrete.                 </p>				21.7	



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Project No.      Drawing No.  
 10-41-222-04      MW5d

# Log of Boring No. MW6

Dates Drilled: 6/9/2011 Logged by: AL Checked By: MVF

Equipment: HOLLOW STEM AUGER Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A Depth to Water (ft): 77

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS		SAMPLES		VOC'S (PPM)	OTHER
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.		DRIVE	BULK		
	<b>0-0.25 ASPHALT</b>						
5	<b>SANDY CLAY (CL):</b> dark brown, stiff, moist, very fine to fine sand.			X		87.5	
10	-brown, dry			X		97.8	
15	<b>SILTY CLAY (CL):</b> brown, moderately soft, moist.			X		201	
20	-some very fine to fine grained sand			X		95.4	
25	<b>SAND (SP):</b> brown, very fine grained, well sorted, dry.			X		65.9	
30	<b>CLAYEY SAND (SC):</b> brown, very fine to fine grained, moderately, sorted, slightly moist.			X		54.1	



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Project No. Drawing No.  
 10-41-222-04 MW6a

# Log of Boring No. MW6

Dates Drilled: 6/9/2011      Logged by: AL      Checked By: MVF

Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A      Depth to Water (ft): 77

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		VOC'S (PPM)	OTHER
			DRIVE	BULK		
40		<b>SANDY CLAY (CL):</b> brown, stiff, moist, very fine to fine grained sand.  -increased silt	X		30.0	
45		<b>SILTY CLAY (CL):</b> dark yellowish brown, moderately soft, moist, minor very fine grained sand.	X		71.0	
50		<b>CLAY (CL):</b> dark brown, stiff, moist, high plasticity.	X		24.6	
55		<b>CLAYEY SAND (SC):</b> brown, very fine to medium grained with clay and silt, and poorly sorted, moist.	X		17.2	
60		<b>SANDY CLAY (CL):</b> brown, stiff, dry, very fine to coarse sand and trace gravel.	X		48.0	
65			X		28.2	



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Project No.      Drawing No.  
 10-41-222-04      MW6b

# Log of Boring No. MW6

Dates Drilled: 6/9/2011 Logged by: AL Checked By: MVF

Equipment: HOLLOW STEM AUGER Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A Depth to Water (ft): 77

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		VOC'S (PPM)	OTHER
			DRIVE	BULK		
		<b>CLAYEY SILT (ML):</b> brown, moderately dry, moderately stiff, trace sand, and gravel..			18.1	
75	▨	<b>SAND (SP):</b> brown, very fine to fine grained with trace silt, well sorted, wet.	X		40.7	
80	▨	-coarser grained	X		3977	
85	▨	<b>SILTY CLAY (CL):</b> brown, soft, wet, minor sand.	X		5255	
90	▨	<b>CLAYEY SILT (ML):</b> brown, very moist, soft to loose.	X		228	
95	▨	<b>SILTY CLAY (CL):</b> brown, very moist, soft, minor sand.	X		19.8	
100	▨	-slightly stiff, moist	X		0.1	
		Total depth 100 feet. Groundwater encountered at 77 ft bgs. Perforated 4" casing installed at 90-103 and 73-88.5 ft bgs. Soil vapor probes set at 5, 15, 25, 50, and 68 ft bgs. 12" diameter well cover set in black-dyed concrete.				



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Project No. 10-41-222-04 Drawing No. MW6c

# Log of Boring No. MW7

Dates Drilled: 6/6/2011      Logged by: AL      Checked By: MVF

Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A      Depth to Water (ft): 70

Depth (ft)	Graphic Log	<p style="text-align: center;"><b>SUMMARY OF SUBSURFACE CONDITIONS</b></p> <p style="font-size: small;">This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</p>	SAMPLES		VOC'S (PPM)	OTHER
			DRIVE	BULK		
5		<p><b>0-0.25 ASPHALT</b></p> <p><b>SAND (SP):</b> yellowish brown, very fine to fine grained, well sorted, dry.</p>				
10		<p><b>SILTY SAND (SM):</b> brown, very fine to fine grainedm trace clay, moderately sorted, slightly moist.</p>				
20		<p><b>SAND (SP):</b> less silt, no clay.</p>				
25		<p>-slightly finer grained, increased silt</p>				
30		<p><b>SILTY CLAY (CL):</b> brown, very soft, moist, interbedded with fine grained sand.</p>				



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Project No.      Drawing No.  
 10-41-222-04      MW7a

# Log of Boring No. MW7

Dates Drilled: 6/6/2011      Logged by: AL      Checked By: MVF

Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A      Depth to Water (ft): 70

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		VOC'S (PPM)	OTHER
			DRIVE	BULK		
40		<b>SAND (SP):</b> yellowish brown, very fine to fine grained, minor silt, well sorted, slightly moist.				
45		<b>CLAY (CL):</b> very dark grayish brown, stiff, moist, moderately plasticity.				
50		<b>CLAYEY SAND (SC):</b> brown, very fine grained sand with silt and clay, moderately sorted, slightly moist, soft to loose.				
55		-coarser grained sand, fine to coarse, dry, moderately consolidated, stiff				
60		<b>SANDY CLAY (CL):</b> yellowish brown, very stiff, moist, very fine to moderately grained sand.				
65		<b>SILT (ML):</b> brown, dry, soft to loose, very well sorted.				



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Project No.      Drawing No.  
 10-41-222-04      MW7b

# Log of Boring No. MW7

Dates Drilled: 6/6/2011 Logged by: AL Checked By: MVF

Equipment: HOLLOW STEM AUGER Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A Depth to Water (ft): 70

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		VOC'S (PPM)	OTHER
			DRIVE	BULK		
75		<b>SILTY SAND (SM):</b> brown, very fine to medium grained, lense of silt as well as lenses of medium sand, wet.				
80		<b>SAND (SP):</b> brown, fine to coarse grained, trace silt and gravel, moderately sorted, wet.				
85		<b>GRAVELLY SAND (SG):</b> brown, fine to medium grained with gravel to 1" diameter, moderately minor coarse sand, poorly sorted, wet.				
90		<b>SILT (ML):</b> brown, soft, very moist, minor very fine grained sand, trace clay.  -no recovery				
95		<b>SILTY SAND (SM):</b> olive brown, very fine grained, trace clay, well sorted, very moist.				
100		<b>SILTY CLAY (CL):</b> olive brown, very soft, moist, high plasticity.  -slightly siltier				



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Project No. Drawing No.  
 10-41-222-04 MW7c

# Log of Boring No. MW7

Dates Drilled: 6/6/2011      Logged by: AL      Checked By: MVF  
 Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A  
 Ground Surface Elevation (ft): N/A      Depth to Water (ft): 70

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS		SAMPLES		VOC'S (PPM)	OTHER
		This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	DRIVE	BULK			
		<p>                     Total depth 105 feet.                      Groundwater encountered at 70 ft bgs.                      Perforated 4" casing installed at 90.5-100.5 and 70-85 ft bgs.                      Soil vapor probes set at 4, 14, 24, 49, and 64 ft bgs.                      12" diameter well cover set in black-dyed concrete.                 </p>					



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Project No.      Drawing No.  
 10-41-222-04      MW7d

# Log of Boring No. MW8

Dates Drilled: 12/12/2011      Logged by: AL      Checked By: MVF

Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A      Depth to Water (ft): 72

Depth (ft)	Graphic Log	<p style="text-align: center;"><b>SUMMARY OF SUBSURFACE CONDITIONS</b></p> <p style="font-size: small;">This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</p>	SAMPLES		BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
0		<b>0-0.25 ASPHALT</b>						
5		<b>SANDY CLAY (CL):</b> olive brown, soft, slightly moist, very fine to fine grained sand and some silt.						
10			X		2.9			2.5Y-4/4
15								
20		<b>SILTY CLAY (CL):</b> brown, soft, moist.	X		2.9			10YR-4/3
25								
30		<b>SAND (SW):</b> light olive brown, very fine grained, trace silt, very well sorted, moderately dry.	X		2.9			2.5Y-5/3



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Project No.    Drawing No.  
 10-41-222-04    MW8a

# Log of Boring No. MW8

Dates Drilled: 12/12/2011      Logged by: AL      Checked By: MVF

Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A      Depth to Water (ft): 72

Depth (ft)	Graphic Log	<p style="text-align: center;"><b>SUMMARY OF SUBSURFACE CONDITIONS</b></p> <p style="font-size: small;">This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</p>	SAMPLES		BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
40		-olive brown, slightly moist	X		2.6			2.5Y-4/3
45								
50		<b>CLAYEY SAND (SC):</b> dark yellowish brown, very fine to fine grained sand, moderately sorted, slightly moist, moderately cohesive.	X		2.4			10YR-4/4
55								
60		<b>SILTY SAND (SM):</b> dark yellowish brown, very fine to fine grained sand, minor clay, moderately sorted, moderately cohesive.	X		1.9			
65								
			X		1.9			



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Project Name  
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Project No.    Drawing No.  
 10-41-222-04    MW8b

# Log of Boring No. MW8

Dates Drilled: 12/12/2011      Logged by: AL      Checked By: MVF

Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A      Depth to Water (ft): 72

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
75	-very moist, trace gravel, not cohesive 	-wet	X		1.7			
80	<b>SANDY CLAY (CL):</b> olive brown, very fine to fine grained sand and silt, very soft, wet. 		X		1.9		2.5Y-4/4	
85	<b>SILTY CLAY (CL):</b> less sand and increased silt. 		X		1.6			
90	<b>SILTY SAND (SM):</b> olive brown, very fine to fine grained sand, minor clay, very moist, poorly sorted. 		X		1.5			
95	-wet, minor gravel 		X		1.6			
100	<b>SILTY CLAY (CL):</b> olive brown, very soft, very moist. 		X		1.9			
			X		2.2			



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Project Name  
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Project No.    Drawing No.  
 10-41-222-04    MW8c

# Log of Boring No. MW8

Dates Drilled: 12/12/2011      Logged by: AL      Checked By: MVF

Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A

Ground Surface Elevation (ft): N/A      Depth to Water (ft): 72

Depth (ft)	Graphic Log	<p style="text-align: center;"><b>SUMMARY OF SUBSURFACE CONDITIONS</b></p> <p style="font-size: small;">This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</p>	SAMPLES		BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
		<p>Total depth 105 feet.                      Groundwater encountered at 72 ft bgs.                      Perforated 4" casing installed at 92-102 and 71-86 ft bgs.                      Soil vapor probes set at 5, 15, 25, 50, and 65 ft bgs.                      12" diameter well cover set in black-dyed concrete.</p>						



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Project Name  
 JOE'S DISCOUNT CLEANERS  
 2890 COCHRAN ST.  
 SIMI VALLEY, CALIFORNIA

Project No.    Drawing No.  
 10-41-222-04    MW8d

# Log of Boring No. MW9

Dates Drilled: 4/8/2013      Logged by: JVC      Checked By: MVF  
 Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A  
 Ground Surface Elevation (ft): N/A      Depth to Water (ft): 75

Depth (ft)	Graphic Log	<b>SUMMARY OF SUBSURFACE CONDITIONS</b> This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		VOCs (PPM)	COLOR
			DRIVE	BULK		
		0-0.25 ASPHALT				
		0-60 feet logged from soil cuttings. Soils appear to be comprised primarily of clayey materials with varying amounts of silt and sand, with some interbedded sand layers. Composition appears to be similar to conditions observed in onsite wells MW5 and MW6.				
60		CLAY (CL): brown, moist, moderately stiff.	X		0.2	10YR 4/3
65		SANDY CLAY (CL): yellowish brown, slightly moist, moderately stiff, very fine to fine grained sand.	X		0.3	10YR 4/4
70		SILTY SAND (SM): brown, slightly moist, very fine to medium, moderately sorted, trace clay, damp.	X		0.6	10YR 4/3
75		SANDY CLAY (CL): brown, moist, soft, very fine grained sand, trace gravel.	X		0.5	10YR 4/3



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Project Name  
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 SIMI VALLEY, CALIFORNIA

Project No.  
 10-41-222-04

Drawing No.  
 MW9a

# Log of Boring No. MW9

Dates Drilled: 4/8/2013      Logged by: JVC      Checked By: MVF  
 Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A  
 Ground Surface Elevation (ft): N/A      Depth to Water (ft): 75

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS  This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		VOCs (PPM)	COLOR
			DRIVE	BULK		
85		SANDY CLAY (CL): brown, moist, soft, very fine grained sand, trace gravel.	X		0.6	10YR 4/3
90		SAND (SW): brown, wet, fine to coarse, trace silt and clay, poorly sorted.	X		0.4	10YR 4/3
95		SILTY CLAY (CL): brown, wet, soft, minor very fine grained sand.	X		0.3	10YR 4/3
100		CLAYEY SAND (SC): wet, brown, very fine to fine, moderately sorted.	X		0.2	10YR 4/3
105		SILTY CLAY (CL): wet, brown, soft.	X		0.3	10YR 4/3
110		SILTY SAND (SM): wet, brown, very fine to fine, with clay and minor silt, poorly sorted.	X		0.2	10YR 4/3
110		CLAY (CL): wet, brown, soft, minor silt and very fine grained sand.	X		0.3	10YR 4/3
110		SANDY CLAY (CL): wet, brown, moderately sorted, very fine to fine grained sand, moderately soft.	X		0.5	10YR 4/3
		Total drilled depth = 111 ft bgs Total reamed depth = 110 ft bgs Groundwater encountered at 75 feet bgs. Performed 2" casing installed at 75-90 and 100-110 feet bgs. Bentonite grout seal placed from 2-68 feet bgs. 12" diameter well box set in concrete to 2 feet bgs.				



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 SIMI VALLEY, CALIFORNIA

Project No.  
 10-41-222-04

Drawing No.  
 MW9b

# Log of Boring No. MW10

Dates Drilled: 4/9/2013      Logged by: JVC      Checked By: MVF  
 Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A  
 Ground Surface Elevation (ft): N/A      Depth to Water (ft): 75

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		VOCs (PPM)	COLOR
			DRIVE	BULK		
		0-0.25 ASPHALT				
		0-60 feet logged from soil cuttings. Soils appear to be comprised primarily of clayey materials with varying amounts of silt and sand, with some interbedded sand layers. Composition appears to be similar to conditions observed in onsite wells MW5 and MW6.				
60		CLAYEY SAND (SC): yellowish brown, slightly moist, poorly sorted, very fine to medium, moderately cohesive.	X		0.2	10YR 4/4
65			X		0.2	10YR 4/4
70		SILTY CLAY (CL): brown, moist, moderately soft.	X		0.0	10YR 4/3
75		SILTY SAND (SM): brown, wet, moderately sorted, very fine to fine, minor clay.	X		0.3	10YR 4/3



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Project Name  
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 SIMI VALLEY, CALIFORNIA

Project No.  
 10-41-222-04

Drawing No.  
 MW10a

# Log of Boring No. MW10

Dates Drilled: 4/9/2013      Logged by: JVC      Checked By: MVF  
 Equipment: HOLLOW STEM AUGER      Driving Weight and Drop: N/A  
 Ground Surface Elevation (ft): N/A      Depth to Water (ft): 75

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		VOCs (PPM)	COLOR
			DRIVE	BULK		
85		SAND (SP): brown, very fine to medium, trace silt, moderately sorted, wet.	X		0.0	10YR 4/3
90		CLAY (CL): brown, soft, wet, minor silt.	X		0.2	10YR 4/3
95		NO RECOVERY				
105	 	SAND (SP): light brown, very fine to fine, wet, well sorted. CLAY (CL): light brown, wet, soft, very fine to fine grained sand.	X		0.0 0.2	10YR 5/3 10YR 5/3
<p>Total drilled depth = 106 ft bgs                      Total reamed depth = 105 ft bgs                      Groundwater encountered at 75 feet bgs.                      Performed 2" casing installed at 70-85 and 95-100 feet bgs.                      Bentonite grout seal placed from 2-64 feet bgs.                      12" diameter well box set in concrete to 2 feet bgs.</p>						



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 SIMI VALLEY, CALIFORNIA

Project No.  
 10-41-222-04

Drawing No.  
 MW10b

# APPENDIX B

# SPILL CONTINGENCY PLAN



# SPILL CONTINGENCY PLAN

CLIENT: .....ASB Property Management  
CLIENT CONTACT: .....Mr. Paul Strauss  
PHONE #: .....(626) 932-1540  
PROJECT NO: .....10-41-222-05  
SITE NAME: .....Joe's Cleaners  
SITE ADDRESS: .....2890 Cochran Street, Simi Valley, California  
SITE CONTACT: .....Mr. Paul Strauss  
PHONE #: .....(626) 932-1540  
DATE: .....May 20, 2013  
PROJECT PRINCIPAL: .....Norman Eke  
PROJECT MANAGER: .....Michael Van Fleet

This Spill Contingency Plan (SPC) delineates the specific measures to be carried out in the event of an accidental spill of hazardous materials associated with the operation of the groundwater extraction and treatment system (GET system) at the site of Joe's Cleaners, located at 2890 Cochran Street in Simi Valley, California (Site). Details regarding the components and operation of the GET system are outlined in a Remedial Design and Implementation Plan for Interim Groundwater Remediation (RDIP). The purpose of the GET system is to extract and treat groundwater that has been impacted with tetrachloroethylene (PCE) associated with dry cleaning operations at the Site.

The PCE-impacted water will be pumped from onsite extraction wells and into a pre-treatment storage tank, which will be situated within a secondary containment tank. The extracted groundwater will be treated by passing it through a series of carbon vessels to strip the PCE. The treated groundwater will temporarily be stored in a post-treatment storage tank where it will discharge, under gravity-feed, to two onsite injection wells.

All personnel participating in the field must be trained in the general and specific hazards unique to the job, have appropriate hazardous materials training, be familiar with the RDIP and this SPC, and wear appropriate personal protective equipment.

## Preventive Measures

The primary obligation is to reduce the possibility of spilled hazardous materials entering the waters of the State or other areas where the material spilled could cause harm. PCE-impacted groundwater is the only hazardous material anticipated to be present at the Site. To minimize the possibility of a spill the following procedures will be adhered to:

1. Containment Equipment
  - PCE-impacted water is to be extracted from two onsite wells and discharged into a pre-treatment storage tank.
  - The Pre-treatment tank is to be stored on or within a secondary containment tank.

- Both the pre-treatment and secondary storage tanks are to be equipped with sensors set to disable the extraction pumps in the event that high water levels are detected.
  - A spill response kit will be maintained at the Site which, at a minimum, will contain a drain seal and/or spill berm to be placed over/around the storm drain, and enough sorbent booms/socks to absorb up to approximately 50 gallons of spilled water.
2. System Inspection/Operation
    - The GET system components will be inspected on a regular basis when operational. Any components not functioning as designed will be repaired or replaced.
    - Routine maintenance of GET system components should be conducted in accordance with manufacture recommendations.
  3. Security
    - The GET system will be maintained within a locked enclosure to restrict access of non-authorized personnel.
  4. Transportation
    - The transportation of PCE-impacted water from the Site is not anticipated once the GET system is operational. However, if necessary, the material will be stored in DOT-approved containers (55-gallon drums), and transported under appropriate manifests.

## **Spills**

In the event that PCE-impacted water is released from the GET system (prior to the effluent of the carbon vessels), it is important that the spill be stopped, and then contained. The following immediate actions will be initiated in the listed order.

1. Turn off the extraction well pumps.
2. Inspect the system and take necessary step to prevent further releases.
3. Prevent spilled water from entering the storm drain.
4. Notify the Project Manager

The Project Manager will designate a Spill Coordinator. The spill coordinator will be responsible for further directing the necessary cleanup and notification activities as follows:

Directing Clean Up Activities – If possible, the spill should be absorbed using onsite materials. If not, a hazardous-materials response unit will be contacted for assistance.

Evaluation of the Spill Incident – A determination regarding the cause of the spill will need to be ascertained to aid in preventing future spills from occurring. The source, cause, and quantity of the spill should be recorded.

Notification – **The Spill Coordinator should immediately notify the City of Simi Valley Environmental Compliance Division, or 911.** The Client Contact and RWQCB should also be notified once the spill has been contained.

The following are pertinent contact numbers:

Project Manager - Michael Van Fleet: ..... (626) 524-9320  
Project Principal - Norman Eke:..... (626) 807-3407  
Haz-Mat Contractor - Patriot Environmental:..... (805) 921-1112  
City of Simi Valley Environmental Compliance Division:..... (805) 583-6429  
Emergency Response/Fire Department: ..... 911  
Client Contact - Paul Strauss:..... (626) 932-1540  
RWQCB - Luis Changkuon:..... (213) 576-6667