URS

REPORT
2005 ANNUAL GROUNDWATER MONITORING RETAIL
FORMER SEARS ~~AUTO~~ CENTER
#1058A
2633 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA
CASE I.D. # STID 1082
FOR SEARS, ROEBUCK & CO.

URS Job No. 25363708

OCTOBER 5, 2005

URS

October 5, 2005

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Number 250
Alameda, California 94502

Subject: **2005 Annual Groundwater Monitoring**
Former Sears Auto Center #1058A
2633 Telegraph Avenue
Case I.D. # STID 1082
For Sears, Roebuck & Co.

Dear Mr. Chan:

Submitted with this letter is the 2005 Annual Groundwater Monitoring Report prepared on behalf of Sears, Roebuck & Co. Please feel free to contact me at (714) 648-2793 if you have questions or comments.

Respectfully Submitted,

URS CORPORATION

J.S. Rowlands, P.G., C.HG., C.E.G.
Project Manager

cc: Mr. Bruce Kaye, Sears, Roebuck & Co.
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1.0 INTRODUCTION

This report has been prepared by URS Corporation (URS) on behalf of Sears, Roebuck & Co (Sears). It presents results of the 2005 Annual Groundwater Monitoring conducted at the former Sears retail center #1058 (the Site) located at 2633 Telegraph Avenue in Oakland, California (Figure 1). The groundwater monitoring event consisted of "post purge" groundwater sample collection from two of five monitoring wells (FOMW-4 and FOMW-5) installed on the Site during May 2002. During Site construction activities, monitoring wells FOMW-2 and FOMW-3 were damaged and were not accessible for sampling during this annual event. FOMW-1 was not sampled because it contained heating oil product. The purpose of the groundwater monitoring was to assess groundwater conditions in the vicinity of a slurry-filled 10,000-gallon heating oil underground storage tank (UST) (Figure 2).

The work is being performed under the regulatory oversight of the Alameda County Environmental Health Services (ACEHS) pursuant to quarterly monitoring and reporting requirements under Title 23, Division 3, Chapter 16 of the California Code of Regulations. In November 2004, the ACEHS, provided correspondence that included requests for the following:

- to perform a conduit/preferential pathway study;
- to evaluate the contaminant plume distribution by providing a north-south cross-section showing the closed in place heating oil tank and the "possible" tire and oil shop impacts;
- to provide a workplan for additional investigation if the north-south cross section indicates that Site investigation is not complete;
- to provide an estimate of the extent of the free phase and dissolved hydrocarbon plumes;
- an assessment of the need to perform interim cleanup activities;
- a proposal for soil and groundwater cleanup objectives for the Site;
- to monitor groundwater on an annual basis in the month of January; and
- to provide a rose diagram indicating the historic groundwater gradients.

These requests are addressed in the following sections of this report. The ACEHS correspondence is included as Appendix A.

2.0 SITE DESCRIPTION

The Site is bounded by 27th Street to the north, Telegraph Avenue to the east, Sycamore Street to the south, and Northgate Avenue to the west (Figure 2). The property is occupied by a former Sears retail center constructed in 1930, and an above-grade parking garage constructed in the 1960's, which was subsequently redeveloped into retail stores and apartments. Prior to construction of the center, single and multi-family residences dating to the turn of the century occupied the Site. The Site elevation is approximately 30 feet above mean sea level (MSL) and slopes gently to the south towards San Francisco Bay.

The former Sears retail center building was three stories tall (approximately 120,000 square feet) with a basement. The building was converted from a commercial retail center into a four story retail and residential apartment building. The western portion of the former retail center building has been demolished. Sears no longer owns the Site but maintains responsibility for environmental issues related to the slurry-filled 10,000 gallon heating oil UST.

The UST formerly stored heating oil and is located near the northwest corner of the building along 27th Street (Figure 2). The UST is constructed of single-walled steel with product piping that extends into the nearby basement (former boiler room) of the building. The UST is located beneath the former loading dock of the building approximately 25 to 30 feet below ground surface (bgs). The loading dock was demolished during 2001, and the area was repaved with asphalt. The UST is contained in a concrete vault approximately 10 feet high and 30 feet long. The product piping was sealed and capped when the UST was taken out of commission during the 1960's. The UST was filled with slurry in the fourth quarter of 1998 under the regulatory oversight of the City of Oakland Fire Prevention Bureau.

3.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

The Site is approximately 1.5 miles east of San Francisco Bay and three miles west of the Diablo Range in Oakland, California. It is located on the eastern flank of the San Francisco Basin, a broad Franciscan depression. The basement rock of the basin is respectively overlain by the Santa Clara Formation, the Alameda Formation, and the Temescal Formation. These formations consist of unconsolidated sediments ranging in total thickness from approximately 300 to 1,000 feet. The Pleistocene Santa Clara Formation consists primarily of alluvial fan deposits that are interspersed with lake, swamp, river channel, and flood plain deposits. The overlying Alameda Formation was deposited in an estuary environment and consists of organic clays and alluvial fan deposits of sands, gravels and silts. The uppermost Holocene Temescal Formation is an alluvial deposit ranging in thickness from 1 to 50 feet and consists primarily of silts and clays with a basal gravel unit. (California Regional Water Quality Control Board [RWQCB], San Francisco Bay Region, June 1999).

Three types of shallow soils are typically found in the Site vicinity. These soil types include the Merrit sands, sandy silts, and clayey silts. The Merritt sands are primarily located in the flatlands area to the west of Lake Merritt. They are a fine-grained, silty sand with lenses of sandy clay and clay. The Merritt sands are typically characterized as having a low moisture content and high permeability. The sandy silts generally consist of unconsolidated, moderately sorted sand, silt, and clay sediments, with both fine-grain and course-grain materials. The sandy silts are typically characterized as having a medium moisture content and moderate permeability. The clayey silts are generally found along the San Francisco Bay and estuary, and in land fills from those areas. The clayey silts may contain organic materials, peaty layers and small lenses of sand. The clayey silts are typically characterized as having high moisture content and low permeability (City of Oakland Public Works Agency, 2000).

The Site is located within the Oakland sub-area of the East Bay Plain groundwater basin. The East Bay Plain groundwater basin encompasses approximately 115 square miles and is bounded by San Pablo Bay to the north, Alameda County to the south, the Hayward Fault to the east, and San Francisco Bay to the west. Existing beneficial use of groundwater within the East Bay Plain basin includes municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supply (RWQCB, June 1995).

Groundwater flow direction in the basin typically follows surface topography. Historical high production wells in the Oakland sub-area were screened at depths greater than 200 feet bgs beneath the Yerba Buena Mud Member of the Alameda Formation. The Yerba Buena Mud is a black organic clay with an average thickness of 25 to 50 feet that forms an aquitard between upper and lower groundwater bearing units. From the 1860's until water importation programs were initiated in the 1930's, groundwater in the East Bay Plain was utilized as the primary municipal water source. Current beneficial uses of groundwater in the basin are minimal due to "readily available high quality imported surface water." Alameda County Well permit applications indicated that 91% of groundwater wells within the basin are used for "backyard" or commercial irrigation, 8.6% of the wells are used for industrial process water, and 0.4% are used for drinking water supply (RWQCB, June 1999).

4.0 BACKGROUND

Lowney Associates (Lowney) performed a "Phase I Environmental Site Assessment (ESA), and Soil and Groundwater Quality Evaluation" in April 1998, and a "Phase II Soil and Groundwater Evaluation," in July 1998. The first assessment included advancing five exploratory borings in three recognized environmental areas of concern for collection of soil samples and groundwater grab samples (Figure 2). Borings EB-1, EB-2, and EB-3 were driven in an area between the boiler room and a suspect pipe in the 27th Street sidewalk. One boring was drilled within 10-feet of an adjacent dry cleaners (EB-4) and another in the vicinity of a possible former tire and oil shop at the southwest corner of the retail center (EB-5). Detectable concentrations of total petroleum hydrocarbons (TPH) ranging from 79 milligrams per kilogram (mg/kg) to 9,500 mg/kg were present in soil samples collected from borings EB-1, EB-2, EB-3, and EB-5. Benzene was not detected (ND) in any of the soil samples submitted for chemical analysis.

During the second assessment conducted by Lowney, seven additional borings were advanced down gradient of the anticipated groundwater flow direction to collect soil and groundwater grab samples (Figure 2). The investigation also confirmed the location and existence of the 10,000-gallon UST beneath the loading dock of the retail center and identified the piping beneath the 27th Street sidewalk as the UST fill line. TPH and benzene, toluene, ethylbenzene, and total xylenes (BTEX) were ND in soil samples collected from borings EB-6 through EB-12.

Groundwater grab samples were collected by Lowney during the two assessments from borings EB-1 through EB-6, EB-10, EB-11, and EB-12. Groundwater grab samples collected from borings EB-1, EB-2, EB-3, and EB-5 contained detectable concentrations of TPH ranging from 38,000 micrograms per liter (µg/L) to 480,000 µg/L. Groundwater grab samples collected from borings EB-2 and EB-4 contained detectable concentrations of benzene at 4.8 µg/L and 4.3 µg/L, respectively. TPH and BTEX were ND for the remaining groundwater grab samples.

SECOR International Incorporated (SECOR) subsequently performed an additional soil and groundwater investigation during November 1998 to further assess subsurface soils and groundwater near the southeastern corner of the property (Secor, Dec. 1998). The scope of work was approved by the ACEHS and included the advancement of nine soil borings (EB-13 through EB-21) for the collection of soil and groundwater grab samples (Figure 2). Soil samples collected from borings EB-19, EB-20, and EB-21 contained detectable concentrations of TPH ranging from 4 mg/kg to 160 mg/kg. BTEX were ND in all soil samples analyzed during the investigation, excluding EB-20-7. Soil sample EB-20-7 contained 0.044 mg/kg of ethylbenzene. Benzene, toluene, and total xylenes were ND.

A groundwater grab sample collected by SECOR from boring EB-14 contained 2,300 µg/L of TPH, 3.2 µg/L of ethylbenzene, and 6.1 µg/L of total xylenes. TPH and BTEX were ND in the groundwater samples collected from borings EB-13, EB-15, and EB-18.

From October 19 to December 2, 1998, URS and subcontractor, Foss Environmental, conducted in-place closure activities for the heating-oil UST in accordance with the City of Oakland Fire Prevention Bureau, Closure Permit #94-98 (URS, Jan, 2001). The closure activities were conducted after obtaining a closure permit and preparing a Site-specific health and safety plan. During the UST closure activities the UST was accessed, evacuated, cleaned, and filled with concrete slurry. URS submitted a letter report to the City of Oakland Fire Prevention Bureau dated February 22, 1999 that documents the in-place closure activities. Approximately 2 ½ cubic yards of oily soil was removed from the access shaft, transported off Site, and disposed at an approved facility. Approximately 500 gallons of oily water pumped from the access shaft and vault, and 10,000 gallons of oily water pumped from the UST was transported off Site and disposed at an approved facility.

The City of Oakland Fire Prevention Bureau forwarded the UST closure report to the ACEHS. The ACEHS issued a letter on October 29, 1999 to Sears requesting a Site assessment work plan and a list of responsible parties. In the letter, ACEHS requested the installation of three groundwater monitoring wells to assess subsurface conditions related to the former UST and dry cleaning facility. Resolution of property ownership issues resulted in Sears assuming the responsibility of assessing conditions solely related to the slurry-filled, heating oil UST.

URS installed three groundwater monitoring wells (FOMW-1, FOMW-2, FOMW-3) on the Site in May 2000 (URS, Jan. 2001). The monitoring wells were located adjacent to, and south of the slurry-filled UST (Figure 2). Soil samples collected from the borings contained concentrations of total extractable petroleum hydrocarbons (TEPH) as diesel fuel or bunker oil ranging from ND to 3,200 mg/kg. BTEX and methyl tertiary butyl ether (MTBE) were not detected in any of the soil samples analyzed.

During the first quarter of 2002 URS conducted an additional assessment of the soil and groundwater at the Site, which consisted of installing two groundwater monitoring wells (FOMW-4 and FOMW-5) and advancing two soil borings. The purpose of the additional assessment was to further characterize the nature and extent of petroleum hydrocarbon impacted soil and groundwater at the Site. Specifically, the extent of heating oil impacted soil to the north and west of the UST, the lateral extent of separate phase product, and the down gradient extent of impacted groundwater were assessed. Results of the additional assessment were used to evaluate the Site for closure under the City of Urban Land Redevelopment Program guidelines (URS Corporation, August 2002).

The highest concentration of TPH detected in soil during the additional assessment was 580 mg/kg of C-20 to C-30 range hydrocarbons. Benzene and ethylbenzene were ND in all soil samples. Toluene was detected in one soil sample at a concentration of 20 µg/kg. Total xylenes were detected in two soil samples at concentrations of 17 µg/kg and 71 µg/kg. The compounds detected were from soil samples collected at depths greater than 10 feet bgs.

The highest concentration of TPH detected in groundwater during the additional assessment was 4.6 mg/L in groundwater grab sample EB-22. TPH was also detected in the groundwater grab sample EB-23 at a concentration of 0.15 mg/L. BTEX were ND in both groundwater grab samples. TPH and BTEX were ND in groundwater samples collected from wells FOMW-3, FOMW-4, and FOMW-5. Groundwater

samples were not collected from well FOMW-1 due to the presence of separate phase product, nor from well FOMW-2 due to access problems.

URS conducted a site closure analysis and submitted the results as part of the 2002 First Quarter groundwater monitoring report. ACEHS responded to the site closure analysis in their letter dated November 22, 2004. The remaining sections of this report address the comments included in their November 22, 2004 letter.

5.0 CONDUIT / PREFERENTIAL PATHWAY STUDY

As requested by ACEHS, URS completed a preferential pathway study for the Site which evaluated potential migration pathways and potential conduits for horizontal and vertical migration of hydrocarbons and volatile organic compounds (VOCs) in soil and groundwater. A detailed utility survey and well survey was conducted to evaluate the potential preferential pathways for migration.

URS contacted Underground Services Alert (USA) during March of 2005 to schedule a Site meeting with utility owners of record, or their designated agents, to evaluate the locations of underground utilities within the Site vicinity. In addition, URS reviewed available maps of underground public utilities at the City of Oakland Building Department. The approximate locations of underground public utilities in the Site vicinity are provided on Figure 2. Cross sections showing the approximate depths of the utilities are provided as Figures 3 and 4.

Underground utilities border the Site to the north on 27th Street and to the east on Telegraph Avenue (Figure 2). The nearest underground utility to the residual concentrations of petroleum hydrocarbons and VOCs is a gas line entering the Site on 27th Street. The gas line is located approximately 50 feet east of the former UST location.

As requested by ACEHS as part of the conduit/preferential pathway study, survey data for wells in the Site vicinity was requested from the County of Alameda Public Works Agency in February 2004. The survey data was provided in May 2004 and included information on wells in Township 1 south, Range 4 west, Section 26 of the Diablo Base and Meridian. The survey data provided covers a minimum radius of ¼-mile from the Site. A review of the data indicates there are no domestic, irrigation, municipal, or industrial groundwater wells in the Site vicinity. Numerous groundwater monitoring wells are located in the Site Vicinity. It is likely that most or all of these wells are completed in the shallow water bearing zones. A copy of the well survey data is provided in Appendix B.

6.0 CONTAMINANT PLUME DISTRIBUTION

As requested by ACEHS, URS prepared a north-south cross-section B-B' showing the former heating oil tank and the "possible" tire and oil shop (Figure 4). The north-south cross-section shows the two areas of soil and groundwater impacts, including soil TPH concentrations and depth to groundwater. In addition, an east-west cross-section A-A' of the Site is provided as Figure 3. The cross-section lines are shown on Figure 2.

6.1 DISTRIBUTION OF IMPACTS TO SOIL

The cross-section B-B' shows that the lateral extent of TPH-impacted soil associated with the heating oil UST to the south are constrained by boring EB-23, which were non-detect (ND) in all samples. The lateral soil impacts in the vicinity of the heating oil UST are constrained to the east and west by borings EB-12 and EB-24, respectively. The maximum TPH concentrations at any depth in borings EB-12 and EB-24 was 5.8 mg/kg and ND, respectively. Based on the cross-section, the northern extent of soil impacts are not defined. Exploratory borings EB-2 and EB-3 had maximum detections of TPH at any depth of 9,500 mg/kg and 3,500 mg/kg, respectively. Additional soil investigation is warranted to the north of the former heating oil UST.

The vertical extent of soil impacts in the vicinity of the heating oil UST extend from a depth of approximately 20 feet to the depth where shallow groundwater exists. Groundwater in the vicinity of the heating oil UST is semi-confined, resulting in a potentiometric water surface of approximately 9 feet bgs.

It is clear from the cross-section that there is a separate source associated with the soil impacts in the vicinity of FOMW-3 (the "possible" tire and oil shop) from that of the source near FOMW-1 (the heating oil UST). The TPH impacts associated with the possible oil and tire shop were first detected in soil samples from FOWM-3 at about 6 feet. The shallow detection of TPH in the vicinity of FOMW-3 is indicative of a surface release. In contrast, the TPH impacts in soil samples in the vicinity of FOMW-1 were typically first detected at about 20 feet, indicating a subsurface source, such as a UST.

6.2 DISTRIBUTION OF IMPACTS TO GROUNDWATER

The cross-section shows that the TPH impacted groundwater plume is laterally constrained on the southern end by a ND concentration in groundwater monitoring well FOMW-5. The groundwater plume is laterally constrained to east and west by ND concentrations in grab samples in borings EB-11 and EB-12, respectively. Groundwater impact to the north of the heating oil UST are not defined. Grab groundwater samples from borings EB-2 and EB-3 contained 480 and 150 mg/L of TPH, respectively. To complete delineation of heating oil impacts to groundwater, additional groundwater investigation is warranted to the north of the former heating oil UST. The current distribution of dissolved phase impacts and free phase heating oil product are discussed in Section 11.0, Annual Groundwater Monitoring, of this report.

7.0 ADDITIONAL SITE INVESTIGATION

Additional soil and groundwater investigation is warranted on the northern side of heating oil UST to complete delineation of the heating oil soil and groundwater plumes. The additional Site investigation will be conducted using direct push drilling methods. The additional soil and groundwater investigation will include drilling three exploratory borings in 27th street and the collection of one hydropunch sample from one of the exploratory borings. The following proposed sampling program will be performed to complete delineation of the northern side of the plume:

- Exploratory borings EB-25, EB-26, and EB-27 in 27th Street as shown on Figure 5;
- One hydropunch groundwater sample collected from EB-27 as shown on Figure 5.

Samples will be collected from the three exploratory borings at five foot intervals starting at ten feet bgs, down to the water table, according to the procedures outlined in Appendix C. The soil samples will be tested for the following:

- TPH as diesel-range and Stoddard solvent-range by modified EPA Method 8015, and 66 VOCs including BTEX and MTBE by EPA Method 8260B.

The groundwater sample will be tested for the following:

- TPH as diesel-range and Stoddard solvent-range by modified EPA Method 8015, and 66 VOCs including BTEX, MTBE, and naphthalene by EPA Method 8260B.

8.0 INTERIM CLEANUP ACTIVITIES

Free phase heating oil product has been consistently observed in groundwater well FOMW-1 from October 2000 to the present groundwater monitoring event. Based on the presence of the heating oil in FOMW-1, the ACEHS requested that URS evaluate the need for interim cleanup activities.

URS believes that interim free product cleanup would be beneficial for the Site, if the free product can be collected effectively and efficiently. Interim cleanup activities have been performed at the Site in the past. Free product removal was previously attempted in 2002 at FOMW-1 using a vacuum truck. The use of a vacuum truck to remove free product was discontinued because a minimal amount of free product was removed. Substantial amounts of heating oil product is not easily removed from FOMW-1 due to the expected minimal thickness of free product within the well and the minimal recharge of the free product to the well due to its physical properties (high viscosity).

In June 2005, URS installed a SoakEase™ adsorbent "sock" to assist in free product removal activities. The adsorbent system that was installed includes a stainless steel mesh canister that holds a two inch outer diameter, three foot long adsorbent "sock", capable of adsorbing one quart of heating oil product. The adsorbent "sock" will be changed on a quarterly basis (or as needed). The progress of free product removal activities will be evaluated in future groundwater monitoring reports.

9.0 SOIL AND GROUNDWATER CLEANUP OBJECTIVES

URS performed a focused review for applicable, relevant, and appropriate requirements (ARARs) for soil and groundwater cleanup goals for the Site. The most appropriate ARARs for the Site were found in the Oakland Urban Land Redevelopment (ULR) Program: Guidance Document (the Guidance Document). As described in the Guidance Document, the intended use is to assist in the clean up and redevelopment of contaminated properties by applying risk-based corrective action at Oakland Sites.

Site soil and groundwater impacts were previously evaluated with respect to the Oakland ULR Program Tier 1 Risk-Based Screening Levels (RBSLs) and/or Tier 2 Site Specific Target Levels (SSTLs) in the Additional Site Assessment and 2002 First Quarter Groundwater Monitoring Report (URS, 2002). A brief summary of the evaluation follows.

The Tier 1 and Tier 2 evaluation process consists of comparing existing concentrations of Chemicals of Potential Concern (COPCs) in Site soil and groundwater to Tier 1 RBSLs or Tier 2 SSTLs provided in look-up tables included in the Guidance Document. Copies of the Tier 1 RBSLs and Tier 2 SSTLs, last updated in January 2000, are provided in Appendix D.

Petroleum hydrocarbons are not listed in the Tier 1 RBSLs or Tier 2 SSTLs and therefore are not considered COPCs at the Site. However, specific constituents present in TPH that may present Site risk, are included in the Tier 1 RBSLs or Tier 2 SSTLs, and are considered COPCs. The COPCs at the Site are BTEX. If COPCs present on a Site exceed the Tier 1 RBSLs, then the Site may be evaluated under Tier 2 SSTLs.

BTEX concentrations present in soil and groundwater at the Site were evaluated under the Tier 1 RBSLs for commercial/industrial sites. Benzene has not been detected in any soil samples collected from the Site. Benzene has not been detected in any groundwater samples collected from monitoring wells at the Site, excluding one sample collected in September 2001 from well FOMW-3 with a concentration of 0.72 µg/L. Benzene, at concentrations ranging to 4.8 µg/L was detected in groundwater "grab" samples collected from the Site by Lowney during April 1998. Historic soil concentrations of benzene and current groundwater concentrations of benzene are below Tier 1 RBSLs for all exposure pathways. Benzene has not been detected in groundwater at concentrations above Tier 1 RBSLs since April 1998.

The highest concentration of toluene historically detected in soil is 0.020 mg/kg, which is below Tier 1 RBSLs for all exposure pathways. The highest concentration of toluene historically detected in groundwater is 1 µg/L, which is below Tier 1 RBSLs for all exposure pathways. The highest concentration of ethylbenzene historically detected in soil is 0.044 mg/kg, which is below Tier 1 RBSLs for all exposure pathways. The highest concentration of ethylbenzene historically detected in groundwater "grab" samples is 3.2 µg/L, which is below Tier 1 RBSLs for all exposure pathways. Ethylbenzene has never been detected in groundwater samples collected from monitoring wells on Site. The highest concentration of xylenes historically detected in soil is 0.071 mg/kg, which is below Tier 1 RBSLs for all exposure pathways. The highest concentration of xylenes historically detected in

groundwater "grab" samples is 6.1 µg/L, which is below Tier 1 RBSLs for all exposure pathways. Xylenes have never been detected in groundwater samples collected from monitoring wells on Site. MTBE has never been detected in soil or groundwater samples collected from the Site.

Based on evaluation of the Site COPCs with respect to the Guidance Document, none of the COPCs present greater than acceptable risks. However, additional soil and groundwater investigation to complete delineation of heating oil impacts is proposed as part of this report. The soil and groundwater investigative data resulting from the additional investigation will be assessed with respect to the Tier 1 RBSLs or Tier 2 SSTLs. At that time, additional ARARS will be evaluated within the context of proposed Site cleanup activities.

10.0 HEALTH AND SAFETY PLAN

Prior to initiating the field activities, URS updated a Site-specific Health & Safety plan to:

- Identify and describe potentially hazardous substances which may be encountered during field operations;
- Specify protective equipment and clothing for on Site activities; and
- Outline measures to be implemented in the event of an emergency.

URS field personnel reviewed the Health & Safety plan prior to commencing the field procedures. Field monitoring activities were recorded in the Health and Safety Plan and were maintained in the project files at URS's Santa Ana office. A copy of the Health and Safety Plan remained on Site during field operations.

11.0 ANNUAL GROUNDWATER MONITORING

The 2005 annual groundwater monitoring was performed on March 21, 2005. Groundwater monitoring was performed on three of five groundwater wells (FOMW-1, FOMW-4, and FOMW-5). Monitoring wells FOMW-2 and FOMW-3 were inaccessible and therefore were not sampled during the 2005 annual groundwater monitoring event. These two wells were covered with soil and/or pavement during Site improvement activities prior to the 2005 annual groundwater monitoring. Depth-to-water data was collected from wells FOMW-4 and FOMW-5. Monitoring wells FOMW-4 and FOMW-5 were then purged and sampled. FOMW-1 contained separate phase product and was not sampled. A description of the monitoring procedures is presented in the following section.

11.1 GROUNDWATER GAUGING

Prior to sampling, accessible groundwater monitoring wells were checked for the presence of separate phase product using a Solinst™ product interface probe. Water levels were measured relative to the surveyed top of well casings using a Solinst™ water level meter. Water levels were recorded to the nearest 0.01 foot. Separate phase product thickness was measured at 0.23 foot in well FOMW-1. Groundwater depths and elevations for the 2005 annual monitoring event are listed in Table 1 and Appendix E.

11.2 PURGING AND SAMPLING METHODS

Prior to sample collection, wells FOMW-4 and FOMW-5 were purged of approximately three well casing volumes at a purge rate of approximately 0.3 to 0.5 gallon per minute (gpm) using a Grundfos™ RediFlo 2 submersible well pump. Water purged from the well was monitored for field parameters including temperature, pH, electrical conductivity, turbidity, dissolved oxygen (DO), and oxygen reduction potential (ORP) using a YSI™ multi-parameter meter equipped with a flow-through cell. Ferrous iron (Fe^{++}) was measured in the field using a Hach™ field testing kit. Measured field parameters are listed in Table 2.

Groundwater samples were collected from two monitoring wells for laboratory analysis during the 2005 annual groundwater monitoring event. Groundwater samples were collected from the discharge tubing of the well pump following purging. The Grundfos RediFlo 2™ submersible well pump was cleaned prior to use (and between wells) by washing in a solution of Alconox, rinsing with tap water, final rinsing with deionized water, and air drying. Pre-cleaned, disposable, polyethylene discharge tubing was attached to the pump following each decontamination and was changed between each well purging event. A blind duplicate was collected from well FOMW-5 and labeled DUP-1. One equipment blank sample, EB-1, was collected by pumping deionized water through the pump and into sample containers following decontamination procedures.

Sample containers and handling procedures conformed with the established protocols for each specific parameter as described in EPA SW-846. The sample bottles, once filled and preserved as required, were

properly labeled. The label included well identification number, sample number, date and time sampled, job number, Site/client name and location, and sampling personnel's initials. The sealed and labeled samples were logged on a chain of custody (COC), placed in ice chests containing ice, and transported to a California DHS accredited laboratory for analysis. A trip blank, prepared by the laboratory, remained in the ice chests during sample collection and transport. The ice chest temperatures were recorded at 4 degrees centigrade by the laboratory upon sample receipt. COC's were maintained throughout the sampling program.

11.3 Laboratory Analyses Program

Groundwater samples were submitted to STS in Montebello, California for analysis. All groundwater samples were analyzed for TPHg, TPHd, and TPHss by modified EPA Method 8015M. The samples were also analyzed for VOCs including BTEX, fuel oxygenates MTBE, Di-isopropyl Ether (DIPE), Ethyl tert-butyl Ether (ETBE), tert-Amyl Methyl Ether (TAME), tert-Butanol (TBA), ethanol, and the lead scavengers 1,2-Dibromoethane (EDB) and 1,2-Dichloroethane (EDC or 1,2-DCA). The equipment blank was analyzed for TPHg by EPA method 8015M and 66 VOCs by EPA Method 8260B. Analytical results for the groundwater samples are summarized in Table 2 and Appendix F. Copies of the laboratory reports are included in Appendix G.

11.4 Well Head Maintenance

As part of the quarterly monitoring program, each well head is inspected to ensure that wells are properly sealed and secured. The routine well maintenance associated with the quarterly groundwater sampling consists of: inspection of water-tight well caps and locks on all monitoring wells and replacement as necessary; replacement of missing or damaged bolts on well box covers; and removal and replacement of damaged well boxes and associated concrete aprons. During this annual event, groundwater monitoring wells FOMW-2 and FOMW-3 were covered (as discussed in Section 7.0) and could not be located.

11.5 Waste Management

Purge water and decontamination water were collected and stored in three 55-gallon DOT-approved drums. Containers were numbered and labeled with the date and contents to identify the source of the wastes. The containers were stored on Site in a designated area and properly disposed of by a licensed waste transporter contracted to Sears following review of the chemical analytical data.

12.0 ANNUAL GROUNDWATER MONITORING FINDINGS

12.1 SHALLOW GROUNDWATER CONDITIONS

Historical groundwater measurements collected since June 2000 indicate that the potentiometric surface beneath the Site has fluctuated from approximately 8 to 12 feet bgs (14 to 18 feet MSL). The water bearing zones are moderately confined, as water levels ascended within drill rods after penetration of the coarser-grained water bearing units during well installation. Groundwater elevations are presented in Table 1 and Appendix E.

Groundwater elevation contours for the Site were generated using SURFER™, a graphical, contouring software program and are shown along with flow direction on Figure 6. Water level contours generated from the March 21, 2005 water level measurements indicate shallow groundwater flow is to the southeast with an approximate gradient of 0.02. Groundwater flow direction and gradient are consistent with previous monitoring events.

Rose diagrams for historical groundwater gradient and flow direction based on 8 of the 10 monitoring events (including this event) are included as Appendix H. A gradient could not be calculated for two of the monitoring events because water levels could only be taken from two wells.

12.2 LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER

TPHd, TPHg, TPHss, BTEX, and MTBE were ND in all groundwater samples and the duplicate sample. Chemical analytical results for the groundwater samples collected during this monitoring event are presented in Table 2 and Figure 7. Results of historical chemical analyses are provided in Appendix F. The California Department of Health Services (CDHS) accredited laboratory reports and chain-of-custody forms for the groundwater samples are provided in Appendix G.

URS conducted a check of data completeness for the analytical laboratory reports. Results indicate that "these data are usable, as qualified, for their intended purpose." URS's Data Validation Reports are included as Appendix I.

13.0 CONCLUSIONS / RECOMMENDATIONS

The conduit/preferential pathway study shows there are minimal concerns for vertical or horizontal migration of residual hydrocarbons or VOCs to groundwater via underground utility trenches or groundwater wells. Available well data shows there are no domestic, irrigation, municipal, or industrial groundwater wells in the Site vicinity.

The distribution of heating oil impacts to soil and groundwater were evaluated as part of this report. Based on the evaluation, it appears that additional soil and groundwater investigation is warranted to complete delineation of soil and groundwater impacts to the north of the heating oil UST. The proposed additional investigation will consist of drilling three exploratory borings in 27th Street as shown on Figure 5. One groundwater sample will be collected from EB-27 using hydropunch methods.

Site soil and groundwater concentrations were evaluated with respect to the Oakland ULR Program Tier 1 RBSLs or Tier 2 SSTLs. Based on evaluation of the Site constituents of potential concern (COPCs) with respect to the Guidance Document, none of the COPCs present greater than acceptable risks. The soil and groundwater investigative data resulting from the additional investigation will be assessed with respect to the Tier 1 RBSLs or Tier 2 SSTLs and additional ARARS will be evaluated within the context of proposed Site cleanup activities at that time.

TPHd, TPHg, TPHss, BTEX, and fuel oxygenates were not detected in any groundwater samples collected during this annual groundwater monitoring event. The groundwater flow direction and gradient are consistent with results from previous quarterly monitoring events.

14.0 SCHEDULE

The tentative schedule for work to be conducted during the 2005 fourth quarter and 2006 first quarter is as follows:

- Replacement of the SoakEase™ adsorbent "sock" in well FOWM-1; November 2005,
- Annual groundwater monitoring; February 2006,
- Additional site assessment; February 2006,
- Submittal of annual groundwater monitoring and additional site assessment report; April 2006.

The ACEHS will be notified of upcoming field activities.

-o0o-

Should you have any questions or comments, please do not hesitate to contact us at (714) 835-6886.

Respectfully Submitted,

URS CORPORATION

Joseph Liles
Project Geologist

J.S. Rowlands, P.G., C.HG., C.E.G.
Project Manager

15.0 REFERENCES

California Regional Water Quality Control Board—San Francisco Bay Region Groundwater Committee (RWQCB), 1999. *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report.* June 1999, 106 p.

California Regional Water Quality Control Board—San Francisco Bay Region Groundwater Committee (RWQCB), 1995. *Water Quality Control Plan.* June 1995.

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URS/Dames & Moore, 2001. *Well Installation and 2000 Second Quarter Groundwater Monitoring,* Former Sears Retail Center #1058, 2633 Telegraph Avenue, Oakland, California, January 30.

Lowney, 1998. *Phase I Environmental Site Assessment and Soil and Groundwater Quality Evaluation,* 2633 Telegraph Avenue, Oakland, California, April 21.

Lowney, 1998. *Phase II Soil and Groundwater Quality Evaluation,* 2633 Telegraph Avenue, Oakland, California, July 6.

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URS/Dames & Moore, 2001. *Well Installation and 2000 Second Quarter Groundwater Monitoring,* Former Sears Retail Center #1058, 2633 Telegraph Avenue, Oakland, California, January 30.

URS, 2002. *Additional Site Assessment and 2002 First Quarter Groundwater Monitoring,* Former Sears Retail Center # 1058, 2633 Telegraph Avenue, Oakland, California, August 27.

Table 1
2005 Annual Groundwater Levels and Parameters
Sears Retail Store No. 1058
Oakland, California

Monitoring Well No.	Date Collected	Notes	GROUNDWATER LEVELS				GROUNDWATER SAMPLING FIELD PARAMETERS						
			Product Thickness (feet)	Depth to Groundwater (feet bgs)	Casing Elevation (MSL)	Groundwater Elevation (MSL)	Temp. (Celcius)	pH (Units)	Cond (µS/cm)	Turbidity (NTU)	O.R.P. (mV)	Dissolved Oxygen (mg/L)	Ferrous Iron (mg/L)
FOMW-1	3/21/2005	SP	0.23	8.83	26.21	17.38	NA	NA	NA	NA	NA	NA	NA
FOMW-2	--	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-3	--	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-4	3/21/2005	--	0.00	9.44	26.20	16.76	18.99	6.45	401	4.1	90.5	0.0	NA
FOMW-5	3/21/2005	--	0.00	12.43	26.23	13.80	19.25	6.35	432	34.8	106.0	0.0	NA

Notes: MSL - Mean Sea Level
BGS - Below ground surface
Groundwater Elevation reference to MSL
Groundwater Elevation = Top of casing elevation - Depth to Water.
1: Well covered by recent constuction. Could not be accessed.

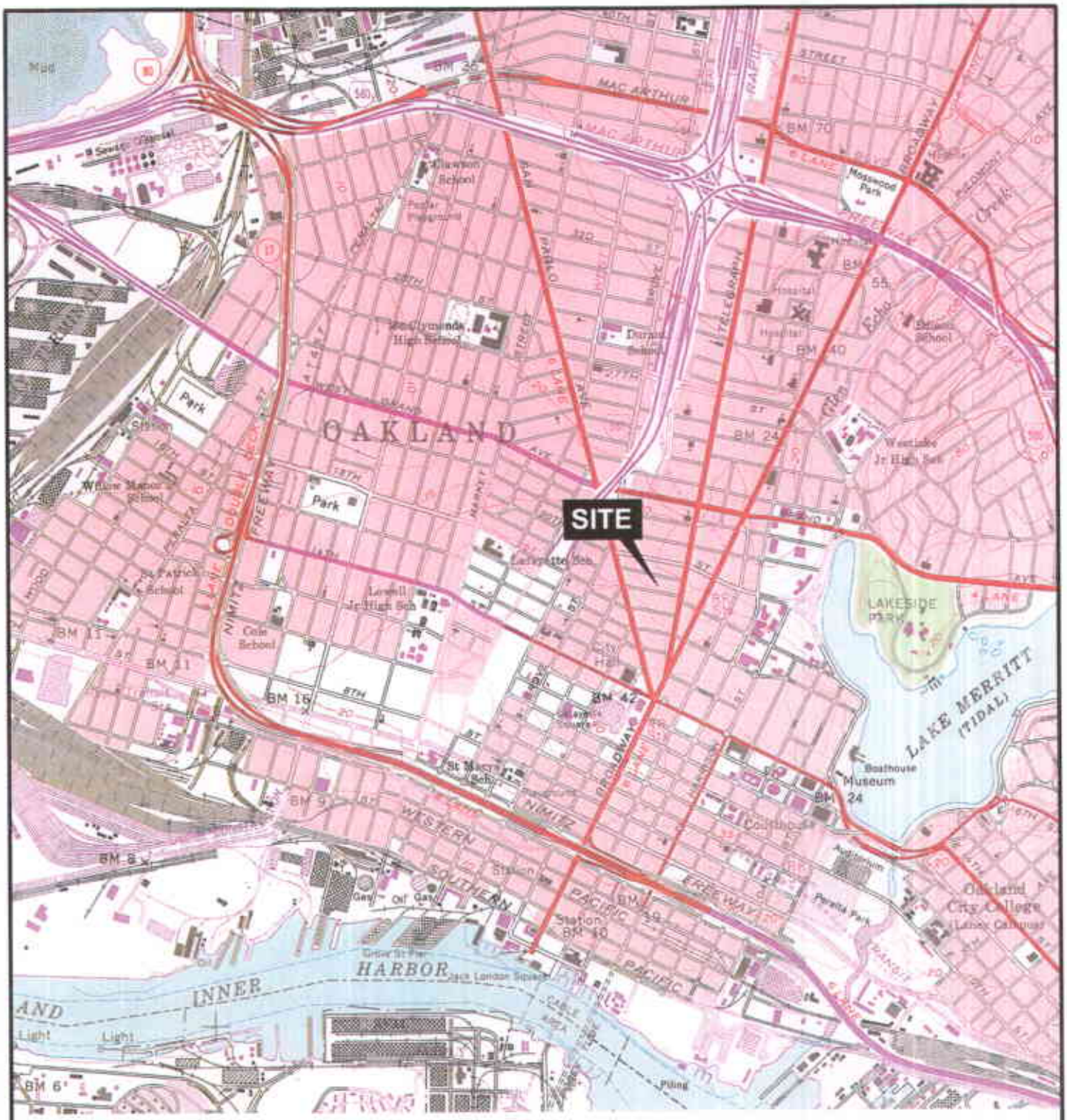
µS/cm - microSiemens per centimeter
mV - millivolt
mg/L - milligrams per liter
NTU - nephelometric turbidity units
SP - Separate phase product in well
NA - Not analyzed/Not available.

Table 2
2005 Annual Groundwater Analytical Results
Sears Retail Store No. 1058
Oakland, California

Monitoring Well No.	Sample Date	LABORATORY ANALYTICAL RESULTS																
			TPH by 8015M			Volatile Organics by GC/MS 8260B												
		Notes	TPHg (µg/L)	TPHd (µg/L)	TPHss (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	ETBE (µg/L)	DIPE (µg/L)	TAME (µg/L)	TBA (µg/L)	EDB (µg/L)	EDC (µg/L)	Naphthalene (µg/L)
FOMW-1	3/21/2005	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-2	3/21/2005	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-3	3/21/2005	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-4	3/21/2005	--	< 50	< 500	< 2000	< 1	< 1	< 1	< 2	< 2	< 2	< 2	< 2	< 10	< 5	< 5	< 5
FOMW-5	3/21/2005	--	< 50	< 500	< 2000	< 1	< 1	< 1	< 2	< 2	< 2	< 2	< 2	< 10	< 5	< 5	< 5
	3/21/2005	1	< 50	< 500	< 2000	< 1	< 1	< 1	< 2	< 2	< 2	< 2	< 2	< 10	< 5	< 5	< 5

Notes: 1: Duplicate sample
2: Well not accessible
< - Analyte not detected above indicated method detection limit
NA: Not analyzed/Not available.
SP: Separate Phase Product
µg/L - micrograms per liter
mg/L - milligrams per liter

TPHg = Total Petroleum Hydrocarbons as gasoline range organics by EPA Method 8015 (modified)
TPHd = Total Petroleum Hydrocarbons as diesel range organics by EPA Method 8015 (modified).
TPHss = Total Petroleum Hydrocarbons as stoddard solvent range organics by EPA Method 8015 (modified)
B T E X - Benzene, Toluene, Ethylbenzene, Total Xylenes
MTBE - Methyl tertiary-butyl ether
ETBE - Ethyl Tertiary Butyl Ether
DIPE - Di-isopropyl Ether
TAME - Tertiary Amyl Methyl Ether
TBA - Tertiary Butyl Alcohol
EDB - 1,2-Dibromoethane
EDC- 1,2-Dichloroethane



REFERENCE: USGS 7.5 Minute Series Oakland West, CA Quad, 1959, Photorevised 1980

FIGURE 1

VICINITY MAP

SEARS AUTO CENTER #1039
1901-1911 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA
For Sears, Roebuck & Co.

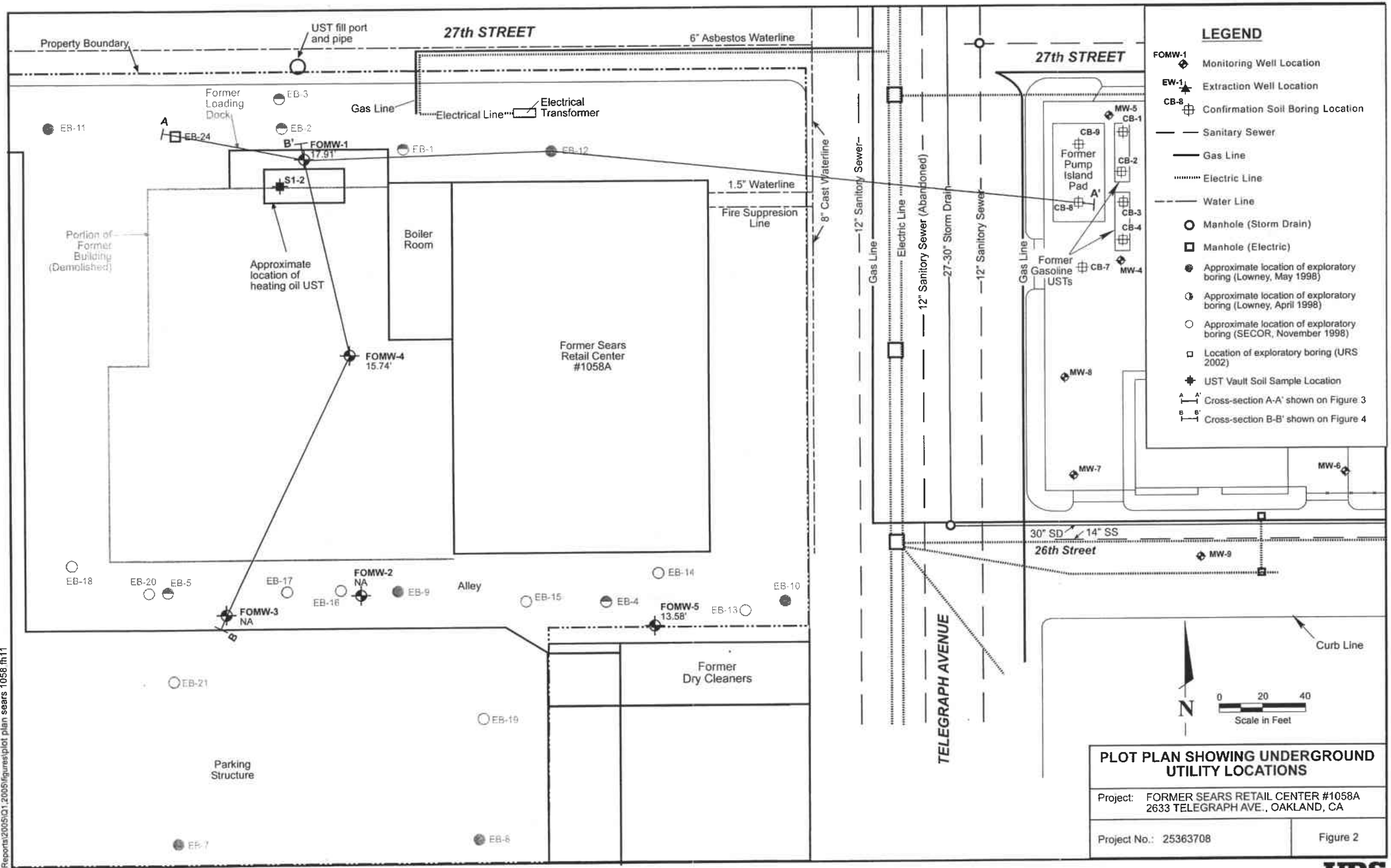
N

0 1/2 1

Scale in Miles

URS

L:/sears/topo #1039 fn10 8/02



PLOT PLAN SHOWING UNDERGROUND UTILITY LOCATIONS

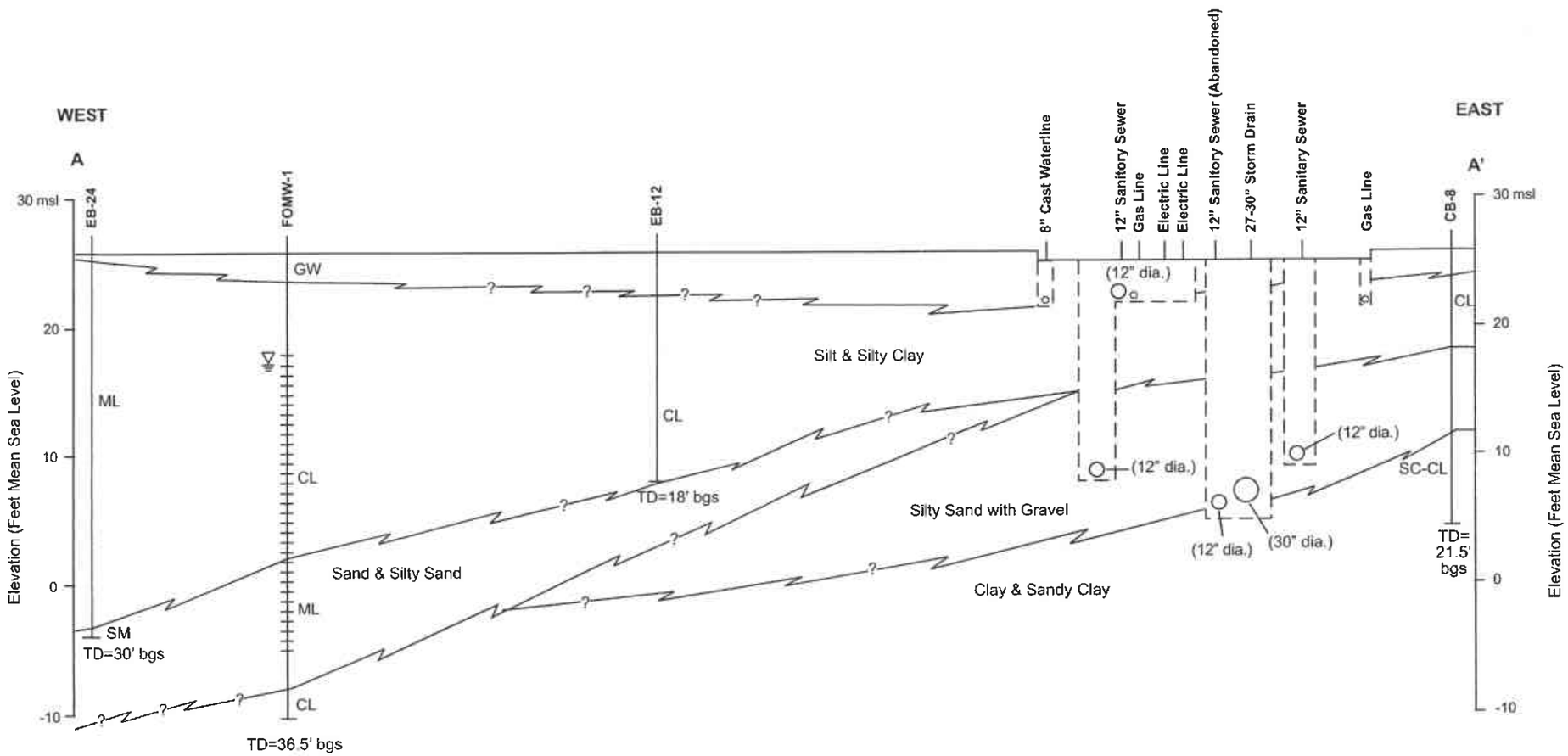
Project: FORMER SEARS RETAIL CENTER #1058A
2633 TELEGRAPH AVE., OAKLAND, CA

Project No.: 25363708

Figure 2

URS

G:\128\Sears_128\Oakland\2633 Telegraph Ave\Project Reports\2005\Q1,2005\figures\plot plan sears 1058 fh11



LEGEND

bgs	Below Ground Surface
TD	Total Depth
	Groundwater Well Screen Interval
SM	USCS Soil Classification
	Approximate Limits of Trenching
	Underground Piping
SM	Confirmed Boring with USCS Classification
?	Inferred Contact
	Groundwater Potentiometric Surface (measured 3/21/05)

Horizontal Scale: 1" = 40'
Vertical Scale: 1" = 10'

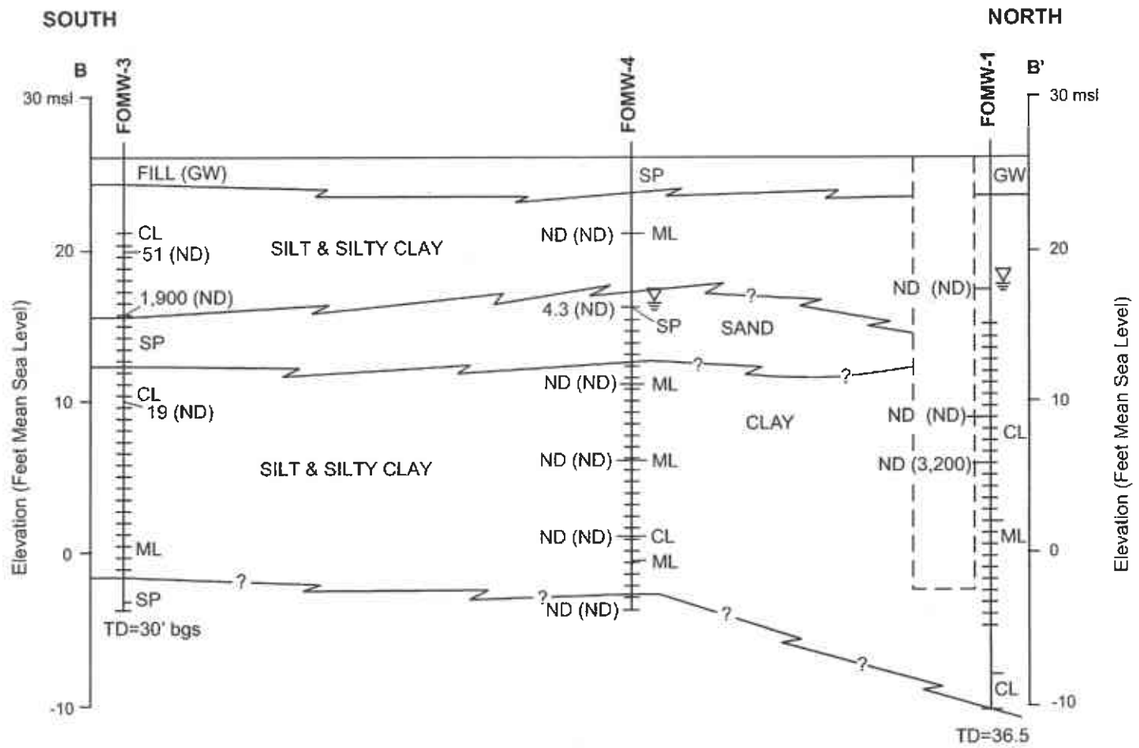
GEOLOGIC CROSS SECTION A-A'

Project: FORMER SEARS AUTO CENTER #1058A
2633 TELEGRAPH AVE., OAKLAND, CA

Project No.: 25363708 | Figure 3

URS

G:\1285Sears_128\Oakland\2633 Telegraph Ave\Project Reports\2005\Q1,2005\figures\cross section 2633 A_A'.fh11 7/05



LEGEND

bgs	Below Ground Surface
TD	Total Depth
	Groundwater Well Screen Interval
	Approximate Limits of Excavation for Heating Oil UST
CL	Groundwater Monitoring Well with USCS Classification
?	Inferred Contact
4.3 (19) mg/kg	TPHd and (TPH Bunker Oil) Concentrations in Soil During Well Installation *Concentrations in milligrams per kilogram (mg/kg)
	Groundwater Potentiometric Surface (measured 3/21/05)
ND	Non Detect

Horizontal Scale: 1" = 40'
Vertical Scale: 1" = 10'

GEOLOGIC CROSS SECTION B-B'

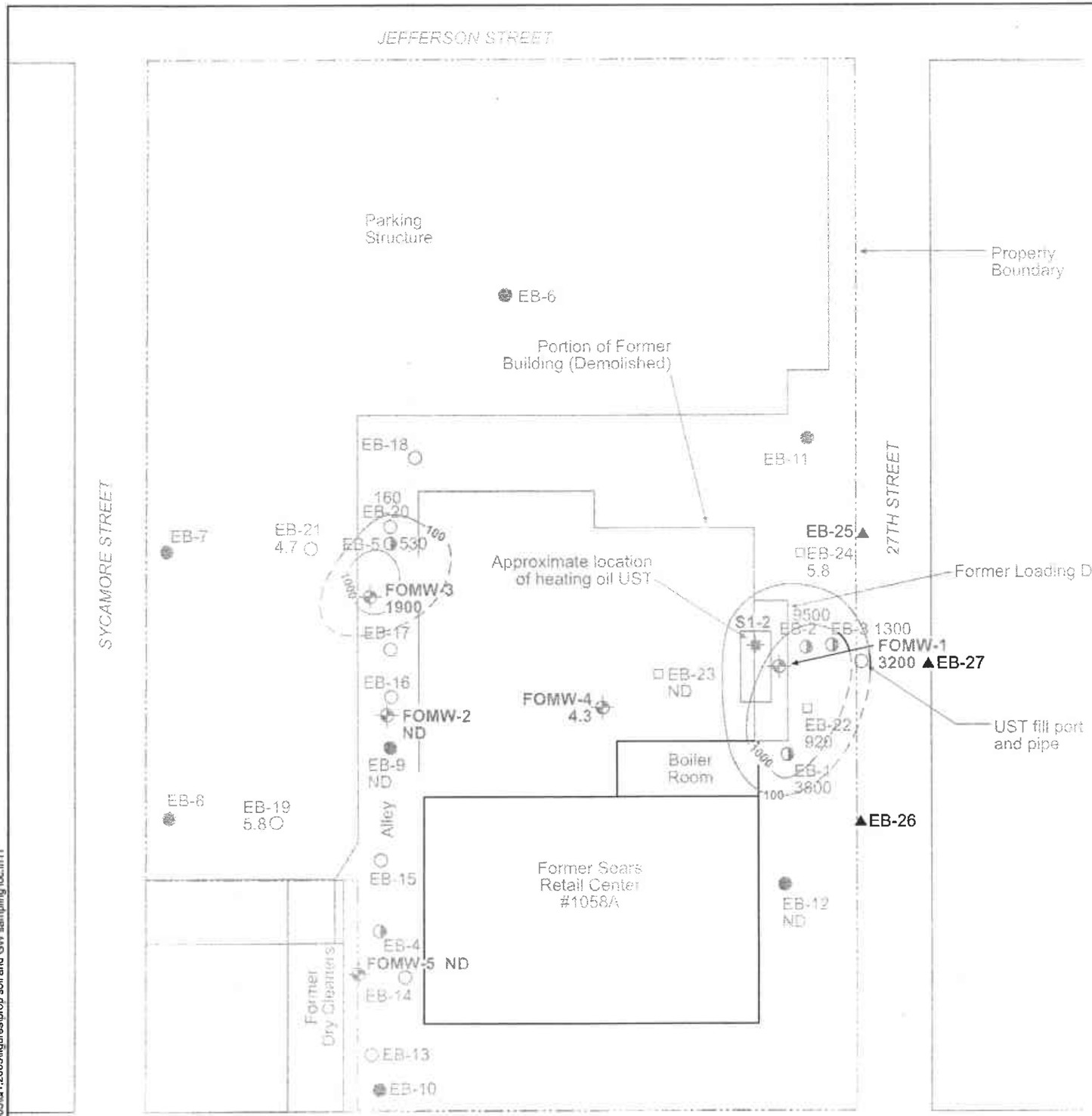
Project: FORMER SEARS AUTO CENTER #1058A
2633 TELEGRAPH AVE., OAKLAND, CA

Project No.: 25363708

Figure 4

URS

G:\128\Sears_128\Oakland\2633 Telegraph Ave\Project Reports\2005\Q1.2005\figures\cross section 2633



LEGEND

- Approximate location of exploratory boring (Lowney, May 1998)
- Approximate location of exploratory boring (Lowney, April 1998)
- Approximate location of exploratory boring (SECOR, November 1998)
- Groundwater monitoring well locations (URS/Dames & Moore)
- Location of exploratory boring (URS 2002)
- UST Vault Soil Sample Location
- —100— TPH Isoconcentration Line
- Proposed soil boring and hydropunch location

NOTES

(1) All concentrations in mg/kg.
(2) ND = Non-detect.
(3) Highest TPH concentration per boring listed.

Reference: Lowney Associates (1998)
SECOR (1998)

PROPOSED SOIL AND GROUNDWATER SAMPLING LOCATIONS

Project: SEARS ROEBUCK & COMPANY

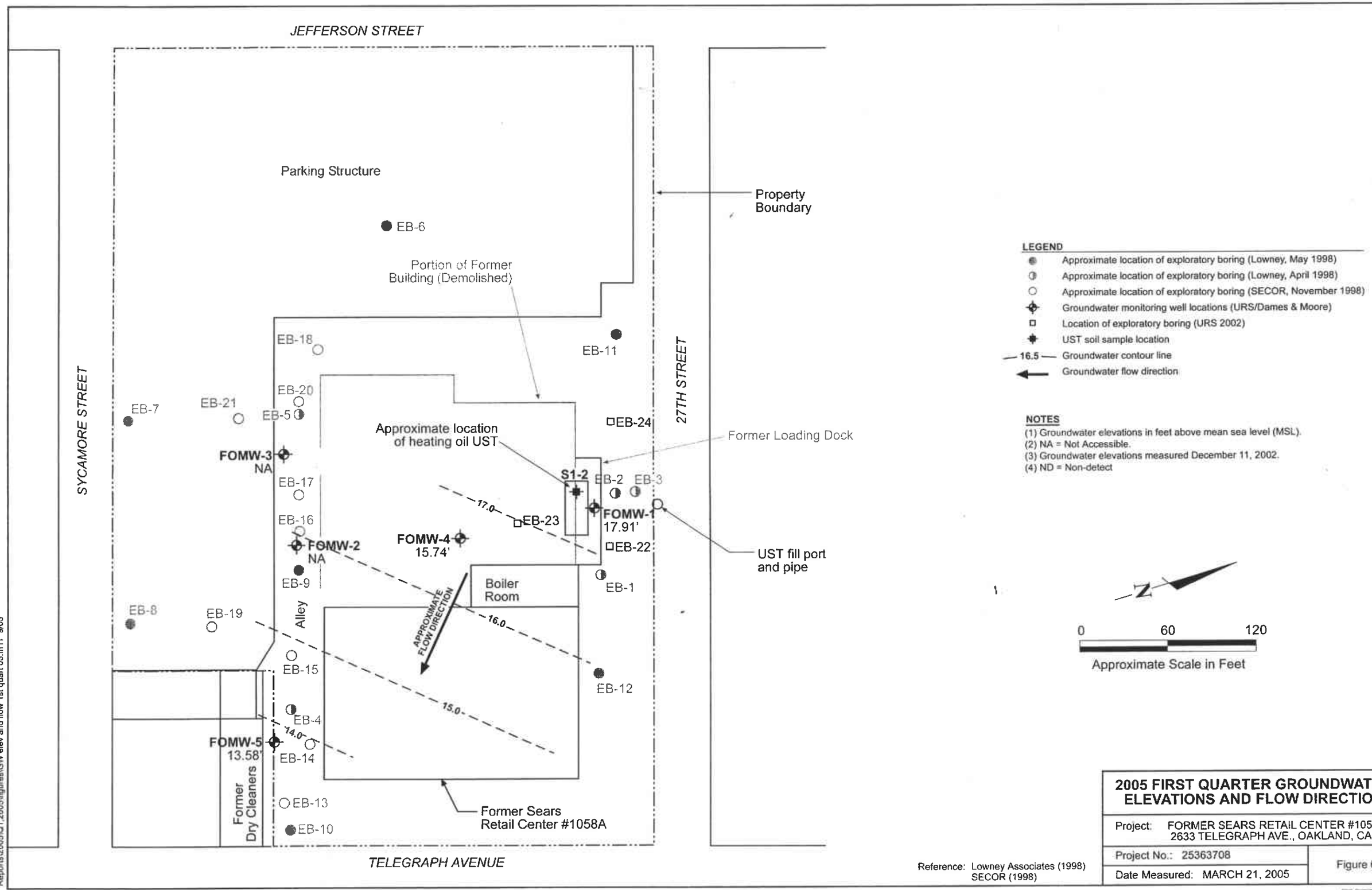
Project No.: 25363708

Date: SEPTEMBER 2005

Figure 5

URS

G:\1126\Sears 1126\Oakland\2633 Telegraph Ave\Project Reports\2005\Q1.2005\figures\prop soil and GW sampling loc.fh11



Reference: Lowney Associates (1998)
SECOR (1998)

2005 FIRST QUARTER GROUNDWATER ELEVATIONS AND FLOW DIRECTION

Project: FORMER SEARS RETAIL CENTER #1058A
2633 TELEGRAPH AVE., OAKLAND, CA

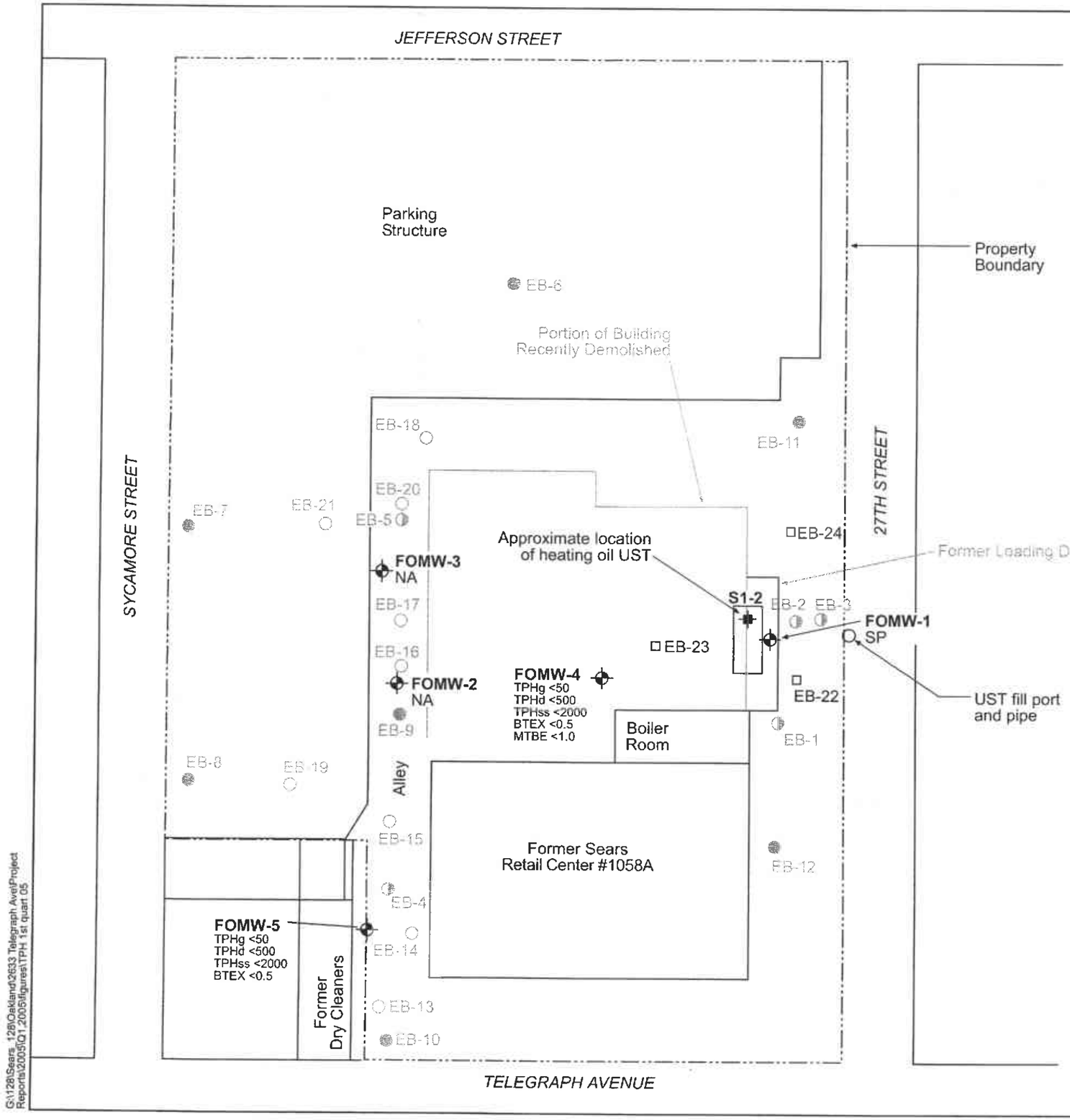
Project No.: 25363708

Date Measured: MARCH 21, 2005

Figure 6

URS

G:\128\Sears_128\Oakland\2633 Telegraph Ave\Project Reports\2005\Q1 2005\figures\GW elev and flow 1st quart 05.fh11 9/05



LEGEND

- Approximate location of exploratory boring (Lowney, May 1998)
- Approximate location of exploratory boring (Lowney, April 1998)
- Approximate location of exploratory boring (SECOR, November 1998)
- Groundwater monitoring well locations (URS/Dames & Moore)
- Location of exploratory boring (URS 2002)
- UST Vault Soil Sample Location

NOTES

(1) Groundwater elevations in feet above mean sea level (MSL).
(2) NA = Not Analyzed.
(3) SP = Separate Phase Product
(4) TPHg = Total Petroleum Hydrocarbons Gasoline Range Organics
(5) TPHd = Total Petroleum Hydrocarbons Diesel Fuel Range Organics
(6) TPHss = Total Petroleum Hydrocarbons Stoddard Solvent Range Organics
(7) BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
(8) MTBE = Methyl Tert Butyl Ether

Reference: Lowney Associates (1998)
SECOR (1998)

2005 FIRST QUARTER TPH, BTEX, AND MTBE CONCENTRATIONS IN GROUNDWATER

Project: FORMER SEARS RETAIL CENTER #1058A
2633 TELEGRAPH AVE., OAKLAND, CA

Project No.: 25363708

Date Measured: MARCH 21, 2005

Figure 7

URS

G:\126\Sears_1261Oakland\25633 Telegraph Ave\Project Reports\2005\Q1 2005\figures\TPH 1st quart 05

APPENDIX A

ACEHS CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

November 22, 2004

Mr. Scott DeMuth
Sears, Roebuck and Co.
333
Beverly Rd., Dept 824ev, A2-245A
Hoffman Estates, IL 60179

Dear Mr. DeMuth:

Subject: Fuel Leak Case No. RO0002600, Former Sears Retail Center #1058,
2633 Telegraph Ave., Oakland, CA 94612

Alameda County Environmental Health staff has recently reviewed the case file for the subject site including the March 2003 URS monitoring report, which recommends site closure. Our office has determined that additional information is necessary to progress to case closure. Please address the following technical comments and submit the technical reports requested below to the undersigned new caseworker.

TECHNICAL COMMENTS

1. Conduit/Preferential Pathway Study: Please provide a conduit/preferential pathway study for this site including a map showing the locations of utilities within the expected plume areas. This should include sewers, storm drains, trenches, etc. Please also provide a well survey of all wells (monitoring, production, abandoned, destroyed, etc) within a ¼ mile radius of the site.
2. Contaminant Plume Definition: It appears that the lateral and vertical extent of each of the contaminant source areas has not been determined. Our office acknowledges that the release detected in the southeast corner of this site is likely the result of release(s) from a former dry cleaner site located at 2601 Telegraph Ave. However, it appears that at least two additional sources of petroleum releases existed at the site; the former heating oil tank closed-in-place and near the "possible" tire and oil shop. It is not likely that the heating oil tank caused the contamination detected near boring EB-5. Please provide a cross section diagram in the north-south direction including these two areas with soil and groundwater locations and concentrations noted plus the depth to water. Should the lateral and vertical extent of contamination not be defined, you are requested to provide a work plan to complete any data gaps. Please include estimations for the extent of free product and dissolved product and a rose diagram indicating the historic groundwater gradients.

3. Interim Cleanup- We request that you evaluate the need to perform interim cleanup to remove/remediate free product and/or heavily impacted areas. Include your recommendations with the report(s) requested above.
4. Corrective Action Plan: We request that you propose soil and groundwater cleanup objectives for the site. These should be consistent with the current and future use of the site. The cleanup goals must adequately protect human health and safety, the environment, eliminate nuisance conditions and protect water resources. Please reference your cleanup goals.
5. Groundwater Monitoring- Until the site is closed, we request that groundwater monitoring continue at the site annually in January and free product, if present, be removed on a more frequent basis. Please include the analysis for naphthalene given the known presence of this compound in diesel fuel in addition to TPHss and TPHd.

TECHNICAL REPORT REQUEST

- December 27, 2004- Conduit/Preferential Pathway study, contaminant definition cross sections and diagrams, work plan for additional contaminant delineation, interim remediation recommendation and corrective action plan cleanup recommendation and cleanup goals.
- January 10, 2004- Groundwater sampling report.

If you have any questions, please contact me at (510) 567-6765.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, D. Drogos
Mr. J. S. Rowlands, URS, 2020 East First St., Suite 400, Santa Ana, CA 92705

11_22_04 2633 TelegraphAve

APPENDIX B

WELL SURVEY DATA

Well Legend

DOM=Domestic well

IRR=Irrigation well

MUN= Municipal well

IND=Industrial well

CAT=Cathodic well

DES=well destroyed (through permit)

ABN=Abandoned and not being used (but has not been destroyed through permit process)

TES=Test well

BOR= Geotechnical investigation

MON= Monitoring well

EXT=Extraction/ Vapor wells

PIE=Piezometers

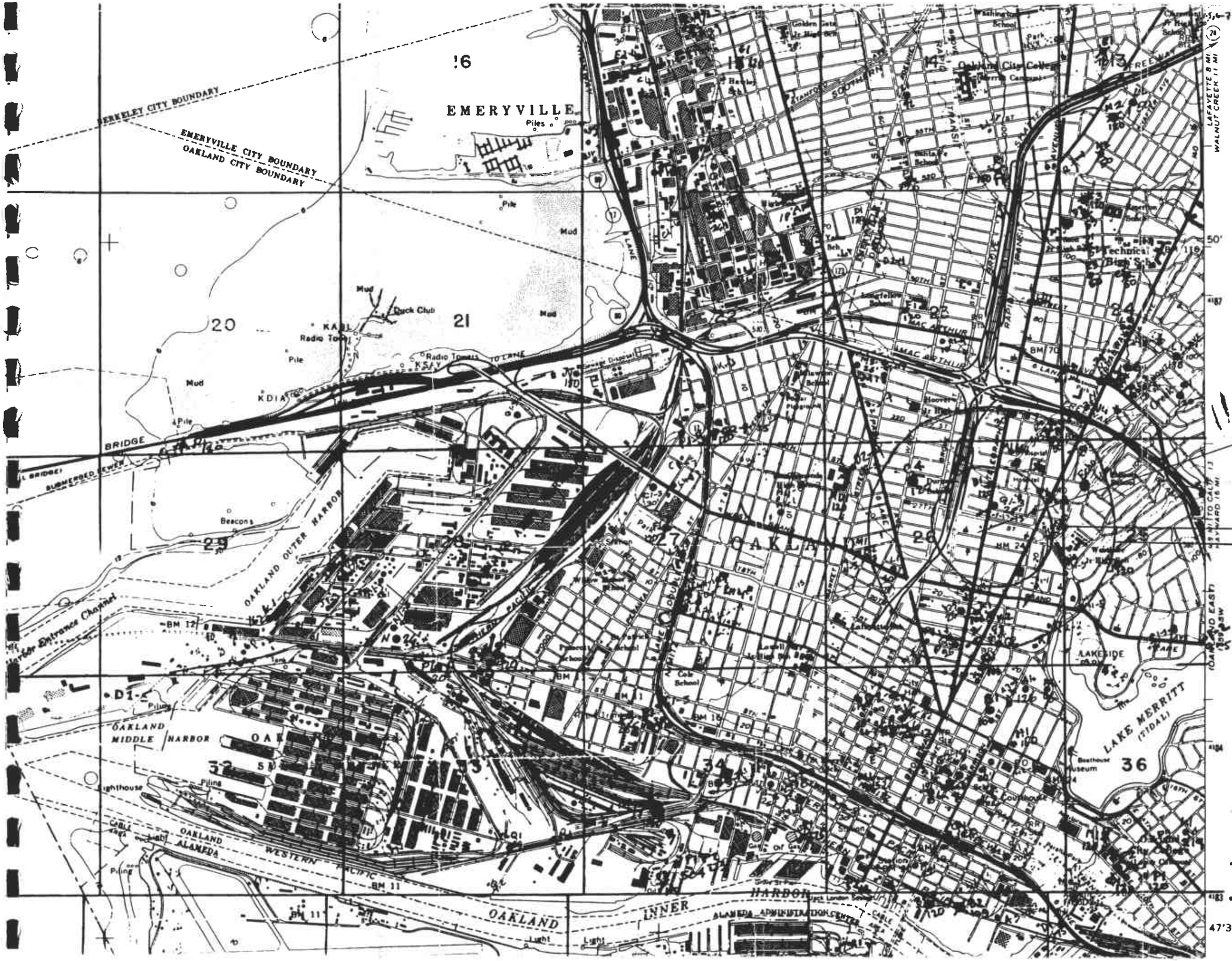
REC=Recovery well (extraction/ vapor)

? = Unknown or no information found or given

1S/4W	26H14	2827 Webster St.	Oakland	Alan Rudy B-2	7/13/1993	122263483	37817098	1	1S/4W 26H	0	0	OAK	8/91	0	10	0	0 BOR
1S/4W	26G16	2633 Telegraph Ave.	Oakland	Sears Roebuck & Co. MW1	7/15/1993	122267754	37815668	1	1S/4W 26G	0	0	OAK	Dec-92	27	22	12	2 MON
1S/4W	26G17	2633 Telegraph Ave.	Oakland	Sears Roebuck & Co. MW2	7/15/1993	122267754	37815668	1	1S/4W 26G	0	0	OAK	Dec-92	27	22	12	2 MON
1S/4W	26G18	2633 Telegraph Ave.	Oakland	Sears Roebuck & Co. MW3	7/15/1993	122267754	37815668	1	1S/4W 26G	0	0	OAK	Dec-92	27	25	13	2 MON
1S/4W	26G19	2633 Telegraph Ave.	Oakland	Sears Roebuck & Co. MW4	7/15/1993	122267754	37815668	1	1S/4W 26G	0	0	OAK	Dec-92	27	23	13	2 MON
1S/4W	26G20	2633 Telegraph Ave.	Oakland	Sears Roebuck & Co. MW5	7/15/1993	122267754	37815668	1	1S/4W 26G	0	0	OAK	Dec-92	27	25	11	2 MON
1S/4W	26H	294 27th St.	Oakland	MR & RB Assoc.	7/27/1993	122262216	37815029	1	1S/4W 26H	0	0	OAK	9/92	0	20	8	0 BOR
1S/4W	26F 1	633 Sycamore St	Oakland	Gilbert Lopez (MW-1)	12/21/1993	122271088	37815824	1	1S/4W 26F	0	0	OAK	8/93	0	22	9	2 MON
1S/4W	26F 2	633 Sycamore St	Oakland	Gilbert Lopez (MW-2)	12/21/1993	122271088	37815824	1	1S/4W 26F	0	0	OAK	8/93	0	22	9	2 MON
1S/4W	26F 3	633 Sycamore St	Oakland	Gilbert Lopez (MW-3)	12/21/1993	122271088	37815824	1	1S/4W 26F	0	0	OAK	8/93	0	23	11	2 MON
1S/4W	26H15	2630 Broadway	Oakland	Chevron Oil B-9 (MW-9)	12/29/1994	122263922	37815367	1	1S/4W 26H	0	0	OAK	7/94	0	20	0	2 MON
1S/4W	26H16	2630 Broadway	Oakland	Chevron Oil B-10 (MW-10)	12/29/1994	122263922	37815367	1	1S/4W 26H	0	0	OAK	7/94	0	20	18	2 MON
1S/4W	26H17	2630 Broadway	Oakland	Chevron Oil B-11 (MW-11)	12/29/1994	122263922	37815367	1	1S/4W 26H	0	0	OAK	7/94	0	20	18	2 MON
1S/4W	26H18	2630 Broadway	Oakland	Chevron Oil B-12 (MW-12)	12/29/1994	122263922	37815367	1	1S/4W 26H	0	0	OAK	7/94	0	20	17	2 MON
1S/4W	26G21	477 25th St.	Oakland	United Glass MW-1	12/29/1994	122266775	37814637	1	1S/4W 26G	0	0	OAK	1/94	0	20	9	2 MON
1S/4W	26P15	1700 Jefferson St	Oakland	Blue Print Services	7/18/1997	122272753	37808224	1	1S/4W 26P	0	0	OAK	4/96	0	36	26	2 TES
1S/4W	26G22	2633 Telegraph Av	Oakland	Sears	7/22/1997	122267719	37815695	1	1S/4W 26G	0	0	OAK	Dec-93	25	22	14	2 MON
1S/4W	26G23	2633 Telegraph Av	Oakland	Sears	7/22/1997	122267719	37815695	1	1S/4W 26G	0	0	OAK	Dec-93	25	22	14	2 MON
1S/4W	26G24	2633 Telegraph Av	Oakland	Sears	7/22/1997	122267719	37815695	1	1S/4W 26G	0	0	OAK	Dec-93	26	22	14	2 MON
1S/4W	26K 1	2250 Telegraph Av	Oakland		7/24/1997	122268257	37812378	1	1S/4W 26K	0	0	OAK	3/94	0	19	11	2 MON
1S/4W	26K 2	2250 Telegraph Av	Oakland		7/24/1997	122268257	37812378	1	1S/4W 26K	0	0	OAK	3/94	0	19	9	2 MON
1S/4W	26K 3	2250 Telegraph Av	Oakland		7/24/1997	122268257	37812378	1	1S/4W 26K	0	0	OAK	3/94	0	19	10	2 MON
1S/4W	26K 4	2250 Telegraph Av	Oakland		7/24/1997	122268257	37812378	1	1S/4W 26K	0	0	OAK	3/94	0	19	10	2 MON
1S/4W	26H19	434 25th St	Oakland	Andre Mercier	7/24/1997	122265722	37814668	1	1S/4W 26H	0	0	OAK	8/94	101	15	14	2 MON
1S/4W	26H20	434 25th St	Oakland	Andre Mercier	7/24/1997	122265722	37814668	1	1S/4W 26H	0	0	OAK	8/94	101	15	15	2 MON
1S/4W	26H21	434 25th St	Oakland	Andre Mercier	7/24/1997	122265722	37814668	1	1S/4W 26H	0	0	OAK	8/94	101	15	14	2 MON
1S/4W	26Q11	1911 Telegraph Av	Oakland	Carter Hawley Hale	8/13/1997	122269321	37809130	1	1S/4W 26Q	0	0	OAK	6/93	24	25	15	4 MON
1S/4W	26Q12	1911 Telegraph Av	Oakland	Carter Hawley Hale	8/13/1997	122269321	37809130	1	1S/4W 26Q	0	0	OAK	6/93	26	30	19	4 MON
1S/4W	26Q13	1911 Telegraph Av	Oakland	Carter Hawley Hale	8/13/1997	122269321	37809130	1	1S/4W 26Q	0	0	OAK	6/93	23	24	15	4 MON
1S/4W	26Q14	2025 Telegraph Av	Oakland	Goodyear Tire & Rubber Co	9/11/1997	122269015	37810451	1	1S/4W 26Q	0	0	OAK	5/93	0	24	15	4 MON
1S/4W	26Q15	2025 Telegraph Av	Oakland	Goodyear Tire & Rubber Co	9/11/1997	122269015	37810451	1	1S/4W 26Q	0	0	OAK	5/93	0	21	15	4 MON
1S/4W	26Q16	2025 Telegraph Av	Oakland	Goodyear Tire & Rubber Co	9/11/1997	122269015	37810451	1	1S/4W 26Q	0	0	OAK	5/93	0	21	15	4 MON
1S/4W	26J11	2330 Webster St	Oakland	Labor Temple	9/17/1997	122264578	37812846	1	1S/4W 26J	0	0	OAK	Dec-95	0	30	21	2 MON
1S/4W	26J12	2330 Webster St	Oakland	Labor Temple	9/17/1997	122264578	37812846	1	1S/4W 26J	0	0	OAK	1/96	0	31	7	2 MON
1S/4W	26J13	2330 Webster St	Oakland	Labor Temple	9/17/1997	122264578	37812846	1	1S/4W 26J	0	0	OAK	1/96	0	31	23	2 MON
1S/4W	26J14	2330 Webster St	Oakland	Labor Temple	9/17/1997	122264578	37812846	1	1S/4W 26J	0	0	OAK	1/96	0	31	20	2 MON
1S/4W	26J15	2330 Webster St	Oakland	Labor Temple	9/17/1997	122264578	37812846	1	1S/4W 26J	0	0	OAK	1/96	0	31	22	2 MON
1S/4W	26J16	2330 Webster St	Oakland	Labor Temple	9/17/1997	122264578	37812846	1	1S/4W 26J	0	0	OAK	1/96	0	31	20	2 MON
1S/4W	26J17	2330 Webster St	Oakland	Labor Temple	9/17/1997	122264578	37812846	1	1S/4W 26J	0	0	OAK	1/96	0	31	20	2 MON
1S/4W	26G25	2633 Telegraph Av	Oakland	Sears Roebuck and Company	10/19/1997	122267731	37815671	1	1S/4W 26G	0	0	OAK	Oct-96	0	20	15	2 MON
1S/4W	26F 4	2703 Martin Luther King J	Oakland	Shell Oil Products Compan	11/3/1997	122271197	37817400	1	1S/4W 26F	0	0	OAK	7/96	0	13	11	2 EXT
1S/4W	26F 5	2703 Martin Luther King J	Oakland	Shell Oil Products Compan	11/3/1997	122271197	37817400	1	1S/4W 26F	0	0	OAK	7/96	0	13	8	2 EXT
1S/4W	26F 6	2703 Martin Luther King J	Oakland	Shell Oil Products Compan	11/3/1997	122271197	37817400	1	1S/4W 26F	0	0	OAK	7/96	0	21	11	2 MON
1S/4W	26F 7	2703 Martin Luther King J	Oakland	Shell Oil Products Compan	11/3/1997	122271197	37817400	1	1S/4W 26F	0	0	OAK	7/96	0	21	9	2 MON
1S/4W	26H22	2735 Broadway	Oakland	Ravizza Comm. Real Estate	11/3/1997	122263611	37816268	1	1S/4W 26H	0	0	OAK	Oct-93	0	38	27	4 MON
1S/4W	26H23	2735 Broadway	Oakland	Ravizza Comm. Real Estate	11/3/1997	122263611	37816268	1	1S/4W 26H	0	0	OAK	Oct-93	0	25	19	4 MON
1S/4W	26H24	2735 Broadway	Oakland	Ravizza Comm. Real Estate	11/3/1997	122263611	37816268	1	1S/4W 26H	0	0	OAK	Oct-93	0	30	20	4 MON
1S/4W	26H25	2735 Broadway	Oakland	Ravizza Comm. Real Estate	11/3/1997	122263611	37816268	1	1S/4W 26H	0	0	OAK	Oct-93	0	30	16	4 MON
1S/4W	26G26	554 27th St	Oakland	Joan Schoonbrood	2/24/1998	122268764	37816875	1	1S/4W 26G	0	0	OAK	6/95	0	20	10	2 MON
1S/4W	26G27	554 27th St	Oakland	Joan Schoonbrood	2/24/1998	122268764	37816875	1	1S/4W 26G	0	0	OAK	6/95	0	20	10	2 MON
1S/4W	26G28	554 27th St	Oakland	Joan Schoonbrood	2/24/1998	122268764	37816875	1	1S/4W 26G	0	0	OAK	6/95	0	20	10	2 MON
1S/4W	26H26	403 28th St	Oakland	Chrysler Realty Corporati	2/24/1998	122264962	37816675	1	1S/4W 26H	0	0	OAK	5/94	0	29	0	2 MON
1S/4W	26H27	403 28th St	Oakland	Chrysler Realty Corporati	2/24/1998	122264962	37816675	1	1S/4W 26H	0	0	OAK	5/94	0	29	0	2 MON
1S/4W	26H28	Valdez St && 26th St	Oakland	Broadway Motors Ford	3/29/1998	122263016	37814839	1	1S/4W 26H	0	0	OAK	5/97	0	15	10	2 MON
1S/4W	26H29	Valdez St && 26th St	Oakland	Broadway Motors Ford	3/29/1998	122263016	37814839	1	1S/4W 26H	0	0	OAK	5/97	0	15	10	2 MON
1S/4W	26H30	Valdez St && 26th St	Oakland	Broadway Motors Ford	3/29/1998	122263016	37814839	1	1S/4W 26H	0	0	OAK	5/97	0	15	0	2 MON
1S/4W	26G29	450 25th St	Oakland	Friction Materials, Inc	9/29/1998	122266062	37814745	1	1S/4W 26G	0	0	OAK	7/98	0	25	15	2 MON
1S/4W	26G30	450 25th St	Oakland	Friction Materials, Inc	9/29/1998	122266062	37814745	1	1S/4W 26G	0	0	OAK	7/98	0	25	14	2 MON
1S/4W	26G31	450 25th St	Oakland	Friction Materials, Inc	9/29/1998	122266062	37814745	1	1S/4W 26G	0	0	OAK	7/98	0	25	15	2 MON

1S/4W	26J 2	23RD & VALDEZ	Oakland	OAKLAND TRIBUNE		6/15/1989	122263653	37812144	8	1S/4W 26J	2467	0	OAK	Aug-88	0	31	18	3 MON
1S/4W	26J 3	23RD & VALDEZ	Oakland	OAKLAND TRIBUNE		6/15/1989	122263653	37812144	8	1S/4W 26J	2468	0	OAK	Aug-88	0	26	15	3 MON
1S/4W	26J 4	2302 VALDEZ ST.	Oakland	MORRISON & FORESTER		11/6/1989	122263640	37812297	0	1S/4W 26J	2469	0	OAK	Aug-89	0	27	0	4 MON
1S/4W	26J 5	2302 VALDEZ ST.	Oakland	MORRISON & FORESTER		11/6/1989	122263640	37812297	0	1S/4W 26J	2470	0	OAK	Aug-89	0	27	0	4 MON
1S/4W	26J 6	2302 VALDEZ ST.	Oakland	MORRISON & FORESTER		11/6/1989	122263640	37812297	0	1S/4W 26J	2471	0	OAK	Aug-89	0	27	0	4 MON
1S/4W	26J 7	2302 VALDEZ ST.	Oakland	MORRISON & FORESTER		11/6/1989	122263640	37812297	0	1S/4W 26J	2472	0	OAK	Aug-89	0	27	0	4 MON
1S/4W	26K 1	2ND AND TELEGRAPH	Oakland	21ST AND TELE PARKING		12/12/1984	122268251	37812747	9	1S/4W 26K	2473	0	OAK	Oct-74	0	0	0	0 GEO*
1S/4W	26K 3	2225 TELEGRAPH AVE	Oakland	TEXACO STA #62488000195		12/20/1988	122268454	37812090	8	1S/4W 26K	2474	0	OAK	Jul-88	0	21	13	2 MON
1S/4W	26K 4	2225 TELEGRAPH AVE	Oakland	TEXACO STA #62488000195		12/20/1988	122268454	37812090	8	1S/4W 26K	2475	0	OAK	Jul-88	0	19	14	2 MON
1S/4W	26K 5	2225 TELEGRAPH AVE	Oakland	TEXACO STA #62488000195		12/20/1988	122268454	37812090	8	1S/4W 26K	2476	0	OAK	Jul-88	0	20	14	2 MON
1S/4W	26K 8	2225 TELEGRAPH AV.	Oakland	TEXACO		6/15/1989	122268454	37812090	8	1S/4W 26K	2477	0	OAK	Dec-88	100	22	14	4 MON
1S/4W	26K 9	2225 TELEGRAPH AV.	Oakland	TEXACO		6/15/1989	122268454	37812090	8	1S/4W 26K	2478	0	OAK	Dec-88	98	21	12	4 MON
1S/4W	26K10	2225 TELEGRAPH AV.	Oakland	TEXACO		6/15/1989	122268454	37812090	8	1S/4W 26K	2479	0	OAK	Dec-88	98	21	13	4 MON
1S/4W	26L 1	774 W. GRAND AVE	Oakland	DAVID FYNE		6/9/1988	122274728	37813547	0	1S/4W 26L	2480	0	OAK	Apr-88	0	40	13	2 MON
1S/4W	26L 2	577 W. GRAND AV.	Oakland	U.S. POSTAL SVC.		6/15/1989	122269840	37812351	0	1S/4W 26L	2481	0	OAK	Dec-88	0	30	0	2 MON
1S/4W	26P 1	1700 JEFFERSON (@17th)	Oakland	BLUE PRINT SERVICES		2/23/1988	122272770	37808224	2	1S/4W 26P	2487	0	OAK	6/87	32	34	25	4 MON
1S/4W	26P 2	1700 JEFFERSON (@17th)	Oakland	BLUE PRINT SERVICES		2/23/1988	122272770	37808224	2	1S/4W 26P	2488	0	OAK	Nov-87	31	32	27	4 DES
1S/4W	26P 3	1700 JEFFERSON (@17th)	Oakland	BLUE PRINT SERVICES		2/23/1988	122272770	37808224	2	1S/4W 26P	2489	0	OAK	6/87	31	32	25	4 MON
1S/4W	26P 4	1700 JEFFERSON (@17th)	Oakland	BLUE PRINT SERVICES		2/23/1988	122272770	37808224	2	1S/4W 26P	2490	0	OAK	1/88	31	33	25	4 MON
1S/4W	26P 5	1700 JEFFERSON (@17th)	Oakland	BLUE PRINT SERVICES		2/23/1988	122272770	37808224	2	1S/4W 26P	2491	0	OAK	1/88	32	34	26	4 MON
1S/4W	26P 6	CRN OF 18TH & JEFFERSON	Oakland	BLUE PRINT SERVICE CO		12/20/1988	122272600	37808700	8	1S/4W 26P	2492	0	OAK	Oct-88	0	41	20	2 MON
1S/4W	26Q 1	19 & FRANKLIN ST	Oakland			12/12/1984	122267200	37807900	8	1S/4W 26Q	2493	0	OAK	9/74	0	0	0	0 GEO*
1S/4W	26Q 2	BROADWAY & 20 ST	Oakland	BANK AMERICA		12/12/1984	122267700	37809700	8	1S/4W 26Q	2494	0	OAK	Nov-78	0	0	0	0 GEO*
1S/4W	26Q 3	1911 TELEGRAPH AVE	Oakland	CARTER-HAWLEY-HALE		6/1/1988	122269338	37809130	0	1S/4W 26Q	2495	0	OAK	Mar-88	0	25	18	2 TES
1S/4W	26Q 4	21ST & BROADWAY	Oakland	BANK OF AMERICA		6/15/1989	122267100	37810600	8	1S/4W 26Q	2496	0	OAK	Nov-88	0	30	20	2 MON
1S/4W	26K 2	BROADWAY & 22ND ST	Oakland	SANWA BANK		12/12/1984	122266600	37811400	8	1S/4W 26K	6549	0	OAK	9/74	0	0	0	0 GEO*
1S/4W	26K 7	2225 TELEGRAPH AV.	Oakland	TEXACO		6/15/1989	122268454	37812090	8	1S/4W 26K	6552	0	OAK	Dec-88	100	22	14	4 MON
1S/4W	26P 6						0	0	9	1S/4W 26P	6821	0		Dec-88	0	40	20	2 TES
1S/4W	26J						0	0	9	1S/4W 26J	6896	0		Aug-89	0	25	0	0 BOR
1S/4W	26J						0	0	9	1S/4W 26J	6897	0		Aug-89	0	22	0	0 BOR
1S/4W	26J						0	0	9	1S/4W 26J	6898	0		Aug-89	0	22	0	0 BOR
1S/4W	26J						0	0	9	1S/4W 26J	6899	0		Aug-89	0	22	0	0 BOR
1S/4W	26J						0	0	9	1S/4W 26J	6900	0		Aug-89	0	24	0	0 BOR
1S/4W	26J						0	0	9	1S/4W 26J	6901	0		Aug-89	0	24	0	0 BOR
1S/4W	26J						0	0	9	1S/4W 26J	6902	0		Aug-89	0	22	0	0 BOR
1S/4W	26K 2						0	0	9	1S/4W 26K	6903	0		Jul-88	0	21	14	2 MON
1S/4W	26K 3						0	0	9	1S/4W 26K	6904	0		Jul-88	0	21	13	2 MON
1S/4W	26K 8						0	0	9	1S/4W 26K	6905	0		Dec-88	99	20	12	4 MON
1S/4W	26P 6						0	0	9	1S/4W 26P	6908	0		Oct-88	0	41	20	2 MON
1S/4W	26L 3	2103 San Pablo Ave	Oakland	Greyhound	ES-1	9/30/1992	122273297	37811847	1	1S/4W 26L	7357	0	OAK	Nov-91	0	31	19	4 MON
1S/4W	26L 4	2103 San Pablo Ave	Oakland	Greyhound	ES-2	9/30/1992	122273297	37811847	1	1S/4W 26L	7358	0	OAK	Nov-91	0	31	20	4 MON
1S/4W	26L 5	2103 San Pablo Ave	Oakland	Greyhound	ES-3	3/9/1992	122273297	37811847	1	1S/4W 26L	7359	0	OAK	Nov-91	0	35	20	4 MON
1S/4W	26L 6	2103 San Pablo Ave	Oakland	Greyhound	ES-4	3/9/1992	122273297	37811847	1	1S/4W 26L	7360	0	OAK	Nov-91	0	31	19	4 MON
1S/4W	26L 7	2103 San Pablo Ave	Oakland	Greyhound	ES-5	9/30/1992	122273297	37811847	1	1S/4W 26L	7361	0	OAK	Nov-91	0	32	19	4 MON
1S/4W	26H10	2740 Broadway	Oakland	Vorelco, Inc.		8/3/1992	122263401	37816191	1	1S/4W 26H	7533	0	OAK	Oct-91	0	30	8	4 MON
1S/4W	26H11	2740 Broadway	Oakland	Vorelco, Inc.		8/3/1992	122263401	37816191	1	1S/4W 26H	7534	0	OAK	Oct-91	0	27	11	4 MON
1S/4W	26H	2827 Webster	Oakland	Alan Rudy	B-1	8/14/1992	122263492	37817097	1	1S/4W 26H	7679	0	OAK	8/91	0	10	0	2 BOR*
1S/4W	26R 6	2100 Harrison St	Oakland	Ahmanson Comm Dev.	MW-3	9/20/1992	122262261	37810004	1	1S/4W 26R	7866	0	OAK	3/92	0	25	7	4 MON
1S/4W	26K11	2225 Telegraph Ave	Oakland	Exxon Service Stn	RW3A	9/21/1992	122268454	37812090	1	1S/4W 26K	7877	0	OAK	5/92	0	22	13	4 EXT
1S/4W	26K12	2225 Telegraph Ave	Oakland	Texaco	MW6A	9/21/1992	122268454	37812090	1	1S/4W 26K	7878	0	OAK	5/92	0	21	0	12 DES
1S/4W	26R 7	1975 Webster St	Oakland	Mobil #04-077	MW-1	9/21/1992	122265694	37808734	1	1S/4W 26R	7892	0	OAK	5/92	8	16	6	4 MON
1S/4W	26R 8	1975 Webster St	Oakland	Mobil #04-077	MW-2	9/21/1992	122265694	37808734	1	1S/4W 26R	7893	0	OAK	5/92	9	16	7	4 MON
1S/4W	26R 9	1975 Webster St	Oakland	Mobil #04-077	MW-3	9/21/1992	122265694	37808734	1	1S/4W 26R	7894	0	OAK	4/92	0	28	5	4 MON
1S/4W	26R10	1975 Webster St	Oakland	Mobil #04-077	MW-4	9/21/1992	122265694	37808734	1	1S/4W 26R	7895	0	OAK	4/92	9	16	6	4 MON
1S/4W	26R	1975 Webster	Oakland	Mobil #04-077	SB1	9/21/1992	122265658	37808698	1	1S/4W 26R	7896	0	OAK	4/92	0	30	12	0 BOR*
1S/4W	26R11	1 Kaiser Plaza	Oakland	Ordway Building	MW-1	9/23/1992	122262483	37810205	1	1S/4W 26R	7972	0	OAK	3/92	23	34	18	2 MON
1S/4W	26R12	1 Kaiser Plaza	Oakland	Ordway Building	MW-2	9/23/1992	122262483	37810205	1	1S/4W 26R	7973	0	OAK	3/92	20	32	16	2 MON
1S/4W	26R13	1 Kaiser Plaza	Oakland	Ordway Building	MW-3	9/23/1992	122262483	37810205	1	1S/4W 26R	7974	0	OAK	3/92	20	28	16	2 MON
1S/4W	26R	1 Kaiser Plaza	Oakland	Ordway Building	B-2	9/23/1992	122262358	37810174	1	1S/4W 26R	7975	0	OAK	3/92	0	20	0	6 BOR*
1S/4W	26K4	2225 Telegraph Ave	Oakland	Texaco	MW6C	9/26/1992	122268454	37812090	1	1S/4W 26K	8128	0	OAK	Nov-91	100	20	0	2 DES
1S/4W	26J10	2345 Broadway	Oakland	Negherbon Auto Center		6/17/1993	122265564	37813116	1	1S/4W 26J	0	0	OAK	6/92	0	29	22	2 MON

Tr	Section	Address	Longcity	Owner	Update	Xcoord	Ycoord	Matchlevel	Tsrqq	Rec_code	Phone	City	Drilldate	Elevation	Totaldepth	Waterdept	Diameter	Use	
	1S/4W	26A	3093 Broadway	Oakland	Connel Oldsmobile	3/14/1991	122260700	37820830		0 1S/4W 26A	1242	0 OAK	Oct-90		0	22	13	2	MON
	1S/4W	26A 1	450 30TH	Oakland	PERALTA HOSPITAL	7/31/1984	122265138	37819514		8 1S/4W 26A	2436	0 OAK	?		0	0	0	0	GEO*
	1S/4W	26A 2	3093 Broadway	Oakland	Connel Oldsmobile	1/11/1991	122260700	37820830		0 1S/4W 26A	929	0 OAK	Oct-90		90	18	4	2	MON
	1S/4W	26A 3	3093 Broadway	Oakland	Connell Oldsmobile	4/17/1991	122260700	37820830		0 1S/4W 26A	1627	0 OAK	Nov-90		0	41	40	2	MON
	1S/4W	26A 4	3093 Broadway	Oakland	Connell Oldsmobile	4/17/1991	122260700	37820830		0 1S/4W 26A	1628	0 OAK	2/91		0	15	7	4	MON
	1S/4W	26A 5	3093 Broadway	Oakland	Connell Oldsmobile	4/17/1991	122260700	37820830		0 1S/4W 26A	1629	0 OAK	2/91		0	40	27	2	MON
	1S/4W	26A 6	3093 Broadway	Oakland	Connell Oldsmobile	4/17/1991	122260700	37820830		0 1S/4W 26A	1630	0 OAK	2/91		0	35	22	2	MON
	1S/4W	26A 7	3093 Broadway	Oakland	Connell Oldsmobile	4/17/1991	122260700	37820830		0 1S/4W 26A	1631	0 OAK	2/91		0	30	24	2	MON
	1S/4W	26A 8	3093 Broadway	Oakland	Connell Oldsmobile	4/17/1991	122260700	37820830		0 1S/4W 26A	1632	0 OAK	3/91		0	35	25	2	MON
	1S/4W	26B 1	29 & TELEGRAPH AV	Oakland	PG&E	7/31/1984	122266800	37818400		8 1S/4W 26E	2437	0 OAK	4/74		0	0	8	0	CAT
95814	1S/4W	26B 2	3045 Telegraph Av	Oakland		7/21/1998	122266610	37819664		1 1S/4W 26E	0	0 OAK	4/96		0	16	11	1	MON
95814	1S/4W	26B 3	3045 Telegraph Av	Oakland		7/21/1998	122266610	37819664		1 1S/4W 26E	0	0 OAK	4/96		0	16	11	1	MON
95814	1S/4W	26B 4	3045 Telegraph Av	Oakland		7/21/1998	122266610	37819664		1 1S/4W 26E	0	0 OAK	4/96		0	16	11	1	MON
	1S/4W	26J 8	Valdez St.and 23rd Street	Oakland	Oakland Tribune	7/27/1990	122263800	37812100		3 1S/4W 26J	722	0 OAK	May-90		0	27	0	4	MON
	1S/4W	26J 9	Valdez St.and 23rd Street	Oakland	Oakland Tribune	7/29/1990	122263800	37812100		3 1S/4W 26J	723	0 OAK	May-90		0	25	0	4	MON
	1S/4W	26K	Broadway/W Grand Ave	Oakland	Commonwealth Companies	7/27/1990	122266300	37811900		3 1S/4W 26K	739	0 OAK	May-90		0	15	0	0	BOR
	1S/4W	26K 2	2225 Telegraph Avenue	Oakland	Texaco	7/30/1990	122268454	37812090		8 1S/4W 26K	750	0 OAK	May-90		99	25	14	4	EXT
	1S/4W	26K 6	2225 Telegraph Avenue	Oakland	Texaco	7/30/1990	122268454	37812090		8 1S/4W 26K	751	0 OAK	May-90		100	25	0	4	EXT
	1S/4W	26K 7	2225 Telegraph Avenue	Oakland	Texaco	7/30/1990	122268600	37811700		3 1S/4W 26K	752	0 OAK	May-90		98	25	0	4	EXT
	1S/4W	26H 6	2915 Broadway	Oakland	European Motors	6/21/1990	122262457	37818081		0 1S/4W 26H	322	0 OAK	2/90		45	30	12	2	MON
	1S/4W	26H 7	2915 Broadway	Oakland	European Motors	6/21/1990	122262457	37818081		0 1S/4W 26H	323	0 OAK	2/90		44	30	11	2	MON
	1S/4W	26H 8	2915 Broadway	Oakland	European Motors	6/21/1990	122262457	37818081		0 1S/4W 26H	324	0 OAK	2/90		44	30	10	2	MON
	1S/4W	26R 1	300 Lakeside Drive	Oakland	Kaiser Center	2/27/1991	122262777	37808352		8 1S/4W 26F	1082	0 OAK	1/91		0	13	0	2	DES
	1S/4W	26R 2	2100 Harrison Street	Oakland	Ahmanson Commercial Dvlpt	4/17/1991	122262261	37810004		0 1S/4W 26F	1622	0 OAK	2/91		0	290	0	5	DOM
	1S/4W	26R 3	2100 Harrison Street	Oakland	Ahmanson Commercial Dvlpt	4/17/1991	122262261	37810004		0 1S/4W 26F	1623	0 OAK	3/91		0	290	20	6	IRR
	1S/4W	26P 7	537 18th Street	Oakland	City of Oakland Redvlpmnt	6/12/1991	122271233	37808300		0 1S/4W 26F	1689	0 OAK	1/91		98	63	54	2	MON
	1S/4W	26P 8	570 18th Street	Oakland	City of Oakland Redvlpmnt	6/12/1991	122271885	37808538		0 1S/4W 26F	1690	0 OAK	1/91		97	15	0	4	EXT
	1S/4W	26P 9	19th St & San Pablo Ave	Oakland	City of Oakland Redvlpmnt	6/12/1991	122272100	37809300		0 1S/4W 26F	1691	0 OAK	1/91		0	30	23	2	TES
	1S/4W	26P10	611 20th St	Oakland	City of Oakland Redvlpmnt	6/12/1991	122271359	37810437		0 1S/4W 26F	1692	0 OAK	1/91		0	30	23	2	TES
	1S/4W	26P11	612 Williams St	Oakland	City of Oakland Redvlpmnt	6/12/1991	122271229	37810033		0 1S/4W 26F	1693	0 OAK	1/91		0	25	23	2	TES
	1S/4W	26P12	585 20th St	Oakland	City of Oakland Redvlpmnt	6/12/1991	122270904	37810372		0 1S/4W 26F	1694	0 OAK	1/91		0	24	21	2	TES
	1S/4W	26P13	588 - 596 Williams St	Oakland	City of Oakland Redvlpmnt	6/12/1991	122270877	37809978		3 1S/4W 26F	1695	0 OAK	1/91		0	28	23	2	TES
	1S/4W	26P14	536 20th St	Oakland	City of Oakland Redvlpmnt	6/12/1991	122270106	37810458		0 1S/4W 26F	1696	0 OAK	1/91		0	23	14	2	TES
	1S/4W	26Q 5	17th St & Broadway	Oakland	City of Oakland Redvlpmnt	6/12/1991	122269200	37807300		0 1S/4W 26C	1697	0 OAK	1/91		0	27	20	2	TES
	1S/4W	26Q 6	557 19th Street	Oakland	City of Oakland Redvlpmnt	6/12/1991	122270854	37809021		0 1S/4W 26C	1698	0 OAK	1/91		0	25	16	2	TES
	1S/4W	26Q 7	19th St & Telegraph Ave	Oakland	City of Oakland Redvlpmnt	6/12/1991	122269300	37808900		3 1S/4W 26C	1699	0 OAK	1/91		0	25	19	2	TES
	1S/4W	26Q 8	552 19th St.	Oakland	City of Oakland Redvlpmnt	6/12/1991	122270742	37809207		0 1S/4W 26C	1700	0 OAK	1/91		0	24	19	2	TES
	1S/4W	26Q 9	20th St. & Telegraph Ave.	Oakland	City of Oakland Redvlpmnt	6/12/1991	122269000	37810200		0 1S/4W 26C	1701	0 OAK	1/91		0	28	21	2	TES
	1S/4W	26Q10	513 18th St	Oakland	City of Oakland Redvlpmnt	6/12/1991	122270108	37808183		0 1S/4W 26C	1702	0 OAK	1/91		0	26	20	2	TES
	1S/4W	26P	S. Pablo & 18th/19th St	Oakland	E.B. Galleria	7/9/1991	122271800	37808400		3 1S/4W 26F	1721	0 OAK	Dec-90		0	120	0	2	CAT
	1S/4W	26R 4	300 Lakeside Drive	Oakland	Kaiser Center	7/26/1991	122262777	37808352		8 1S/4W 26F	1737	0 OAK	6/91		0	35	20	2	MON
	1S/4W	26H 9	2740 Broadway Ave	Oakland	Broadway Volkswagen	7/29/1991	122263401	37816191		3 1S/4W 26H	1751	0 OAK	4/91		5	17	3	2	MON
	1S/4W	26G 1	2800 TELEGRAPH AVE	Oakland	SHELL OIL COMPANY	8/8/1988	122267087	37817156		0 1S/4W 26G	2446	0 OAK	Apr-88		0	28	12	3	MON
	1S/4W	26G 2	2800 TELEGRAPH AVE	Oakland	SHELL OIL COMPANY	8/8/1988	122267087	37817156		0 1S/4W 26G	2447	0 OAK	Apr-88		0	28	12	3	MON
	1S/4W	26G 3	2800 TELEGRAPH AVE	Oakland	SHELL OIL COMPANY	8/8/1988	122267087	37817156		0 1S/4W 26G	2448	0 OAK	Apr-88		0	28	12	3	MON
	1S/4W	26G 4	2800 TELEGRAPH AV.	Oakland	SHELL OIL	6/15/1989	122267087	37817156		0 1S/4W 26G	2449	0 OAK	Oct-88		0	30	11	3	MON
	1S/4W	26G 5	2800 TELEGRAPH AV.	Oakland	SHELL OIL	6/15/1989	122267087	37817156		0 1S/4W 26G	2450	0 OAK	Oct-88		0	24	13	3	MON
	1S/4W	26G 6	2800 TELEGRAPH AV.	Oakland	SHELL OIL	6/15/1989	122267087	37817156		0 1S/4W 26G	2451	0 OAK	Oct-88		0	22	12	3	MON
	1S/4W	26G 7	2800 TELEGRAPH AV.	Oakland	SHELL OIL	6/15/1989	122267087	37817156		0 1S/4W 26G	2452	0 OAK	Oct-88		0	30	12	3	MON
	1S/4W	26G 8	2800 TELEGRAPH AV S-8	Oakland	SHELL OIL CO.	11/6/1989	122267087	37817156		2 1S/4W 26G	2453	0 OAK	Sep-89		26	22	11	3	MON
	1S/4W	26G 9	2800 TELEGRAPH AV S-9	Oakland	SHELL OIL CO.	11/6/1989	122267087	37817156		0 1S/4W 26G	2454	0 OAK	Sep-89		26	32	14	3	MON
	1S/4W	26G10	2800 TELEGRAPH AV S10	Oakland	SHELL OIL CO.	11/6/1989	122267087	37817156		2 1S/4W 26G	2455	0 OAK	Sep-89		27	31	14	3	MON
	1S/4W	26G11	2800 TELEGRAPH S11	Oakland	SHELL OIL	1/22/1990	122267087	37817156		2 1S/4W 26G	2459	0 OAK	Oct-89		0	31	14	3	MON
	1S/4W	26H 1	28 & VALDEZ ST	Oakland	CHRSTN CHURCH HOME BLDG	7/31/1984	122262100	37816600		8 1S/4W 26H	2460	0 OAK	?		0	0	0	0	GEO*
	1S/4W	26H 2	20TH ST.	Oakland	COMMUNITY CARE BLDG	7/31/1984	122293000	37817250		2 1S/4W 26H	2461	0 OAK	Nov-78		0	0	0	0	GEO*
	1S/4W	26H 3	2740 BROADWAY	Oakland	BROADWAY VW	6/15/1989	122263401	37816191		0 1S/4W 26H	2462	0 OAK	Jan-89		0	20	7	2	MON
	1S/4W	26H 4	2740 BROADWAY	Oakland	BROADWAY VW	6/15/1989	122263401	37816191		0 1S/4W 26H	2463	0 OAK	Jan-89		0	20	11	2	MON
	1S/4W	26H 5	2740 BROADWAY	Oakland	BROADWAY VW	6/15/1989	122263401	37816191		0 1S/4W 26H	2464	0 OAK	Jan-89		0	20	11	2	MON
	1S/4W	26J	2302 VALDEZ ST.	Oakland	MORRISON & FORESTER	11/6/1989	122263640	37812297		0 1S/4W 26J	2465	0 OAK	Aug-89		0	27	0	0	BOR
	1S/4W	26J 1	23RD & VALDEZ	Oakland	OAKLAND TRIBUNE	6/15/1989	122263653	37812144		8 1S/4W 26J	2466	0 OAK	Aug-88		0	31	18	3	MON



Sears Oakland #10508
2633 Telegraph Ave.
Oakland, Ca

¼ mile Radius
½ mile Radius

T. 1S.
T. 2S.

APPENDIX C

STANDARD DRILLING PROCEDURES

STANDARD OPERATING PROCEDURE

DIRECT PUSH TECHNOLOGY DRILLING INVESTIGATION

FORMER SEARS RETAIL CENTER #1058A
2633 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

October 5, 2005

URS

2020 East First Street, Suite 400
Santa Ana, California 92705

TABLE OF CONTENTS

1.0 INTRODUCTION

The document presents standard methods and procedures for conducting subsurface soil investigations using direct push technology (DPT).

2.0 INVESTIGATIVE METHODS

The soil assessment investigation will be performed under the direct supervision of a California Registered Geologist. A description of investigative methods is presented below.

2.1 HEALTH AND SAFETY PLAN

Pursuant to Health and Safety Code 1910.120, URS will update a Site-specific Health & Safety Plan (HSP), prior to conducting field work. The plan will address the following:

- Identify and describe potentially hazardous substances that may be encountered during field operations.
- Specify protective equipment and clothing for onsite activities.
- Outline measures that will be implemented in the event of an emergency.

URS field personnel will review requirements of the Health & Safety Plan prior to commencing field work.

2.2 UTILITY CLEARANCE

In accordance with California State law, Underground Services Alert (USA) will be notified of our intent to conduct subsurface investigations at least 48 hours prior to initiation of intrusive field tasks. Proposed locations of subsurface investigation will be clearly marked with white paint or surveyors flagging as required by USA. USA will contact utility owners of record within the vicinity and notify them of our intention to conduct subsurface investigations in proximity to buried utilities. The utility owners of record, or their designated agents, will be expected to clearly mark the position of their utilities on the ground surface throughout the area designated for investigation.

2.3 SOIL BORING LOCATIONS

Soil boring locations may be modified in the field to avoid subsurface structures. Additionally, minor adjustments in boring locations may be necessary based on equipment access.

2.4 DPT DRILLING AND SOIL SAMPLE COLLECTION METHODS

A truck-mounted hydraulic DPT rig will be used to complete the borings. Samples will be collected using an 18-inch long core barrel with a retractable piston sampler. Upon reaching the desired sample depth, the retractable piston will be unlocked and the sampler advanced into the soil to collect the sample. Soil will be driven into a 1¾-inch inside diameter, 18-inch long acetate sleeve as the core barrel is advanced. After being driven approximately two feet, the rods will be removed from the borehole and the acetate sleeve containing the soil removed from the sample barrel. Selected 6-inch sections will then be cut, fitted with end caps, sealed with parafilm, labeled, and bagged in zip-lock baggies.

After decontamination and adding a new sleeve, the sample barrel will be lowered back into the borehole, additional sections of rod added, and the process repeated until the desired depth is reached. Once sampling is completed, the DPT borings will be backfilled with hydrated bentonite chips.

Soil samples will be properly sealed, labeled, and recorded on a chain-of-custody (COC) document. The sample labels affixed to the samples will include the following information; site/client name, boring designation, sample number, sample depth, collector's initials, date and time of collection. The sealed and labeled samples will be placed in an ice chest packed with ice and transported, under COC, to a California Department of Health Services (CDHS) accredited laboratory for chemical analysis.

During drilling operations, a photo-ionization detector (PID) will be used to monitor the presence and level of organic vapors in the borings and soil cuttings, and to screen soil samples. Organic vapor readings will be recorded on the boring logs prepared by the field geologist during drilling activities. The following sampling information will be recorded on the boring logs: boring number and location, sample identification numbers, sample depth, lithologic description in general accordance with the Unified Soils Classification System (USCS), description of any visible evidence of soil contamination (i.e., odor, staining), organic vapor readings, date and time of sample collection. Copies of the DPT boring logs will be provided in the project report.

2.5 EQUIPMENT DECONTAMINATION

All field equipment used for soil sample collection during the field investigation will be decontaminated prior to use at each sampling point to reduce the potential for the introduction of contamination and cross-contamination in accordance with the guidelines and procedures discussed below. These procedures are necessary to ensure quality control in decontamination of field equipment and to serve as a means to identify and correct potential errors in the sample collection and sample handling procedures.

Downhole soil sampling equipment will be cleaned prior to each sampling event using a dilute Alconox solution followed by double rinsing with fresh water, followed by a distilled water rinse. The ground beneath the decontamination area will be covered with plastic sheeting to minimize potential contact between produced fluids and the ground surface. Decontamination procedures will be documented in field logs.

2.6 WASTE MANAGEMENT

Soil cuttings and decontamination water generated during sampling activities will be placed in DOT-approved 55-gallon drums, sealed, and placed in an area designated by the property owner, pending receipt of analytical results. The drums will be labeled with the date and contents. The disposition of the contents of each drum will be determined upon completion of laboratory analysis.

APPENDIX D

SOIL AND GROUNDWATER CLEANUP OBJECTIVES

Table 5. Oakland Tier 1 RBSLs

Medium	Exposure Pathway	Land Use	Type of Risk	Benzo(e)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Beryllium	Bis (2-ethylhexyl) phthalate	Butyl benzyl phthalate
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	2.5E-02	2.5E-01		2.5E-01	4.5E+03	3.6E+01	
			Hazard			2.1E+02		3.7E+02	1.0E+03	1.0E+04
		Commercial/ Industrial	Carcinogenic	7.9E-02	7.9E-01		7.9E-01	1.7E+04	1.1E+02	
			Hazard			1.4E+03		6.8E+03	6.8E+03	6.8E+04
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
		Commercial/ Industrial	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
		Commercial/ Industrial	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*6.2E+00*	2.1E+00		2.1E+00	9.6E+00	3.7E+03	
			Hazard	*6.2E+00*		SAT		9.6E+00	SAT	SAT
		Commercial/ Industrial	Carcinogenic	*6.2E+00*	8.9E+00		8.9E+00	9.6E+00	1.6E+04	
			Hazard	*6.2E+00*		SAT		9.6E+00	SAT	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	*2.0E-04*	5.6E-05		5.6E-05	4.0E-03	8.0E-03	
			Hazard	*2.0E-04*		>SOL		4.0E-03	3.1E-01	>SOL
		Commercial/ Industrial	Carcinogenic	*2.0E-04*	2.4E-04		2.4E-04	4.0E-03	3.4E-02	
			Hazard	*2.0E-04*		>SOL		4.0E-03	>SOL	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	1.1E-06	1.1E-05		1.2E-05		5.1E-02	
			Hazard			>SOL		2.0E+00	>SOL	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 5. Oakland Tier 1 RBSLs

Medium	Exposure Pathway	Land Use	Type of Risk	Dichloro- ethane (1,1-)	Dichloro- ethane (1,2-) (EDC)	Dichloro- ethylene (1,1-)	Dichloro- ethylene (cis 1,2-)	Dichloro- ethene (trans 1,2)	Dimethylbenza- (a)anthracene (7,12)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	4.7E+01	3.9E+00	4.9E-01			
			Hazard	4.9E+03	1.4E+02	4.3E+02	4.8E+02	9.5E+02	1.6E+03
		Commercial/ Industrial	Carcinogenic	1.5E+02	1.2E+01	1.5E+00			
			Hazard	3.1E+04	8.8E+02	2.7E+03	3.0E+03	6.1E+03	1.0E+04
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	8.6E-01	1.7E-01	9.4E-03			
			Hazard	1.3E+02	6.8E+00	3.0E+00	1.4E+01	1.9E+01	
		Commercial/ Industrial	Carcinogenic	1.4E+01	2.7E+00	1.5E-01			
			Hazard	SAT	2.0E+02	8.7E+01	4.1E+02	5.4E+02	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	2.4E+00	4.8E-01	2.6E-02			
			Hazard	4.5E+02	2.3E+01	9.9E+00	4.7E+01	6.2E+01	
		Commercial/ Industrial	Carcinogenic	9.1E+00	1.8E+00	1.0E-01			
			Hazard	SAT	1.3E+02	5.8E+01	2.8E+02	3.6E+02	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	6.4E-03	*3.8E-04*	*1.5E-02*	*8.2E-03*	*2.0E-02*	
			Hazard	6.4E-03	*3.8E-04*	*1.5E-02*	*8.2E-03*	*2.0E-02*	SAT
		Commercial/ Industrial	Carcinogenic	6.4E-03	*3.8E-04*	*1.5E-02*	*8.2E-03*	*2.0E-02*	
			Hazard	6.4E-03	*3.8E-04*	*1.5E-02*	*8.2E-03*	*2.0E-02*	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	2.3E+00	7.2E-01	1.4E-02			
			Hazard	3.6E+02	2.9E+01	4.3E+00	3.5E+01	3.2E+01	
		Commercial/ Industrial	Carcinogenic	3.6E+01	1.1E+01	2.2E-01			
			Hazard	>SOL	8.3E+02	1.2E+02	1.0E+03	9.4E+02	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	1.1E+02	1.8E+01	9.3E-01			
			Hazard	>SOL	8.6E+02	3.5E+02	1.6E+03	2.0E+03	
		Commercial/ Industrial	Carcinogenic	4.0E+02	6.9E+01	3.5E+00			
			Hazard	>SOL	5.0E+03	2.0E+03	>SOL	>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	
			Hazard	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	>SOL
		Commercial/ Industrial	Carcinogenic	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	
			Hazard	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	2.1E-01	2.4E-02	1.3E-03			
			Hazard	1.9E+01	7.2E-01	1.2E+00	1.8E+00	3.5E+00	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 5. Oakland Tier 1 RBSLs

Medium	Exposure Pathway	Land Use	Type of Risk	Fluorene	Indeno-1,2,3-CD pyrene	Mercury	Methanol	Methyl ethyl ketone	Methylene Chloride	Methyl-napthalene (2-)	MTBE
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic		2.5E-01				2.1E+01		
			Hazard	2.1E+03		4.7E+00	2.4E+04	2.6E+04	3.1E+03	2.0E+03	2.6E+02
		Commercial/ Industrial	Carcinogenic		7.9E-01				6.6E+01		
			Hazard	1.4E+04		3.0E+01	1.5E+05	1.6E+05	2.0E+04	1.3E+04	1.7E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic		SAT				1.3E+00		
			Hazard	SAT		1.2E+01	4.5E+04	6.9E+03	7.4E+02	SAT	4.4E+03
		Commercial/ Industrial	Carcinogenic		SAT				2.0E+01		
			Hazard	SAT			SAT	SAT	SAT	SAT	SAT
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic		SAT				3.5E+00		
			Hazard	SAT		4.0E+01	SAT	2.3E+04	2.5E+03	SAT	SAT
		Commercial/ Industrial	Carcinogenic		SAT				1.3E+01		
			Hazard	SAT		2.3E+02	SAT	SAT	SAT	SAT	SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic		SAT	*3.2E-01*			3.1E-03		*7.6E-03*
			Hazard	2.6E+02		*3.2E-01*	1.7E+00	3.3E+00	3.1E-03	1.6E+02	*7.6E-03*
		Commercial/ Industrial	Carcinogenic		SAT	*3.2E-01*			3.1E-03		*7.6E-03*
			Hazard	SAT		*3.2E-01*	1.1E+01	2.2E+01	3.1E-03	1.1E+03	*7.6E-03*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic		>SOL				6.7E+00		
			Hazard	>SOL		2.6E-01	6.5E+05	6.0E+04	4.0E+03	>SOL	2.4E+04
		Commercial/ Industrial	Carcinogenic		>SOL				1.1E+02		
			Hazard	>SOL		7.6E+00	>SOL	>SOL	>SOL	>SOL	>SOL
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic		>SOL				2.3E+02		
			Hazard	>SOL		1.6E+01	>SOL	>SOL	>SOL	>SOL	>SOL
		Commercial/ Industrial	Carcinogenic		>SOL				8.7E+02		
			Hazard	>SOL		9.5E+01	>SOL	>SOL	>SOL	>SOL	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic		>SOL	*2.0E-03*			5.0E-03		*1.3E-02*
			Hazard	6.3E-01		*2.0E-03*	7.8E+00	9.4E+00	5.0E-03	6.3E-01	*1.3E-02*
		Commercial/ Industrial	Carcinogenic		>SOL	*2.0E-03*			5.0E-03		*1.3E-02*
			Hazard	>SOL		*2.0E-03*	5.1E+01	6.1E+01	5.0E-03	4.1E+00	*1.3E-02*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic		7.0E-06				1.3E-01		
			Hazard	3.1E-01		3.6E-02	2.2E+02	1.5E+02	1.6E+01	6.1E-01	1.5E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 5. Oakland Tier 1 RBSLs

Medium	Exposure Pathway	Receptor	Type of Risk	2-Naphthalene	Nickel	Nitro-benzene	PCBs	Phenan-threne	Phenol	Pyrene	Pyridine	Selenium
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic		3.4E+04	5.5E+02	5.0E-02				2.8E+02	
			Hazard	2.0E+03	1.5E+03		1.2E+00	1.6E+04	3.1E+04	1.6E+03		3.7E+02
		Commercial/ Industrial	Carcinogenic		1.3E+05	1.7E+03	1.8E-01				8.9E+02	
			Hazard	1.3E+04	2.7E+04		1.0E+01	1.0E+05	2.0E+05	1.0E+04		6.8E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			SAT	6.9E+01				2.9E+03	
			Hazard	SAT			SAT	SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic			SAT	1.1E+03				4.6E+04	
			Hazard	SAT			SAT	SAT	SAT	SAT		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			SAT	1.9E+02				8.1E+03	
			Hazard	SAT			SAT	SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic			SAT	7.3E+02				3.1E+04	
			Hazard	SAT			SAT	SAT	SAT	SAT		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*1.2E+00*	*2.0E+01*	2.9E-01	*4.7E+00*				1.2E-01	*7.7E-01*
			Hazard	*1.2E+00*	*2.0E+01*		*4.7E+00*	SAT	1.0E+01	SAT		*7.7E-01*
		Commercial/ Industrial	Carcinogenic	*1.2E+00*	*2.0E+01*	1.2E+00	*4.7E+00*				5.3E-01	*7.7E-01*
			Hazard	*1.2E+00*	*2.0E+01*		*4.7E+00*	SAT	6.7E+01	SAT		*7.7E-01*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			>SOL	2.3E-02				4.8E+03	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL	3.6E-01				7.7E+04	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			>SOL	3.2E-01				4.1E+04	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL	>SOL				1.5E+05	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	*2.0E-02*	*1.0E-01*	1.3E-01	*5.0E-04*				6.7E-02	*5.0E-02*
			Hazard	*2.0E-02*	*1.0E-01*		*5.0E-04*	>SOL	9.4E+00	>SOL		*5.0E-02*
		Commercial/ Industrial	Carcinogenic	*2.0E-02*	*1.0E-01*	5.7E-01	*5.0E-04*				2.9E-01	*5.0E-02*
			Hazard	*2.0E-02*	*1.0E-01*		*5.0E-04*	>SOL	6.1E+01	>SOL		*5.0E-02*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			2.8E+00	1.6E-06				2.6E+00	
			Hazard	1.5E+00	7.9E+00		4.4E-05	>SOL	1.5E+02	>SOL		2.0E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 5. Oakland Tier 1 RBSLs

Medium	Exposure Pathway	Land Use	Type of Risk	Silver	Styrene	Tetrachloro-ethane (1,1,2,2-)	Tetrachloro-ethylene (PCE)	Tetraethyl Lead	Toluene	Trichloro-ethane (1,1,1-)	Trichloro-ethane (1,1,2-)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic			1.0E+00	5.7E+00				3.8E+00
			Hazard	3.7E+02	9.8E+03	1.2E+03	4.8E+02	5.2E-03	9.0E+03	1.8E+03	1.9E+02
		Commercial/ Industrial	Carcinogenic			3.1E+00	1.8E+01				1.2E+01
			Hazard	6.8E+03	6.3E+04	7.9E+03	3.0E+03	3.4E-02	5.6E+04	1.2E+04	1.2E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			7.4E-01	3.0E-01				5.4E-01
			Hazard		SAT	1.0E+03	1.2E+01		3.6E+02	2.6E+02	3.1E+01
		Commercial/ Industrial	Carcinogenic			1.2E+01	4.8E+00				8.7E+00
			Hazard		SAT	SAT	SAT		SAT	SAT	8.9E+02
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			2.1E+00	8.4E-01				1.5E+00
			Hazard		SAT	SAT	4.1E+01		SAT	8.7E+02	1.0E+02
		Commercial/ Industrial	Carcinogenic			7.8E+00	3.2E+00				5.8E+00
			Hazard		SAT	SAT	2.4E+02		SAT	SAT	5.9E+02
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*2.5E+00*	*2.4E+00*	3.0E-03	*2.6E-02*	*2.4E+00*	*8.8E-01*	*7.8E-01*	*8.8E-03*
			Hazard	*2.5E+00*	*2.4E+00*	3.0E-03	*2.6E-02*	*2.4E+00*	*8.8E-01*	*7.8E-01*	*8.8E-03*
		Commercial/ Industrial	Carcinogenic	*2.5E+00*	*2.4E+00*	3.0E-03	*2.6E-02*	*2.4E+00*	*8.8E-01*	*7.8E-01*	*8.8E-03*
			Hazard	*2.5E+00*	*2.4E+00*	3.0E-03	*2.6E-02*	*2.4E+00*	*8.8E-01*	*7.8E-01*	*8.8E-03*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			7.5E-01	2.0E-01				9.9E-01
			Hazard		>SOL	1.0E+03	8.4E+00		2.1E+02	2.4E+02	5.6E+01
		Commercial/ Industrial	Carcinogenic			1.2E+01	3.3E+00				1.6E+01
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	1.6E+03
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			1.1E+01	1.3E+01				2.2E+01
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	1.5E+03
		Commercial/ Industrial	Carcinogenic			4.1E+01	5.1E+01				6.4E+01
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
			Hazard	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
		Commercial/ Industrial	Carcinogenic	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
			Hazard	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			4.5E-03	6.0E-03				1.8E-02
			Hazard	2.1E+00	9.3E+00	4.9E+00	5.3E-01	6.7E-06	1.1E+01	4.3E+00	7.8E-01

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 5. Oakland Tier 1 RBSLs

Medium	Exposure Pathway	Land Use	Type of Risk	Trichloroethylene (TCE)	Vanadium	Vinyl Chloride	Xylenes	Zinc
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	1.9E+01		5.0E-01		
			Hazard	2.9E+02	5.2E+02		5.4E+04	2.2E+04
		Commercial/ Industrial	Carcinogenic	5.9E+01		1.6E+00		
			Hazard	1.8E+03	9.5E+03		3.0E+05	4.1E+05
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	1.1E+00		1.3E-03		
			Hazard	1.3E+01			SAT	
		Commercial/ Industrial	Carcinogenic	1.7E+01		2.1E-02		
			Hazard	3.6E+02			SAT	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	3.0E+00		3.7E-03		
			Hazard	4.2E+01			SAT	
		Commercial/ Industrial	Carcinogenic	1.1E+01		1.4E-02		
			Hazard	2.4E+02			SAT	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*2.7E-02*		*6.5E-04*	*1.3E+01*	
			Hazard	*2.7E-02*	3.3E+02	*6.5E-04*	*1.3E+01*	8.8E+02
		Commercial/ Industrial	Carcinogenic	*2.7E-02*		*6.5E-04*	*1.3E+01*	
			Hazard	*2.7E-02*	2.2E+03	*6.5E-04*	*1.3E+01*	5.8E+03
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	6.9E-01		3.7E-03		
			Hazard	8.1E+00			>SOL	
		Commercial/ Industrial	Carcinogenic	1.1E+01		5.9E-02		
			Hazard	2.3E+02			>SOL	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	4.1E+01		2.5E-01		
			Hazard	5.7E+02			>SOL	
		Commercial/ Industrial	Carcinogenic	1.5E+02		9.6E-01		
			Hazard	>SOL			>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	*5.0E-03*		*5.0E-04*	*1.8E+00*	
			Hazard	*5.0E-03*	1.1E-01	*5.0E-04*	*1.8E+00*	4.7E+00
		Commercial/ Industrial	Carcinogenic	*5.0E-03*		*5.0E-04*	*1.8E+00*	
			Hazard	*5.0E-03*	7.2E-01	*5.0E-04*	*1.8E+00*	3.1E+01
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	4.6E-03		2.6E-03		
			Hazard	7.2E-02	2.8E+00		6.6E+01	1.2E+02

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

APPENDIX F: TIER 2 SITE-SPECIFIC TARGET LEVELS

This appendix contains the complete set of Oakland Tier 2 SSTLs for Merritt sands, sandy silts and clayey silts. The Oakland Tier 2 SSTLs may be applied only at sites that meet the eligibility criteria specified in Section 2.2 *and* where one or more of the three soil types has been shown to prevail (see Section 2.3.4).

Please note that the Oakland RBCA look-up tables will be updated whenever new or better information becomes available. It is recommended that you consult the ULR Program web page at www.oaklandpw.com to make sure that you have the latest version of the look-up tables before applying the Oakland Tier 2 SSTLs at your site.

For step-by-step assistance in reading the look-up tables, refer back to Section 2.4.

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure Pathway	Land Use	Type of Risk	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Arsenic	Barium	Benz(a)-anthracene	Benzene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic					3.8E+00		3.7E+00	3.7E+01
			Hazard	3.9E+03	3.9E+03	5.8E+03	1.9E+04	2.2E+01	5.3E+03		9.9E+01
		Commercial/ Industrial	Carcinogenic					2.4E+01		1.6E+01	1.5E+02
			Hazard	4.0E+04	4.0E+04	5.4E+04	2.0E+05	3.8E+02	1.2E+05		9.2E+02
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic							SAT	7.0E-01
			Hazard	SAT	SAT	1.8E+03	SAT				2.3E+00
		Commercial/ Industrial	Carcinogenic							SAT	1.1E+01
			Hazard	SAT	SAT	5.3E+04	SAT				6.7E+01
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic							SAT	3.9E+00
			Hazard	SAT	SAT	1.2E+04	SAT				1.6E+01
		Commercial/ Industrial	Carcinogenic							SAT	1.5E+01
			Hazard	SAT	SAT	7.0E+04	SAT				9.1E+01
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic					*2.1E+01*	*6.0E+02*	3.2E+01	*1.0E-02*
			Hazard	SAT	SAT	2.1E+00	SAT	*2.1E+01*	*6.0E+02*		*1.0E-02*
		Commercial/ Industrial	Carcinogenic					*2.1E+01*	*6.0E+02*	SAT	*1.0E-02*
			Hazard	SAT	SAT	1.4E+01	SAT	*2.1E+01*	*6.0E+02*		*1.0E-02*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic							>SOL	1.4E+00
			Hazard	>SOL	>SOL	2.0E+04	>SOL				4.7E+00
		Commercial/ Industrial	Carcinogenic							>SOL	2.2E+01
			Hazard	>SOL	>SOL	5.9E+05	>SOL				1.4E+02
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic							>SOL	1.8E+02
			Hazard	>SOL	>SOL	4.2E+05	>SOL				7.2E+02
		Commercial/ Industrial	Carcinogenic							>SOL	6.9E+02
			Hazard	>SOL	>SOL	>SOL	>SOL				>SOL
	Ingestion of Groundwater	Residential	Carcinogenic					*5.0E-02*	*1.0E+00*	5.6E-04	*1.0E-03*
			Hazard	9.4E-01	9.4E-01	1.6E+00	>SOL	*5.0E-02*	*1.0E+00*		*1.0E-03*
		Commercial/ Industrial	Carcinogenic					*5.0E-02*	*1.0E+00*	2.4E-03	*1.0E-03*
			Hazard	>SOL	>SOL	1.0E+01	>SOL	*5.0E-02*	*1.0E+00*		*1.0E-03*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic					2.0E-02		1.6E-04	6.3E-02
			Hazard	1.1E+00	1.7E+00	4.2E+01	>SOL	1.2E-01	2.8E+01		1.8E-01

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure* Pathway	Land Use	Type of Risk	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Beryllium	Bis (2-ethylhexyl) phthalate	Butyl benzyl phthalate
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	3.7E-01	3.7E+00		3.7E+00	4.5E+04	5.3E+02	
			Hazard			2.6E+02		3.8E+02	1.3E+03	1.3E+04
		Commercial/ Industrial	Carcinogenic	1.6E+00	1.6E+01		1.6E+01	1.7E+05	2.3E+03	
			Hazard			2.7E+03		8.5E+03	1.4E+04	1.4E+05
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
		Commercial/ Industrial	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
		Commercial/ Industrial	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*SAT*	SAT		SAT	4.6E+01	SAT	
			Hazard	*SAT*		SAT		4.6E+01	SAT	SAT
		Commercial/ Industrial	Carcinogenic	*SAT*	SAT		SAT	4.6E+01	SAT	
			Hazard	*SAT*		SAT		4.6E+01	SAT	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	*2.0E-04*	5.6E-04		5.6E-04	4.0E-03	8.0E-02	
			Hazard	*2.0E-04*		>SOL		4.0E-03	3.1E-01	>SOL
		Commercial/ Industrial	Carcinogenic	*2.0E-04*	>SOL		>SOL	4.0E-03	>SOL	
			Hazard	*2.0E-04*		>SOL		4.0E-03	>SOL	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	1.1E-05	1.1E-04		1.2E-04		>SOL	
			Hazard			>SOL		2.0E+00	>SOL	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure Pathway	Land Use	Type of Risk	Acrolein	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroform	Chromium (III)	Chromium (VI)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	2.1E+04		2.5E+01		1.3E+02		1.4E+01
			Hazard	3.8E+01	1.3E+03	4.0E+01	9.2E+02	5.8E+02	7.7E+04	3.8E+02
		Commercial/ Industrial	Carcinogenic	7.9E+04		1.0E+02		5.3E+02		1.1E+02
			Hazard	8.5E+02	7.0E+03	3.6E+02	7.2E+03	5.4E+03	1.7E+06	8.5E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			2.7E-01		3.4E+00		
			Hazard		1.1E+00	4.5E-01	6.5E-01	1.3E+01		
		Commercial/ Industrial	Carcinogenic			4.3E+00		5.4E+01		
			Hazard		3.3E+01	1.3E+01	1.9E+01	3.7E+02		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			1.5E+00		1.9E+01		
			Hazard		7.6E+00	3.0E+00	4.4E+00	8.5E+01		
		Commercial/ Industrial	Carcinogenic			5.8E+00		7.2E+01		
			Hazard		4.4E+01	1.8E+01	2.5E+01	4.9E+02		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*5.5E+00*		*1.4E-02*	*3.3E-01*	*7.3E-01*		1.4E+01
			Hazard	*5.5E+00*	1.4E+01	*1.4E-02*	*3.3E-01*	*7.3E-01*	4.1E+08	1.4E+01
		Commercial/ Industrial	Carcinogenic	*5.5E+00*		*1.4E-02*	*3.3E-01*	*7.3E-01*		1.4E+01
			Hazard	*5.5E+00*	9.1E+01	*1.4E-02*	*3.3E-01*	*7.3E-01*	2.7E+09	1.4E+01
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			2.7E-01		9.1E+00		
			Hazard		3.3E+00	4.5E-01	4.0E+00	3.4E+01		
		Commercial/ Industrial	Carcinogenic			4.3E+00		1.4E+02		
			Hazard		9.5E+01	1.3E+01	1.2E+02	9.8E+02		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			5.6E+01		1.0E+03		
			Hazard		7.3E+02	1.1E+02	>SOL	4.5E+03		
		Commercial/ Industrial	Carcinogenic			2.1E+02		3.9E+03		
			Hazard		>SOL	6.5E+02	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	*5.0E-03*		*5.0E-04*	*7.0E-02*	*1.0E-01*		5.0E-02
			Hazard	*5.0E-03*	1.6E+00	*5.0E-04*	*7.0E-02*	*1.0E-01*	1.6E+01	5.0E-02
		Commercial/ Industrial	Carcinogenic	*5.0E-03*		*5.0E-04*	*7.0E-02*	*1.0E-01*		5.0E-02
			Hazard	*5.0E-03*	1.0E+01	*5.0E-04*	*7.0E-02*	*1.0E-01*	1.0E+02	5.0E-02
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			4.1E-02		3.9E-01		6.8E-02
			Hazard	2.0E-01	9.4E+00	7.1E-02	1.2E+00	1.9E+00	3.8E+02	1.9E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure Pathway	Land Use	Type of Risk	Chrysene	Copper	Cresol(-m)	Cresol(-o)	Cresol(-p)	Cyanide	Dibenz(a,h)-anthracene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	3.7E+01						1.1E+00
			Hazard		2.8E+03	3.2E+03	3.2E+03	3.2E+02	3.1E+03	
		Commercial/ Industrial	Carcinogenic	1.6E+02						4.7E+00
			Hazard		6.3E+04	3.3E+04	3.3E+04	3.3E+03	6.8E+04	
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	SAT	*1.7E+00*				2.9E+01	9.1E+01
			Hazard		*1.7E+00*	1.1E+01	1.1E+01	1.0E+00	2.9E+01	
		Commercial/ Industrial	Carcinogenic	SAT	*1.7E+00*				2.9E+01	SAT
			Hazard		*1.7E+00*	7.1E+01	7.4E+01	6.7E+00	2.9E+01	
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	>SOL	*1.3E+00*				2.0E-01	1.6E-04
			Hazard		*1.3E+00*	7.8E-01	7.8E-01	7.8E-02	2.0E-01	
		Commercial/ Industrial	Carcinogenic	>SOL	*1.3E+00*				2.0E-01	7.0E-04
			Hazard		*1.3E+00*	5.1E+00	5.1E+00	5.1E-01	2.0E-01	
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	>SOL						1.4E-05
			Hazard		1.5E+01	6.7E+00	6.4E+00	5.9E-01	7.0E+00	

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure Pathway	Land Use	Type of Risk	Dichloro- ethane (1,1-)	Dichloro- ethane (1,2-) (EDC)	Dichloro- ethylene (1,1-)	Dichloro- ethylene (cis 1,2-)	Dichloro- ethene (trans 1,2)	Dimethylbenza- (a)anthracene (7,12)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	6.6E+02	5.3E+01	7.0E+00			
			Hazard	6.0E+03	1.7E+02	5.2E+02	5.8E+02	1.2E+03	2.0E+03
		Commercial/ Industrial	Carcinogenic	2.7E+03	2.2E+02	3.0E+01			
			Hazard	5.8E+04	1.6E+03	4.9E+03	5.4E+03	1.1E+04	2.0E+04
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	8.8E+00	1.8E+00	9.2E-02			
			Hazard	1.4E+02	7.2E+00	2.9E+00	1.5E+01	1.9E+01	
		Commercial/ Industrial	Carcinogenic	1.4E+02	2.9E+01	1.5E+00			
			Hazard	SAT	2.1E+02	8.5E+01	4.3E+02	5.5E+02	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	5.0E+01	1.0E+01	5.2E-01			
			Hazard	9.3E+02	4.8E+01	2.0E+01	9.9E+01	1.3E+02	
		Commercial/ Industrial	Carcinogenic	1.9E+02	3.9E+01	2.0E+00			
			Hazard	SAT	2.8E+02	1.1E+02	5.7E+02	7.4E+02	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	3.1E-02	*1.9E-03*	*7.0E-02*	*4.0E-02*	*9.6E-02*	
			Hazard	3.1E-02	*1.9E-03*	*7.0E-02*	*4.0E-02*	*9.6E-02*	SAT
		Commercial/ Industrial	Carcinogenic	3.1E-02	*1.9E-03*	*7.0E-02*	*4.0E-02*	*9.6E-02*	
			Hazard	3.1E-02	*1.9E-03*	*7.0E-02*	*4.0E-02*	*9.6E-02*	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	2.8E+01	7.7E+00	2.2E-01			
			Hazard	4.3E+02	3.1E+01	7.0E+00	4.0E+01	4.2E+01	
		Commercial/ Industrial	Carcinogenic	4.4E+02	1.2E+02	3.5E+00			
			Hazard	>SOL	8.9E+02	2.0E+02	1.2E+03	1.2E+03	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	3.2E+03	4.1E+02	4.5E+01			
			Hazard	>SOL	2.0E+03	1.7E+03	>SOL	>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	1.6E+03	1.7E+02			
			Hazard	>SOL	>SOL	>SOL	>SOL	>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	
			Hazard	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	>SOL
		Commercial/ Industrial	Carcinogenic	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	
			Hazard	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	2.1E+00	2.4E-01	1.3E-02			
			Hazard	1.9E+01	7.2E-01	1.2E+00	1.8E+00	3.5E+00	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure Pathway	Land Use	Type of Risk	Dimethyl phenol (2,4)	di-n-Butyl phthalate	di-n-octyl phthalate	Dinitro toluene (2,4)	Dioxane (1,4)	Ethyl-benzene	Ethylene Dibromide	Flouran-thene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic				1.4E+01	1.4E+02		1.2E+00	
			Hazard	1.3E+03	6.5E+03	1.3E+03			6.3E+03	3.3E+00	2.6E+03
		Commercial/ Industrial	Carcinogenic				6.0E+01	5.6E+02		5.2E+00	
			Hazard	1.3E+04	6.8E+04	1.4E+04			6.3E+04	3.1E+01	2.7E+04
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic				SAT	SAT		2.9E+00	
			Hazard	SAT	SAT	SAT			SAT	8.1E-01	SAT
		Commercial/ Industrial	Carcinogenic				SAT	SAT		4.6E+01	
			Hazard	SAT	SAT	SAT			SAT	2.4E+01	SAT
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic				SAT	SAT		1.6E+01	
			Hazard	SAT	SAT	SAT			SAT	5.4E+00	SAT
		Commercial/ Industrial	Carcinogenic				SAT	SAT		6.2E+01	
			Hazard	SAT	SAT	SAT			SAT	3.2E+01	SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic				3.3E-02	SAT	*3.8E+01*	*3.8E-04*	
			Hazard	9.9E+00	SAT	SAT			*3.8E+01*	*3.8E-04*	SAT
		Commercial/ Industrial	Carcinogenic				1.4E-01	SAT	*3.8E+01*	*3.8E-04*	
			Hazard	6.5E+01	SAT	SAT			*3.8E+01*	*3.8E-04*	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic				>SOL	>SOL		5.9E+00	
			Hazard	>SOL	>SOL	>SOL			>SOL	1.6E+00	>SOL
		Commercial/ Industrial	Carcinogenic				>SOL	>SOL		9.3E+01	
			Hazard	>SOL	>SOL	>SOL			>SOL	4.8E+01	>SOL
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic				>SOL	>SOL		1.8E+02	
			Hazard	>SOL	>SOL	>SOL			>SOL	6.0E+01	>SOL
		Commercial/ Industrial	Carcinogenic				>SOL	>SOL		6.9E+02	
			Hazard	>SOL	>SOL	>SOL			>SOL	3.5E+02	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic				2.2E-03	>SOL	*7.0E-01*	*5.0E-05*	
			Hazard	3.1E-01	1.6E+00	>SOL			*7.0E-01*	*5.0E-05*	>SOL
		Commercial/ Industrial	Carcinogenic				9.2E-03	>SOL	*7.0E-01*	*5.0E-05*	
			Hazard	2.0E+00	1.0E+01	>SOL			*7.0E-01*	*5.0E-05*	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic				6.4E-02	>SOL		5.9E-03	
			Hazard	2.7E+00	7.3E+00	2.1E-03			3.6E+00	1.7E-02	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure Pathway	Land Use	Type of Risk	Fluorene	Indeno-(1,2,3-CD) pyrene	Mercury	Methanol	Methyl ethyl ketone	Methylene Chloride	Methyl-napthalene (2-)	MTBE
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic		3.7E+00				3.0E+02		
			Hazard	2.6E+03		5.8E+00	2.9E+04	3.1E+04	3.9E+03	2.5E+03	3.3E+02
		Commercial/ Industrial	Carcinogenic		1.6E+01				1.3E+03		
			Hazard	2.7E+04		5.5E+01	2.7E+05	2.7E+05	4.0E+04	2.6E+04	3.4E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic		SAT				1.3E+01		
			Hazard	SAT		1.2E+01	5.6E+04	7.9E+03	8.0E+02	SAT	4.8E+03
		Commercial/ Industrial	Carcinogenic		SAT				2.1E+02		
			Hazard	SAT			SAT	SAT	SAT	SAT	SAT
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic		SAT				7.6E+01		
			Hazard	SAT		6.2E+01	SAT	SAT	SAT	SAT	SAT
		Commercial/ Industrial	Carcinogenic		SAT				2.9E+02		
			Hazard	SAT		4.7E+02	SAT	SAT	SAT	SAT	SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic		SAT	*1.5E+00*			1.6E-02		*4.0E-02*
			Hazard	SAT		*1.5E+00*	9.9E+00	1.8E+01	1.6E-02	7.7E+02	*4.0E-02*
		Commercial/ Industrial	Carcinogenic		SAT	*1.5E+00*			1.6E-02		*4.0E-02*
			Hazard	SAT		*1.5E+00*	6.5E+01	1.2E+02	1.6E-02	SAT	*4.0E-02*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic		>SOL				7.6E+01		
			Hazard	>SOL		3.4E-01	6.6E+05	6.2E+04	4.5E+03	>SOL	2.5E+04
		Commercial/ Industrial	Carcinogenic		>SOL				1.2E+03		
			Hazard	>SOL		9.8E+00	>SOL	>SOL	>SOL	>SOL	>SOL
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic		>SOL				5.8E+03		
			Hazard	>SOL		5.4E+01	>SOL	>SOL	>SOL	>SOL	>SOL
		Commercial/ Industrial	Carcinogenic		>SOL				>SOL		
			Hazard	>SOL		3.1E+02	>SOL	>SOL	>SOL	>SOL	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic		>SOL	*2.0E-03*			5.0E-03		*1.3E-02*
			Hazard	6.3E-01		*2.0E-03*	7.8E+00	9.4E+00	5.0E-03	6.3E-01	*1.3E-02*
		Commercial/ Industrial	Carcinogenic		>SOL	*2.0E-03*			5.0E-03		*1.3E-02*
			Hazard	>SOL		*2.0E-03*	5.1E+01	6.1E+01	5.0E-03	4.1E+00	*1.3E-02*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic		>SOL				1.3E+00		
			Hazard	3.1E-01		3.6E-02	2.2E+02	1.5E+02	1.6E+01	6.1E-01	1.5E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure Pathway	Land Use	Type of Risk	Naphthalene	Nickel	Nitro-benzene	PCBs	Phenan-threne	Phenol	Pyrene	Pyridine	Selenium
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic		3.4E+05	7.8E+03	6.5E-01				4.1E+03	
			Hazard	2.5E+03	1.5E+03		1.4E+00	1.9E+04	3.8E+04	2.0E+03		3.8E+02
		Commercial/ Industrial	Carcinogenic		1.3E+06	3.3E+04	3.3E+00				1.7E+04	
			Hazard	2.5E+04	3.4E+04		1.8E+01	2.0E+05	3.9E+05	2.0E+04		8.5E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			SAT	6.9E+02				3.0E+04	
			Hazard	SAT			SAT	SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic			SAT	SAT				4.8E+05	
			Hazard	SAT			SAT	SAT	SAT	SAT		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			SAT	SAT				1.6E+05	
			Hazard	SAT			SAT	SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic			SAT	SAT				6.1E+05	
			Hazard	SAT			SAT	SAT	SAT	SAT		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*5.8E+00*	*9.5E+01*	1.4E+01	*2.2E+01*				6.1E+00	*3.7E+00*
			Hazard	*5.8E+00*	*9.5E+01*		*2.2E+01*	SAT	5.1E+01	SAT		*3.7E+00*
		Commercial/ Industrial	Carcinogenic	*5.8E+00*	*9.5E+01*	6.1E+01	*2.2E+01*				2.6E+01	*3.7E+00*
			Hazard	*5.8E+00*	*9.5E+01*		*2.2E+01*	SAT	3.3E+02	SAT		*3.7E+00*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			>SOL	2.4E-01				4.9E+04	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL	>SOL				7.8E+05	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			>SOL	>SOL				7.7E+05	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL	>SOL				>SOL	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	*2.0E-02*	*1.0E-01*	1.3E+00	*5.0E-04*				6.7E-01	*5.0E-02*
			Hazard	*2.0E-02*	*1.0E-01*		*5.0E-04*	>SOL	9.4E+00	>SOL		*5.0E-02*
		Commercial/ Industrial	Carcinogenic	*2.0E-02*	*1.0E-01*	5.7E+00	*5.0E-04*				2.9E+00	*5.0E-02*
			Hazard	*2.0E-02*	*1.0E-01*		*5.0E-04*	>SOL	6.1E+01	>SOL		*5.0E-02*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			2.8E+01	1.6E-05				2.6E+01	
			Hazard	1.5E+00	7.9E+00		4.4E-05	>SOL	1.5E+02	>SOL		2.0E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure Pathway	Land Use	Type of Risk	Silver	Styrene	Tetrachloroethane (1,1,2,2-)	Tetrachloroethylene (PCE)	Tetraethyl Lead	Toluene	Trichloroethane (1,1,1-)	Trichloroethane (1,1,2-)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic			1.4E+01	8.1E+01				5.2E+01
			Hazard	3.8E+02	1.2E+04	1.5E+03	5.8E+02	6.5E-03	1.1E+04	2.2E+03	2.3E+02
		Commercial/ Industrial	Carcinogenic			5.6E+01	3.4E+02				2.1E+02
			Hazard	8.5E+03	1.2E+05	1.4E+04	5.4E+03	6.8E-02	9.4E+04	2.3E+04	2.2E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			7.5E+00	3.0E+00				5.6E+00
			Hazard		SAT	1.0E+03	1.2E+01		3.7E+02	2.6E+02	3.2E+01
		Commercial/ Industrial	Carcinogenic			1.2E+02	4.8E+01				9.0E+01
			Hazard		SAT	SAT	SAT		SAT	SAT	9.2E+02
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			4.3E+01	1.7E+01				3.2E+01
			Hazard		SAT	SAT	8.3E+01		SAT	SAT	2.1E+02
		Commercial/ Industrial	Carcinogenic			1.6E+02	6.5E+01				1.2E+02
			Hazard		SAT	SAT	SAT		SAT	SAT	1.2E+03
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*1.2E+01*	*1.1E+01*	1.5E-02	*1.3E-01*	*SAT*	*4.2E+00*	*3.7E+00*	*4.3E-02*
			Hazard	*1.2E+01*	*1.1E+01*	1.5E-02	*1.3E-01*	*SAT*	*4.2E+00*	*3.7E+00*	*4.3E-02*
		Commercial/ Industrial	Carcinogenic	*1.2E+01*	*1.1E+01*	1.5E-02	*1.3E-01*	*SAT*	*4.2E+00*	*3.7E+00*	*4.3E-02*
			Hazard	*1.2E+01*	*1.1E+01*	1.5E-02	*1.3E-01*	*SAT*	*4.2E+00*	*3.7E+00*	*4.3E-02*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			7.8E+00	3.1E+00				1.1E+01
			Hazard		>SOL	1.1E+03	1.3E+01		2.8E+02	3.7E+02	5.9E+01
		Commercial/ Industrial	Carcinogenic			1.2E+02	5.0E+01				1.7E+02
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	1.7E+03
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			2.2E+02	>SOL				4.9E+02
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	3.3E+03
		Commercial/ Industrial	Carcinogenic			8.5E+02	>SOL				1.9E+03
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
			Hazard	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
		Commercial/ Industrial	Carcinogenic	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
			Hazard	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			4.5E-02	6.0E-02				1.8E-01
			Hazard	2.1E+00	9.3E+00	4.9E+00	5.3E-01	6.7E-06	1.1E+01	4.3E+00	7.8E-01

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 6. Oakland Tier 2 SSTLs for Merritt Sands

Medium	Exposure Pathway	Land Use	Type of Risk	Trichloroethylene (TCE)	Vanadium	Vinyl Chloride	Xylenes	Zinc
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	2.6E+02		6.9E+00		
			Hazard	3.5E+02	5.4E+02		6.0E+04	2.3E+04
		Commercial/ Industrial	Carcinogenic	1.1E+03		2.8E+01		
			Hazard	3.3E+03	1.2E+04		3.8E+05	5.1E+05
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	1.1E+01		1.3E-02		
			Hazard	1.3E+01			SAT	
		Commercial/ Industrial	Carcinogenic	1.7E+02		2.0E-01		
			Hazard	3.7E+02			SAT	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	6.1E+01		7.1E-02		
			Hazard	8.5E+01			SAT	
		Commercial/ Industrial	Carcinogenic	2.3E+02		2.7E-01		
			Hazard	4.9E+02			SAT	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*1.3E-01*		*2.9E-03*	*6.4E+01*	
			Hazard	*1.3E-01*	1.6E+03	*2.9E-03*	*6.4E+01*	4.2E+03
		Commercial/ Industrial	Carcinogenic	*1.3E-01*		*2.9E-03*	*6.4E+01*	
			Hazard	*1.3E-01*	1.0E+04	*2.9E-03*	*6.4E+01*	2.8E+04
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	9.6E+00		6.0E-02		
			Hazard	1.1E+01			>SOL	
		Commercial/ Industrial	Carcinogenic	1.5E+02		9.6E-01		
			Hazard	3.3E+02			>SOL	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL		1.2E+01		
			Hazard	>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL		4.7E+01		
			Hazard	>SOL			>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	*5.0E-03*		*5.0E-04*	*1.8E+00*	
			Hazard	*5.0E-03*	1.1E-01	*5.0E-04*	*1.8E+00*	4.7E+00
		Commercial/ Industrial	Carcinogenic	*5.0E-03*		*5.0E-04*	*1.8E+00*	
			Hazard	*5.0E-03*	7.2E-01	*5.0E-04*	*1.8E+00*	3.1E+01
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	4.6E-02		2.6E-02		
			Hazard	7.2E-02	2.8E+00		6.6E+01	1.2E+02

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Arsenic	Barium	Benz(a)-anthracene	Benzene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic					3.2E+00		2.5E+00	2.7E+01
			Hazard	3.1E+03	3.1E+03	4.8E+03	1.6E+04	2.0E+01	5.2E+03		8.2E+01
		Commercial/ Industrial	Carcinogenic					1.5E+01		7.9E+00	8.5E+01
			Hazard	2.0E+04	2.0E+04	3.0E+04	1.0E+05	2.5E+02	9.4E+04		5.2E+02
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic							SAT	1.1E+00
			Hazard	SAT	SAT	3.3E+03	SAT				3.6E+00
		Commercial/ Industrial	Carcinogenic							SAT	1.7E+01
			Hazard	SAT	SAT	9.7E+04	SAT				1.1E+02
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic							SAT	2.0E+01
			Hazard	SAT	SAT	5.7E+04	SAT				8.0E+01
		Commercial/ Industrial	Carcinogenic							SAT	7.7E+01
			Hazard	SAT	SAT	SAT	SAT				4.7E+02
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic					*8.9E+00*	*2.5E+02*	2.0E+01	*6.5E-03*
			Hazard	SAT	SAT	1.6E+00	SAT	*8.9E+00*	*2.5E+02*		*6.5E-03*
		Commercial/ Industrial	Carcinogenic					*8.9E+00*	*2.5E+02*	SAT	*6.5E-03*
			Hazard	SAT	SAT	1.0E+01	SAT	*8.9E+00*	*2.5E+02*		*6.5E-03*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic							>SOL	3.4E+00
			Hazard	>SOL	>SOL	2.2E+04	>SOL				1.1E+01
		Commercial/ Industrial	Carcinogenic							>SOL	5.3E+01
			Hazard	>SOL	>SOL	6.2E+05	>SOL				3.2E+02
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic							>SOL	1.0E+03
			Hazard	>SOL	>SOL	>SOL	>SOL				>SOL
		Commercial/ Industrial	Carcinogenic							>SOL	>SOL
			Hazard	>SOL	>SOL	>SOL	>SOL				>SOL
	Ingestion of Groundwater	Residential	Carcinogenic					*5.0E-02*	*1.0E+00*	5.6E-04	*1.0E-03*
			Hazard	9.4E-01	9.4E-01	1.6E+00	>SOL	*5.0E-02*	*1.0E+00*		*1.0E-03*
		Commercial/ Industrial	Carcinogenic					*5.0E-02*	*1.0E+00*	2.4E-03	*1.0E-03*
			Hazard	>SOL	>SOL	1.0E+01	>SOL	*5.0E-02*	*1.0E+00*		*1.0E-03*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic					2.0E-02		1.6E-04	6.3E-02
			Hazard	1.1E+00	1.7E+00	4.2E+01	>SOL	1.2E-01	2.8E+01		1.8E-01

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Beryllium	Bis (2-ethylhexyl) phthalate	Butyl benzyl phthalate
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	2.5E-01	2.5E+00		2.5E+00	4.5E+04	3.6E+02	
			Hazard			2.1E+02		3.7E+02	1.0E+03	1.0E+04
		Commercial/ Industrial	Carcinogenic	7.9E-01	7.9E+00		7.9E+00	1.7E+05	1.1E+03	
			Hazard			1.4E+03		6.8E+03	6.8E+03	6.8E+04
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
		Commercial/ Industrial	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
		Commercial/ Industrial	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*1.9E+01*	SAT		SAT	1.9E+01	SAT	
			Hazard	*1.9E+01*		SAT		1.9E+01	SAT	SAT
		Commercial/ Industrial	Carcinogenic	*1.9E+01*	SAT		SAT	1.9E+01	SAT	
			Hazard	*1.9E+01*		SAT		1.9E+01	SAT	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	*2.0E-04*	5.6E-04		5.6E-04	4.0E-03	8.0E-02	
			Hazard	*2.0E-04*		>SOL		4.0E-03	3.1E-01	>SOL
		Commercial/ Industrial	Carcinogenic	*2.0E-04*	>SOL		>SOL	4.0E-03	>SOL	
			Hazard	*2.0E-04*		>SOL		4.0E-03	>SOL	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	1.1E-05	1.1E-04		1.2E-04		>SOL	
			Hazard			>SOL		2.0E+00	>SOL	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Cadmium	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroform	Chromium (III)	Chromium (VI)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	2.1E+04		1.8E+01		9.1E+01		1.3E+01
			Hazard	3.7E+01	1.3E+03	3.3E+01	8.0E+02	4.8E+02	7.4E+04	3.7E+02
		Commercial/ Industrial	Carcinogenic	7.9E+04		5.7E+01		2.9E+02		8.7E+01
			Hazard	6.8E+02	6.7E+03	2.1E+02	4.8E+03	3.0E+03	1.4E+06	6.8E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			4.1E-01		5.3E+00		
			Hazard		1.7E+00	6.8E-01	1.0E+00	2.0E+01		
		Commercial/ Industrial	Carcinogenic			6.5E+00		8.5E+01		
			Hazard		5.0E+01	2.0E+01	3.0E+01	5.8E+02		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			7.6E+00		9.9E+01		
			Hazard		3.8E+01	1.5E+01	2.3E+01	4.4E+02		
		Commercial/ Industrial	Carcinogenic			2.9E+01		3.8E+02		
			Hazard		2.2E+02	8.8E+01	1.3E+02	2.5E+03		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*2.3E+00*		*8.8E-03*	*2.1E-01*	*4.7E-01*		5.8E+00
			Hazard	*2.3E+00*	8.5E+00	*8.8E-03*	*2.1E-01*	*4.7E-01*	1.7E+08	5.8E+00
		Commercial/ Industrial	Carcinogenic	*2.3E+00*		*8.8E-03*	*2.1E-01*	*4.7E-01*		5.8E+00
			Hazard	*2.3E+00*	5.6E+01	*8.8E-03*	*2.1E-01*	*4.7E-01*	1.1E+09	5.8E+00
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			1.3E+00		1.9E+01		
			Hazard		1.2E+01	2.2E+00	2.1E+01	7.2E+01		
		Commercial/ Industrial	Carcinogenic			2.1E+01		3.1E+02		
			Hazard		3.6E+02	6.4E+01	>SOL	2.1E+03		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			5.0E+02		5.4E+03		
			Hazard		>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL		>SOL		
			Hazard		>SOL	>SOL	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	*5.0E-03*		*5.0E-04*	*7.0E-02*	*1.0E-01*		5.0E-02
			Hazard	*5.0E-03*	1.6E+00	*5.0E-04*	*7.0E-02*	*1.0E-01*	1.6E+01	5.0E-02
		Commercial/ Industrial	Carcinogenic	*5.0E-03*		*5.0E-04*	*7.0E-02*	*1.0E-01*		5.0E-02
			Hazard	*5.0E-03*	1.0E+01	*5.0E-04*	*7.0E-02*	*1.0E-01*	1.0E+02	5.0E-02
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			4.1E-02		3.9E-01		6.8E-02
			Hazard	2.0E-01	9.4E+00	7.1E-02	1.2E+00	1.9E+00	3.8E+02	1.9E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Scenario	Type of Risk	Chrysene	Copper	Cresol(-m)	Cresol(-o)	Cresol(-p)	Cyanide	Dibenz(a,h)-anthracene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	2.5E+01						7.4E-01
			Hazard		2.8E+03	2.6E+03	2.6E+03	2.6E+02	3.0E+03	
		Commercial/ Industrial	Carcinogenic	7.9E+01						2.3E+00
			Hazard		5.0E+04	1.7E+04	1.7E+04	1.7E+03	5.5E+04	
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	SAT	*1.2E+00*				1.2E+01	5.7E+01
			Hazard		*1.2E+00*	7.0E+00	7.3E+00	6.5E-01	1.2E+01	
		Commercial/ Industrial	Carcinogenic	SAT	*1.2E+00*				1.2E+01	SAT
			Hazard		*1.2E+00*	4.5E+01	4.7E+01	4.3E+00	1.2E+01	
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	>SOL	*1.3E+00*				2.0E-01	1.6E-04
			Hazard		*1.3E+00*	7.8E-01	7.8E-01	7.8E-02	2.0E-01	
		Commercial/ Industrial	Carcinogenic	>SOL	*1.3E+00*				2.0E-01	7.0E-04
			Hazard		*1.3E+00*	5.1E+00	5.1E+00	5.1E-01	2.0E-01	
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	>SOL						1.4E-05
			Hazard		1.5E+01	6.7E+00	6.4E+00	5.9E-01	7.0E+00	

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Dichloro-ethane (1,1-)	Dichloro-ethane (1,2) (EDC)	Dichloro-ethylene (1,1-)	Dichloro-ethylene (cis 1,2-)	Dichloro-ethane (trans 1,2)	Dimethylbenza-(a)anthracene (7,12)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	4.8E+02	3.9E+01	4.9E+00			
			Hazard	4.9E+03	1.4E+02	4.3E+02	4.8E+02	9.6E+02	1.6E+03
		Commercial/ Industrial	Carcinogenic	1.5E+03	1.2E+02	1.5E+01			
			Hazard	3.1E+04	8.8E+02	2.7E+03	3.0E+03	6.1E+03	1.0E+04
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	1.4E+01	3.0E+00	1.4E-01			
			Hazard	2.2E+02	1.2E+01	4.3E+00	2.3E+01	2.9E+01	
		Commercial/ Industrial	Carcinogenic	2.2E+02	4.7E+01	2.2E+00			
			Hazard	SAT	3.4E+02	1.2E+02	6.7E+02	8.4E+02	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	2.6E+02	5.5E+01	2.5E+00			
			Hazard	SAT	2.6E+02	9.5E+01	5.1E+02	6.4E+02	
		Commercial/ Industrial	Carcinogenic	9.7E+02	2.1E+02	9.6E+00			
			Hazard	SAT	1.5E+03	5.5E+02	SAT	3.7E+03	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	2.0E-02	*1.3E-03*	*4.2E-02*	*2.6E-02*	*6.0E-02*	
			Hazard	2.0E-02	*1.3E-03*	*4.2E-02*	*2.6E-02*	*6.0E-02*	SAT
		Commercial/ Industrial	Carcinogenic	2.0E-02	*1.3E-03*	*4.2E-02*	*2.6E-02*	*6.0E-02*	
			Hazard	2.0E-02	*1.3E-03*	*4.2E-02*	*2.6E-02*	*6.0E-02*	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	6.0E+01	1.1E+01	1.0E+00			
			Hazard	9.4E+02	4.4E+01	3.2E+01	7.5E+01	1.0E+02	
		Commercial/ Industrial	Carcinogenic	9.6E+02	1.7E+02	1.6E+01			
			Hazard	>SOL	1.3E+03	9.2E+02	2.2E+03	3.0E+03	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL	1.8E+03	3.7E+02			
			Hazard	>SOL	8.4E+03	>SOL	>SOL	>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	6.7E+03	1.4E+03			
			Hazard	>SOL	>SOL	>SOL	>SOL	>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	
			Hazard	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	>SOL
		Commercial/ Industrial	Carcinogenic	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	
			Hazard	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	2.1E+00	2.4E-01	1.3E-02			
			Hazard	1.9E+01	7.2E-01	1.2E+00	1.8E+00	3.5E+00	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Dimethyl phenol (2,4)	di-n-Butyl phthalate	di-n-octyl phthalate	Dinitro-toluene (2,4)	Dioxane (1,4)	Ethyl-benzene	Ethylene Dibromide	Flouran-thene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic				9.6E+00	1.0E+02		8.4E-01	
			Hazard	1.0E+03	5.2E+03	1.0E+03			5.1E+03	2.7E+00	2.1E+03
		Commercial/ Industrial	Carcinogenic				3.0E+01	3.2E+02		2.6E+00	
			Hazard	6.7E+03	3.4E+04	6.8E+03			3.3E+04	1.7E+01	1.4E+04
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic				SAT	SAT		4.6E+00	
			Hazard	SAT	SAT	SAT			SAT	1.3E+00	SAT
		Commercial/ Industrial	Carcinogenic				SAT	SAT		7.4E+01	
			Hazard	SAT	SAT	SAT			SAT	3.8E+01	SAT
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic				SAT	SAT		8.4E+01	
			Hazard	SAT	SAT	SAT			SAT	2.8E+01	SAT
		Commercial/ Industrial	Carcinogenic				SAT	SAT		3.2E+02	
			Hazard	SAT	SAT	SAT			SAT	1.6E+02	SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic				2.1E-02	SAT	*2.4E+01*	*2.5E-04*	
			Hazard	6.3E+00	1.2E+07	SAT			*2.4E+01*	*2.5E-04*	SAT
		Commercial/ Industrial	Carcinogenic				8.9E-02	SAT	*2.4E+01*	*2.5E-04*	
			Hazard	4.1E+01	SAT	SAT			*2.4E+01*	*2.5E-04*	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic				>SOL	>SOL		7.0E+00	
			Hazard	>SOL	>SOL	>SOL			>SOL	2.0E+00	>SOL
		Commercial/ Industrial	Carcinogenic				>SOL	>SOL		1.1E+02	
			Hazard	>SOL	>SOL	>SOL			>SOL	5.7E+01	>SOL
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic				>SOL	>SOL		6.8E+02	
			Hazard	>SOL	>SOL	>SOL			>SOL	2.2E+02	>SOL
		Commercial/ Industrial	Carcinogenic				>SOL	>SOL		2.6E+03	
			Hazard	>SOL	>SOL	>SOL			>SOL	1.3E+03	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic				2.2E-03	>SOL	*7.0E-01*	*5.0E-05*	
			Hazard	3.1E-01	1.6E+00	>SOL			*7.0E-01*	*5.0E-05*	>SOL
		Commercial/ Industrial	Carcinogenic				9.2E-03	>SOL	*7.0E-01*	*5.0E-05*	
			Hazard	2.0E+00	1.0E+01	>SOL			*7.0E-01*	*5.0E-05*	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic				6.4E-02	>SOL		5.9E-03	
			Hazard	2.7E+00	7.3E+00	2.1E-03			3.6E+00	1.7E-02	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Fluorene	Indeno (1,2,3-CD) pyrene	Mercury	Methanol	Methyl ethyl ketone	Methylene Chloride	Methyl-napthalene (2-)	MTBE
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic		2.5E+00				2.1E+02		
			Hazard	2.1E+03		5.0E+00	2.4E+04	2.7E+04	3.1E+03	2.1E+03	2.6E+02
		Commercial/ Industrial	Carcinogenic		7.9E+00				6.6E+02		
			Hazard	1.4E+04		3.2E+01	1.6E+05	1.7E+05	2.0E+04	1.3E+04	1.7E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic		SAT				2.2E+01		
			Hazard	SAT		1.3E+01	1.0E+05	1.4E+04	1.3E+03	SAT	8.1E+03
		Commercial/ Industrial	Carcinogenic		SAT				3.5E+02		
			Hazard	SAT			SAT	SAT	SAT	SAT	SAT
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic		SAT				4.1E+02		
			Hazard	SAT		2.8E+02	SAT	SAT	SAT	SAT	SAT
		Commercial/ Industrial	Carcinogenic		SAT				1.6E+03		
			Hazard	SAT		1.6E+03	SAT	SAT	SAT	SAT	SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic		SAT	*6.3E-01*			1.0E-02		*2.7E-02*
			Hazard	SAT		*6.3E-01*	7.5E+00	1.3E+01	1.0E-02	4.9E+02	*2.7E-02*
		Commercial/ Industrial	Carcinogenic		SAT	*6.3E-01*			1.0E-02		*2.7E-02*
			Hazard	SAT		*6.3E-01*	4.9E+01	8.4E+01	1.0E-02	SAT	*2.7E-02*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic		>SOL				1.3E+02		
			Hazard	>SOL		8.4E-01	6.6E+05	6.6E+04	7.5E+03	>SOL	3.0E+04
		Commercial/ Industrial	Carcinogenic		>SOL				2.0E+03		
			Hazard	>SOL		2.4E+01	>SOL	>SOL	>SOL	>SOL	>SOL
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic		>SOL				>SOL		
			Hazard	>SOL		3.1E+02	>SOL	>SOL	>SOL	>SOL	>SOL
		Commercial/ Industrial	Carcinogenic		>SOL				>SOL		
			Hazard	>SOL		1.8E+03	>SOL	>SOL	>SOL	>SOL	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic		>SOL	*2.0E-03*			5.0E-03		*1.3E-02*
			Hazard	6.3E-01		*2.0E-03*	7.8E+00	9.4E+00	5.0E-03	6.3E-01	*1.3E-02*
		Commercial/ Industrial	Carcinogenic		>SOL	*2.0E-03*			5.0E-03		*1.3E-02*
			Hazard	>SOL		*2.0E-03*	5.1E+01	6.1E+01	5.0E-03	4.1E+00	*1.3E-02*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic		>SOL				1.3E+00		
			Hazard	3.1E-01		3.6E-02	2.2E+02	1.5E+02	1.6E+01	6.1E-01	1.5E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Naphthalene	Nickel	Nitro-benzene	PCBs	Phenan-threne	Phenol	Pyrene	Pyridine	Selenium
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic		3.4E+05	5.6E+03	5.0E-01				2.9E+03	
			Hazard	2.1E+03	1.5E+03		1.2E+00	1.6E+04	3.1E+04	1.6E+03		3.7E+02
		Commercial/ Industrial	Carcinogenic		1.3E+06	1.8E+04	1.9E+00				9.3E+03	
			Hazard	1.3E+04	2.7E+04		1.0E+01	1.0E+05	2.0E+05	1.0E+04		6.8E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			SAT	1.1E+03				4.7E+04	
			Hazard	SAT			SAT	SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic			SAT	SAT				7.4E+05	
			Hazard	SAT			SAT	SAT	SAT	SAT		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			SAT	SAT				4.5E+05	
			Hazard	SAT			SAT	SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic			SAT	SAT				SAT	
			Hazard	SAT			SAT	SAT	SAT	SAT		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*3.7E+00*	*4.0E+01*	9.2E+00	*1.4E+01*				3.9E+00	*1.6E+00*
			Hazard	*3.7E+00*	*4.0E+01*		*1.4E+01*	SAT	3.4E+01	SAT		*1.6E+00*
		Commercial/ Industrial	Carcinogenic	*3.7E+00*	*4.0E+01*	3.9E+01	*1.4E+01*				1.7E+01	*1.6E+00*
			Hazard	*3.7E+00*	*4.0E+01*		*1.4E+01*	SAT	2.2E+02	SAT		*1.6E+00*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			>SOL	2.8E-01				5.0E+04	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL	>SOL				8.0E+05	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			>SOL	>SOL				>SOL	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL	>SOL				>SOL	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	*2.0E-02*	*1.0E-01*	1.3E+00	*5.0E-04*				6.7E-01	*5.0E-02*
			Hazard	*2.0E-02*	*1.0E-01*		*5.0E-04*	>SOL	9.4E+00	>SOL		*5.0E-02*
		Commercial/ Industrial	Carcinogenic	*2.0E-02*	*1.0E-01*	5.7E+00	*5.0E-04*				2.9E+00	*5.0E-02*
			Hazard	*2.0E-02*	*1.0E-01*		*5.0E-04*	>SOL	6.1E+01	>SOL		*5.0E-02*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			2.8E+01	1.6E-05				2.6E+01	
			Hazard	1.5E+00	7.9E+00		4.4E-05	>SOL	1.5E+02	>SOL		2.0E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Land Use	Chemical	Benzene	Toluene	Tetrachloroethene (1,1,2,2-)	Tetrachloroethylene (PCE)	Tetraethyl Lead	Toluene	Trichloroethane (1,1,1-)	Trichloroethane (1,1,2-)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic			1.0E+01	5.7E+01				3.8E+01
			Hazard	3.7E+02	1.0E+04	1.3E+03	4.8E+02	5.2E-03	9.0E+03	1.8E+03	1.9E+02
		Commercial/ Industrial	Carcinogenic			3.3E+01	1.8E+02				1.2E+02
			Hazard	6.8E+03	6.4E+04	8.2E+03	3.0E+03	3.4E-02	5.6E+04	1.2E+04	1.2E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			1.2E+01	4.6E+00				6.9E+00
			Hazard		SAT	1.6E+03	1.9E+01		5.7E+02	4.0E+02	5.0E+01
		Commercial/ Industrial	Carcinogenic			1.9E+02	7.3E+01				1.4E+02
			Hazard		SAT	SAT	SAT		SAT	SAT	1.5E+03
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			2.1E+02	8.6E+01				1.6E+02
			Hazard		SAT	SAT	4.2E+02		SAT	SAT	1.1E+03
		Commercial/ Industrial	Carcinogenic			8.0E+02	3.3E+02				6.2E+02
			Hazard		SAT	SAT	SAT		SAT	SAT	SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*5.1E+00*	*7.2E+00*	9.5E-03	*7.8E-02*	*6.9E+00*	*2.7E+00*	*2.3E+00*	*2.8E-02*
			Hazard	*5.1E+00*	*7.2E+00*	9.5E-03	*7.8E-02*	*6.9E+00*	*2.7E+00*	*2.3E+00*	*2.8E-02*
		Commercial/ Industrial	Carcinogenic	*5.1E+00*	*7.2E+00*	9.5E-03	*7.8E-02*	*6.9E+00*	*2.7E+00*	*2.3E+00*	*2.8E-02*
			Hazard	*5.1E+00*	*7.2E+00*	9.5E-03	*7.8E-02*	*6.9E+00*	*2.7E+00*	*2.3E+00*	*2.8E-02*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			9.2E+00	1.2E+01				1.4E+01
			Hazard		>SOL	1.3E+03	5.1E+01		>SOL	>SOL	8.0E+01
		Commercial/ Industrial	Carcinogenic			1.5E+02	2.0E+02				2.3E+02
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	2.3E+03
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			8.1E+02	>SOL				2.0E+03
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	>SOL
		Commercial/ Industrial	Carcinogenic			>SOL	>SOL				>SOL
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
			Hazard	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
		Commercial/ Industrial	Carcinogenic	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
			Hazard	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			4.5E-02	6.0E-02				1.8E-01
			Hazard	2.1E+00	9.3E+00	4.9E+00	5.3E-01	6.7E-06	1.1E+01	4.3E+00	7.8E-01

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 7. Oakland Tier 2 SSTLs for Sandy Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Trichloroethylene (TCE)	Vanadium	Vinyl Chloride	Xylenes	Zinc
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	1.9E+02		5.0E+00		
			Hazard	2.9E+02	5.2E+02		5.6E+04	2.2E+04
		Commercial/ Industrial	Carcinogenic	5.9E+02		1.6E+01		
			Hazard	1.8E+03	9.5E+03		3.1E+05	4.1E+05
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	1.7E+01		1.8E-02		
			Hazard	2.0E+01			SAT	
		Commercial/ Industrial	Carcinogenic	2.6E+02		2.8E-01		
			Hazard	5.7E+02			SAT	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	3.1E+02		3.3E-01		
			Hazard	4.3E+02			SAT	
		Commercial/ Industrial	Carcinogenic	1.2E+03		1.2E+00		
			Hazard	2.5E+03			SAT	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*8.2E-02*		*1.6E-03*	*4.0E+01*	
			Hazard	*8.2E-02*	6.7E+02	*1.6E-03*	*4.0E+01*	1.8E+03
		Commercial/ Industrial	Carcinogenic	*8.2E-02*		*1.6E-03*	*4.0E+01*	
			Hazard	*8.2E-02*	4.4E+03	*1.6E-03*	*4.0E+01*	1.2E+04
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	2.9E+01		2.8E-01		
			Hazard	3.4E+01			>SOL	
		Commercial/ Industrial	Carcinogenic	4.6E+02		4.4E+00		
			Hazard	9.9E+02			>SOL	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL		1.0E+02		
			Hazard	>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL		3.9E+02		
			Hazard	>SOL			>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	*5.0E-03*		*5.0E-04*	*1.8E+00*	
			Hazard	*5.0E-03*	1.1E-01	*5.0E-04*	*1.8E+00*	4.7E+00
		Commercial/ Industrial	Carcinogenic	*5.0E-03*		*5.0E-04*	*1.8E+00*	
			Hazard	*5.0E-03*	7.2E-01	*5.0E-04*	*1.8E+00*	3.1E+01
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	4.6E-02		2.6E-02		
			Hazard	7.2E-02	2.8E+00		6.6E+01	1.2E+02

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Arsenic	Barium	Benz(a)-anthracene	Benzene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic					2.6E+00		1.7E+00	1.9E+01
			Hazard	2.3E+03	2.3E+03	3.7E+03	1.2E+04	1.8E+01	5.0E+03		6.3E+01
		Commercial/ Industrial	Carcinogenic					9.5E+00		4.3E+00	4.9E+01
			Hazard	1.1E+04	1.1E+04	1.8E+04	5.6E+04	1.5E+02	7.1E+04		3.0E+02
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic							SAT	1.9E+00
			Hazard	SAT	SAT	6.3E+03	SAT				6.2E+00
		Commercial/ Industrial	Carcinogenic							SAT	3.0E+01
			Hazard	SAT	SAT	1.8E+05	SAT				1.8E+02
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic							SAT	1.6E+02
			Hazard	SAT	SAT	1.2E+05	SAT				6.5E+02
		Commercial/ Industrial	Carcinogenic							SAT	6.2E+02
			Hazard	SAT	SAT	SAT	SAT				SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic					*4.4E+00*	*1.3E+02*	1.4E+01	*4.5E-03*
			Hazard	4.0E+02	2.7E+02	1.5E+00	SAT	*4.4E+00*	*1.3E+02*		*4.5E-03*
		Commercial/ Industrial	Carcinogenic					*4.4E+00*	*1.3E+02*	5.8E+01	*4.5E-03*
			Hazard	SAT	SAT	9.7E+00	SAT	*4.4E+00*	*1.3E+02*		*4.5E-03*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic							>SOL	5.6E+00
			Hazard	>SOL	>SOL	2.1E+04	>SOL				1.9E+01
		Commercial/ Industrial	Carcinogenic							>SOL	8.9E+01
			Hazard	>SOL	>SOL	6.2E+05	>SOL				5.4E+02
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic							>SOL	>SOL
			Hazard	>SOL	>SOL	9.5E+05	>SOL				>SOL
		Commercial/ Industrial	Carcinogenic							>SOL	>SOL
			Hazard	>SOL	>SOL	>SOL	>SOL				>SOL
	Ingestion of Groundwater	Residential	Carcinogenic					*5.0E-02*	*1.0E+00*	5.6E-04	*1.0E-03*
			Hazard	9.4E-01	9.4E-01	1.6E+00	>SOL	*5.0E-02*	*1.0E+00*		*1.0E-03*
		Commercial/ Industrial	Carcinogenic					*5.0E-02*	*1.0E+00*	2.4E-03	*1.0E-03*
			Hazard	>SOL	>SOL	1.0E+01	>SOL	*5.0E-02*	*1.0E+00*		*1.0E-03*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic					2.0E-02		1.6E-04	6.3E-02
			Hazard	1.1E+00	1.7E+00	4.2E+01	>SOL	1.2E-01	2.8E+01		1.8E-01

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Beryllium	Bis (2-ethylhexyl) phthalate	Butyl benzyl phthalate
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	1.7E-01	1.7E+00		1.7E+00	4.5E+04	2.4E+02	
			Hazard			1.6E+02		3.6E+02	7.8E+02	7.8E+03
		Commercial/ Industrial	Carcinogenic	4.3E-01	4.3E+00		4.3E+00	1.7E+05	6.2E+02	
			Hazard			7.4E+02		5.1E+03	3.7E+03	3.7E+04
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
		Commercial/ Industrial	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
		Commercial/ Industrial	Carcinogenic	SAT	SAT		SAT		SAT	
			Hazard			SAT			SAT	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*1.2E+01*	SAT		SAT	9.6E+00	7.3E+04	
			Hazard	*1.2E+01*		SAT		9.6E+00	SAT	SAT
		Commercial/ Industrial	Carcinogenic	*1.2E+01*	SAT		SAT	9.6E+00	SAT	
			Hazard	*1.2E+01*		SAT		9.6E+00	SAT	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	>SOL		>SOL		>SOL	
			Hazard			>SOL			>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	*2.0E-04*	5.6E-04		5.6E-04	4.0E-03	8.0E-02	
			Hazard	*2.0E-04*		>SOL		4.0E-03	3.1E-01	>SOL
		Commercial/ Industrial	Carcinogenic	*2.0E-04*	>SOL		>SOL	4.0E-03	>SOL	
			Hazard	*2.0E-04*		>SOL		4.0E-03	>SOL	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	1.1E-05	1.1E-04		1.2E-04		>SOL	
			Hazard			>SOL		2.0E+00	>SOL	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Cadmium	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroform	Chromium (III)	Chromium (VI)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	2.1E+04		1.2E+01		6.2E+01		1.2E+01
			Hazard	3.6E+01	1.4E+03	2.6E+01	6.6E+02	3.7E+02	7.1E+04	3.6E+02
		Commercial/ Industrial	Carcinogenic	7.9E+04		3.3E+01		1.6E+02		6.6E+01
			Hazard	5.1E+02	6.5E+03	1.2E+02	3.1E+03	1.8E+03	1.0E+06	5.1E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			6.7E-01		9.3E+00		
			Hazard		2.9E+00	1.1E+00	1.9E+00	3.5E+01		
		Commercial/ Industrial	Carcinogenic			1.1E+01		1.5E+02		
			Hazard		8.4E+01	3.2E+01	5.5E+01	1.0E+03		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			6.1E+01		8.1E+02		
			Hazard		3.1E+02	1.2E+02	2.1E+02	3.6E+03		
		Commercial/ Industrial	Carcinogenic			2.3E+02		3.1E+03		
			Hazard		SAT	7.0E+02	SAT	SAT		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*1.1E+00*		*5.9E-03*	*1.6E-01*	*3.4E-01*		2.9E+00
			Hazard	*1.1E+00*	6.0E+00	*5.9E-03*	*1.6E-01*	*3.4E-01*	8.5E+07	2.9E+00
		Commercial/ Industrial	Carcinogenic	*1.1E+00*		*5.9E-03*	*1.6E-01*	*3.4E-01*		2.9E+00
			Hazard	*1.1E+00*	3.9E+01	*5.9E-03*	*1.6E-01*	*3.4E-01*	5.6E+08	2.9E+00
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			3.3E+00		3.1E+01		
			Hazard		2.6E+01	5.5E+00	5.5E+01	1.2E+02		
		Commercial/ Industrial	Carcinogenic			5.2E+01		5.0E+02		
			Hazard		7.5E+02	1.6E+02	>SOL	3.4E+03		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			>SOL		>SOL		
			Hazard		>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL		>SOL		
			Hazard		>SOL	>SOL	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	*5.0E-03*		*5.0E-04*	*7.0E-02*	*1.0E-01*		5.0E-02
			Hazard	*5.0E-03*	1.6E+00	*5.0E-04*	*7.0E-02*	*1.0E-01*	1.6E+01	5.0E-02
		Commercial/ Industrial	Carcinogenic	*5.0E-03*		*5.0E-04*	*7.0E-02*	*1.0E-01*		5.0E-02
			Hazard	*5.0E-03*	1.0E+01	*5.0E-04*	*7.0E-02*	*1.0E-01*	1.0E+02	5.0E-02
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			4.1E-02		3.9E-01		6.8E-02
			Hazard	2.0E-01	9.4E+00	7.1E-02	1.2E+00	1.9E+00	3.8E+02	1.9E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Chrysene	Copper	Cresol(m)	Cresol(o)	Cresol(p)	Cyanide	Dibenz(a,h)-anthracene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	1.7E+01						4.9E-01
			Hazard		2.6E+03	1.9E+03	1.9E+03	1.9E+02	2.8E+03	
		Commercial/ Industrial	Carcinogenic	4.3E+01						1.3E+00
			Hazard		3.8E+04	9.2E+03	9.2E+03	9.2E+02	4.1E+04	
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	5.1E+04		
		Commercial/ Industrial	Carcinogenic	SAT						SAT
			Hazard			SAT	SAT	SAT		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	SAT	*1.2E+00*				6.2E+00	3.8E+01
			Hazard		*1.2E+00*	4.8E+00	5.0E+00	4.6E-01	6.2E+00	
		Commercial/ Industrial	Carcinogenic	SAT	*1.2E+00*				6.2E+00	1.6E+02
			Hazard		*1.2E+00*	3.2E+01	3.3E+01	3.0E+00	6.2E+00	
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic	>SOL						>SOL
			Hazard			>SOL	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	>SOL	*1.3E+00*				2.0E-01	1.6E-04
			Hazard		*1.3E+00*	7.8E-01	7.8E-01	7.8E-02	2.0E-01	
		Commercial/ Industrial	Carcinogenic	>SOL	*1.3E+00*				2.0E-01	7.0E-04
			Hazard		*1.3E+00*	5.1E+00	5.1E+00	5.1E-01	2.0E-01	
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	>SOL						1.4E-05
			Hazard		1.5E+01	6.7E+00	6.4E+00	5.9E-01	7.0E+00	

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Dichloroethene (1,1-)	Dichloroethane (1,2-) (EDC)	Dichloroethylene (1,1-)	Dichloroethylene (cis 1,2-)	Dichloroethene (trans 1,2)	Dimethylbenza-(a)anthracene (7,12)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	3.3E+02	2.7E+01	3.3E+00			
			Hazard	3.8E+03	1.1E+02	3.3E+02	3.7E+02	7.4E+02	1.2E+03
		Commercial/ Industrial	Carcinogenic	8.7E+02	7.1E+01	8.5E+00			
			Hazard	1.8E+04	5.1E+02	1.6E+03	1.8E+03	3.5E+03	5.6E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	2.4E+01	5.4E+00	2.3E-01			
			Hazard	3.8E+02	2.1E+01	7.2E+00	4.0E+01	4.9E+01	
		Commercial/ Industrial	Carcinogenic	3.9E+02	8.6E+01	3.6E+00			
			Hazard	SAT	6.2E+02	2.1E+02	1.2E+03	1.4E+03	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	2.1E+03	4.2E+02	2.1E+01			
			Hazard	SAT	2.0E+03	7.8E+02	SAT	5.2E+03	
		Commercial/ Industrial	Carcinogenic	SAT	1.6E+03	7.8E+01			
			Hazard	SAT	SAT	SAT	SAT	SAT	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	1.4E-02	*9.9E-04*	*2.8E-02*	*1.9E-02*	*4.2E-02*	
			Hazard	1.4E-02	*9.9E-04*	*2.8E-02*	*1.9E-02*	*4.2E-02*	SAT
		Commercial/ Industrial	Carcinogenic	1.4E-02	*9.9E-04*	*2.8E-02*	*1.9E-02*	*4.2E-02*	
			Hazard	1.4E-02	*9.9E-04*	*2.8E-02*	*1.9E-02*	*4.2E-02*	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	9.8E+01	1.5E+01	2.3E+00			
			Hazard	1.5E+03	6.0E+01	7.5E+01	1.2E+02	1.8E+02	
		Commercial/ Industrial	Carcinogenic	1.6E+03	2.4E+02	3.7E+01			
			Hazard	>SOL	1.7E+03	2.2E+03	3.4E+03	5.1E+03	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL	3.5E+03	9.4E+02			
			Hazard	>SOL	>SOL	>SOL	>SOL	>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL	>SOL	>SOL			
			Hazard	>SOL	>SOL	>SOL	>SOL	>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	
			Hazard	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	>SOL
		Commercial/ Industrial	Carcinogenic	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	
			Hazard	5.0E-03	*5.0E-04*	*6.0E-03*	*6.0E-03*	*1.0E-02*	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	2.1E+00	2.4E-01	1.3E-02			
			Hazard	1.9E+01	7.2E-01	1.2E+00	1.8E+00	3.5E+00	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Dimethyl phenol (2,4)	di-n-Butyl phthalate	di-n-octyl phthalate	Dinitro-toluene (2,4)	Dioxane (1,4)	Ethyl-benzene	Ethylene Dibromide	Flouran-thene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic				6.3E+00	7.0E+01		5.5E-01	
			Hazard	7.7E+02	3.9E+03	7.8E+02			3.9E+03	2.2E+00	1.6E+03
		Commercial/ Industrial	Carcinogenic				1.7E+01	1.8E+02		1.4E+00	
			Hazard	3.7E+03	1.9E+04	3.7E+03			1.8E+04	1.0E+01	7.4E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic				SAT	SAT		7.5E+00	
			Hazard	SAT	SAT	SAT			SAT	2.1E+00	SAT
		Commercial/ Industrial	Carcinogenic				SAT	SAT		1.2E+02	
			Hazard	SAT	SAT	SAT			SAT	6.1E+01	SAT
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic				SAT	SAT		4.5E+02	
			Hazard	SAT	SAT	SAT			SAT	1.5E+02	SAT
		Commercial/ Industrial	Carcinogenic				SAT	SAT		1.7E+03	
			Hazard	SAT	SAT	SAT			SAT	8.7E+02	SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic				1.5E-02	SAT	*1.6E+01*	*1.8E-04*	
			Hazard	4.3E+00	7.9E+06	SAT			*1.6E+01*	*1.8E-04*	SAT
		Commercial/ Industrial	Carcinogenic				6.2E-02	SAT	*1.6E+01*	*1.8E-04*	
			Hazard	2.8E+01	SAT	SAT			*1.6E+01*	*1.8E-04*	SAT
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic				>SOL	>SOL		8.5E+00	
			Hazard	>SOL	>SOL	>SOL			>SOL	2.4E+00	>SOL
		Commercial/ Industrial	Carcinogenic				>SOL	>SOL		1.4E+02	
			Hazard	>SOL	>SOL	>SOL			>SOL	6.9E+01	>SOL
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic				>SOL	>SOL		1.3E+03	
			Hazard	>SOL	>SOL	>SOL			>SOL	4.3E+02	>SOL
		Commercial/ Industrial	Carcinogenic				>SOL	>SOL		>SOL	
			Hazard	>SOL	>SOL	>SOL			>SOL	2.5E+03	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic				2.2E-03	>SOL	*7.0E-01*	*5.0E-05*	
			Hazard	3.1E-01	1.6E+00	>SOL			*7.0E-01*	*5.0E-05*	>SOL
		Commercial/ Industrial	Carcinogenic				9.2E-03	>SOL	*7.0E-01*	*5.0E-05*	
			Hazard	2.0E+00	1.0E+01	>SOL			*7.0E-01*	*5.0E-05*	>SOL
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic				6.4E-02	>SOL		5.9E-03	
			Hazard	2.7E+00	7.3E+00	2.1E-03			3.6E+00	1.7E-02	>SOL

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Fluorene	Indeno-(1,2,3-CD)-pyrene	Mercury	Methanol	Methyl ethyl ketone	Methylene Chloride	Methyl-napthalene (2-)	MTBE
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic		1.7E+00				1.4E+02		
			Hazard	1.6E+03		3.9E+00	1.9E+04	2.2E+04	2.3E+03	1.6E+03	2.0E+02
		Commercial/ Industrial	Carcinogenic		4.3E+00				3.7E+02		
			Hazard	7.4E+03		1.8E+01	8.9E+04	1.0E+05	1.1E+04	7.4E+03	9.3E+02
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic		SAT				4.2E+01		
			Hazard	SAT		1.5E+01	1.9E+05	2.4E+04	2.5E+03	SAT	1.4E+04
		Commercial/ Industrial	Carcinogenic		SAT				6.7E+02		
			Hazard	SAT			SAT	SAT	SAT	SAT	SAT
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic		SAT				3.5E+03		
			Hazard	SAT		1.6E+03	SAT	SAT	SAT	SAT	SAT
		Commercial/ Industrial	Carcinogenic		SAT				SAT		
			Hazard	SAT		9.4E+03	SAT	SAT	SAT	SAT	SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic		SAT	*3.2E-01*			8.2E-03		*2.1E-02*
			Hazard	5.2E+02		*3.2E-01*	7.1E+00	1.1E+01	8.2E-03	3.2E+02	*2.1E-02*
		Commercial/ Industrial	Carcinogenic		SAT	*3.2E-01*			8.2E-03		*2.1E-02*
			Hazard	SAT		*3.2E-01*	4.7E+01	7.3E+01	8.2E-03	2.1E+03	*2.1E-02*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic		>SOL				1.9E+02		
			Hazard	>SOL		1.4E+00	6.4E+05	6.5E+04	1.1E+04	>SOL	3.6E+04
		Commercial/ Industrial	Carcinogenic		>SOL				3.0E+03		
			Hazard	>SOL		4.1E+01	>SOL	>SOL	>SOL	>SOL	>SOL
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic		>SOL				>SOL		
			Hazard	>SOL		6.0E+02	>SOL	>SOL	>SOL	>SOL	>SOL
		Commercial/ Industrial	Carcinogenic		>SOL				>SOL		
			Hazard	>SOL		3.5E+03	>SOL	>SOL	>SOL	>SOL	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic		>SOL	*2.0E-03*			5.0E-03		*1.3E-02*
			Hazard	6.3E-01		*2.0E-03*	7.8E+00	9.4E+00	5.0E-03	6.3E-01	*1.3E-02*
		Commercial/ Industrial	Carcinogenic		>SOL	*2.0E-03*			5.0E-03		*1.3E-02*
			Hazard	>SOL		*2.0E-03*	5.1E+01	6.1E+01	5.0E-03	4.1E+00	*1.3E-02*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic		>SOL				1.3E+00		
			Hazard	3.1E-01		3.6E-02	2.2E+02	1.5E+02	1.6E+01	6.1E-01	1.5E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Naphthalene	Nickel	Nitro-benzene	PCBs	Phenan-threne	Phenol	Pyrene	Pyridine	Selenium
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic		3.4E+05	3.7E+03	3.6E-01				2.0E+03	
			Hazard	1.6E+03	1.4E+03		9.8E-01	1.2E+04	2.3E+04	1.2E+03		3.6E+02
		Commercial/ Industrial	Carcinogenic		1.3E+06	9.9E+03	1.1E+00				5.1E+03	
			Hazard	7.4E+03	2.0E+04		5.8E+00	5.6E+04	1.1E+05	5.6E+03		5.1E+03
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			SAT	1.6E+03				6.6E+04	
			Hazard	SAT			SAT	SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic			SAT	SAT				1.1E+06	
			Hazard	SAT			SAT	SAT	SAT	SAT		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			SAT	SAT				3.9E+05	
			Hazard	SAT			SAT	SAT	SAT	SAT		
		Commercial/ Industrial	Carcinogenic			SAT	SAT				SAT	
			Hazard	SAT			SAT	SAT	SAT	SAT		
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*2.4E+00*	*2.0E+01*	6.5E+00	*9.4E+00*				2.8E+00	*8.0E-01*
			Hazard	*2.4E+00*	*2.0E+01*		*9.4E+00*	SAT	2.5E+01	SAT		*8.0E-01*
		Commercial/ Industrial	Carcinogenic	*2.4E+00*	*2.0E+01*	2.8E+01	*9.4E+00*				1.2E+01	*8.0E-01*
			Hazard	*2.4E+00*	*2.0E+01*		*9.4E+00*	SAT	1.6E+02	SAT		*8.0E-01*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			>SOL	3.2E-01				4.9E+04	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL	>SOL				7.8E+05	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			>SOL	>SOL				6.6E+05	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
		Commercial/ Industrial	Carcinogenic			>SOL	>SOL				>SOL	
			Hazard	>SOL			>SOL	>SOL	>SOL	>SOL		
	Ingestion of Groundwater	Residential	Carcinogenic	*2.0E-02*	*1.0E-01*	1.3E+00	*5.0E-04*				6.7E-01	*5.0E-02*
			Hazard	*2.0E-02*	*1.0E-01*		*5.0E-04*	>SOL	9.4E+00	>SOL		*5.0E-02*
		Commercial/ Industrial	Carcinogenic	*2.0E-02*	*1.0E-01*	5.7E+00	*5.0E-04*				2.9E+00	*5.0E-02*
			Hazard	*2.0E-02*	*1.0E-01*		*5.0E-04*	>SOL	6.1E+01	>SOL		*5.0E-02*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			2.8E+01	1.6E-05				2.6E+01	
			Hazard	1.5E+00	7.9E+00		4.4E-05	>SOL	1.5E+02	>SOL		2.0E+00

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Silver	Styrene	Tetrachloroethane (1,1,2,2-)	Tetrachloroethylene (PCE)	Tetraethyl Lead	Toluene	Trichloroethane (1,1,1-)	Trichloroethane (1,1,2-)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic			7.2E+00	3.6E+01				2.7E+01
			Hazard	3.6E+02	7.7E+03	1.0E+03	3.7E+02	3.9E-03	7.1E+03	1.4E+03	1.5E+02
		Commercial/ Industrial	Carcinogenic			1.9E+01	1.0E+02				7.0E+01
			Hazard	5.1E+03	3.7E+04	4.7E+03	1.8E+03	1.9E-02	3.4E+04	6.5E+03	7.2E+02
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			1.8E+01	7.6E+00				1.5E+01
			Hazard		SAT	2.5E+03	3.1E+01		9.3E+02	6.6E+02	8.4E+01
		Commercial/ Industrial	Carcinogenic			2.9E+02	1.2E+02				2.4E+02
			Hazard		SAT	SAT	SAT		SAT	SAT	2.4E+03
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			1.0E+03	6.9E+02				1.1E+03
			Hazard		SAT	SAT	SAT		SAT	SAT	SAT
		Commercial/ Industrial	Carcinogenic			3.9E+03	SAT				4.2E+03
			Hazard		SAT	SAT	SAT		SAT	SAT	SAT
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*2.6E+00*	*4.8E+00*	6.6E-03	*5.2E-02*	*4.6E+00*	*1.8E+00*	*1.5E+00*	*2.0E-02*
			Hazard	*2.6E+00*	*4.8E+00*	6.6E-03	*5.2E-02*	*4.6E+00*	*1.8E+00*	*1.5E+00*	*2.0E-02*
		Commercial/ Industrial	Carcinogenic	*2.6E+00*	*4.8E+00*	6.6E-03	*5.2E-02*	*4.6E+00*	*1.8E+00*	*1.5E+00*	*2.0E-02*
			Hazard	*2.6E+00*	*4.8E+00*	6.6E-03	*5.2E-02*	*4.6E+00*	*1.8E+00*	*1.5E+00*	*2.0E-02*
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic			1.1E+01	2.6E+01				1.9E+01
			Hazard		>SOL	1.5E+03	1.1E+02		>SOL	>SOL	1.1E+02
		Commercial/ Industrial	Carcinogenic			1.7E+02	>SOL				3.0E+02
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	3.1E+03
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic			1.5E+03	>SOL				4.0E+03
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	>SOL
		Commercial/ Industrial	Carcinogenic			>SOL	>SOL				>SOL
			Hazard		>SOL	>SOL	>SOL		>SOL	>SOL	>SOL
	Ingestion of Groundwater	Residential	Carcinogenic	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
			Hazard	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
		Commercial/ Industrial	Carcinogenic	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
			Hazard	*1.0E-01*	*1.0E-01*	1.0E-03	*5.0E-03*	*1.5E-02*	*1.5E-01*	*2.0E-01*	*5.0E-03*
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic			4.5E-02	6.0E-02				1.8E-01
			Hazard	2.1E+00	9.3E+00	4.9E+00	5.3E-01	6.7E-06	1.1E+01	4.3E+00	7.8E-01

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

Table 8. Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Trichloroethylene (TCE)	Vanadium	Vinyl Chloride	Xylenes	Zinc
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	1.3E+02		3.5E+00		
			Hazard	2.2E+02	5.0E+02		5.3E+04	2.1E+04
		Commercial/ Industrial	Carcinogenic	3.3E+02		9.1E+00		
			Hazard	1.1E+03	7.2E+03		2.6E+05	3.1E+05
Subsurface Soil [mg/kg]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	2.7E+01		3.0E-02		
			Hazard	3.2E+01			SAT	
		Commercial/ Industrial	Carcinogenic	4.4E+02		4.8E-01		
			Hazard	9.3E+02			SAT	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	2.5E+03		2.7E+00		
			Hazard	3.4E+03			SAT	
		Commercial/ Industrial	Carcinogenic	SAT		1.0E+01		
			Hazard	SAT			SAT	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	*5.5E-02*		*1.1E-03*	*2.7E+01*	
			Hazard	*5.5E-02*	3.3E+02	*1.1E-03*	*2.7E+01*	8.9E+02
		Commercial/ Industrial	Carcinogenic	*5.5E-02*		*1.1E-03*	*2.7E+01*	
			Hazard	*5.5E-02*	2.2E+03	*1.1E-03*	*2.7E+01*	5.8E+03
Groundwater [mg/l]	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	5.4E+01		6.6E-01		
			Hazard	6.3E+01			>SOL	
		Commercial/ Industrial	Carcinogenic	8.6E+02		1.0E+01		
			Hazard	>SOL			>SOL	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>SOL		2.7E+02		
			Hazard	>SOL			>SOL	
		Commercial/ Industrial	Carcinogenic	>SOL		1.0E+03		
			Hazard	>SOL			>SOL	
	Ingestion of Groundwater	Residential	Carcinogenic	*5.0E-03*		*5.0E-04*	*1.8E+00*	
			Hazard	*5.0E-03*	1.1E-01	*5.0E-04*	*1.8E+00*	4.7E+00
		Commercial/ Industrial	Carcinogenic	*5.0E-03*		*5.0E-04*	*1.8E+00*	
			Hazard	*5.0E-03*	7.2E-01	*5.0E-04*	*1.8E+00*	3.1E+01
Water Used for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	4.6E-02		2.6E-02		
			Hazard	7.2E-02	2.8E+00		6.6E+01	1.2E+02

*Italicized concentrations based on California MCLs

SAT = RBSL exceeds saturated soil concentration of chemical

>SOL = RBSL exceeds solubility of chemical in water

APPENDIX E

HISTORICAL GROUNDWATER LEVELS AND FIELD PARAMETERS

APPENDIX E
HISTORICAL GROUNDWATER LEVELS AND FIELD PARAMETERS
SEARS RETAIL STORE NO. 1058
OAKLAND, CALIFORNIA

			GROUNDWATER LEVELS				GROUNDWATER SAMPLING FIELD PARAMETERS						
Monitoring Well No.	Date Collected	Notes	Product Thickness (feet)	Depth to Groundwater (feet bgs)	Casing Elevation (MSL)	Groundwater Elevation (MSL)	Temp. (Celcius)	pH (Units)	Cond (µS/cm)	Turbidity (NTU)	O.R.P. (mV)	Dissolved Oxygen (mg/L)	Ferrous Iron (mg/L)
FOMW-1	6/8/2000	1,2	0.00	9.59	27.81	18.22	18.3	6.72	659	NA	13.0	0.28	NA
	10/10/2000	SP	0.01	9.91	27.81	17.90	NA	NA	NA	NA	NA	NA	NA
	12/15/2000	SP	0.01	9.44	27.81	18.37	NA	NA	NA	NA	NA	NA	NA
	3/27/2001	SP	0.01	9.00	27.81	18.81	NA	NA	NA	NA	NA	NA	NA
	6/22/2001	SP	NA	NA	27.81	NA	NA	NA	NA	NA	NA	NA	NA
	9/26/2001	SP	0.01	10.85	27.81	16.96	NA	NA	NA	NA	NA	NA	NA
	12/7/2001	3	NA	NA	27.81	NA	NA	NA	NA	NA	NA	NA	NA
	3/6/2002	SP,6	0.01	8.70	26.21	17.51	NA	NA	NA	NA	NA	NA	NA
	6/6/2002	SP,7	--	8.10	26.21	18.11	NA	NA	NA	NA	NA	NA	NA
	9/6/2002	SP,7	NA	9.00	26.21	17.21	NA	NA	NA	NA	NA	NA	NA
	12/11/2002	SP,7	0.01	8.30	26.21	17.91	NA	NA	NA	NA	NA	NA	NA
	3/21/2005	SP,7	0.23	8.83	26.21	17.38	NA	NA	NA	NA	NA	NA	NA
FOMW-2	6/8/2000	--	0.00	11.14	26.65	15.51	14.7	7.00	673	NA	10.0	2.92	NA
	10/10/2000	--	0.00	12.34	26.65	14.31	15.8	7.58	420	NA	0.0	NA	NA
	12/15/2000	--	0.00	11.05	26.65	15.60	14.0	7.09	1210	NA	NA	0.15	NA
	3/27/2001	--	0.00	10.91	26.65	15.74	15.4	7.62	305	NA	92.0	0.61	NA
	6/22/2001	--	0.00	11.30	26.65	15.35	15.3	5.33	340	NA	0.2	0.25	NA
	9/26/2001	3	NA	NA	26.65	NA	NA	NA	NA	NA	NA	NA	NA
	12/7/2001	4	NA	NA	26.65	NA	NA	NA	NA	NA	NA	NA	NA
	3/6/2002	4,5	NA	11.25	26.65	15.40	NA	NA	NA	NA	NA	NA	NA
	6/6/2002	4,5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/6/2002	4,5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/11/2002	3,4,5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/21/2005	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-3	6/8/2000	2	0.00	10.48	26.80	16.32	15.0	6.87	689	NA	23.0	0.22	NA
	10/10/2000	--	0.00	11.15	26.80	15.65	15.6	7.66	430	NA	39.0	NA	NA
	12/15/2000	--	0.00	10.36	26.80	16.44	14.1	7.31	1400	NA	45.0	0.15	NA
	3/27/2001	--	0.00	10.12	26.80	16.68	NA	NA	NA	NA	NA	NA	NA
	6/22/2001	--	0.00	10.65	26.80	16.15	15.7	5.11	330	NA	0.1	0.50	NA
	9/26/2001	--	0.00	11.74	26.80	15.06	17.5	6.81	528	NA	23.8	0.78	NA
	12/7/2001	--	0.00	9.59	26.80	17.21	16.8	6.71	432	228.9	34.2	0.18	0.32
	3/6/2002	6	0.00	10.59	26.70	16.11	16.3	6.76	471	NA	45.6	0.3	0.11
	6/6/2002	--	0.00	10.78	26.70	15.92	15.91	6.63	538	2.1	NA	NA	NA
	9/6/2002	--	0.00	11.19	26.70	15.51	18.75	6.56	495	77.7	NA	NA	0.0
	12/11/2002	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/21/2005	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-4	3/6/2002	5,6	0.00	10.08	26.20	16.12	15.90	6.75	376	NA	78.2	0.18	0.47
	6/6/2002	6	0.00	10.23	26.20	15.97	15.91	6.63	538	18.1	NA	NA	NA
	9/6/2002	--	0.00	10.58	26.20	15.62	19.88	6.47	454	1099.9	NA	NA	0.0
	12/11/2002	--	0.00	10.46	26.20	15.74	19.36	6.26	249	31.2	115.2	0.12	0.0
	3/21/2005	--	0.00	9.44	26.20	16.76	18.99	6.45	401	4.1	90.5	0.0	NA
FOMW-5	3/6/2002	5,6	0.00	12.91	26.23	13.32	16.63	6.62	386	NA	77.9	0.09	0.3
	6/6/2002	6	0.00	12.60	26.23	13.63	16.54	6.02	464	43.5	NA	NA	NA
	9/6/2002	--	0.00	12.55	26.23	13.68	18.62	6.38	409	71.4	NA	NA	0.0
	12/11/2002	--	0.00	12.65	26.23	13.58	18.87	6.21	179	127.8	58.6	0.31	0.0
	3/21/2005	--	0.00	12.43	26.23	13.80	19.25	6.35	432	34.8	106.0	0.0	NA

Notes: MSL - Mean Sea Level
BGS - Below ground surface
Groundwater Elevation reference to MSL
Groundwater Elevation = Top of casing elevation - Depth to Water
1 Sheen observed on water surface.
2 Petroleum odor in groundwater
3 Well covered by recent construction. Could not be accessed.
4 Well casing damaged
5 Reference point for DTW measurement has not been surveyed
6 Well resurveyed by Mariscal and Associates on May 13, 2002
7 Product too viscous to obtain accurate measurement
8 Well damaged/inaccessible
SP - Separate phase product in well
NA - Not analyzed/Not available.

µS/cm - microSiemens per centimeter
mV - millivolt
mg/L - milligrams per liter

APPENDIX F

HISTORICAL SUMMARY OF GROUNDWATER MONITORING RESULTS

APPENDIX F
HISTORICAL SUMMARY OF GROUNDWATER MONITORING RESULTS
SEARS RETAIL STORE NO. 1058
OAKLAND, CALIFORNIA

Monitoring Well No.	Sample Date	Notes	LABORATORY ANALYTICAL RESULTS									PHYSICAL PARAMETERS						
			TPH by 8015M				Volatile Organics by GC/MS 8021A/8260A											
			TPHg (µg/L)	TPHd (µg/L)	TPHo (µg/L)	TPHss (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity (mg/L)	Dissolved Methane (µg/ML)	Hydrocarbon Degraders (CFU/ML)	Heterotrophic Plate Count (CFU/ML)
FOMW-1	6/8/2000	--	NA	< 50	J 1200	NA	< 0.5	< 0.5	< 0.5	< 1	< 5	NA	NA	360	230	< 0.01	390	4,000
	10/10/2000	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/15/2000	SP	NA	260	< 50	NA	< 0.5	< 0.5	< 0.5	< 1	< 5	NA	NA	NA	NA	NA	NA	NA
	12/15/2000	1	NA	370	< 50	NA	< 0.5	< 0.5	< 0.5	< 1	< 5	NA	NA	NA	NA	NA	NA	NA
	3/27/2001	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/22/2001	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/26/2001	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/7/2001	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/6/2002	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/6/2002	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/6/2002	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/11/2002	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/21/2005	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-2	6/8/2000	--	NA	< 50	< 50	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	NA	NA	250	150	< 0.01	1	110
	10/10/2000	--	NA	< 50	< 50	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	NA	NA	260	140	< 0.01	170	1600
	12/15/2000	--	NA	< 50	< 50	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	7.8	30	210	190	< 0.01	550	1000
	3/27/2001	--	NA	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	8.4	47	290	130	< 0.01	30	170
	3/27/2001	1	NA	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	9.1	47	320	130	< 0.01	40	70
	6/22/2001	--	NA	< 250	< 250	NA	< 1	< 1	< 1	< 1	< 5.0	NA	NA	220	110	< 0.01	4,000	400,000
	9/26/2001	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/7/2001	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/6/2002	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/6/2002	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/6/2002	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/11/2002	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/21/2005	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-3	6/8/2000	--	NA	< 50	J 1200	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	NA	NA	330	190	< 0.01	440	110,000
	6/8/2000	1	NA	< 50	J 1100	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	NA	NA	330	180	< 0.01	50	8,000
	10/10/2000	--	NA	230	< 50	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	NA	NA	300	170	< 0.01	800	4,000
	12/15/2000	--	NA	100	< 50	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	3.2	30	290	190	< 0.01	1,200	1,800
	3/27/2001	--	NA	170	NA	NA	< 0.5	< 0.5	< 0.5	< 1	< 5.0	3.3	51	420	130	< 0.01	400	300
	6/22/2001	--	NA	260	< 250	NA	< 1	< 1	< 1	< 1	< 5.0	NA	NA	250	150	< 0.01	4,000	350,000
	9/26/2001	--	NA	95	< 500	NA	0.72	1	< 0.5	< 0.5	< 5.0	5.0	55	NA	150	0.011	30	170
	12/7/2001	--	NA	110	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	7.1	66	NA	130	NA	260	1,000
	3/6/2002	--	< 50	53	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	6.8	84	NA	140	NA	--	--
	6/6/2002	--	< 50	302 J	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	9.08	39.3	NA	160	NA	200	400
	9/6/2002	--	< 50	< 500	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	1.54	26.9	NA	165	NA	20	100
	12/11/2002	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX F
HISTORICAL SUMMARY OF GROUNDWATER MONITORING RESULTS
SEARS RETAIL STORE NO. 1058
OAKLAND, CALIFORNIA

Monitoring Well No.	Sample Date	Notes	LABORATORY ANALYTICAL RESULTS									PHYSICAL PARAMETERS						
			TPH by 8015M				Volatile Organics by GC/MS 8021A/8260A											
			TPHg (µg/L)	TPHd (µg/L)	TPHo (µg/L)	TPHss (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity (mg/L)	Dissolved Methane (µg/ML)	Hydrocarbon Degraders (CFU/ML)	Heterotrophic Plate Count (CFU/ML)
	3/21/2005	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-4	3/6/2002	--	< 50	< 50	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	9.7	53	--	100	--	--	--
	3/6/2002	1	< 50	52	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	9.7	53	--	110	--	--	--
	6/6/2002	--	< 50	120 J	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	12.7	25.6	NA	146	NA	1,000	4,000
	6/6/2002	1	< 50	< 500	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	--	--	NA	--	NA	--	--
	9/6/2002	--	< 50	< 500	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	7.64	21.2	NA	144	NA	40	5,000
	9/6/2002	1	< 50	< 500	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	7.48	11.8	NA	126	NA	--	--
	12/11/2002	--	< 50	< 500	< 2000	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	17.3	35.1	NA	125	NA	10	400
	12/11/2002	1	< 50	< 500	< 2000	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	NA	NA	NA	NA	NA	NA	NA
	3/21/2005		< 50	< 500	NA	< 2000	< 1	< 1	< 1	< 2	< 2	NA	NA	NA	NA	NA	NA	NA
FOMW-5	3/6/2002	--	< 50	< 50	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	15	41	--	120	--	--	--
	6/6/2002	--	< 50	< 500	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	11.4	25.9	NA	130	NA	200	1,600
	9/6/2002	--	< 50	< 500	< 500	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	7.48	11.8	NA	124	NA	30	100
	12/11/2002	--	< 50	< 500	< 2000	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	14.4	29.6	NA	121	NA	10	600
	3/21/2005	--	< 50	< 500	NA	< 2000	< 1	< 1	< 1	< 2	< 2	NA	NA	NA	NA	NA	NA	NA

Notes: TPH - Total petroleum hydrocarbons
B T E X - Benzene, Toluene, Ethylbenzene, Total Xylenes
MTBE - Methyl tertiary-butyl ether
TDS = Toal Dissolved Soilds
1: Duplicate sample
2: Well covered by recent constuction. Could not be accessed.
3: Well casing is damaged
4: Well damaged/inaccessible
J - Bunker-C detections were qualitated against the diesel standard and flagged as estimated concentrations
< - Analyte not detected above indicated method detection limit
NA: Not analyzed/Not available.
SP: Separate Phase Product

TPHg = Total Petroleum Hydrocarbons as gasoline range hydrocarbons by EPA Method 8015 (modified)
TPHd = Total Petroleum Hydrocarbonsas diesel range hydrocarbons by EPA Method 8015 (modified).
TRPo = Total Petroleum Hydrocarbons as oil range by EPA Method 8015 (modified)
TRPo = Total Petroleum Hydrocarbons as stoddard solvent range by EPA Method 8015 (modified)
µg/L - micrograms per liter
mg/L - milligrams per liter
(CFU/ML)- colony forming unit per millliliter

Southland Technical Services, Inc.
Environmental Laboratories

03-30-2005

Mr. Scott Rowlands
URS Corporation
2020 E. First Street, Suite 400
Santa Ana, CA 92705

Project: 25363708/Sears Oakland 1058A
Project Site: 2633 Telegraph Ave., Oakland, CA
Sample Date: 03-21-2005
Lab Job No.: UR503130

Dear Mr. Rowlands:

Enclosed please find the analytical report for the sample(s) received by STS Environmental Laboratories on 03-24-2005 and analyzed by the following EPA methods:

EPA 8015M (Gasoline)
EPA 8015M (Diesel)
EPA 8015M (Stoddard Solvent)
EPA 8260B (VOCs by GC/MS)

All analyses have met the QA/QC criteria of this laboratory.

The sample(s) arrived in good conditions (i.e., chilled at 4°C, intact) and with a chain of custody record attached.

STS Environmental Laboratory is certified by CA DHS (Certificate Number 1986). Thank you for giving us the opportunity to serve you. Please feel free to call me at (323) 888-0728 if our laboratory can be of further service to you.

Sincerely,

Roger Wang, Ph. D.
Laboratory Director

Enclosures

This cover letter is an integral part of this analytical report.

7801 Telegraph Road Suite L, Montebello, CA 90640 Phone: (323) 888-0728 Fax: (323) 888-1509

Southland Technical Services, Inc.
Environmental Laboratories

03-30-2005

Client:	URS Corporation	Lab Job No.:	UR503130
Project:	25363708/Sears Oakland 1058A		
Project Site:	2633 Telegraph Ave., Oakland, CA	Date Sampled	03-21-2005
Matrix:	Water	Date Received:	03-24-2005
Batch No.:	AMC25-GW1/for Gasoline	Date Analyzed:	03-25-2005
Batch No.:	EF05-DW1/for Diesel & SS	Date Analyzed:	03-24-2005

EPA 8015M (Gasoline, Diesel & Stoddard Solvent)
Reporting Unit: µg/L (ppb)

Date of Analysis for TPH (Gasoline)			03-25-05	03-25-05	03-25-05	03-25-05	03-25-05
Preparation Method for TPH (Gasoline)			5030	5030	5030	5030	5030
Date of Analysis for TPH (D & SS)			03-24-03	03-24-03	03-24-03	03-24-03	03-24-03
Date of Extraction for TPH (D & SS)			03-24-03	03-24-03	03-24-03	03-24-03	03-24-03
Preparation Method for TPH (D & SS)			3510C	3510C	3510C	3510C	3510C
LAB SAMPLE I.D.				UR503130-1	UR503130-2	UR503130-3	UR503130-4
CLIENT SAMPLE I.D.				FOMW-4	FOMW-5	DUP-1	EB-1
Analyte		**MDL**	**MB**				
TPH-Gasoline		50	ND	ND	ND	ND	ND
TPH-Diesel		500	ND	ND	ND	ND	NA
TPH-Stoddard Solvent		2000	ND	ND	ND	ND	NA
Surrogate	Spk Conc.	ACP%	MB %RC	%RC	%RC	%RC	%RC
BFB (for TPH-Gasoline)	20 ppb	70-130	93	81	89	86	93
Diocthyl Phthalate (for TPH-D & O)	5 ppm	70-130	102	88	94	90	

SPK Conc.=Spiking Concentration; ACP%=Acceptable Range of Percent; %RC=% Recovery
MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected(Below MDL); NA=Not Analyzed

Checked & approved by:

Roger Wang, Ph.D.
Laboratory Director.

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Southland Technical Services, Inc.
Environmental Laboratories

Client: URS Corporation
Project: 25363708/Sears Oakland 1058A

Lab Job No.: UR503130
Matrix: Water

Date Reported: 03-30-2005
Date Sampled: 03-21-2005

EPA 8260B (VOCs by GC/MS, Page 1 of 2) Reporting Unit: µg/L(ppb)

Date ANALYZED		03-25-05	03-25-05	03-25-05	03-25-05	03-25-05		
PREPARATION METHOD		5030	5030	5030	5030	5030		
DILUTION FACTOR		1	1	1	1	1		
LAB SAMPLE I.D.			UR503130-1	UR503130-2	UR503130-3	UR503130-4		
CLIENT SAMPLE I.D.			FOMW-4	FOMW-5	DUP-1	EB-1		
COMPOUND	MDL	MB						
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND		
Chloromethane	5	ND	ND	ND	ND	ND		
Vinyl Chloride	2	ND	ND	ND	ND	ND		
Bromomethane	5	ND	ND	ND	ND	ND		
Chloroethane	5	ND	ND	ND	ND	ND		
Trichlorofluoromethane	5	ND	ND	ND	ND	ND		
1,1-Dichloroethene	5	ND	ND	ND	ND	ND		
Iodomethane	5	ND	ND	ND	ND	ND		
Methylene Chloride	5	ND	ND	ND	ND	ND		
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND		
1,1-Dichloroethane	5	ND	ND	ND	ND	ND		
2,2-Dichloropropane	5	ND	ND	ND	ND	ND		
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND		
Bromochloromethane	5	ND	ND	ND	ND	ND		
Chloroform	5	ND	ND	ND	ND	ND		
1,2-Dichloroethane	5	ND	ND	ND	ND	ND		
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND		
Carbon tetrachloride	5	ND	ND	ND	ND	ND		
1,1-Dichloropropene	5	ND	ND	ND	ND	ND		
Benzene	1	ND	ND	ND	ND	ND		
Trichloroethene	2.5	ND	ND	ND	ND	ND		
1,2-Dichloropropane	5	ND	ND	ND	ND	ND		
Bromodichloromethane	5	ND	ND	ND	ND	ND		
Dibromomethane	5	ND	ND	ND	ND	ND		
Trans-1,3-Dichloropropene	5	ND	ND	ND	ND	ND		
cis-1,3-Dichloropropene	5	ND	ND	ND	ND	ND		
1,1,2-Trichloroethane	5	ND	ND	ND	ND	ND		
1,3-Dichloropropane	5	ND	ND	ND	ND	ND		
Dibromochloromethane	5	ND	ND	ND	ND	ND		
2-Chloroethylvinyl ether	5	ND	ND	ND	ND	ND		
Bromoform	5	ND	ND	ND	ND	ND		
Isopropylbenzene	5	ND	ND	ND	ND	ND		
Bromobenzene	5	ND	ND	ND	ND	ND		
Toluene	1	ND	ND	ND	ND	ND		
Tetrachloroethene	2.5	ND	ND	ND	ND	ND		
1,2-Dibromoethane(EDB)	5	ND	ND	ND	ND	ND		

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Southland Technical Services, Inc.
Environmental Laboratories

Client: URS Corporation
Project: 25363708/Sears Oakland 1058A

Lab Job No.: UR503130
Matrix: Water

Date Reported: 03-30-2005
Date Sampled: 03-21-2005

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: ppb

COMPOUND	MDL	MB	FOMW-4	FOMW-5	DUP-1	EB-1		
Chlorobenzene	5	ND	ND	ND	ND	ND		
1,1,1,2-Tetrachloroethane	5	ND	ND	ND	ND	ND		
Ethylbenzene	1	ND	ND	ND	ND	ND		
Total Xylenes	2	ND	ND	ND	ND	ND		
Styrene	5	ND	ND	ND	ND	ND		
1,1,2,2-Tetrachloroethane	5	ND	ND	ND	ND	ND		
1,2,3-Trichloropropane	5	ND	ND	ND	ND	ND		
n-Propylbenzene	5	ND	ND	ND	ND	ND		
2-Chlorotoluene	5	ND	ND	ND	ND	ND		
4-Chlorotoluene	5	ND	ND	ND	ND	ND		
1,3,5-Trimethylbenzene	5	ND	ND	ND	ND	ND		
tert-Butylbenzene	5	ND	ND	ND	ND	ND		
1,2,4-Trimethylbenzene	5	ND	ND	ND	ND	ND		
Sec-Butylbenzene	5	ND	ND	ND	ND	ND		
1,3-Dichlorobenzene	5	ND	ND	ND	ND	ND		
p-Isopropyltoluene	5	ND	ND	ND	ND	ND		
1,4-Dichlorobenzene	5	ND	ND	ND	ND	ND		
1,2-Dichlorobenzene	5	ND	ND	ND	ND	ND		
n-Butylbenzene	5	ND	ND	ND	ND	ND		
1,2,4-Trichlorobenzene	5	ND	ND	ND	ND	ND		
1,2-Dibromo-3-Chloropropane	5	ND	ND	ND	ND	ND		
Hexachlorobutadiene	5	ND	ND	ND	ND	ND		
Naphthalene	5	ND	ND	ND	ND	ND		
1,2,3-Trichlorobenzene	5	ND	ND	ND	ND	ND		
Acetone	25	ND	ND	ND	ND	ND		
2-Butanone (MEK)	25	ND	ND	ND	ND	ND		
Carbon disulfide	25	ND	ND	ND	ND	ND		
4-Methyl-2-pentanone	25	ND	ND	ND	ND	ND		
2-Hexanone	25	ND	ND	ND	ND	ND		
Vinyl Acetate	25	ND	ND	ND	ND	ND		
MTBE	2	ND	ND	ND	ND	ND		
ETBE	2	ND	ND	ND	ND	ND		
DIPE	2	ND	ND	ND	ND	ND		
TAME	2	ND	ND	ND	ND	ND		
t-Butyl Alcohol	10	ND	ND	ND	ND	ND		
SURROGATE	**SPK Conc.**	**%RC**	**%RC**	**%RC**	**%RC**	**%RC**		**Accept Limit%**
Dibromofluoro-methane	25	89	93	95	99	95		79-126
Toluene-d8	25	101	96	95	96	93		79-121
Bromofluoro-benzene	25	84	73	80	78	88		71-131

MB=Method Blank; MDL=Method Detection Limit; ND=Not Detected (below DF × MDL).

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Southland Technical Services, Inc.
Environmental Laboratories

03-30-2005

EPA 8015M (TPH)
Batch QA/QC Report

Client: URS Corporation
Project: 25363708/Sears Oakland 1058A
Matrix: Water
Batch No: AMC25-GW1

Lab Job No.: UR503130
LLab Sample ID: UR503101-1
Date Analyzed: 03-25-2005

I. MS/MSD Report
Unit: ppb

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-Gasoline	ND	1000	1,150	1,070	115.0	107.0	7.2	30	70-130

II. LCS Result
Unit: ppb

Analyte	LCS Report Value	True Value	Rec.%	Accept. Limit
TPH-Gasoline	1,170	1,000	117.0	80-120

ND: Not Detected (at the specified limit)

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Southland Technical Services, Inc.
Environmental Laboratories

03-30-2005

EPA 8015M (TPH)
Batch QA/QC Report

Client:	URS Corporation	Lab Job No.:	UR503130
Project:	25363708/Sears Oakland 1058A		
Matrix:	Water	Lab Sample ID:	UR503130-4
Batch No.:	EC24-DW1	Date Analyzed:	03-24-2005

I. MS/MSD Report
Unit: ppm

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-d	ND	20	25.2	24.4	126.0	122.0	3.2	30	70-130

II. LCS Result
Unit: ppm

Analyte	LCS Report Value	True Value	Rec.%	%Rec Accept. Limit
TPH-d	21.1	20	105.5	80-120

ND: Not Detected (at the specified limit).

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Southland Technical Services, Inc.
Environmental Laboratories

03-30-2005

EPA 8260B
Batch QA/QC Report

Client: URS Corporation
Project: 25363708/Sears Oakland 1058A
Matrix: Water
Batch No: 0325-VOAW

Lab Job No.: UR503130
Lab Sample ID: UR503101-1
Date Analyzed: 03-25-2005

I. MS/MSD Report
Unit: ppb

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
1,1-Dichloroethene	ND	20	20.0	19.3	100.0	96.5	3.6	30	70-130
Benzene	ND	20	18.0	17.1	90.0	85.5	5.1	30	70-130
Trichloro-ethene	ND	20	16.0	15.0	80.0	75.0	6.5	30	70-130
Toluene	ND	20	17.0	15.8	85.0	79.0	7.3	30	70-130
Chlorobenzene	ND	20	16.1	15.3	80.5	76.5	5.1	30	70-130

II. LCS Result
Unit: ppb

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
1,1-Dichloroethene	22.9	20.0	114.5	80-120
Benzene	24.0	20.0	120.0	80-120
Trichloro-ethene	20.1	20.0	100.5	80-120
Toluene	21.5	20.0	107.5	80-120
Chlorobenzene	20.1	20.0	100.5	80-120

ND: Not Detected.

7801 Telegraph Road Suite L, Montebello, CA 90640 Phone: (323) 888-0728 Fax: (323) 888-1509

URS CORPORATION
2020 East First Street, Suite 400
Santa Ana, CA 92705
(714) 835-6886
FAX (714) 667-7147

CHAIN OF CUSTODY RECORD

Date: 3/21/05
Page 1 of 1

☐ Data Requested in GISKey Format

UR503130

Lab Name: STS Labs	URS Project/PO Number: 25363708
Client Name/Project Name/Location: Sears Oakland 1058A	GeoTracker Information:
URS Project Manager: Scott Rowlands	EDF Reporting: Y N Global ID:
Sampler Name and Signature: Joe Lulas	COELT Log Number:

Requested Analyses:

	Sample Name:	Sample Date:	Sample Time:	Preserved:	Matrix:	Container Type:	# of Cont.:	TPHd, TPHss (silica gel cleanup)	TPHg	VOCs	Naphthalene										HOLD	Special Instructions:
1	FOMW-5	3/24/05	1257	Y N HCL	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA	6	X	X	X	X											UR503130-2
2	Dup-1	3/24/05	1300	Y N HCL	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA	6	X	X	X	X											-3
3	FOMW-4	3/24/05	1510	Y N HCL	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA	8	X	X	X	X											-1
4	EB-1	3/24/05	1500	Y N HCL	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA	3		X	X												-4
5				Y N	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA																
6				Y N	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA																
7				Y N	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA																
8				Y N	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA																
9				Y N	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA																
10				Y N	S L G	Acetate SS. Brass Jar Encore ___ml Amb. Plas. Glass VOA																

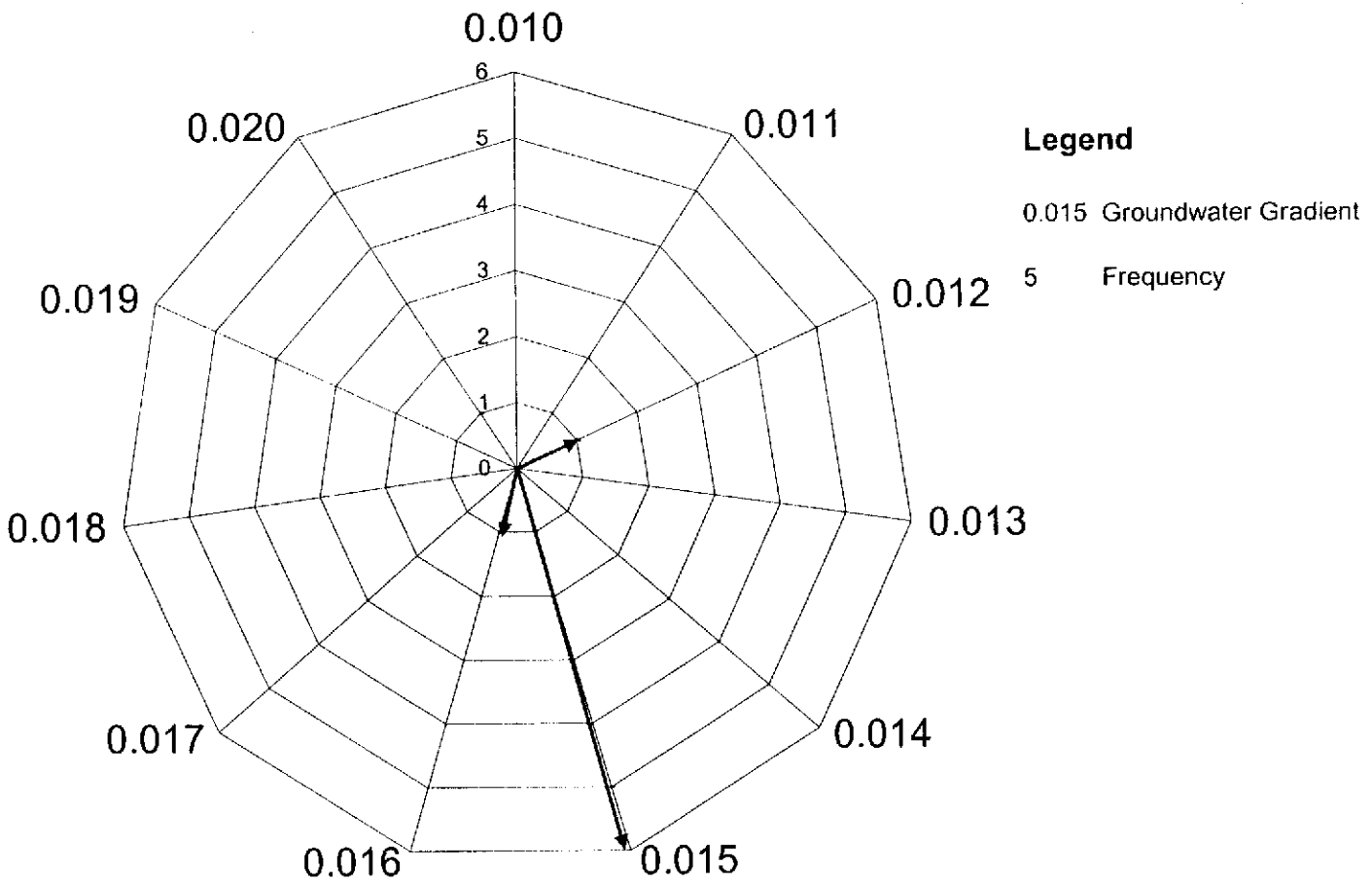
Relinquished by: [signature]	Date: 3/24/05	Received By: Steve	Date/Time: 3/24/05 11:30 AM	Turnaround Time: (Check) Same Day: ___ 72 Hour: ___	Lab Use Only Cooler Temperature*: 4°C *Record upon arrival
Relinquished by:	Date:	Received By:	Date/Time:	24 Hour: ___ 5 Day: ___	
Relinquished by:	Date:	Received By:	Date/Time:	48 Hour: ___ Standard: ✓	URS

S=Solid L=Liquid G=Gas White Copy in Final Report, Yellow to File, Pink to URS at Dropoff

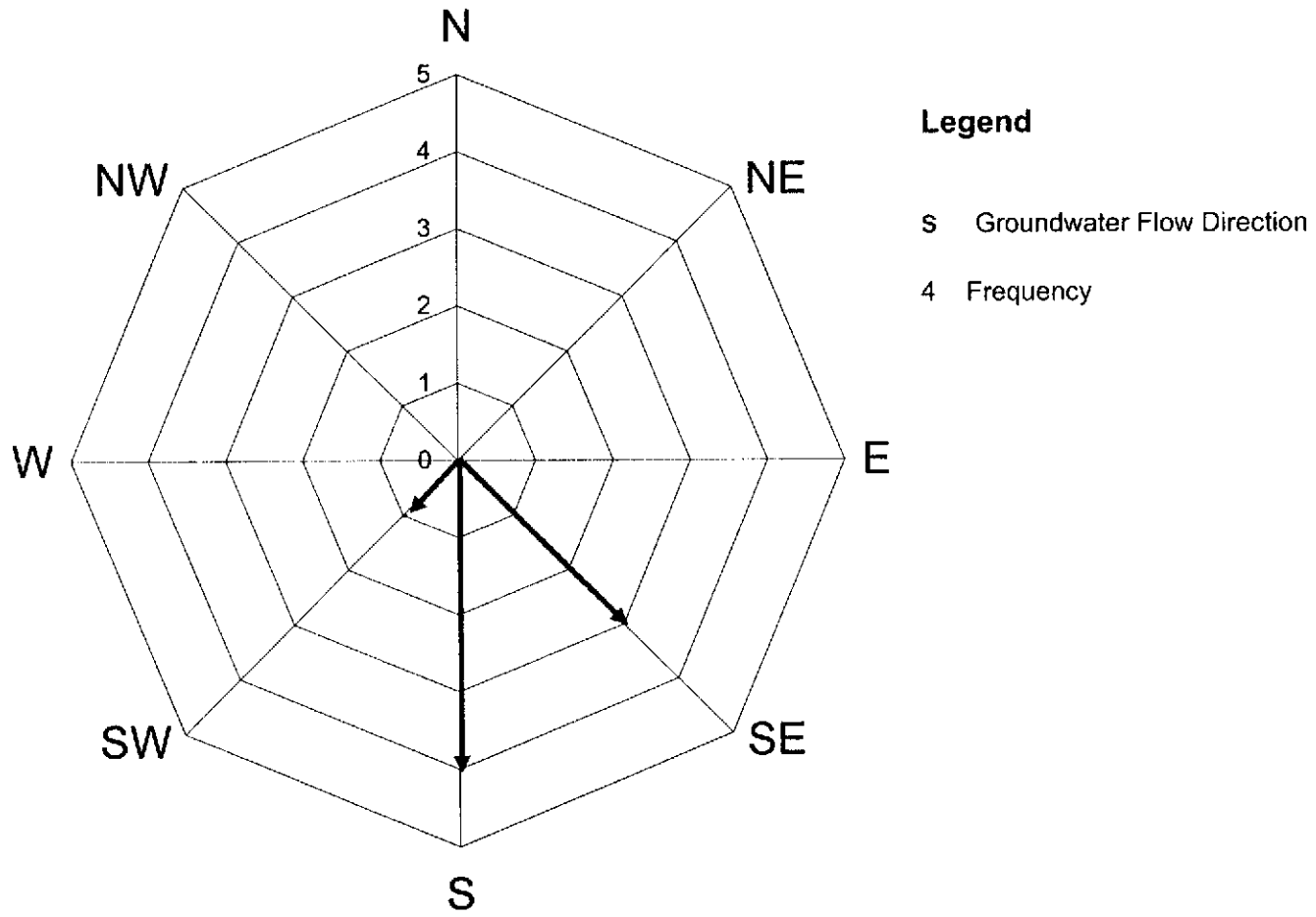
APPENDIX H

ROSE DIAGRAMS FOR HISTORICAL GROUNDWATER GRADIENT AND FLOW DIRECTION

Appendix H
Historic Hydraulic Gradient Diagram
Sears Auto Center #1058A
2633 Telegraph Avenue, Oakland, CA
December 15, 2000 - March 21, 2005



Appendix H
Historic Hydraulic Flow Direction Diagram
Sears Auto Center #1058A
2633 Telegraph Avenue, Oakland, CA
December 15, 2000 - March 21, 2005



APPENDIX I

URS DATA VALIDATION REPORT

Level III Data Validation Summary

PROJECT: Sears Oakland 1058
LABORATORY: Southland Technical Services, Inc. (STS)
MATRIX: Water
LAB PROJECT #: UR402084
SAMPLES: See table below

Field ID	QC Designations	Lab ID	TPH-Gasoline	TPH-Diesel, TPH-Oil	VOCs (including Fuel Oxygenates)
TB-1	Trip blank	UR402084-12	X		X
MW-1		UR402084-1	X	X	X
MW-5		UR402084-5	X	X	X
MW-2		UR402084-2	X	X	X
MW-4		UR402084-4	X	X	X
MW-8		UR402084-8	X	X	X
MW-7		UR402084-7	X	X	X
MW-6		UR402084-6	X	X	X
MW-9		UR402084-9	X	X	X
MW-3		UR402084-3	X	X	X
EW-1		UR402084-10	X	X	X
DUP-1	Field duplicate of EW-1	UR402084-11	X	X	X
EB-1	Equipment blank	UR402084-13	X		X

Date Sampled: 2/11/04
TPH-Gasoline= Total petroleum hydrocarbon – gasoline range (C_4-C_{12}), TPH-Diesel= Total petroleum hydrocarbon – diesel range (C_{13}-C_{23})
TPH-Oil= Total petroleum hydrocarbon – oil range (C_{24}-C_{40}) VOCs = Volatile organic compounds
Fuel Oxygenates = t-butyl alcohol (TBA), t-amyl methyl ether (TAME), di - isopropyl ether (DIPE), ethyl-t-butyl ether (ETBE), Methyl tertiary butyl ether (MTBE).
STS is certified by California Department of Health Services, Environmental Laboratory Accreditation Program (ELAP Certificate Number 1986).

DATA REVIEW MATRIX

QC Parameter	TPH-Gasoline EPA5030/8015M	TPH-Diesel, and TPH -Oil EPA3510C/8015M	VOCs EPA5030/8260B
Chain-of-custody (COC)	✓	✓	✓
Sample Receipt	✓	✓	✓
Holding Times	✓	✓	✓
Method Blank	✓	✓	✓
Surrogate Recovery	✓	✓	✓
Laboratory Control Sample	✓	✓	✓
Matrix Spike	✓(1)	(2)	✓(1)
Duplicate or Spike Duplicate	✓(1)	(2)	✓(1)
Field Duplicate	✓	✓	✓
Trip Blank	✓	NA	✓
Equipment Blank	✓	NA	✓

✓ = Quality control evaluation criteria met NA = Not Applicable or not analyzed

Notes:

1. MS/MSD was conducted on sample MW-1. The results were within acceptance criterion.
2. MS/MSD was conducted on non-site related sample matrix; therefore, the MS/MSD results obtained may not be fully representative of the accuracy and precision of the analysis on the site-specific sample matrix.

Summary: Based on this limited validation covering the QC parameters listed in the table above, these data are considered to be useable for meeting project objectives without qualification. However, the data user must evaluate the ultimate usability of the data based on the reporting limits obtained. The table below lists the detection limits obtained for undiluted samples.

Analyte	Detection Limits Obtained
TPH-Diesel	500
TPH-Oil	2000
TPH-Gasoline	50
VOCs	1 to 25
Ethanol	500
MTBE	2
TBA	10
Other Oxygenates	2

Aqueous units are microgram per Liter (µg /L).

Samples did not require dilution for the requested analyses.