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Alameda County
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BAYROCK OAKS, LLC

Alameda County Environmental Health Care Services
Local Oversight Program
1131 Harbor Way Parkway, Suite 250
Alameda, California 94502-6577

Date: August 31, 2009

Your Reference: RO2733

Attn. Mr. Steven Plunkett

SUBJECT: **Corrective Action Report - Oak Walk Redevelopment Site, Emeryville, California**
and
Geotechnical Engineering Inspection Report - Oak Walk Redevelopment Site, Emeryville, California

Dear Mr. Plunkett:

Copies of the *Corrective Action Report - Oak Walk Redevelopment Site, Emeryville California,* prepared by our consultants, The San Joaquin Company Inc. (**SJC**), and the *Geotechnical Engineering Inspection Report- Oak Walk Redevelopment Site, Emeryville California,* also prepared by SJC, have been electronically submitted to the ACEH website.

With respect to the Corrective Action Report and to the Geotechnical Engineering Inspection Report, I state the following:

I declare, under penalty of perjury, that the information and recommendations contained in the reports cited above are true and correct to the best of my knowledge.

If you have any technical questions about the documents please call Dr. Dai Watkins at (510) 336-9118. For administrative questions please call me at (510) 594-8811 Ext. 2.

Sincerely,

Marilyn Ponte
Bay Rock Residential, LLC

cc: Dr. Dai Watkins, The San Joaquin Company Inc.

1300 CLAY STREET, SUITE 620, OAKLAND, CA 94612 PH. 510-873-8880 FAX 510-873-8285

THE SAN JOAQUIN COMPANY INC.
1120 HOLLYWOOD AVENUE, SUITE 3, OAKLAND, CALIFORNIA 94602

REMEDIATION REPORT

Oak Walk Redevelopment Site
Emeryville, California

for

Bay Rock Oaks, LLC

VOLUME I of IV

August 2009

Project No.: 0004.086

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PROFESSIONAL CERTIFICATION AND LIMITATIONS

This report was prepared under the direction of the engineer whose seal and signature appear below. The work was performed in accordance with generally accepted standards of engineering practice based on information available to us at the time of its preparation and within the limits of the scope of work directed by the client. No other representation, express or implied, and no warranty or guarantee is included or intended as to professional opinions, recommendations, or field or laboratory data provided.

REGISTERED PROFESSIONAL ENGINEER
D. J. WATKINS
No. 28602
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

D. J. Watkins
08/24/09.

D. J. Watkins, Ph.D., P.E.
Civil Engineer
The San Joaquin Company Inc.

1.0 INTRODUCTION

This remediation report was prepared by The San Joaquin Company Inc. (**SJC**) of Oakland, California for the Oak Walk redevelopment site in the city of Emeryville, California. The site location is shown on Figure 1. Plate 1 is an aerial photograph of the subject property and nearby properties as they were on April 19, 2003. Figure 2 is a site plan showing the property with the structures and infrastructure present prior to its redevelopment, which was initiated in 2007. Figure 3 is a site plan of the subject property as it has been redeveloped for mixed residential and commercial use.

Soil and groundwater beneath that property has been affected by the release of fuel hydrocarbons and industrial solvents the sources of which were underground storage tanks formerly located at several off- and on-site locations. The Corrective Action Plan (The San Joaquin Company, Inc. 2006a,b) on which the remediation work was based was developed in response to regulatory direction issued by the Alameda County Department of Environmental Health (**ACEH**) (Alameda County Environmental Health Care Services 2006, 2005a, 2005b). The ACEH approved the Corrective Action Plan on December 1, 2006 (Alameda County Environmental Health Care Services 2006). The ACEH assigned the case number RO2733 to the property.

On June 30, 2007, Bay Rock Oaks, LLC (**Bay Rock Oaks**) of Oakland California, a California Limited Liability Company, purchased the property within the boundary shown on Figure 2 from the Oaks Club, a California Limited Partnership (**Oaks Club**). Subsequently, on March 14, 2008, a small parcel near the intersection of 40th and Adeline Streets was transferred from the ownership of Bay Rock Oaks to the City of Emeryville's Redevelopment Agency (**ERDA)** and integrated with adjacent land to the east to form the property now known as 4001 Adeline Street, as shown on Figure 3.

SJC prepared this remediation report for Bay Rock Oaks.

1.1 Report Structure

This report is contained in four volumes. This document is Volume I. It presents a history of the site, a description of its environmental condition prior to remediation, and details of the remediation work undertaken, including records of field observations, results of laboratory analyses, conclusions reached based on an engineering analysis of those findings and a summary of the post-remediation activities required to complete the environmental management program defined by the Corrective Action Plan developed for the site.

Volumes II and III contain copies of the laboratory Certificates of Analysis for samples recovered during the period August 9 - September 24, 2007 and September 24, 2007 - February 10, 2009, respectively. Volume IV contains copies of all Waste Manifests generated during the remediation work.

1.2 Site North

As is shown on Figures 2 and 3, true north at the Oak Walk Site is slightly to the west of the center line of Adeline Street, which runs along the eastern side of the city block on which the Oak Walk property is located. However, to simplify discussion, in this report we have established a “Site North” that parallels the alignment of San Pablo Avenue, which runs along the western side of the property. Unless otherwise stated, all compass directions used in this text should be interpreted in the context of that directional construct.

1.3 Site History

Ohlone Indians were the principal inhabitants of the eastern shore of San Francisco Bay when, in 1820, the neighborhood of the subject property, like most of present-day Alameda County, was awarded by Spain to Luis Maria Peralta. The land grant specified that Peralta promote European settlement of the area, which the Spaniards called Encinal, the "grove of evergreen oaks,” and which Peralta called Rancho San Antonio. By 1842, new settlers had established full-scale logging operations in the oak groves and redwood forests of the East Bay and the Ohlones and most of their culture had been obliterated by European diseases and settler hostility.

In the late 1800s, Atchison, Topeka and Santa Fe (**AT&SF**) Railroad tracks were constructed to the east of the subject property along the center of Adeline Street on a north-northeast to south-southwest alignment, but, where the intersection of Adeline and 40th Street is now located, the line curved to the west toward San Pablo Avenue before crossing that street and continuing westward into the industrial areas that were, at that time, beginning to develop in the city of Emeryville. The area that is today the site of the Oak Walk redevelopment was occupied by residences, each associated with areas of open land, outbuildings and stables.

By 1911, residential sites that were formerly adjacent to the AT&SF Railroad line had become areas of open land on what is today the 40th Street frontage of the Oak Walk Site. Stores and “saloons” had been constructed along the northern portion of the San Pablo Avenue frontage of the subject property and additional residences had been constructed that fronted onto 41st Street.

With the early 20th century growth of population in the East Bay, development of industries accelerated in the one-square mile city of Emeryville. The AT&SF Railroad transported materials and workers to the industrial areas to the west of San Pablo Avenue along the eastern shore of San Francisco Bay. There were no rail yards or locomotive maintenance shops to the east of that thoroughfare. None of the environmental problems associated with such facilities have been discovered on any of the properties adjacent to the Oak Walk Site.

Industry in many Emeryville neighborhoods expanded rapidly during the 1939 to 1945 World War (World War II) but that development had little effect on the property included within the Oak Walk Site. However, wholesale storage and warehousing facilities were developed on the previously open lands to the south and north of the AT&SF Railroad line between Adeline and San Pablo Avenue and an automobile service station, which in its last years of existence was known as Celis' Alliance Service Station, was constructed along the eastern side of San Pablo Avenue. A wholesale plumbing supply business occupied the building to the east of that service station. A tire sales and service business that included a gasoline and oil dispensing station was located on the southeast corner of the intersection of San Pablo Avenue and 41st Street. (**Note:** There are no regulatory records regarding the number or location of storage tanks associated with that service station facility.)

By 1967 an upholsterer occupied the commercial building shown on Figure 2 at 4086 San Pablo Avenue. That upholstery business later expanded to occupy the warehouse previously used by the wholesale plumbing supply facility that was located to the rear of the gasoline service station located at 4000 San Pablo Avenue.

In the 1970s, the commercial building at 4070 San Pablo Avenue was constructed and used by the San Francisco French Bread Company (**SFFBC**) as a bakery. That company installed two underground fuel storage tanks: a 10,000-gallon gasoline tank and a 10,000-gallon diesel tank. They were used to fuel their delivery vehicles. The former locations of those tanks, as well as the tank sites at the former service station site at 4000 San Pablo Avenue are shown on Figure 2.

By the 1980s, many of the industrial facilities in western Emeryville had begun to decay and increasingly became idle. In the 1990s, the City of Emeryville through its redevelopment agency, the Emeryville Redevelopment Agency (**ERDA)**, began an ambitious undertaking to clean up and redevelop former industrial areas of the City and other tracts where commercial and residential properties had become rundown. Included in that redevelopment program was construction of a major new thoroughfare formed by extending 40th Street from its previous termination at Adeline Street westward to the frontage of Interstate 80, which passes along the eastern shore of San Francisco Bay, some 0.85 miles to the west of the Oak Walk Site. The highway construction which occurred in 1995 included the extension of 40th Street from Adeline Street to San Pablo Avenue, for which purpose the City of Emeryville procured the land along the alignment of that extension and demolished the former carpet and upholstery warehouse described above. The automobile service station at 4000 San Pablo Avenue was also razed at that time.

A small building was constructed at the corner of Adeline and 40th Streets by the Alameda - Contra Costa Transit District (**AC Transit**) in conjunction with the 40th Street extension. It served as a bathroom for transit drivers calling at the bus stops located on both sides of 40th Street.

The 1995 construction of the extension of 40th Street also took a portion of the land previously occupied by the SFFBC, including the southern half of the former sites of the gasoline and diesel underground storage tanks located on that property. After the 40th

Street construction was complete, the site was configured as shown on Figure 2 and on Plate 1. The Oaks Club purchased the remaining SFFBC property on April 19, 1998, at which time the club also purchased the commercial buildings at 4086 and 4090 San Pablo Avenue.

Historically, the commercial building at 4086 San Pablo Avenue was the site of an upholstery business and, later, a specialty hydraulic hose fitting shop that neither dispensed nor used hydraulic oil or similar liquid material. It was vacated in early 2005. The hose fitting shop had also occupied the ground floor of the adjacent building at 4090 San Pablo Avenue, which had historically been a restaurant and the upper floor of which was occasionally used by the Oaks Club for staff training. The commercial building at 4070 San Pablo Avenue was used by the club as a carpentry and maintenance shop and its surrounding yard was used as a parking lot for Oaks Club patrons. The former site of the tire sales and gasoline service facility located at the intersection of 41st Street and San Pablo Avenue, which had the address 4098 San Pablo Avenue, had been purchased by the Oaks Club on July 27, 1998 and was also used as a parking lot.

The single- and multi-family residential buildings that are shown on Figure 2 were built on the Oak Walk Site at various times from the late 19th through the early 20th Centuries but, by the early 21st Century, they were generally in a very dilapidated condition and none were compliant with modern building codes. The Oaks Club purchased the residential building at 1089 41st Street on April 19, 1989 and the other residential buildings on the site on December 19, 1991.

All of the residential structures on the Oak Walk Site were vacated by late 2004 and all of the commercial buildings were vacated by the time site clearance for the redevelopment was initiated in July 2007.

As noted previously, ownership of the Oak Walk Site passed from the Oaks Club to Bay Rock Oaks on June 30, 2007.

1.4 Redevelopment

Demolition for redevelopment of the Oak Walk Site occurred in mid 2007. However, the residential structures originally located at 1077½, 1079, 1083, 1089 and 1089B 41st Street (see Figure 2 for locations) were not demolished. They were first placed on house-moving dollies so that they could be temporarily relocated before they were placed on new foundations on the 41st Street frontage and architecturally restored after remediation work on that portion of the site was completed. Their current locations are shown on Figure 3. Below is the relocation information for each:

Former Location Address on 41st Street	**Relocation Address on 41st Street**
1079	1077
1083	1079
1089	1081
1089B	1083
1077½	1085

In addition, the three-story residence that had been located at 1077 41st Street was moved to the location shown on Figure 3 at the intersection of Adeline and 40th Streets. That parcel of land and the structure, which currently has no foundations, are owned by ERDA and have the address 4001 Adeline Street. We understand that ERDA intends to rehabilitate that building and return it to residential use.

The Oak Walk development also includes three new structures that are designated Buildings 1, 2, and 3 on Figure 3. Building 1 is located at the intersection of 40th Street and San Pablo Avenue. Its ground floor is occupied by two large retail spaces. Above that are one one-bedroom and one two-bedroom condominium residence. The commercial spaces on the ground floor of Building 1 have the addresses 4000 and 4010 San Pablo Avenue. The residences on the upper floors have the addresses 4002 and 4008 San Pablo Avenue.

Building 2, which has three stories, is located at the northwestern corner of the site at the intersection of 41st Street and San Pablo Avenue. The ground floor of that structure includes a retail space, two two-bedroom town homes and one three-bedroom town home. The upper floors of that building feature two one-bedroom condominiums and two two-bedroom condominiums. The commercial space on the ground floor of Building 2 has the address 4098 San Pablo Avenue. The residences on the ground floor have the addresses 1087, 1089 and 1091 41st Street. The four units on the upper floors of that building have the addresses 1093, 1095, 1097 and 1099 41st Street.

Building 3 is a four-story residential building, which is comprised of a total of 44 one-, two- and three-bedroom condominium and townhome units with a 61 car garage that occupies a portion of the ground floor. This garage is accessible from 40th Street. A new restroom facility for AC Transit is located, as shown on Figure 3, on the ground floor of Building 3. It is accessed by a door opening onto 40th Street. The residential units in Building 3 have the address 1122 40th Street, Unit Nos.1 through 44.

Plate 8 is a view of the redeveloped property as seen from the intersection of San Pablo Avenue and 41st Street. Plate 9 shows the residences on the podium level of Building 3 Plate 10 shows the restored residences that are now located on 41st Street.

2.0 SITE SETTING

The Oak Walk Site occupies a major part of the city block that is bounded by 41st Street, Adeline Street, 40th Street and San Pablo Avenue. It has a total area of some 75,294 sq. ft. (1.73 acres).

2.1 Topography

The site has a mean elevation close to 45.5 ft. above the National Vertical Datum (**NVD**). At the scale of the property as a whole, it has a downward slope from east to west (*i.e.*, from Adeline Street to San Pablo Avenue). Along the subject property's southern frontage, 40th Street slopes down toward San Pablo Avenue at a gradient of 1.35%, while along the northern frontage on 41st Street the corresponding slope is only 0.78%. Minimal grading was required for redevelopment of the site other than that needed to provide for horizontal pads for the structures built on the property.

The whole of the Oak Walk Site is surrounded by public streets except along its eastern boundary, beyond which are residential sites that front onto Adeline Street, 40th Street and 41st Street (see Figure 5).

2.2 Regional Geology

The subject property is situated on the eastern side of San Francisco Bay in the California Coast Ranges section of the Pacific Border physiographic province.

As is typical of sites in the neighborhood, the subject property is underlain by fill that varies in thickness from approximately 3 to 10 feet. Beneath the fill are strata of alluvial fan deposits of the Quaternary-age Temescal Formation that is comprised of inter-fingering lenses of clayey gravel, sandy silty clay and sand-clay-silt mixtures (Radbruch 1957). At the site, this formation is some 20 ft. to 30 ft. thick and lies unconformably over earlier Quaternary continental and marine sands, clays and gravels of the Alameda Formation, the maximum thickness of which has not been fully explored in the region around the subject property, but is known to exceed 1,050 ft.

2.3 Regional Hydrology

Temescal Creek flows in underground culverts along a generally east to west course approximately 0.5 miles to the north of the subject property and discharges into San Francisco Bay, the shore of which is today some 0.85 miles to the west of the site. Prior to circa 1880, after which it was filled to become the site of a housing tract, there was a 30-acre tidal flat that formed an embayment in the shoreline of the Bay at a distance of some 0.6 miles southwest of the Oak Walk Site.

Temescal Creek and the tidal flats of San Francisco Bay dominated the regional hydrology of the area prior to its urbanization in the late 19th Century. However, there were no known streams that existed during the historical period in the vicinity of the Oak Walk Site closer than Temescal Creek.

The majority of precipitation running off the roofs of the structures and the parking lot on the redeveloped Oak Walk property is directed into filtration beds. Water discharged from the filter beds and small areas of paving that drain into street gutters is directed into the City of Emeryville's storm water management system. That system drains to San Francisco Bay. Approximately 90% of precipitation falling on the site is either diverted into the filter beds or percolates into the subsurface.

2.4 Regional Hydrogeology

The depth to the groundwater table in the area of the subject property reflects long term weather cycles as well as seasonal variations in local precipitation in the San Francisco Bay Area. Depending upon those factors, the piezometric level of the regional groundwater may be at elevations that vary between approximately 4 and 12 ft. below the ground surface (**BGS**) (The San Joaquin Company Inc. 2005).

Regionally, the general direction of groundwater flow is west toward San Francisco Bay. However, at any given location the direction of groundwater flow can be substantially different because it is influenced by the local presence of high-permeability facies in the subsurface that were deposited by paleo streambeds and other geomorphologic processes typical of those that influence the depositional environment of alluvial fans.

2.5 Sources of Contamination Affecting the Oak Walk Site

The program of environmental site characterization conducted at the Oak Walk Site showed that soil and groundwater beneath the property is affected by both fuel hydrocarbons and paint thinners (solvents) (The San Joaquin Company Inc. 2005). Those materials were released into the subsurface at four separate locations. Three of the sources, two where paint solvents were released and one where fuel hydrocarbons were released, are located off the Oak Walk Site, while the fourth, at which a release of fuel hydrocarbons occurred, is today partially outside and partially inside the Oak Walk site boundary. Each of those sources is discussed below.

2.5.1 The Former Dunne and Boysen Paint Sites

These sites are in close proximity to each other and are situated to the east of the Oak Walk Site beyond the adjacent Ennis property and Adeline Street. Their locations are shown on Figure 5. Paint was manufactured and paint solvents were stored in underground tanks at both of these facilities. In the case of the former Boysen Paint Site (also referred to in the regulatory records as Oakland National Engraving (**ONE Oakland**), contamination is also known to have been released from a sump on that property. Both are cited in regulatory records as sources of releases of regulated materials to the subsurface. With the currently available information it is not possible to be certain whether or not the solvents released at Boysen Paint commingled with solvents released at the Dunne Paint Site. However, both contribute to the plume of paint solvents found to be affecting the subsurface beneath the Oak Walk Site. For the purpose of this report, those two release sites will be treated as if they are a single source.

Petroleum hydrocarbons in the gasoline and middle distillate ranges, including compounds in the diesel and Mineral Spirits range, which can be ascribed to releases of solvents at the Dunne Paint Site and at the Boysen Paint/ONE Oakland Site, have been detected over essentially the whole area of the Oak Walk Site. There is also clear evidence that those materials are present at high concentrations in soil and groundwater under the Ennis property, which, as shown on Figure 4, is adjacent to the Oak Walk Site and lies between it and the former paint manufacturing sites.

The ACEH has assigned the case number RO72/RO73 to the Dunne Paint Site and the case number RO79 to the Boysen Paint/ONE Oakland Site.

2.5.2 The Former Celis Alliance Automobile Service Station

The location of the former Celis service station, which is today beneath the 40th Street right-of-way and adjacent to the Oak Walk Site, is also shown on Figure 5. Large quantities of fuel hydrocarbons were released from underground storage tanks on that site. The releases contaminated soil and groundwater over a wide area that is, today, occupied by the 40th Street right-of-way, a portion of the Andante condominium housing site south of the former Celis Site, and a significant portion of the Oak Walk Site to the north. After the City of Emeryville Redevelopment Agency acquired the Celis Site by eminent domain for the purpose of extending 40th Street west from Adeline Street, a portion of the area of the subsurface affected by the release at that site was remediated by removal of contaminated soil down to some 9 ft. BGS and by a limited program of groundwater pumping. Some limited areas beneath the 40th Street right-of way to the east of, and up the hydrogeologic gradient from, the tanks were also partially remediated by excavation and off-site disposal of contaminated soil.

The Celis Site is recorded in California regulatory databases with the identifiers shown below:

> The California State Water Resources Control Board (**SWRCB**) has established the following Global ID for the Celis Site: T0600101794
>
> The California Regional Water Quality Control Board - San Francisco Bay Region (**RWQCB**) has been assigned the following case number to the Celis Site: 01-1938
>
> The ACEH Local Oversight Program (**LOP**), which is the lead agency for the site, has assigned the following case number to the Celis Site: RO453/RO567

Releases of fuel hydrocarbons and, to limited extent, motor oil from the Celis Site commingled beneath the Oak Walk Site with the paint solvents released at the Boysen and Dunne Paint Sites to the east.

2.5.3 The Former San Francisco French Bread Site

As was described in Section 1.3, the San Francisco French Bread Company (**SFFBC**) formerly occupied a part of the Oak Walk Site that today fronts onto 40th Street. SFFBC installed two ten thousand-gallon underground storage tanks on their property, which had the address 4070 San Pablo Avenue. One tank stored diesel and the other stored gasoline for use in the bread company's fleet of distribution vehicles. The former locations of the tanks are shown on Figures 2 and 5.

When the 1995 extension of 40th Street between Adeline Street and San Pablo Avenue was constructed by the City of Emeryville, the southern half of the tank sites became part of the street right-of-way and the northern half remained within the current boundaries of the Oak Walk site. At that time, soil was remediated by excavation to a depth of 10 ft. over an approximately 20 ft. by 18 ft. rectangular area at a location coincident with the southern half of the former SFFBC tank pit. No further remediation of the portion of SFFBC tank site that is beneath 40th Street has occurred since then. However, as is recorded in this report, the northern portion of the former SFFBC Site was included in the remediation work conducted at the Oak Walk Site.

The SFFBC tank sit is recorded in California databases with the identifications shown below.

> The SWRCB has established the following Global ID for the SFFBC Site: T0600101186
>
> The RWQCB has been assigned the following case number to the SFFBC Site: 01-1289
>
> The ACEH LOP, which is the lead agency for the site, has assigned the following case number to the SFFBC Site: RO171

2.5.4 Oak Walk Site

With the exception of the small area of the former SFFBC property that is included in the Oak Walk Site, there are no known sources of contamination on the subject property. However, in order to provide oversight of the site characterization and remediation of the Oak Walk Site, the ACEH has assigned the following case number to the Oak Walk Site: RO2733. At the request of the ACEH, the SWRCB established the following Geotracker Global ID for the Oak Walk Site: T06019705080.

3.0 SITE CHARACTERIZATION PROGRAM

SJC completed an extensive, multi-phased environmental and geotechnical engineering site characterization program for the Oak Walk Redevelopment Site in 2005 (The San Joaquin Company 2005, 2004a,b,c). The scope of that investigation included excavation of eight exploratory trenches, drilling of two cone penetrometer test holes and a total of 30 exploratory borings, in 21 of which groundwater-quality monitoring wells were constructed (the locations of the trenches, wells and borings are shown on Figure 4). In addition to the trenches, wells and borings drilled by SJC, geotechnical and geochemical data was available from wells and borings installed for the former Dunne and Boysen Paint Sites, the San Francisco French Bread Site, the Celis Site and the Andante Site (see Figure 5 for locations).

Logs of all the trenches, borings and wells drilled for the Oak Walk Site are compiled in Appendix A, together with logs of the wells and borings referenced in this report that were drilled by

- Clayton Group Services (**Clayton**) as part of its investigation of the Frank Dunne Paint Site (Clayton Group Services 2005, 2004)

- Aqua Science Engineers, Inc. (**ASE**) and Environmental Resource Management (**ERM**) for the Boysen Paint/ONE Oakland Site (sometimes referred on the logs as the Kozel Property or Aegis) (Aqua Science Engineers, Inc. 2005, Environmental Resource Management 2006)

- Woodward Clyde Consultants (**Woodward Clyde**) for well WCEW-1 at the Celis Site (Woodward Clyde 1995)

- URS Corporation (**URS**) for monitoring wells associated with the former Celis Site (URS Corporation 2007)

The latitude, longitude and casing and surface elevations for the wells and borings drilled by SJC and Woodward Clyde are compiled in Table 1. The results of analyses of soil samples recovered from borings, wells and trenches are compiled in Tables 3, 4, and 5. The results of analyses of groundwater samples are compiled in Tables 6 and 7.

SJC's principal findings derived from the site characterization work are summarized below.

3.1 Site Hydrogeology

The regional direction of groundwater flow at the site is essentially from east to west but, locally, it is greatly influenced by zones and channels of permeable sands and gravels that are present in the subsurface. Areas where channels and zones of high-permeability soils are present extend from east to west across the length of the site. However, such permeable facies are relatively less pronounced along the southern boundary of the site at 40th Street. In close proximity to the northern boundary of the site along 41st Street, they are essentially absent.

3.1.1 Groundwater Contours

The local presence or absence of permeable facies in the subsurface beneath the Oak Walk Site is reflected in the groundwater contours derived from a round of groundwater-quality monitoring conducted on November 8, 2004 that are shown on Figure 6. The geometry of the piezometric contours is strongly indicative of areas that have zones and channels of relatively permeable soils in a matrix of lower-permeability soils and shows how those zones are flanked to the north and south by strata that are dominated by low-permeability clays and silty clays.

Examination of Figure 6 shows that, at the scale of the site, the direction of groundwater flow beneath the Oak Walk property on November 8, 2004 was to the west at an average gradient of 0.0094 ft/ft. However, locally, due to the influence of channels of high permeability sands and gravels in the subsurface, which is otherwise dominantly composed of clayey facies, the direction of groundwater flow may be to the northwest, southwest, or in intermediate compass directions at gradients as great as 0.02 ft/ft.

3.1.2 Hydrostratigraphic Sections

Information from the logs of the trenches, borings and wells drilled on the site was synthesized to develop hydrostratigraphic sections along the lines A-A’, B-B’, C-C’, D-D’, E-E’, F-F’, G-G’ and H-H’ that are located as shown on Figure 4. The sections are shown on Figures 7 through 14. The boring logs from which the sections were derived are included in Appendix A.

The cross sections show the fill material that covers the site and the underlying alluvial sediments, which are divided into six classes: very low-permeability fill that was used to restore the remedial excavations; very low-permeability soil that was created by excavating and re-compacting soils in other areas of the site; and the following undisturbed natural soils: the very low-permeability clays and silty clays; the slightly more permeable sandy clay and clays with some silt, sand or gravel (*i.e.*, soils that are dominantly clayey, but which have small lenses and inclusions of coarser facies); permeable silts, clayey gravels and sands; and highly permeable gravels that are free of silty or clayey fractions. That presentation makes it possible to reduce the details of the stratigraphy to a tractable degree of complexity by distinguishing between the different soil types based on the properties that are of importance to the understanding of the distribution and transport of chemicals of concern in the subsurface. However, it is not intended to represent the detailed geologic stratigraphy of the complex of inter-bedded and lenticular strata and paleo streambed deposits that are present in the alluvial fan on which the Oak Walk Site is located.

> **Note:** Where applicable, the hydrostratigraphic sections and other interpretations of the hydrogeology and geochemistry beneath the subsurface of

> the Oak Walk Site have been updated from those presented in the environmental site characterization report (The San Joaquin Company 2005) to reflect the additional data gathered during implementation of the corrective action program.

Also shown on the cross sections are the locations from which soil samples were recovered on, or close to, the section lines. The concentrations of TPHg, TPHd (which includes diesel, Mineral Spirits and components of other middle-distillate petroleum hydrocarbons) and the critical analyte, benzene, that were detected in those samples, which were recovered before the site was remediated, are noted adjacent to the sampling locations.

The hydrostratigraphic cross sections reveal that beneath some areas of the Oak Walk Site there are relatively high-permeability facies that include in-filled paleo streambed channels.

3.1.3 Net Permeable Facies

To assist with understanding of the distribution of high-permeability channels in the subsurface beneath the Oak Walk Site, the net permeable facies diagram shown on Figure 15 was constructed.

The isochores shown on the Figure are for the 5-20 ft. BGS interval, which is the interval between the typical depth to groundwater and the typical maximum depth to which the subsurface is affected by petroleum hydrocarbons. The permeable intervals summed to compute the net permeable facies were the sandy clays, clays with some silt, sand or gravel, and highly-permeable gravels.

Areas shown on Figure 15, where the net permeable facies in the subsurface exceed 50% in the selected interval are highlighted, provide a good visual image of the areal distribution of permeable zones and channels beneath the site through which contaminants of concern have preferentially migrated across the Oak Walk Site following their release at the paint factory sites to the east of Adeline Street, at the Celis Site beneath 40th Street, and at the former SFFBC site. It is noted that the channelization of permeable facies across the Oak Walk Site is in good agreement with the geometry of the groundwater contours shown on Figure 6.

The areas and channels of permeable soil detected beneath the Oak Walk Site are not confined to that property alone. They extend westward beneath San Pablo Avenue and eastward beneath the adjoining Ennis property and across Adeline Street under the Frank Dunne and Boysen Paint Sites at least as far as the California Linen Rental Site (**California Linen**), which is located to the east of Linden Street in Oakland. The locations of channels and areas of high-permeable soil in the neighborhood are shown on Figure 5. That Figure was prepared by SJC at the request of the ACEH (Alameda County Health Care Services 2006) and was developed from available data from the Andante Site (The San Joaquin Company Inc. 2003), the Oak Walk Site (The San Joaquin Company 2005, 2004a,b,c), including additional site characterization data gathered during implementation of the site remediation work, the Frank Dunne Site, the Boysen Paint Site and the California Linen Site. Figure 5 presents SJC's best estimates of the courses of the paleo streambed channels that pass through the area and the continuity of the high permeability sand and gravel deposits that are characteristic of those channels. The interpretations are based on a preponderance of the available stratigraphic, hydrogeologic and geochemical data. With the exception of the paleo streambed that crosses from the northern to western boundaries of the Andante property and those that were exposed during the remediation of Oak Walk Site, the location and continuity of the streambed deposits on the other properties and streets as shown on the drawing have not been observed in open excavations.

As is shown on Figure 5, there are two principal channels of high-permeability deposits that cross the Oak Walk Site. One passes from the Ennis property westward towards San Pablo Avenue through the northern portion of the subject property. In addition, there is a second narrow, but well-defined channel of paleo streambed deposits that extends from the southwest portion of the Ennis property across the Oak Walk Site in a northeast to southwest direction and continues beneath 40th Street to cross the boundary of the Andante Property to the south and continues through that site to pass beneath San Pablo Avenue. That paleo channel was originally discovered in 2003 when SJC was remediating the Andante Site (The San Joaquin Company 2003) and was confirmed to cross 40th Street when its sandy and gravely deposits were again encountered in Exploratory Trench 3 (See Figure 4 for location) during early stages of the site characterization work at the Oak Walk Site (The San Joaquin Company 2004c). The streambed deposits on the Andante Site were excavated from the channel and clay plugs were installed across the channel where it crossed the boundaries of that site at 40th Street and at San Pablo Avenue. Excavation of Exploratory Trench 11 on the Oak Walk Site extended beneath and laterally beyond both banks of that paleo channel allowing its continuity from the Ennis Property to 40th Street to be confirmed.

The hydrogeologic features described above, including the paleo streambed deposits, are features compatible with the published geology of the region, which is covered by an alluvial fan that, in the neighborhood of the Oak Walk Site, includes bands of stream and levee deposits (California Regional Water Quality Control Board - San Francisco Bay Region 1999).

3.1.4 Hydraulic Conductivity of Soil

As part of the site characterization program conducted at the Oak Walk Site, SJC recovered samples of silty clay recovered from boring BG-2 (see Figure 4 for location) at a depth of 6.5 ft. and a second sample of similar material from a depth of 6 ft. in Monitoring Well MW-7. Constant-head permeability tests conducted on those samples found that the soils had hydraulic conductivities of 2.51 x 10^{-9} cm/sec and 2.95 x 10^{-8} cm/sec, respectively (The San Joaquin Company Inc. 2005). Those test results confirmed the extremely low permeability of the silty clays beneath the site and supported the interpretation that migration of contaminants in groundwater is controlled by the silts, sands and gravels that were deposited on the site in the paleo streambed channels and other alluvial fan deposits laid down during the Recent geological era.

3.2 Chemicals of Concern in Soil and Groundwater

The site characterization program conducted at the Oak Walk Site showed that soil and groundwater over essentially the whole of the property is affected by petroleum hydrocarbons. As was discussed in Section 2.5 above, Mineral Spirits and paint thinners were released from the Frank Dunne and Boysen Paint sites located to the east of Adeline Street and diesel and gasoline were released at the Celis Site, located beneath what is now 40th Street. Over large areas of the site the solvents and fuels became intermingled. In addition, a limited area of the site on its southern frontage on 40th Street was affected by a release of gasoline from a SFFBC tank that was formerly located partially within and partially outside the Oak Walk property boundary. Tables 3, 4 and 5 are compilations of the concentrations of chemicals of concern in soil samples recovered from the Oak Walk Site together with soil data from samples recovered at other sites in the neighborhood. Similarly, Tables 6 and 7 present the concentrations of chemicals of concern in groundwater recovered from the Oak Walk Site and from other sites in the neighborhood.

> **Note:** As is described in Section 7.0, during remediation of the Oak Walk property soil affected by petroleum hydrocarbons was excavated in some areas of the site to depths of 6 or 7 ft. BGS and shipped off site for disposal. As described in Section 10.0, over the remaining areas of the site, the existing soil was excavated to various depths and re-compacted as an engineered fill. In Tables 3 and 4, concentrations of chemicals of concern that were detected in samples recovered from locations where soil has since been shipped off site are shown in *italic font*. At locations where the undisturbed in situ soil was excavated and the areas were restored with engineered fill derived from on-site soil, the concentrations are shown in smaller font.

3.2.1 Comingling of Fuel Hydrocarbons and Paint Solvents

Comingling of different petroleum products from the different sources that migrated across the Oak Walk Site complicate an interpretation of which areas of the site were affected by discharges from those different sources. However, it is possible to reach an understanding of the distribution of petroleum compounds that fall within different ranges of carbon-chain length and to delineate areas affected by chemicals of particular concern, such as benzene. Figures 16 through 22 provide visual representations of those distributions. To construct those visualizations, SJC considered petroleum hydrocarbons that fall into the middle-distillate range separately from hydrocarbons that fall into the gasoline range.

The middle-distillate range hydrocarbons include diesel, Mineral Spirits and the heavier fraction of paint solvents. The gasoline range hydrocarbons include gasoline fuel, including its components that are of specific concern such as benzene, toluene, ethyl benzene and xylene isomers, as well as lighter fractions of paint solvents. However, paint solvents do not generate chromatographic patterns that are characteristic of fuel hydrocarbons. This makes it possible to distinguish samples of soil and groundwater affected by fuel hydrocarbons from those affected solely by paint solvents.

As part of the site characterization study for the Oak Walk Site, SJC made a study of site-specific hydrogeologic and chemical parameters that could be used to differentiate between areas of the property that had been affected solely by paint solvents as opposed to areas where a comingling of paint solvents and fuel hydrocarbons are present (The San Joaquin Company Inc. 2005). For example, Monitoring Well MWT-14 (see Figure 16 for location) is located in an area of the site that was judged to be hydrogeologically remote from sites adjacent to the southern boundary of the Oak Walk Site where releases of fuels are known to have occurred. That conclusion is supported by the fact that the groundwater sample recovered from that well on November 6, 2004 contained 4,600 μg/L of a gasoline-range compound but no detectable concentrations of any of the BTEX compounds, which would be expected to be present if the groundwater were affected by gasoline.

The chromatogram from the EPA Method 8260B analysis for gasoline-range compounds performed on the sample of groundwater from Monitoring Well MWT-14 is shown on Page B-1 in Appendix B. It clearly does not match the standard chromatogram for gasoline fuel that is shown on Page B-5 in that Appendix. Compared to the gasoline fuel standard, the sample's chromatogram reflects the presence of many more compounds at high concentrations in the 10.0-minute to 12.5-minute range, while it lacks peaks similar to those seen in the standard in the 2.5-minute to 7.5-minute range. As is noted in Table 6, the laboratory could not match the detected mixture of hydrocarbon compounds present in the sample of groundwater recovered from Monitoring Well MWT-14 to its standard chromatogram for gasoline, although for reporting purposes it did quantify its concentration as "equivalent" to 4,600 μg/L of gasoline.

Page B-2 in Appendix B is the chromatogram from the analysis of a sub-aliquot of sample MWT-14 for total extractable petroleum hydrocarbons (**TEPH**) by EPA Method 8015. It shows the presence of hydrocarbons over a wide range of carbon-chain lengths that correspond to chemicals that emerged into the gas chromatograph in the 3-minute to 9-minute period following the injection of the sample into that equipment. The large numbers of compounds present are concentrated in two groups - those grouped around the 4.6-minute interval and those around the 7.0-minute interval. As can be seen in the standard chromatogram shown on Page B-9, compounds in that range are also present in diesel fuel, but the chromatographic pattern produced by the analysis of Sample MWT-14 for TEPH is dissimilar to the pattern for diesel fuel. The chromatogram does have a multiplicity of peaks in the Mineral Spirits range (see page B-6 in Appendix B) and the laboratory quantified the concentration of the detected mixture in terms of a similar concentration of Mineral Spirits (see Table 6). However, because it did not match either the laboratory standard for diesel fuel, the standard for Mineral Spirits or any other recognizable petroleum product, the specific product represented by the chromatogram shown on page B-2 cannot be determined, nor can it be determined whether the chromatographic pattern represents a single product or two separate petroleum hydrocarbon mixtures that have commingled. When that chromatogram is taken together with the chromatogram from the gasoline-range analysis of the sample on Page B-1, the most reasonable conclusion that can be reached is that groundwater at the location of Monitoring Well MWT-14 is affected by a petroleum hydrocarbon product, or a mixture of products, dissimilar in characteristics to fuel hydrocarbons, but which contain components with molecular length in the same range as solvents that are used in the paint manufacturing industry.

The various characteristics of the analytical results obtained for the sample of groundwater from Monitoring Well MWT-14 are, in several respects, shared by the results obtained for a large number of other groundwater and soil samples from the Oak Walk Site recovered from locations where the chemicals of concern could not be unambiguously identified as a fuel hydrocarbon such as gasoline. However, as is evidenced by significant concentrations of BTEX compounds in soil and groundwater samples recovered from a substantial portion of the southern half of the site, fuel hydrocarbons released from the former Celis Site and, to a lesser extent, the former SFFBC Site have comingled with paint solvents released from either one or both of the paint manufacturing facilities at the intersection of Adeline and 41st Streets. For example, the sample of groundwater recovered on September 8, 2007 from Monitoring Well MW-2, which, as is shown on Figure 4, is located a few feet to the south of the 40th Street frontage of the Oak Walk Site, contained diesel, Mineral Spirits and gasoline at concentrations of 1,400 μg/L, 1,500 μg/L and 8,300 μg/L, respectively. From the above discussion regarding contaminants in groundwater at Monitoring Well MWT-14, that information alone does not permit a conclusion that the groundwater at Monitoring Well MW-2 contains fuel hydrocarbons. However, the fact that the sample recovered from that well contained benzene at a concentration of 1,500 μg/L together with ethylbenzene at 340 μg/L and total xylene isomers at 21 μg/L is evidence that the fuel gasoline is present at that location in addition to the paint solvent Mineral Spirits.

3.2.2 Concentration of Analytes in Excess of the ESLs

To provide a standard process for determining whether analytes of concern detected at a contaminated site will require additional evaluation, the RWQCB and the California Environmental Protection Agency (**Cal/EPA**) have established Environmental Screening Levels (**ESLs**) for many chemicals and for mixtures of chemicals such as gasoline and diesel (California Regional Water Quality Control Board San Francisco Bay Region 2008).

An assessment designed to determine whether or not chemicals of concern in the subsurface exceed the ESL values is often described as a Tier I Assessment (American Society for Testing and Materials 2002). The concentrations of analytes of concern in soil and groundwater at an affected site are compared to the ESLs. Site-specific ESLs depend upon the future use of the site (*e.g.* for residential, commercial or industrial purposes) and whether the groundwater beneath the site is a current or potential source of drinking water. If the concentrations are lower than the applicable ESLs, no further work need be completed before the site is released for the intended use. However, if exceedance occurs, it does not necessarily require active remediation of soil and groundwater, installation of engineered barriers, or enforcement of administrative controls at an affected site. The condition simply means that additional evaluations must be made before it can be determined whether or not corrective action measures must be undertaken.

3.2.2.1 Applicable ESLs

Different ESLs have been established for sites where the planned future use of the property is residential compared to commercial or industrial, for sites where soil is affected at shallow depth as opposed to at greater depth, and for sites where groundwater is a source of drinking water as opposed to sites where it is not (California Regional Water Quality Control Board - San Francisco Bay Region 2008).

The RWQCB has found that shallow groundwater in the region of the Oak Walk Site is not a source of drinking water (California Regional Water Quality Control Board - San Francisco Bay Region 1999). The redeveloped Oak Walk Site includes both residential and commercial structures. However, SJC has elected, conservatively, to compare concentrations of chemicals of concern in soil and groundwater to ESLs that apply to residential sites regardless of whether the ground floor a structure is used for residential or commercial purposes. In the case of contaminants in soils, there are separate ESLs for shallow soils (*i.e.*, soil at depth less than 3 meters (9.84 ft. BGS) and for deep soils (*i.e.*, at depths greater than 9.84 ft). The applicable ESLs for the analytes of concern at the Oak Walk Site for soil, groundwater and soil gas are compiled in Tables 8 (shallow soils) and 9 (deep soils).

The results of analyses of soil and groundwater that indicated the presence of contaminants of concern at concentrations in excess of the applicable ESLs are shown in **bold** in Tables 3 through 7 and Table 10. On Figures 19 through 22, areas of the site where soil and groundwater are affected by analytes of concern at concentrations in excess of the applicable ESLs are distinguished from areas where the concentrations are lower than the ESLs by the intensity of shading.

> **NB**: At the time of the corrective action planning, the ESLs for the Oak Walk Site were based on the RWQCB's 2005 ESL document (California Regional Water Quality Control Board San Francisco Bay Region (2005). Since then, a new version has been implemented (California Regional Water Quality Control Board San Francisco Bay Region (2008). All exceedances on the Tables in this corrective action report have been updated to be consistent with the ESLs in the 2008 document.

3.2.3 Distribution of Middle Distillate-range Petroleum Hydrocarbons

As can be seen on Figure 20, the areas where the concentrations of middle distillate-range petroleum hydrocarbons are present in soil or groundwater at concentrations in excess of the applicable ESLs are distributed in a wide band that runs from the San Pablo Avenue frontage of the Oak Walk Site eastward to the boundary of the site where it adjoins the Ennis property. That band connects with a similar band that extends northward from the 40th Street frontage of the Oak Walk Site through to the approximate center of the property. That distribution correlates well with the distribution of high-permeability soils, which is shown on the net permeable facies diagram that is presented on Figure 15.

The highest concentrations of middle distillate-range hydrocarbons were detected in a groundwater sample recovered from Monitoring Well MWT-11 on November 6, 2004 that contained Mineral Spirits at a concentration of 3,500 μg/L. In that same area of the site, where sand-filled channels are present in the subsurface, concentrations of Mineral Spirits in groundwater in Monitoring Well MWT-7 on May 19, 2004 were also elevated at 3,200 μg/L. On that same date, relatively high concentrations of middle distillate-range hydrocarbons were also present along the southwestern boundary of the site where 3,200 μg/L of Mineral Spirits were detected in a sample recovered from Monitoring Well MWT-2 and 2,100 μg/L of the same material were detected in groundwater in Monitoring Well MW-2. However, when a second sample of groundwater was recovered from that well on September 18, 2007, the concentration of Mineral Spirits in groundwater at that location had fallen to 1,500 μg/L, while the concentration of diesel, which had been undetectable in 2004, had risen to 1,400 μg/L.

> **Note:** As is discussed in Section 8.0, following extraction of contaminated groundwater from Groundwater Extraction Pit No. 1, which was excavated at the former location of Monitoring Well MWT-7 (see Figure 23 for location), the concentration of Mineral Spirits in that area of the site was reduced to 810 μg/L.

3.2.4 Distribution of Gasoline-range Petroleum Hydrocarbons

As is shown on Figure 19, gasoline-range petroleum hydrocarbons affect the subsurface over almost the whole of the site. This is reflective of the commingling of gasoline fuel released at the Celis and SFFBC Sites with the high concentrations of gasoline-range compounds in the paint solvents that migrated down the groundwater gradient from the Dunne and/or Boysen Paint Sites to the east of Adeline Street.

The concentration of gasoline-range hydrocarbons in Monitoring Well MWT-7 on May 19, 2004, at 56,000 μg/L, was the highest detected anywhere on the Oak Walk Site, but it is notable that no BTEX compounds, with the exception of a trace of benzene, were detected in that sample of groundwater. That condition indicated that the predominant source of the gasoline-range hydrocarbons in that area of the site was the release of solvents from the paint manufacturing facilities to the east of Adeline Street rather than the fuel hydrocarbons that were released along 40th Street. However, high concentrations of gasoline-range hydrocarbons that do include BTEX compounds were detected on May 19, 2004 in Monitoring Wells MW-2, MWT-2 and WCEW-1, at 49,000 μg/L, 28,000 μg/L and 3,700 μg/L, respectively. Those data indicate that groundwater contamination in that area of the site originated, at least in part, from the fuel hydrocarbon releases at the former Celis service station and, to a more limited extent, at the former SFFBC tank site.

> **Note:** Following extraction of contaminated groundwater from Extraction Pit No. 1, the concentration of gasoline-range hydrocarbons in the area around Monitoring Well MWT-7 fell from 82,000 μg/L to 1,100 μg/L and there were no detectable concentrations of any of the BTEX compounds.

3.2.5 Distribution of BTEX Compounds

As is shown on Figure 21, concentrations of benzene in soil or groundwater beneath the site that exceed the applicable ESL are confined to a limited area along the 40th Street frontage of the site. That area extends no more than 55 ft. northward from the Oak Walk Site's frontage with that thoroughfare, but it extends eastward some 210 ft. from San Pablo Avenue. Within that area, the highest concentration of benzene in groundwater was detected in the sample recovered from Monitoring Well MW-2 on February 19, 2004 at a concentration of 7,900 μg/L. However, in a sample recovered from that same well on September 19, 2007 the concentration of benzene had fallen to 1,500 μg/L.

> **Note:** When the boring for Monitoring Well MW-12 was drilled on February 9, 2009, traces of the BTEX compounds at concentrations less than their ESLs were detected in a sample recovered from the boring at a depth of 20 ft. BGS. No BTEX compounds had previously been detected in that area of the site. It is suspected that the traces of those compounds are related to the tire sales and fuel service station that had historically been operated at the southeastern corner of the intersection of San Pablo Avenue and 41st Street intersection prior to the 1960s. (See Section 1.3 for site history.)

As can be seen by examination of Tables 3 and 6, in addition to benzene, each of the three other compounds in the BTEX group (*i.e.*, toluene, ethylbenzene and xylene isomers) was also present in soil and/or groundwater at some locations beneath the site at concentrations that exceed their ESLs. However, such instances are few, and where they occur, they are generally coincident with the presence of benzene in the subsurface media.

3.2.6 Distribution of MTBE

As can be seen by examination of Figure 22 and Tables 3 and 6, the concentrations of the gasoline additive MTBE in soil or groundwater beneath the property nowhere exceed its ESL in soil or groundwater.

3.2.7 Distribution of Polynuclear Aromatic Compounds and Other Analytes

Tables 3 and 6 also show that there are a few instances where the polynuclear aromatic compounds (**PNA**s), naphthalene and 2-methyl-naphthalene, were present in soil and groundwater beneath the Oak Walk Site. Those PNAs may be components of diesel fuel or of industrial solvents. At the Oak Walk Site, they were at their highest concentrations in groundwater in samples recovered on May 19, 2004 and from Monitoring Wells MW-2 and MWT-2 (see Figure 4 for locations), which suggests that they are principally associated with diesel released from the former Celis service station site. Some very low concentrations of PNAs were detected in some soil samples from more widely-dispersed locations, but the preponderance of those additional detections was also in areas that are believed to have been affected by fuel hydrocarbons.

4.0 CORRECTIVE ACTION PROGRAM ELEMENTS

The Corrective Action Plan (The San Joaquin Company Inc. 2006b) as amended (The San Joaquin Company Inc. 2006a) was approved by the ACEH in December 2006 (Alameda County Environmental Health Care Services 2006). In addition to remediation tasks, it provided for additional site characterization to be conducted prior to the remediation, a soil-gas survey to be conducted following grading of the site but prior to construction of the new buildings, and a post-remediation groundwater-quality monitoring program. The CAP also provided for an environmental deed restriction to be recorded for the redeveloped property.

4.1 Demolition and Site Clearance

The first element of the work defined by the Corrective Action Plan (**CAP**), as amended, was demolition or relocation of all structures previously present on the site and clearance of all vegetation, paving and foundations.

4.2 Additional Exploratory Trenching

To extend understanding of the distribution of paleo streambed channels and other high-permeability facies and the distribution of soil and groundwater affected by petroleum hydrocarbons in the subsurface of the Oak Walk Site, the CAP provided for excavation of three additional exploratory trenches, numbered 9 - 11 at the locations shown on Figure 4.

4.3 Remedial Actions

The CAP provided for the following site remediation elements:

- Excavation and off-site disposal of contaminated soil

- Cut-off and sealing of sewers and other utility conduits at property boundaries

- Restoration of remedial excavations with very low-permeability engineered fill

- Extraction and disposal of contaminated groundwater

- Mass excavation of soil over the complete area of the site and conditioning of soil for placement as low-permeability engineered fill

- Installation of an elastomeric membrane under the occupied commercial and residential spaces in the buildings constructed on the site.

4.4 Post-remediation Monitoring

In addition to the remedial activity, the CAP called for a post-remediation soil-gas survey and a post-remediation program of groundwater-quality monitoring.

4.4.1 Soil-gas Survey

As was detailed in the CAP, based on the recognized published standards for soil-gas surveys (American Society of Testing and Materials 2000b, California Department of Toxic Substances Control 2004, California Department of Toxic Substances Control and California Regional Water Quality Control Board - Los Angeles Region 2003, Technical Advisory Committee, Oakland Urban Land Development Program 1996), the very low permeability of the clay soils at the Oak Walk Site and the shallow depth to groundwater are such that measurements of soil-gas concentrations are likely to be unreliable and un-conservative and should not be used at such sites. In fact, the advisory document issued by the California Department of Toxic Substances Control and the California Regional Water Quality Control Board - Los Angeles Region specifically *prohibits* soil-gas testing in locations such as the Oak Walk Site where the bottom 5 ft. of a test boring is in clay.

Despite the above concerns, at the request of ACEH and the City of Emeryville, a soil gas survey was conducted at the Oak Walk Site following backfilling of the remedial excavations and rough grading of the site.

The soil-gas survey was completed on October 29, 2007 and its results are documented in Section 11.0 of this report.

4.4.2 Post-remediation Groundwater-quality Monitoring

Prior to remediation of the Oak Walk Site, a total of 14 groundwater-quality monitoring wells that had been installed within its boundaries during the site characterization program were closed. As is discussed in Section 14, when construction of the new development was sufficiently advanced, 11 new groundwater-quality monitoring wells were installed on the site to complete an array of 18 monitoring wells to be used for a post-remediation groundwater monitoring program.

4.5 Deed Restrictions

Environmental deed restrictions will be recorded for each of the separate parcels of land into which the Oak Walk Site will be subdivided. Those parcels are shown on Figure 3. The principal terms of the deed restrictions are described in Section 13.0. Draft deed restrictions have been developed in consultation with the ACEH and their final form will be negotiated following completion of the formal subdivision procedure.

5.0 DEMOLITION AND SITE CLEARANCE

To prepare for site clearance, the fourteen groundwater-quality monitoring wells installed within the boundaries of the Oak Walk Site, Monitoring Wells MWT-1 through MWT-14 (see Figure 2 for locations), were closed under the permit of the ACDPW in October 2005. Well closure reports were filed with that county department and the California Department of Water Resources (**DWR**).

> **Note:** Because it was damaged during construction of the new Oak Walk infrastructure, Monitoring Well MW-6 was closed under permit of the ACDPW in November 2007.

In July 2007, the Oak Walk Site was cleared of all structures, foundations, and paving were demolished and cleared from the property. All recycled materials were shipped to reprocessing facilities for beneficial reuse. All vegetative matter other than mature trees was also cleared from the site, together with vegetative topsoil. However, as noted in Section 1.4, the residential structures at 1077½, 1079, 1083, 1089 and 1089B 41st Street (see Figure 2) were moved off their foundations and temporarily relocated on the site so that after site remediation and grading were complete they could be set on new foundations fronting onto 41st Street, where they have the new addresses 1077 – 1085 41st Street, as shown on Figure 3. The three-story apartment house located at 1077 41st Street was also lifted from its original foundation and was moved to the portion of the site at the intersection of Adeline and 40th Streets. It is currently stored there without foundations but supported by earthquake-resistant tie-downs. That building now has the address 4001 Adeline Street and is owned by ERDA.

No underground storage tanks were found during the site clearance and building demolition. However, a hydraulic hoist, which had not leaked, was found beneath the parking lot that had been located at the S.E. corner of the intersection of San Pablo Avenue and 41st Street (see Figure 2 for location). The hoist, which was associated with the tire retailing business that had historically been located at that location, was removed from the ground, emptied of hydraulic oil and the oil and metal components were transported off-site for recycling in beneficial use.

6.0 ADDITIONAL EXPLORATORY TRENCHING

To obtain a preliminary understanding of the distribution of COC's and the types of soil present in the subsurface, eight exploratory trenches were opened on the Oak Walk Site during an early phase of site characterization. Locations of Trenches Nos. 1-8 are shown on Figure 4. Each trench was logged and soil and groundwater samples recovered from them were analyzed for COC's.

Following site clearance, three additional 4-ft. wide exploratory trenches, designated Trench Nos. 9, 10 and 11, were opened at the locations also shown on Figure 4. The purpose was to refine understanding of the alignment of paleo streambed channels and high-permeability zones that cross the site and that are the primary pathways for transport of contaminants in groundwater originating from off-site sources.

Copies of all trench logs are included in Appendix A. The results of analyses of soil and groundwater samples recovered from them are included in Tables 3 and 6, respectively. Copies of the laboratory certificates of analysis for samples recovered from trenches in 2007 are included in Appendices E and F. The locations from which the soil and groundwater samples were recovered from each trench are shown on the logs.

6.1 Trenches 9 and 10

Trench 10, which was 156.8 ft. long and up to 21 ft. deep, was excavated in the northeastern corner of the Oak Walk Site to explore conditions downstream of the portion of the Ennis property where Clayton Group Services had found highly-permeable contaminated soil below approximately 11 ft. BGS. The groundwater in those soils was heavily contaminated by up to 47,000 µg/L of Mineral Spirits that had originated at the Dunne and/or Boysen Paint sites across Adeline St. (Clayton Group Services 2004). The geochemical data from Clayton's soil and groundwater analyses are presented in Tables 5 and 7, respectively.

As can be seen in its log, the hydrostratigraphy of Trench 10 indicates that there is a high-permeability paleo streambed channel that is between 30 and 50 ft. wide at the northern end of the trench, the northern bank of which is some 5-10 ft. south of the boundary of the Oak Walk property along 41st Street. Those permeable deposits were found between the depths of 10 ft. and 19 ft. However, unlike other high-permeability channel deposits found in other areas of the Oak Walk Site and adjacent properties, at its bottom, the channel formation is integral with a strata of permeable material that is some 1 to 2 ft. thick and extends southward from the bottom of the channel and continues throughout the length of the trench.

As can be seen by inspection of its Trench Log and Table 3, detectable quantities of petroleum hydrocarbons in soil were confined to the permeable zones exposed in Trench 10. That soil was affected by diesel-range petroleum hydrocarbons at concentrations up to 820 mg/Kg, Mineral Spirits up to 1,300 mg/K and gasoline-range hydrocarbons up to 4,200 mg/Kg. None of the BTEX compounds were found in any of the soil samples from

Trench 10. This is consistent with the contamination in this area of the site having originated at the Dunne and/or Boysen Paint Sites. Consistent with those results was the detection of diesel-range hydrocarbons at 6,100 μg/L, Mineral Spirits at 9,100 μg/L and gasoline-range hydrocarbons at 70,000 μg/L in groundwater samples recovered from that trench. (See Table 6 for groundwater data.) Also consistent with the interpretation that groundwater contamination in that area of the Oak Walk property originated at the paint manufacturing sites, it contained none of the BTEX compounds nor any of the fuel oxygenates MTBE, TAME, TBA, DIPE and ETBE.

As is shown on Figure 4, Trench 9 was parallel to and approximately 82 ft. west of and down-gradient from Trench 10. It was 153.6 ft. long and up to 19 ft. deep. Near its southern end, Trench 9 merged with groundwater Extraction Pit No. 1, which is discussed in Section 8.0. In Trench 9, the permeable facies are clayey sand and, in the southern portion of the trench, silty gravel. Those facies extend over the whole length of the trench, with the top of the materials being encountered at varying depths between 8 and 12 ft BGS. The clayey sand has typical thicknesses varying between 5 and 6.5 ft. The stratum of silty gravel that forms the permeable facies at the southern end of Trench 9 has typical thicknesses varying between 2 and 3 ft. The more than 154 ft. lateral extent of the permeable facies forms a permeable zone that differs significantly from the well-defined paleo streambed channels that generally have widths of 30 ft. or less that have been found in other areas of the Oak Walk Site and on adjacent property.

As was the case for Trench 10, detectable concentrations of chemicals of concern in soil were limited to samples recovered from the permeable zone. In those samples, diesel-range hydrocarbon compounds up to 600 mg/Kg, Mineral Spirits at concentrations up to 900 mg/Kg and gasoline-range petroleum hydrocarbons at concentrations up to 19,000 mg/Kg were detected but without any concentrations of the BTEX compounds or any fuel oxygenates. This is again consistent with the source of the contamination in this area of the site having originated at the paint sites to the east across Adeline Street.

A sample of the groundwater in Trench 9 was recovered from Groundwater Extraction Pit No. 1 before contaminated groundwater was pumped from that pit. The sample, designated as GEP-1 (see Table 6 for analytical data), contained 54,000 μg/L of diesel-range hydrocarbons, 81,000 μg/L of Mineral Spirits and 8,200 μg/L of gasoline-range petroleum hydrocarbons. Again, the source of those contaminants can be dominantly assigned to the paint manufacturing sites to the east. That sample did contain 1.4 μg/L of benzene, 4 μg/L of toluene, 2 μg/L of total xylene isomers and 1.9 μg/L of MTBE. However, those traces of components of fuel hydrocarbons can be explained by the proximity of groundwater Extraction Pit GEP-1 to the northern fringes of the plume of gasoline that originated at the Celis Site adjacent to the southwestern corner of the Oak Walk Site (see Figure 19 for location). As is noted in Section 8.0, no BTEX compounds or fuel oxygenates were detected in the sample of groundwater recovered from GEP-1 after contaminated groundwater had been pumped from it.

6.2 Trench 11

As shown on Figure 4, Trench 11 was excavated in the southeastern area of the Oak Walk Site to confirm the north-northwestern continuity of the paleo streambed channel shown on Figure 5 that was known to extend from the Oak Walk Site, across 40th Street to the Andante property to the south of that thoroughfare and from there to pass beneath San Pablo Avenue. The location at which the paleo streambed channel crosses from the Oak Walk property to the 40th Street right-of-way coincides with the former location of the underground fuel storage tanks installed on the site by the SFFBC prior to the construction of that street (see Figure 4 for location).

The log of Trench 11 shows a cross-section through a well-defined paleo streambed channel filled with loose sand and gravel deposits, which have a width of some 15 ft. and which occur in the interval between 9 and 15.5 ft. BGS. As was the case with Trenches 9 and 10, with the exception of a trace of diesel-range hydrocarbon at 9.2 mg/K at a depth of 5.0 BGS, no chemicals of concern were detected in the low-permeability soils that surround the paleo streambed deposits (See Table 3). However, as can be seen in Table 6, groundwater recovered from within the streambed deposits was affected by diesel-range hydrocarbons at 4,500 µg/L, Mineral Spirits at 5,800 µg/L and gasoline-range hydrocarbons at 1,800 µg/L, with no detectable concentrations of any of the BTEX compounds or fuel oxygenates. That indicates that the contaminants in this portion of that paleo stereambed channel have their source at the Dunne and/or Boysen Paint sites. That interpretation can be confirmed by inspection of the chromatograms generated from the analyses of sample W11 (see pages B-3 and B-4 in Appendix B) which have characteristics that are not consistent with fuel hydrocarbons.

The above findings support the previously-developed interpretation (The San Joaquin Company 2005) that fuel hydrocarbons released from the SFFBC tanks did not diffuse more than a short distance to the north-northwest through the permeable facies in the paleo streambed channel.

6.3 Trench Back-filling

The submerged volumes of the trenches were back-filled with well-separated blocks of broken concrete and 1-½ to ¾ in. sieve-sized crushed rock that was compacted by blows from an excavator bucket. When the surface of the crushed rock was above the water table, the remaining depths of the excavations were back-filled with low-permeability engineered fill using the methods described in Section 9.0 below.

7.0 REMEDIAL EXCAVATIONS

To remove soil heavily affected by benzene and other petroleum hydrocarbons and to limit the potential health risk due to the presence of such soils beneath residential structures, two remedial excavations were opened in August 2007, at the locations shown on Figure 23. Remedial Excavation No. 1 (**RE-1**) had dimensions of 60 ft. x 110 ft. x 7 ft. deep, while Remedial Excavation No. 2 (**RE-2**) measured 75 ft. x 215 ft. x 6 ft. deep.

RE-1 was excavated to remove contaminated soil from beneath the site of Building 1 of the Oak Walk project. RE-2 was excavated to remove contaminated soil from beneath a portion of Building 3. The locations of those buildings are shown on Figure 3.

7.1 Removal of Clean Overburden

Clean surficial soil over the area of the remedial excavations was removed using excavators and large front loaders were used to temporarily stockpile that material on the site. Care was taken to limit the depth of that removal to a maximum of 4 ft. BGS to avoid transferring contaminated soil to the stockpile.

7.2 Excavation and Disposal of Contaminated Soil

Prior to opening the remedial excavations, a permit for excavation of contaminated soil was obtained from the San Francisco Bay Area Air Quality Management District (**SFBAAQMD**) in compliance with that Agency’s Regulation 8, Rule 40.

The affected soil was removed using large excavators, which discharged the soil directly into end-dump trailer trucks. Immediately following the loading of each truck, the truck tires were cleaned and the load inspected to make sure that no contaminated soil would be lost from the truck during transport.

The affected soil was then shipped under Special Waste Manifests for disposal to either Allied Waste’s Keller Canyon Landfill in Pittsburg, California or to its Forward Landfill in Manteca, California. The specific landfill at which each truckload was discharged was determined based on the trucking logistics plan. That plan was modified dynamically to account for traffic congestion along the heavily-trafficked routes from the Oak Walk Site to the disposal facilities.

In addition to the contaminated soil shipped off site from the remedial excavations in 2007, additional contaminated soil from the bottom of trenches excavated at the Oak Walk Site for installation of sanitary sewers, a grease trap, storm water sewers, storm water filtration boxes and for tree planting on the site and in the sidewalk around its perimeter was also periodically shipped off-site to the landfills until site work was completed in January 2009.

A total of 170 truckloads of contaminated soil having a total weight 3,096.13 tons were transported to the landfills. Copies of the Special Waste Manifests for each load are compiled in Appendix G

Plates 2 and 3, respectively, show RE-1 and RE-2 at advanced stages of the excavation work.

7.3 Soil Sampling in Remedial Excavation

As the remedial excavations were extended, sampling locations were established on the floors of the excavations at the intersections of a grid formed by rectilinear lines spaced 25 ft. apart. To obtain samples for analysis, intact blocks of soil were excavated from the target locations and raised to the surface in an excavator bucket. A face of the block of soil in the bucket was cut with a shovel to expose an undisturbed surface and a clean, 2-in. diameter by 6-in. long brass sampling tube was driven into the cut soil face until the tube was completely filled with soil.

Following sample recovery, each sample tube was cleaned externally, its ends covered with Teflon foil and closed with tightly-fitted plastic caps secured with adhesiveless tape. Each sample tube was then be labeled for identification, entered into chain-of-custody control and packed on chemical ice for transport to TestAmerica's laboratory in Pleasanton, California within 24 hours.

The locations in the floors of the remedial excavations from which the samples were recovered are shown on Figures 24 and 25.

Each soil sample submitted to the laboratory was analyzed for the following suite of analytes.

Analyte	Method of Analysis
Total Petroleum Hydrocarbons (quantified as diesel)	EPA Method 8015M
Total Petroleum Hydrocarbons (quantified as Mineral Spirits)	EPA Method 8015M
Total Petroleum Hydrocarbons (quantified as gasoline)	EPA Method 8260B
Benzene	EPA Method 8260B
Toluene	EPA Method 8260B
Ethyl benzene	EPA Method 8260B
Total Xylene Isomers	EPA Method 8260B

Test America's laboratory is certified by the DHS to perform the soil analyses listed above. The results of the analyses of the samples are summarized in tabular form in Table 10.

7.4 Evaluation of Results of Analyses of Soil Samples Recovered from Excavations

Inspection of Table 10 shows that less that 24% of the soil samples recovered from the floors of the remedial excavations contained concentrations of TPHd, Mineral Spirits, TPHg, benzene, toluene, ethylbenzene or xylene isomers in excess of the applicable ESLs listed in Table 8. However, *none* of the concentrations that did exceed the ESLs exceeded the representative concentrations of those compounds in soil that are shown in Table 11. Those concentrations were used to perform the Tier 2 Health Risk Assessment that was a basis for design of the corrective action measures for the site (The San Joaquin Company Inc. 2006b).

8.0 EXTRACTION AND DISPOSAL OF CONTAMINATED GROUNDWATER

The CAP called for excavation of two groundwater extraction pits from which groundwater in areas of the site where it had been affected by the highest concentrations of chemicals of concern detected on the property during the site characterization program could be extracted.

One pit was to be located at the southern boundary of the site adjacent to Monitoring Well MW-2. (See Figure 23 for location.) The concentrations of the BTEX compounds and MTBE detected in the groundwater in Monitoring Well MW-2 on May 19, 2004 were the highest detected anywhere on the site. However, when an excavation penetrated 20 ft. BGS and some 13 ft. below the elevation of the piezometric surface, no water flowed into the excavation within 48 hours of opening the pit. Under those circumstances, the pit was backfilled and an attempt to extract contaminated groundwater from that area of the site was abandoned. On September 18, 2008, a groundwater sample was recovered from Monitoring Well MW-2 and analyzed for TPHd, Mineral Spirits, TPHg, the BTEX compounds and the fuel oxygenates MTBE, TAME, TBA, DIPE and ETBE. The results of the analysis are included in Table 6. Inspection of the Table shows that between May 19, 2004 and September 18, 2007 there had been a substantial reduction in the concentrations of chemicals of concern in the groundwater present in that well. For example, the concentration of benzene fell from 7,900 μg/L to 1,500 μg/L, which is an 81% reduction. Reductions of similar magnitude had occurred in the other analytes.

The health risk analysis that was conducted to support the corrective action design assumed that the remedial measures taken would reduce the May 19, 2004 concentrations of chemicals of concern in groundwater in the area around Monitoring Well MW-2 by 60%. As is cited in Table 11, in the case of benzene, that meant that the target concentration in groundwater after remediation would be 3,160 μg/L (The San Joaquin Company Inc. 2006b). The actual concentration of 1,500 μg/L measured in the sample recovered from Monitoring Well MW-2 on September 18, 2007 was 53% lower than that target concentration. There were similar reductions in the concentrations of other chemicals of concern in the groundwater in Monitoring Well MW-2 so that all were lower than the target assumed for the corrective action program design. These findings demonstrate that the inability to extract contaminated water from the area around Monitoring Well MW-2 did not prevent the remedial action goals from being achieved.

In September 2007, a groundwater extraction pit, designated Groundwater Extraction Pit No. 1 (**GEP-1**), was successfully opened at the location shown on Figure 25. The pit was approximately 25 ft. x 15 ft. x 19 ft. deep and is shown in section on the log of Trench 9 that is included in Appendix A. The excavated soil was segregated into material affected by petroleum hydrocarbons and clean soil. The clean overburden soil was set aside for use as engineered fill and the contaminated soil was shipped off-site for disposal in the manner described in Section 7.2.

On September 26, 2007, groundwater began to flow into the extraction pit at a depth of approximately 16 ft. BGS and over a period of 36 hours the surface of the groundwater in the pit rose to a depth of approximately nine feet BGS. At that time, a sample of the groundwater in the pit was recovered by lowering a bailer attached to a length of twine into the water in such a manner as to cause minimal disturbance to the water column and to ensure that the water entering the bailer was from the upper one foot depth below the water surface. The sample was decanted into clean glassware containing hydrochloric acid preservative that was pre-dispensed by the laboratory. After labeling for identification, the sample was packed on chemical ice and shipped within four hours to TestAmerica's laboratory in Pleasanton, California for analysis. The sample was designated Sample No. GEP-1A. It was analyzed for TPHd, Mineral Spirits, TPHg, the BTEX compounds and the fuel oxygenates MTBE, TAME, TBA, DIPE and ETBE. The results of the analyses are recorded in Table 6. The sample contained 81,000 μg/L of Mineral Spirits (TPHms), 54,000 μg/L of diesel-range hydrocarbons (TPHd) and 8,200 μg/L of gasoline-range hydrocarbons (TPHg), but the mixtures of compounds in the diesel and gasoline range did not have the characteristics of fuel hydrocarbons. Traces of benzene, toluene, xylene isomers and MTBE were also detected in the sample but there were no detectable concentrations of ethylbenzene, TAME, TBA, DIPE or ETBE. Those findings are consistent with the interpretation developed from the site characterization program that groundwater in that area of the Oak Walk Site is primarily affected by Mineral Spirits and other industrial solvents released at the up-gradient Boysen Paint and Frank Dunne sites.

The water in the extraction pit was then left for some 48 hours in a quiescent state to permit the petroleum hydrocarbons to concentrate near the surface so that the water containing the highest concentration of chemicals of concern could be preferentially extracted.

Groundwater was extracted from the pit by hanging a suction hose connected to a 5,000 gallon capacity vacuum truck from the boom of an excavator so that its end was constantly held a few inches below the surface of the water as groundwater was extracted from the pit. The vacuum was applied in such a way that there was just enough suction to draw the water into the truck. This technique ensures that the most contaminated groundwater that is close to the surface is drawn into the truck and is not mixed by turbulence with the water at greater depth that contains lower concentrations of contaminants. After the first vacuum truck was nearly fully loaded, the surface of the water in the groundwater extraction pit had fallen to a depth of approximately 11 ft. BGS.

After filling the vacuum truck, its contents were shipped under control of a waste manifest to the DeMenno/Kerdoon treatment facility in Compton, California, where its petroleum hydrocarbon content was recycled in beneficial use and the cleaned water discharged under permit to the Los Angeles County Sanitation District's sewerage system. The waste manifests under which the contaminated water was shipped from the Oak Walk Site to the recycling facility are included in Appendix G.

Following filling of the vacuum truck, the groundwater was permitted to recharge the pit and to again allow the most contaminated water to rise to the surface and reach a quiescent state before additional extraction was undertaken. Six vacuum truckloads of water were removed from the pit for a total volume of 21,000 gallons, which exceeded the 20,000 gallons specified in the CAP. Plate 4 shows the drawn-down groundwater in the extraction pit after the first vacuum truck had been loaded. A sheen of petroleum hydrocarbons can be seen on the surface. However, after extraction was complete, the water in the pit became clear.

On October 4, 2007, after extraction of groundwater was completed, a second sample of water was recovered from the pit by the same methodology as was use for the first sample. This sample was analyzed for the same suite of analytes as the first. As is recorded in Table 6, no traces of any of the BTEX compounds or fuel oxygenates were detected in this sample, which was designated as sample number GEP-1B. The concentrations of diesel-range hydrocarbons had fallen from 54,000 μg/L to 530 μg/L, which is a 99% reduction. The concentration of Mineral Spirits had fallen from 81,000 μg/L to 810 μg/L, which is also a 99% reduction, while TPHg, in falling from 8,200 μg/L to 1,100 μg/L, achieved an 87/% reduction. Those figures demonstrate that groundwater extraction from Groundwater Extraction Pit No. 1 successfully met the goals of the CAP, which were to reduce groundwater contamination significantly in this portion of the Oak Walk Site and to contribute to an improvement in the quality of groundwater in the area affected by the releases of regulated material that occurred at the up-gradient Boysen Paint and Frank Dunne sites.

Upon completion of the groundwater extraction, Groundwater Extraction Pit No. 1 was backfilled with a mixture of broken concrete up to 1 ft. in principal dimension and ¾ in. crushed rock until the top of the backfill material was some 3 in. above the water table. That material was compacted by a heavy vibratory roller. Backfilling of the pit was completed using compacted low permeability clay soils in the manner described in Section 9.0 below.

9.0 RESTORATION OF REMEDIAL EXCAVATIONS

Following the excavation and off-site disposal of the contaminated soil removed from them, the remedial excavations were backfilled with very low-permeability, compacted clay soil.

Soil for backfilling was obtained from the stockpile of clean excavated soil that had been left on the site and from a borrow pit in Los Altos, California. Dry densities, moisture contents and compaction curves were obtained from representative samples of each of those soils. The characterization results are compiled in Table 12. The hydraulic conductivity of the backfill soils was measured using a constant head permeameter. The results of those tests are also cited in Table 12.

The soil placed in the remedial excavations was compacted using heavy, vibratory, sheep's-foot rollers to a minimum of 90% relative density, as that relative compaction is defined by the American Society of Testing and Materials (**ASTM**) Standard D1557-00 (American Society of Testing and Materials 2000a).

The relative compaction of the soil was confirmed in situ by field testing with a nuclear soil density gauge in compliance with ASTM D6938-07b (American Society of Testing and Materials 2001). The compaction curves and the results of the soil density tests are compiled in the project's Geotechnical Engineering Inspection Report (The San Joaquin Company Inc. 2009).

Sections B-B', D-D', F-F' and G-G' through the backfilled remedial excavations are shown on Figures 8, 10, 12 and 13, respectively.

Plate 5 shows the residence formerly located at 1077½ 41st Street (see Figure 2 for location) being transported across the backfill of Remedial Excavation No.2 to the new address shown on Figure 3 at 1085 41st Street where it was restored and incorporated into the new development (see Plate 9).

9.1 Hydraulic Conductivity of Backfill

As is documented in Table 12, the hydraulic conductivity of the backfill soils when compacted to 90% relative density ranged from 1.52 x 10^{-9} cm/sec to 7.82 x 10^{-8}. These values are all much lower than the 5.65 x 10^{-7} cm/sec for the soil in the subsurface that was assumed for the purpose of designing the corrective action measures specified in the CAP (The San Joaquin Company Inc. 2006b).

9.2 Closure of Sewer Laterals

All abandoned sewers and other disused conduits that were encountered during the opening of the remedial excavations were cut off and plugged at the property boundary in compliance with the requirements of the City of Emeryville. All backfill in on-site utility trenches was removed during the mass excavation operations. During backfilling of the remedial excavations, the very low permeability clay fill was compacted against the excavation walls to cut off any flow of contaminated water that might otherwise migrate onto the site.

10.0 RE-ENGINEERING OF SITE-WIDE SOILS

Due to the soft native soils on the Oak Walk Site, construction of foundations for buildings required improvement of the soil in the upper 3 ft. to 6 ft. BGS. To accomplish this, the geotechnical engineering plan (The San Joaquin Company Inc. 2004b) for the site called for soil beneath the whole of Building 3 (see Figure 3 for location) to be excavated to a minimum depth of 6 ft. After conditioning, this soil was returned to the excavation as engineered fill compacted to a relative density of 90%. The methods used to place, compact and verify the density of that backfill were the same as those used to backfill the remedial excavations (see Section 9.0). The re-engineered soil beneath Building 1 has a depth of 7 ft., which was required by the environmental corrective action plan, which in this area exceeded the 6 ft. geotechnical engineering depth requirement. The depth of re-engineered soil beneath Building 2 and the single family residential structures fronting onto 41st Street is a minimum of 4 ft. Soil beneath the paved outdoor parking has been re-engineered to a minimum depth of 3 ft.

The effect of the geotechnical engineering soil improvement work described above has been to create a stratum of very low permeability soil beneath both the residential and commercial ground floor units in the new building complex that has hydraulic conductivity within the range 1.52×10^{-8} to 7.82×10^{-8} cm/sec. That range is less than the 5.65×10^{-7}cm/sec hydraulic conductivity that was used for the design of the corrective action measures.

11.0 SOIL GAS SURVEY

As is recorded in Table 12, the hydraulic conductivities of the clay soils in the vadose zone at the Oak Walk Site in its post-remediation condition fall within the very low range of range 2.51 x 10^{-9} to 7.82 x 10^{-8} cm/sec. Because the groundwater table is shallow, it restricts the depth of soil gas test borings to 5 ft BGS. These conditions render measurements of soil gas to be an unsuitable basis for computation of health risks at the property. In fact, there is a significant concern that a risk assessment based on the results of a soil gas survey could *under estimate* the risks. SJC presented a detailed discussion of the site-specific geotechnical engineering parameters that scientifically preclude use of soil gas survey technology at the Oak Walk Site in the Corrective Action Plan (The San Joaquin Company Inc. 2006b).

11.1 Regulatory Guidance for Applicability of Soil Gas Surveys

The limitations of measurements of COCs in soil gas at sites with high water tables and low permeability soils are recognized in the national guidance standard for implementation of soil gas surveys (American Society for Testing and Materials 2000b). The advisory document issued by the California Department of Toxic Substances Control and the California Regional Water Quality Control Board – Los Angeles Region (2003) specifically *prohibits* soil gas testing at locations where the bottom 5 ft. of a test boring is in clay, which is an unavoidable condition at all locations on the Oak Walk site. Despite these concerns, the City of Emeryville required that a soil gas survey be conducted at the Oak Walk Site as a condition of the City's approval of the redevelopment project (City of Emeryville 2005). Accordingly, after notifying City staff of our concerns, SJC included a soil gas survey in the Corrective Action Plan. However, while recording the survey results, SJC has not relied on it to assess whether or not the corrective action program met its design objectives to limit health risks at the site.

11.2 Soil Gas Testing Locations

After the remedial excavations had been backfilled and the geotechnical soil improvement measures had been completed, soil gas testing was performed at the 10 locations shown on Figure 4. At each test location a 2 in. diameter, 5 ft. deep boring was drilled using push technology. The four foot long by two inch diameter drill tube was advanced into the ground by pushing and, as necessary, hammering. The drill tube was lined with clear plastic liners. As the boring was advanced, it was logged by a California-registered geotechnical engineer. The logs are included in Appendix A. The engineer also surveyed the elevations of the ground surface at the test locations. Those elevations are recorded in Table 1. Tests were performed at location SG-7 through SG-10 on September 24, 2007. The tests at locations SG-1 through SG-6 were performed on October 29, 2007. The borehole drilling was performed by and the soil gas testing equipment operated by Gregg Drilling and Testing, Inc. of Martinez, California, which holds the requisite C57 license issued by the California State Contractors Licensing Board.

Although for the reason stated above, the soil gas testing was performed in the very low permeability clay soils at the inadequate depth of 5 ft. BGS, the work was otherwise performed according to the applicable methodologies specified in the advisory documents for active soil gas investigation issued by the California Department of Toxic Substances Control and the California Regional Water Quality Control Board – Los Angeles Region (2003) and the California Regional Water Quality Control Board - San Francisco Bay Region (2005).

11.3 Sampling and Analysis of Soil from Bottoms of Soil Gas Test Borings

A soil sample was recovered from a depth of 5 ft. BGS in each soil gas boring by cutting off an approximately 6 in. length of the drill tube liner. In each case the ends of the sample tube were covered with Teflon sheets and closed with tightly-fitting plastic caps which were secured by adhesiveless tape so that the sample tube was hermetically sealed. The samples were then labeled for identification and stored on chemical ice ready for transportation within 10 hours for analysis at TestAmerica's laboratory in Pleasanton, California. After the soil sample was recovered, the top of the boring was temporarily sealed by a bentonite plug to reduce loss of gas from the boring while the soil-gas sampling equipment was being prepared to perform a gas sample extraction.

The soil samples, which were identified as Samples SG-1 through SG-10, were analyzed for the following suite of analytes.

Analyte	Method of Analysis
Total Petroleum Hydrocarbons (quantified as diesel)	EPA Method 8015B
Total Petroleum Hydrocarbons (quantified as Mineral Spirits)	EPA Method 8015B
All 66 Volatile Organic Compounds Included in EPA Method 8260.	EPA Method 8260B

TestAmerica's laboratory is certified by the California Department of Health Services to perform the specified analyses.

The results of the soil analyses are presented in Table 13.

11.4 Recovery and Analysis of Samples of Soil Gas

To recover a sample of soil gas, a soil gas probe was driven into the bottom of the boring so as to penetrate a minimum of one foot into undisturbed soil. The inner tube of the soil gas probe was then pulled back ½ in. to expose the slotted inlet, which permits soil gas to enter the tip of the probe. The annular space between the drive rod of the probe and the boring wall was then filled with hydrated bentonite to prevent intrusion of ambient air into the boring.

A length of new ¼ in. diameter Tygon® tubing fitted with a brass coupling with an O-ring seal was then threaded down the probe's inner tube and tightly screwed onto the soil-gas sampling tip. At the point that the Tygon® tubing left the probe the annular space between that tubing and the inner probe pipe was sealed with hydrated bentonite as a further measure to prevent intrusion of ambient air into the soil around the sampling tip. The other end of the tubing was connected to a closed flow-control valve on an evacuated Summa™ canister supplied by TestAmerica's laboratory in Costa Mesa, California. The flow-control valve had been decontaminated at the laboratory and set by the laboratory for a flow rate of 150 mL/min.

A second Summa™ canister was coupled to the tubing so that it could act as a vacuum pump to purge the apparatus and tubing before soil gas was extracted from the subsurface. Laboratory-supplied and decontaminated pressure gauges were attached to the tubing so that the vacuum in the canisters could be monitored. Those arrangements formed a continuous sealed pathway from the tip of the soil gas probe to the primary Summa™ canister. Following assembly of the sampling equipment the boring was left undisturbed for a minimum of 20 min. for the subsurface to reach equilibrium conditions.

A leak test was then performed by opening the flow control valve of the secondary Summa™ canister so as to apply a vacuum of -6 in. to -8 in. of Hg to the sampling equipment while swabbing all tubing joints with isopropyl alcohol. The system was adjudicated to be free of leaks if the preset pressure was held constant for a minimum of 10 minutes. Thereafter, throughout the duration of the sample extraction process, the system's joints were swabbed with isopropyl alcohol every five minutes to check for any subsequent development of leaks.

The sample extraction equipment array was then purged of ambient air by opening the valve to the secondary Summa™ canister for a period of three minutes.

The flow control valve on the primary Summa™ canister used to contain the soil gas sample was then fully opened to draw gas from the soil into the canister. At this point the vacuum in the canister was approximately -30 in. of Hg. As the sample recovery progressed, the pressure in the system slowly increased until it reached -5 in. of Hg, at which point the sampling canister was shut off. The sample cylinder was then labeled for identification and entered into chain of custody control. All tubing used at a given sampling location was discarded and the soil gas recovery probe was decontaminated before moving to a new test location. New tubing and laboratory-decontaminated pressure gauges were used to perform the soil gas extraction.

The borings drilled to sample soil gas were closed by filling with hydrated bentonite pellets.

After filling and labeling, the gas cylinders were shipped so as to arrive at TestAmerica's laboratory in Costa Mesa, California within 48 hours. All the soil gas samples were analyzed for all 51 of the volatile organic compounds specified for the EPA TO-15 Method analytical procedure. The results of the analyses are presented in Table 13.

11.5 Evaluation of Soil Gas Survey Results

As is indicated in Table 13, none of the samples of soil recovered from the soil-gas test borings contained any COC's at concentrations higher than the applicable ESLs.

As is also indicated in Table 13, only benzene, at a concentration of 840 $\mu g/m^3$ detected in the soil gas sample recovered from location SG-10, exceeded the currently published ESL of 84 $\mu g/m^3$ established for benzene in soil gas by the RWQCB for shallow soil at residential sites where the groundwater is not a source of drinking water (California Regional Water Quality Control Board San Francisco Bay Region 2008). The ESL of 84 $\mu g/m^3$ is derived from a model in which the residential building is assumed to be constructed on a high-permeability sandy soil having a hydraulic conductivity of 7.4 x 10^{-3} cm/sec. That ESL value was computed using the USEPA's spreadsheet program SG-ADV-Feb04.xls (California Department of Toxic Substances Control 2004). The computation is reproduced in Appendix D, which shows that for a benzene concentration of 84 $\mu g/m^3$, the resulting carcinogenic incremental risk from vapor intrusion into indoor air is 1.0 x 10^{-6}. That value is the limit used by the RWQCB to differentiate between acceptable and unacceptable risk.

As was recorded in Section 9.1, the highest measured hydraulic conductivity of the silty clay engineered fill from which soil gas sample SG-10 was recovered was 7.82 x 10^{-8} cm/sec. The spreadsheet algorithm used by the RWQCB to compute the ESLs for soil gas provides for an election to compute carcinogenic risk for models where it is assumed that building are constructed on a range of soil types. These include silty clay having a hydraulic conductivity of 5.5 x 10^{-6} cm/sec. Although that conductivity is almost two orders of magnitude greater than the hydraulic conductivity of soil at the soil gas testing locations, it can be used with the algorithm to obtain a very conservative assessment of the site-specific soil gas screening concentration applicable to the Oak Walk Site. SJC has performed that calculation and the resulting spreadsheet output is included in Appendix D. The concentration of benzene in soil gas present in a silty clay with a hydraulic conductivity of 5.5 x 10^{-6} cm/sec would have to exceed 4,200 $\mu g/m^3$ for the incremental carcinogenic risk to be greater than the specified limit of 1.0 x 10^{-6}. (**Note:** Except for changing the soil properties to those applicable to silty clay, all of the other highly conservative input parameters used by the RWQCB to compute *non* site-specific ESLs were left unchanged in the model used for SJC's computation.)

Based on the above evaluation, if the soil gas survey results were to be taken at face value it could be concluded that they demonstrate that there are no significant risks due to the presence of components of petroleum hydrocarbons in soil gas beneath the Oak Walk site. <u>However, due to the inapplicability of soil gas testing to the geotechnical conditions at the site that were explained earlier in this report, the soil gas data should not be used to</u>

assess the environmental condition of the property. Such assessments should rely on an assessment the geotechnical and hydrogeologic conditions at the property and measurements of the concentrations of chemicals of concern in soil and groundwater which, as has been demonstrated elsewhere in this document, do show that the site's environmental condition to be suitable for residential use.

12.0 INSTALLATION OF ELASTOMERIC MEMBRANE

As required by the CAP (The San Joaquin Company Inc. 2006b) and approved by the ACEH (Alameda County Environmental Health Care Services 2006) a Liquid Boot® elastomeric membrane was placed beneath floor slabs of all first floor residential and commercial space in the buildings on the redeveloped Oak Walk Site. Liquid Boot,® manufactured by LBI Technologies, Inc. of Santa Ana, California (**LBI**) has a hydraulic conductivity of less than 1.0 x 10^{-11} cm/sec (Tofani 2009) as measured by ASTM Standard Test D4491 (American Society for Testing and Materials 2004). It does not break down in the presence of petroleum hydrocarbons when subjected to the ASTM Standard D543-06 test (American Society for Testing and Materials International 2006) and it has been shown to gain less than 1% in weight when exposed to benzene vapor at a concentration of 136,000 μg/L. At that concentration, a 60 mil thickness of the material has a mean benzene diffusion coefficient of 2.1 x 10^{-13} m^2/day (GeoKinetics, Inc. 2008, Tofani 2009). Figure 26 shows the ground floor commercial and residential units where the floor slabs at the Oak Walk Site were underlain by the Liquid Boot® membrane.

The Liquid Boot® membrane was sprayed over a geotextile substrate laid over a 4-in. thick gravel base until it reached a minimum thickness of 60 mils. The membrane was also installed vertically along the interior sides of the buildings' strip footings and column bases, as well as around each utility pipe or other penetration passing through the floor slabs. That technique ensures that there are no gaps anywhere in the completed membrane over the entire area of the occupied space. In addition to the areas beneath ground floor occupied space, a Liquid Boot® membrane was installed so as to fully seal the floor and walls of the elevator pits in Building 3 of the new development.

The Liquid Boot® was installed by Gergen Construction of Garden Grove, California who are a LBI approved installer. The preparation of the gravel base and the installation of the geotextile substrate onto which the Liquid Boot® was sprayed was inspected and approved by the project geotechnical engineer who is also a LBI Certified Liquid Boot® Inspector. After application and curing of the Liquid Boot®, the inspector cut swatches from the cured membrane and confirmed that it had a minimum thickness of 60 mils and inspected the membrane to ensure that it had been properly installed. Each separate area of the cured Liquid Boot® was subjected to a smoke test that demonstated that it was free of any voids or unsealed penetrations. Plate 6 shows smoke testing of the cured Liquid Boot® at Building 1. The inspection reports are reproduced in Appendix C. No penetrations of the impermeable membrane were made after it was installed and had cured.

Following installation and curing, 105 mil thick Liquid Boot® Ultra Shield-1000 geotextile fabric was laid over the membrane to protect it during installation of the concrete floor slab. Plate 7 shows the protective fabric installed over the Liquid Boot® at Building 3. As shown on Figure 27, the concrete floor slabs are 6 in. thick with a minimum of No. 4 reinforcing bar set at 18 inches on center each way.

13.0 DEED RESTRICTIONS

Before property ownership of any of the commercial and residential units of the development is transferred to private parties, a deed restriction will be submitted for recording to the Alameda County Recorder. The deed restriction will place limits on future uses of and construction on the property. Separate deed restrictions will be recorded for each separate piece of property into which the site is subdivided. The property boundaries on the subdivided site are shown on Figure 3.

Drafts of the deed restriction have been prepared that include the following principal terms.

- Future use of the property shall be restricted to high-density residential, commercial or office space, or, in the case of the parcels that are currently the sites of single family residences, to that use.
- No hospitals shall be located on the property.
- No schools for persons under 21 shall be located on the property.
- No day care centers for children or senior citizens shall be located on the property.
- No excavations deeper than 4 ft. shall be opened on the property without the written permission of the Alameda County Environmental Health Department (**ACEH**). Any contaminated soil brought to the surface by any means must be managed in compliance with all applicable local, State and Federal laws.
- No well for extraction of groundwater for domestic, potable, industrial or any other use shall be drilled on the property without the express permission of ACEH.
- All uses and development of the property shall preserve the remedial measures taken at the property and preserve any groundwater-quality monitoring system installed on the property unless otherwise expressly permitted by ACEH.
- All uses and modification of remediation measures or the groundwater-quality monitoring system shall be consistent with the site-specific Risk Management Plan, *i.e.*, the installed elements of the CAP and the continuing requirements of the deed restriction.

The deed restrictions will be recorded after approval of final drafts by ACEH.

14.0 ADDITIONAL GROUNDWATER-QUALITY MONITORING WELLS

As noted in Section 5.0, all groundwater-quality monitoring wells that had been installed within the boundaries of the Oak Walk Site had been closed prior to site clearance and demolition. To provide for a post-remediation groundwater-quality monitoring program, WCEW-1 and MW-2 through MW-8, which were used for the site characterization program in 2004 and located outside the property boundaries, were left in place, except for Monitoring Well MW-6, which was damaged by construction in November 2007.

To complete the post-remediation groundwater-quality well array, Monitoring Well MW-6 was replaced by Monitoring Well MW-6A and ten new wells (MW-9 through MW-16C) were installed under permits issued by the Alameda County Department of Public Works (**ACDPW**) at the locations shown on Figure 4. The new well locations were selected with consideration for the known distribution of analytes of concern in the subsurface, their proximity to residential and commercial buildings beneath which soil and groundwater is present, and the accessibility of well sites on the redeveloped property.

With the exception of proposed Monitoring Wells MW-16A, MW-16B and MW-16C, all of the new monitoring wells have a total depth of 20 feet. The purpose of the well cluster at location 16 is to assess any significant variations in the concentrations of chemicals of concern in groundwater with depth beneath the groundwater table. Monitoring Well MW-16A was screened over the interval 5-15 ft. BGS and Monitoring Wells MW-16B and MW-16C were screened over the intervals 20-25 ft BGS and 30-35 ft. BGS, respectively.

14.1 Well Drilling and Soil Sampling

Monitoring Wells MW-9 through 11 and MW-6A were installed on September 27, 2008. The well borings were advanced using an 8-in., open-stem auger mounted on a drilling rig operated by a Gregg Drilling & Testing of Martinez, California, which holds the requisite C57 license issued by the California State Contractors Licensing Board. The borings were logged under the direction of a California-licensed geotechnical engineer. The remaining seven wells (*i.e.*, Monitoring Wells MW-12 through MW-16C) were installed on February 10, 2009. Copies of the well logs, which include details of the well construction, are included in Appendix A.

While the borings for the proposed monitoring wells were being drilled, the drilling equipment was used to recover soil samples in clean, brass tubes from a depth of 5 ft. in each hole and at 5-ft. intervals thereafter, to the bottom of each boring.

Following sample recovery, each sample tube was cleaned externally, its ends covered with Teflon foil and closed with tightly-fitted plastic caps secured with adhesiveless tape. Each sample tube was then labeled for identification, entered into chain-of-custody control and packed on chemical ice for transport to TestAmerica’s laboratory in Pleasanton, California.

Each soil sample submitted to the laboratory was analyzed for the following suite of analytes.

Analyte	Method of Analysis
Total Petroleum Hydrocarbons (quantified as diesel)	EPA Method 8015M
Total Petroleum Hydrocarbons (quantified as Mineral Spirits)	EPA Method 8015M
Total Petroleum Hydrocarbons (quantified as gasoline)	EPA Method 8260B
Benzene	EPA Method 8260B
Toluene	EPA Method 8260B
Ethyl benzene	EPA Method 8260B
Total Xylene Isomers	EPA Method 8260B

TestAmerica's laboratory is certified by the DHS to perform the soil analyses listed above.

14.2 Disposal of Drill Cuttings

Drill cuttings from the well borings were temporarily retained in 55-gal., close-topped, steel drums placed in storage in a secure area of the Oak Walk Site until they were transported off-site on February 18, 2009 under control of a Special Waste manifest for disposal at Allied Waste's Keller Canyon Landfill in Pittsburg, California.

14.3 Well Development

Following construction, the wells were developed by pumping and surging and by bailing a minimum of 10 well volumes from each. The well development water was temporarily staged in a 200-gallon storage tank located in a secured storage space on the Oak Walk Site before it was shipped off site under control of a waste manifest to the DeMenno/Kerdoon treatment facility in Compton, California, where its petroleum hydrocarbon content was recycled in beneficial use and the cleaned water discharged under permit to the Los Angeles County Sanitation District's sewerage system.

14.4 Survey of Well-head Locations and Elevations

The latitude, longitude and elevations of the tops of the casings of the new wells relative to the National Vertical Datum (**NAVD)** were surveyed by a California-registered land surveyor in compliance with California Bill AB 2886 (Water Code Sections 13195-13198). The latitude and longitude of the wells are recorded in Table 1, together with the elevations of the tops of the casings and the surface elevations of the ground at the well heads.

15. COMPLETED CORRECTIVE ACTION PLAN ELEMENTS

By April 2009, when construction of the Oak Walk redevelopment project was concluded, the following remediation elements of the Corrective Action Plan had been completed.

Demolition and Site Clearance

Demolition and clearance of the site was completed in July 2007.

Excavation and Off-site Disposal of Contaminated Soil

Contaminated soil was excavated from two remedial excavations and shipped off-site for disposal at permitted disposal facility. Together with contaminated soil excavated from utility trenches and tree-planting sites, a total of 3,096.13 tons of soil affected by fuel hydrocarbons and paint solvents were removed from the site. The results of analyses of confirmation samples, as recorded in Table 10, demonstrated that concentrations of the BTEX compounds in the soil remaining in the bottoms of the remedial excavations were at lower concentrations than those cited in Table 11, which were used as the basis for the design of the corrective action measures.

Restoration of Remedial Excavation

The remedial excavations were backfilled with clean native and imported soils and compacted to 90% relative compaction so that the hydraulic conductivity of the fill was in the range 1.52 x 10^{-8} to 7.82 x 10^{-8} cm/sec. The highest hydraulic conductivity in that range is less than the hydraulic conductivity of 1.0 x 10^{-7} cm/sec that was used for the design of the corrective action measures.

Extraction and Disposal of Contaminated Groundwater

A total of 21,000 gallons of contaminated groundwater was extracted from the area of the site where 54,000 μg/L of TPHd, 81,000 μg/L of TPHms, 8,200 μg/L of TPHg, 1.4 μg/L of benzene, 3.6 μg/L of toluene and 2.2 μg/L of xylenes had been present. Following the extraction, the concentrations of those contaminants in groundwater were reduced to 530 μg/L of TPHd, 810 μg/L of TPHms, 1,100 μg/L of TPHg, and no detectable traces of benzene, toluene and xylenes. That reduction achieved the objectives of the CAP, which were to reduce significantly the contaminants of concern in groundwater in the most heavily-affected area of the Oak Walk Site and to improve its quality in the area down-gradient of the paint manufacturing plants to the east.

Re-engineering of Site-wide Soils

To comply with the geotechnical engineering requirements for redevelopment it was necessary to remove native soils to varying depths between four and six feet beneath structures on the site and to three feet beneath paved areas and to replace the excavated material with engineered fill compacted to 90% relative compaction. The resulting compacted material has hydraulic conductivities in the range 1.52 x 10^{-8} to 7.82 x 10^{-8} cm/sec. The effect of re-engineering the soil was to provide a stratum of low permeability soil beneath all occupied structure on the site having hydraulic conductivity of less than 5.65 x 10^{-7} cm/sec, which was the CAP goal.

Cut-off and Sealing of Utility Conduits Crossing Site Boundaries

All sewer and other utility conduits crossing the site boundaries prior to its redevelopment were cut off and sealed. Low permeability compacted clay cut-offs were used to prevent migration of groundwater across the site boundaries via the backfill of abandoned utility trenches.

Installation of Elastomeric Membrane

A Liquid Boot® membrane was installed beneath the ground floor slab of all residential and commercial space in the buildings and around the floor and walls of the elevator shaft pits on the Oak Walk Site. Liquid Boot® is an elastomeric membrane that does not breakdown when exposed to petroleum hydrocarbons. It has a hydraulic conductivity of less than 1 x 10^{-11}cm/sec as measured by ASTM Standard Test D4491. When a 60 mil thickness of the material is exposed to benzene vapor at a concentration of 136,000 μg/L it has a mean diffusion coefficient of 2.1 x 10^{-13} m^2/day (Tofani 2009). It does not break down in the presence of petroleum hydrocarbons when subjected to the ASTM Standard D543-06 test and it has been shown to gain less than 1% in weight when exposed to benzene vapor at a concentration of 136,000 μg/L. Under those conditions it has a mean benzene diffusion coefficient of 2.1 x 10^{-13} m^2/day (GeoKinetics, Inc. 2008, Tofani 2009). Figure 26 shows the ground floor commercial and residential units where the floor slabs are underlain by the Liquid Boot® membrane.

Completion of Post-remediation Groundwater-quality Monitoring Well Array

Eleven new groundwater-quality monitoring wells have been installed within the boundaries of the Oak Walk Site. Together with seven wells previously installed outside the boundaries of the site they form an 18-well array that will be used to implement a post-remediation groundwater-quality monitoring program.

16. POST-REMEDIATION GROUNDWATER MONITORING

As called for by the approved CAP, a one-year duration groundwater-quality monitoring program is planned for the Oak Walk Site that will employ the extant 18-well array of groundwater-quality monitoring wells shown on Figure 4. A total of five rounds of monitoring will be conducted at quarterly intervals. The results will be submitted in report form to the ACEH. The quarterly groundwater sampling will be coordinated with sampling rounds conducted by the City of Emeryville for the Celis and SFFBC Sites.

16.1 Determination of Groundwater Elevations

To initiate each monitoring round, the depth from the top of the casing to the water table will be measured using a conductivity meter. The results will be used to compute the groundwater table elevations relative to the NAVD, to produce a contour map of the groundwater table and to determine the direction and magnitude of the groundwater flow gradient.

16.2 Well Purging

After the depths to groundwater are measured, a small-diameter, submersible pump will be used to purge each groundwater-quality monitoring well of stagnant water. The pumped water will be discharged into 5-gal. pails, each of which will, in turn, be discharged into open-topped, 55-gallon drums. The purge water will be pumped into a 200-gallon storage tank that will be located in a secured area on the Oak Walk property.

During the purging procedure, the temperature, electrical conductivity and pH of the stream of purge water will be monitored by periodically checking those parameters using a multi-function electronic meter. Purging will continue until all three parameters stabilize, *i.e.*, variations between measurements are less than 10%. The array of parametric results for each well will be recorded in field notes.

16.3 Groundwater Sampling Procedure

After purging, samples will be recovered from each monitoring well using a disposable bailer. Water brought to the surface in the bailers will be decanted via a discharge spigot valve in the bottom of the bailer so as to completely fill clean glassware supplied by the laboratory. The vials used to contain samples of groundwater for volatile organic compound (**VOC**) analysis will contain the applicable volume of hydrochloric acid preservative pre-dispensed by the laboratory. The sample vials and jars will be tightly closed, labeled for identification, entered into chain-of-custody control and packed on chemical ice for transport, within 24 hours, to TestAmerica’s laboratory in Pleasanton, California.

16.4 Groundwater Analyses

Each groundwater water sample will be analyzed for the following suite of analytes.

Analyte	Method of Analysis
Total Petroleum Hydrocarbons (quantified as diesel)	EPA Method 8015M with pre-treatment by EPA Method 3630.
Total Petroleum Hydrocarbons (quantified as Mineral Spirits)	EPA Method 8015M with pre-treatment by EPA Method 3630.
Total Petroleum Hydrocarbons (quantified as gasoline)	EPA Method 8260B
Benzene	EPA Method 8260B
Toluene	EPA Method 8260B
Ethylbenzene	EPA Method 8260B
Total Xylene Isomers	EPA Method 8260B
tertiary-Butyl alcohol	EPA Method 8260B
Methyl-tertiary butyl ether	EPA Method 8260B
Di-isopropyl ether	EPA Method 8260B
Ethyl tertiary-butyl ether	EPA Method 8260B
Tertiary-amyl methyl ether	EPA Method 8260B

TestAmerica's laboratory is certified by the DHS to perform the groundwater analyses listed above.

16.5 Disposal of Purge Water

Purge water held in the 200-gallon on-site holding tank will be allowed to accumulate until sufficient volume is available for economical transport for off-site disposal. Purge water leaving the site will be transported under control of a waste manifest to the DeMenno/Kerdoon treatment facility in Compton, California, where its petroleum hydrocarbon content will be recycled in beneficial use and the cleaned water discharged under permit to the Los Angeles County Sanitation District's sewerage system.

16.6 Reporting

Following each round of groundwater-quality monitoring an engineering report will be prepared that will contain the field data and laboratory results and present an analysis and evaluation of that data. Electronic editions of those reports will be uploaded to ACEH's ftp site and to the SWRCB's Geotracker website.

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TABLE 1

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TABLE 1

BORING AND WELL LOCATIONS AND ELEVATIONS

Well/Boring ID	**Surface Elev.** ft. MSL	**Casing Elev.** ft. MSL	**Latitude** Degrees (N)	**Longitude** Degrees (W)
BG-1	43.33	-	37.83126586	122.27971459
BG-2	46.47	-	37.83157152	122.27901056
CPT-1	46.54	-	37.83157565	122.27899228
CPT-2	44.69	-	37.83159903	122.27956231
BE-1	44.96	-	37.83140061	122.27938970
BE-2	46.60	-	37.83141540	122.27892388
BE-3	48.48	-	37.83149306	122.27850527
BE-4	44.59	-	37.83154608	122.27931623
BE-5	43.84	-	37.83168812	122.27985103
BE-6	43.88	-	37.83163348	122.27970796
WCEW-1	42.09	41.73	37.83120830	122.27974368
MW-2	44.71	44.40	37.83131189	122.27912475
MW-3	45.95	45.49	37.83137871	122.27878729
MW-4	47.49	47.31	37.83145282	122.27838874
MW-5	42.86	42.51	37.83147167	122.27983901
MW-6	43.86	43.35	37.83183292	122.27986542
MW-6A	43.60	43.18	37.83179969	122.27992736
MW-7	45.24	44.75	37.83194879	122.27958321
MW-8	48.53	48.38	37.83210236	122.27875590
MW-9	48.00	47.85	37.83189908	122.27887514
MW-10	45.90	45.66	37.83195822	122.27924086
MW-11	45.50	45.10	37.83181178	122.27950944
MW-12	43.20	42.93	37.83164128	122.27985519
MW-13	45.90	45.56	37.83169800	122.27948931
MW-14	45.70	45.19	37.83157942	122.27941128
MW-15	43.80	43.55	37.83145978	122.27961017
MW-16A	44.80	44.50	37.83133828	122.27933383
MW-16B	44.80	44.59	37.83136053	122.27934047
MW-16C	44.80	44.48	37.83135208	122.27933761
MWT-1	43.32	42.98	37.83138990	122.27976003
MWT-2	45.70	45.28	37.83146798	122.27918964
MWT-3	47.93	47.64	37.83151042	122.27863741
MWT-4	45.15	44.74	37.83156377	122.27949460
MWT-5	47.32	47.10	37.83159767	122.27883544
MWT-6	45.41	45.16	37.83175239	122.27951885
MWT-7[1]	45.60	45.69	37.83164424	122.27918258
MWT-8	47.43	47.23	37.83175750	122.27885735
MWT-9	46.14	45.78	37.83193666	122.27927581
MWT-10	47.38	47.22	37.83197238	122.27902606
MWT-11	45.50	46.63	37.83170803	122.27930198

Well/Boring ID	**Surface Elev.** ft. MSL	**Casing Elev.** ft. MSL	**Latitude** Degrees (N)	**Longitude** Degrees (W)
MWT-12	46.10	47.97	37.83172816	122.27914423
MWT-13	46.30	48.16	37.83173814	122.27901118
MWT-14	47.80	47.85	37.83187913	122.27889705
SG-1	44.91	-	-	-
SG-2	45.93	-	-	-
SG-3	46.86	-	-	-
SG-4	47.46	-	-	-
SG-5	43.76	-	-	-
SG-6	45.91	-	-	-
SG-7	45.84	-	-	-
SG-8	42.51	-	-	-
SG-9	45.98	-	-	-
SG-10	47.31	-	-	-

Notes:

1) MWT-7 casing truncated by vandals. Elevation resurveyed on 11/10/04
2) Horizontal Datum: NAD 83
3) Vertical Datum: NAVD 88

TABLE 2

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TABLE 2

DEPTHS TO GROUNDWATER

Well No.	Date Measured	Casing Elevation ft. MSL	Groundwater Depth ft.	Groundwater Elevation ft. MSL
WCEW-1		41.73		
	05/19/04		7.88	33.85
	11/08/04		7.13	34.60
	04/15/07		7.39	34.34
	06/21/07		7.74	33.99
	08/09/07		8.00	33.73
MW-2		44.40		
	05/19/04		5.98	38.42
	11/08/04		4.94	39.46
	04/15/07		4.86	39.54
	06/21/07		5.62	38.78
	08/09/07		5.42	38.98
MW-3		45.49		
	05/19/04		5.66	39.83
	11/08/04		5.89	39.60
	04/15/07		5.25	40.24
	06/21/07		5.95	39.54
	8/9/2007		6.57	38.92
MW-4		47.31		
	05/19/04		6.19	41.12
	11/08/04		5.81	41.50
MW-5		42.51		
	05/19/04		7.39	35.12
	11/08/04		7.09	35.42
	04/15/07		6.92	35.59
	06/21/07		7.50	35.01
	8/9/2007		7.42	35.09
MW-6		43.35		
	05/19/04		7.16	36.19
	11/08/04		6.93	36.42
MW-7		44.75		
	05/19/04		8.40	36.35
	11/08/04		8.10	36.65
MW-8		48.38		
	05/19/04		9.65	38.73
	11/08/04		9.05	39.33
MWT-1	05/19/04	42.98	8.43	34.55
	11/08/04		6.82	36.16
MWT-2	05/19/04	45.28	7.69	37.59
	11/08/04		7.17	38.11

Well No.	**Date Measured**	**Casing Elevation ft. MSL**	**Groundwater Depth ft.**	**Groundwater Elevation ft. MSL**
MWT-3	05/19/04	47.64	7.64	40.00
	11/08/04		7.66	39.98
MWT-4	05/19/04	44.74	8.43	36.31
	11/08/04		7.99	36.75
MWT-5	05/19/04	47.10	9.07	38.03
	11/08/04		8.84	38.26
MWT-6	05/19/04	45.21	9.05	36.16
	11/08/04		8.73	36.48
MWT-7 [1]	05/19/04	46.61	9.90	36.71
	11/08/04	45.69	8.60	37.09
MWT-8	05/19/04	47.23	9.65	37.58
	11/08/04		9.31	37.92
MWT-9	05/19/04	45.78	8.70	37.08
	11/08/04		8.23	37.55
MWT-10	05/19/04	47.22	9.53	37.69
	11/08/04		9.03	38.19
MWT-11	11/08/04	46.63	9.71	36.92
MWT-12	11/08/04	47.97	10.79	37.18
MWT-13	11/08/04	48.16	10.65	37.51
MWT-14	11/08/04	47.85	9.63	38.22

Notes:

1) MWT-7 casing truncated by vandals. Elevation resurveyed on 11/10/04
2) MW-6 damaged during construction. Replaced by MW-6A on 09/27/08

TABLE 3

SJC

TABLE 3

RESULTS OF ORGANIC CHEMICAL ANALYSES OF SOIL SAMPLES RECOVERED FROM THE OAK WALK REDEVELOPMENT SITE

			Petroleum Hydrocarbons			**Volatile Organic Compounds**																	**PNAs**		
Sample ID	**Date Sampled**	**Depth BGS**	**Mineral Spirits**	**TPHd (Diesel)**	**TPHg (Gasoline)**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**MTBE**	**Acetone**	**2-Butanone**	**n-Butylbenzene**	**sec-Butylbenzene**	**tert-Butylbenzene**	**Isopropylbenzene**	**p-Isopropylbenzene**	**p-Isopropyltoluene**	**n-Propylbenzene**	**1,2,4-Trimethylbenzene**	**1,3,5-Trimethylbenzene**	**Other VOCs by 8260B**	**Napthalene**	**2-Methylnapthalene**	**15 Other PNAs by 8270C**
		ft.	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	**GC/MS**	mg/Kg	mg/Kg	mg/Kg
Trenches																									
T1 - 7.0	12/03/03	7.0	na	*70* [16]	***530*** [5]	ND	ND	***8.3***	*4.7*	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T1 - 8.5	12/03/03	8.5	na	90	**1,400** [5]	ND	ND	**10**	1.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T2 - 6.5	12/03/03	6.5	na	ND	3.8 [5]	0.026	ND	0.024	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T2 - 8.5	12/03/03	8.5	na	1.5	**300** [5]	**1.1**	3.1	**6.4**	**27**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T3 - 8.0	12/03/03	8.0	na	4.3	6.4	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	ND	na	na
T3 - 9.5	12/03/03	9.5	na	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T4 - 10.5	12/03/03	10.5	na	ND	ND	ND	ND	ND	ND	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND
T5 - 9.0	12/03/03	9	ND	70 [4]	**400**	ND	2.6	**6.1**	**36**	ND	na	na	ND	0.6	ND	0.88	ND	ND	3.9	25	7.6	ND	**4.1**	**1.8**	ND
T6 - 8.5	12/02/03	8.5	na	70	**3,000** [5]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T7 - 9.0	12/02/03	9.0	na	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T8 - 8.5	12/02/03	8.5	na	**150**	**820** [5]	ND	ND	ND	ND	ND	na	na	0.51	0.81	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND
T9-S10-D 5.0	10/04/07	5.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T9-S10-D 10.0	10/04/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T9-S10-D 14.25	10/04/07	14.3	100	67	**19,000**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T9-S30-D 5.0	10/05/07	5.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T9-S30-D 10.0	10/05/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T9-S30-D 14.0	10/05/07	14.0	14	8.9	**3,900**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T9-S50-D 5.0	10/05/07	5.0	ND	12	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T9-S50-D 10.0	10/05/07	10.0	99	75	**530**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T9-S50-D 13.0	10/05/07	13.0	**900**	**600**	**7,600**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T9-S50-D 15.0	10/05/07	15.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-0S-5.0	09/21/07	5.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-0S-10.0	09/21/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-0S-15.0	09/21/07	15.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S21.5-17.0	09/21/07	17.0	**300**	**210**	**560**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S21.5-20.5	09/21/07	20.5	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S50-D 5.0	09/24/07	5.0	ND	3.8 [16]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S50-D 10.0	09/24/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S50-D 15.0	09/24/07	15.0	48	30	**350**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S55-D 17.0	09/24/07	17.0	ND	ND	2.2	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S75-D 5.0	09/24/07	5.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S75-D 10.0	09/24/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S75-D 15.0	09/24/07	15.0	**580**	**360**	**2,100**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S75-D 17.0	09/24/07	17.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S100-D 5.0	09/26/07	5.0	ND	2.3	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S100-D 10.0	09/26/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S100-D 15.0	09/26/07	15.0	**1,300**	**820**	**4,200**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S125-D 5.0	09/26/07	5.0	ND	2.9	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S125-D 10.0	09/26/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S125-D 15.0	09/26/07	15.0	ND	ND	2.1	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

			Petroleum Hydrocarbons			**Volatile Organic Compounds**																	**PNAs**		
Sample ID	**Date Sampled**	**Depth BGS** ft.	**Mineral Spirits** mg/Kg	**TPHd (Diesel)** mg/Kg	**TPHg (Gasoline)** mg/Kg	**Benzene** mg/Kg	**Toluene** mg/Kg	**Ethylbenzene** mg/Kg	**Total Xylenes** mg/Kg	**MTBE** mg/Kg	**Acetone** mg/Kg	**2-Butanone** mg/Kg	**n-Butylbenzene** mg/Kg	**sec-Butylbenzene** mg/Kg	**tert-Butylbenzene** mg/Kg	**Isopropylbenzene** mg/Kg	**p-Isopropylbenzene** mg/Kg	**p-Isopropyltoluene** mg/Kg	**n-Propylbenzene** mg/Kg	**1,2,4-Trimethylbenzene** mg/Kg	**1,3,5-Trimethylbenzene** mg/Kg	**Other VOCs by 8260B** **GC/MS**	**Napthalene** mg/Kg	**2-Methylnapthalene** mg/Kg	**15 Other PNAs by 8270C** mg/Kg
T10-S150-D 5.0	09/26/07	5.0	2.2	6.2	2.6	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S150-D 10.0	09/26/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S150-D 15.0	09/26/07	15.0	**550**	**420**	**1,700**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T10-S150-D 19.0	09/26/07	19.0	ND	ND	6.9	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T11-5	08/08/07	5.0	ND	*9.2*	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T11-10	08/08/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
T11-15	08/08/07	15.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Borings and Wells																									
BE-1-5.0	04/02/04	5.0	62 [3]	ND	**540**	ND	ND	**5.1**	1.6	ND	ND	ND	8.4	3.1	ND	2.7	ND	0.29	13	12	3.8	ND [6]	**18**	**3.2**	ND [9]
BE-1-10.0	04/02/04	10.0	**130** [3]	ND	**3,600**	**13**	**140**	**80**	**430**	ND	ND	ND	3.7	ND	ND	1.4	ND	ND	6.2	32	12	ND	**7.5**	ND	ND
BE-1-13.5	04/02/04	13.5	na 2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
BE-1-15.0	04/02/04	15.0	ND	ND	7.9	0.096	0.029	0.12	0.6	0.011	ND	ND	0.014	ND	ND	ND	ND	ND	0.027	0.054	0.013	ND	0.12	ND	ND
BE-1-20.0	04/02/04	20.0	ND	ND	2.5	0.027	0.011	0.016	0.033	ND	0.031	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-1-25.0	04/02/04	25.0	ND	ND	ND	ND	0.0053	ND	0.011	0.012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-2-5.0	04/02/04	5.0	*27* [3]	ND	***340***	***1.3***	ND	***5.7***	***26***	ND	ND	ND	*9.1*	*2.4*	ND	*2.5*	ND	ND	*12*	*37*	*14*	ND	***18***	***1.4***	ND
BE-2-10.0	04/02/04	10.0	24 [3]	ND	**820**	**7.4**	**33**	**16**	**87**	ND	ND	ND	3.3	ND	ND	1.3	ND	ND	5.7	29	10	ND	**6.8**	**0.31**	ND
BE-2-15.0	04/02/04	15.0	ND	2.5 [8]	5.0	0.052	ND	0.027	ND	0.075	0.14	ND	0.046	0.019	ND	0.0097	ND	ND	0.046	ND	ND	ND	ND	ND	ND
BE-2-20.0	04/02/04	20.0	ND	2.4 [7]	ND	ND	ND	ND	0.0086	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-2-25.0	04/02/04	25.0	ND	ND	ND	0.053	0.051	0.038	0.15	0.018	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0069	ND	ND	ND	ND	ND
BE-3-5.0	04/02/04	5.0	ND	1.1 [8]	ND	ND	ND	ND	ND	ND	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-3-10.0	04/02/04	10.0	ND	ND	ND	ND	ND	ND	ND	ND	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-3-15.0	04/02/04	15.0	ND	1.3 [7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-3-20.0	04/02/04	20.0	**190**	ND	**1,600** [5]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-4-5.0	04/01/04	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-4-9.5	04/01/04	9.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-4-14.5	04/01/04	14.5	ND	1.3 [8]	2.8	0.006	ND	0.047	0.024	ND	0.04	ND	0.081	0.027	ND	0.017	0.0099	ND	0.081	0.12	0.005	ND	0.086	ND	ND
BE-4-19.5	04/01/04	19.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-5-5.0	04/01/04	5.0	ND	4.5 [7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-5-10.0	04/01/04	10.0	14	ND	**340** [5]	ND	ND	ND	ND	ND	ND	ND	0.092	0.046	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-5-14.5	04/01/04	14.5	ND	2.5 [7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-5-19.5	04/01/04	19.5	ND	12 [7]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
BE-6-4.0	04/01/04	4.0	ND	22 [7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-6-9.5	04/01/04	9.5	ND	**1,200** **[7]**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0066	ND	ND
BE-6-15.0	04/01/04	15.0	ND	11 [8]	130 [5]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BE-6-20.0	04/01/04	20.0	ND	4.9 [8]	2.6 [5]	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
BG-1-5	04/06/04	5.0	ND	ND	*1.3*	ND	ND	ND	ND	ND	*0.046*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	*0.1*	ND
BG-1-10	04/06/04	10.0	35 [3]	ND	**870**	ND	9.0	**13**	**75**	ND	ND	ND	2.6	ND	ND	1.1	ND	ND	4.4	23	8.1	ND	**4.2**	**3.5**	ND
BG-1-15	04/06/04	15.0	ND	3.7 [8]	**270**	1.1	0.99	**4.9**	**24**	ND	0.065	ND	0.028	ND	ND	ND	ND	ND	0.025	0.160	0.056	ND	0.055	ND	ND
BG-1-20	04/06/04	20.0	ND	ND	ND	0.0062	ND	ND	ND	0.005	0.044	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BG-1-25	04/06/04	25.0	ND	ND	ND	ND	ND	0.0051	0.023	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
BG-1-30	04/06/04	30.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BG-1-35	04/06/04	35.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

			Petroleum Hydrocarbons			Volatile Organic Compounds																PNAs		
Sample ID	**Date Sampled**	**Depth BGS** *ft.*	**Mineral Spirits** mg/Kg	**TPHd (Diesel)** mg/Kg	**TPHg (Gasoline)** mg/Kg	**Benzene** mg/Kg	**Toluene** mg/Kg	**Ethylbenzene** mg/Kg	**Total Xylenes** mg/Kg	**MTBE** mg/Kg	**Acetone** mg/Kg	**2-Butanone** mg/Kg	**n-Butylbenzene** mg/Kg	**sec-Butylbenzene** mg/Kg	**tert-Butylbenzene** mg/Kg	**Isopropylbenzene** mg/Kg	**p-Isopropylbenzene** mg/Kg	**p-Isopropyltoluene** mg/Kg	**n-Propylbenzene** mg/Kg	**1,2,4-Trimethylbenzene** mg/Kg	**1,3,5-Trimethylbenzene** mg/Kg	**Other VOCs by 8260B** **GC/MS**	**Napthalene** mg/Kg	**2-Methylnapthalene** mg/Kg	**15 Other PNAs by 8270C** mg/Kg
BG-2-5.0	04/06/04	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BG-2-10.5	04/06/04	10.5	47 [3]	ND	**1,200**	ND	ND	**16**	**80**	ND	ND	ND	6.0	ND	ND	2.4	ND	ND	10	50	17	ND	**8.5**	**3.0**	ND
BG-2-15.0	04/06/04	15.0	ND	ND	ND	ND	ND	ND	ND	ND	0.028	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BG-2-18.0	04/06/04	18.0	ND	ND	ND	ND	ND	ND	ND	0.020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BG-2-21.0	04/06/04	21.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BG-2-25.0	04/06/04	25.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
BG-2-30.0	04/06/04	30.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
BG-2-35.0	04/06/04	35.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-1-4.0	04/02/04	4.0	ND	ND	ND	ND	ND	ND	*0.0063*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-1-11.5	04/02/04	11.5	74	ND	**2,400 [5]**	ND	ND	ND	ND	ND	ND	ND	ND	0.023	0.022	ND	ND	ND	ND	ND	ND	ND	ND	**1.7**	ND
MWT-1-15.0	04/02/04	15.0	ND	2.8 [8]	ND	ND	ND	ND	ND	ND	ND	ND	0.0051	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-1-20 [11]	04/02/04	20.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-2-5.5	04/02/04	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-2-10.0	04/02/04	10.0	12 [3]	ND	**440**	ND	ND	2.3	6.8	ND	ND	ND	1.8	0.44	ND	0.500	ND	ND	2.4	10	3.8	ND	1.2	**0.93**	ND
MWT-2-15.0	04/02/04	15.0	ND	8.0 [8]	120	ND	ND	0.67	1.2	ND	0.099	0.027	0.035	0.0079	ND	0.0055	ND	ND	0.032	0.18	0.047	ND	0.08	0.14	ND
MWT-2-20.0	04/02/04	20.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-3-5.0	04/02/04	5.0	ND	*1.2* [7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-3-10.0	04/02/04	10.0	ND	7.5 [8]	7.0 [5]	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.026	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-3-15.0	04/02/04	15.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-3-20.0	04/02/04	20.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-4-4.0	04/01/04	4.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-4-10.0	04/01/04	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-4-15.0	04/01/04	15.0	150	ND	120 [5]	ND	ND	ND	ND	ND	ND	ND	0.026	0.015	0.0094	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-4-20.0	04/01/04	20.0	ND	2.4 [8]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-5-5.0	04/02/04	5.0	ND	1.3 [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-5-10.0	04/02/04	10.0	ND	1.1 [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-5-15.0	04/02/04	15.0	ND	7.0 [7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-5-20.0	04/02/04	20.0	ND	7.6 [7]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-6-5.0	04/01/04	5.0	ND	2.1 [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-6-10.5	04/01/04	10.5	51	ND	**860 [5]**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-6-14.5	04/01/04	14.5	ND	1.4 [8]	9.0 [5]	ND	ND	ND	ND	ND	0.064	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-6-19.5	04/01/04	19.5	ND	8.5 [8]	13 [5]	ND	ND	ND	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-7-5.0	04/01/04	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-7-10.0	04/01/04	10.0	ND	3.5 [8]	4.40 [5]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-7-15.0	04/01/04	15.0	ND	3.4 [8]	7.20 [5]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-7-20.0	04/01/04	20.0	ND	ND	ND	ND	ND	ND	ND	ND	0.088	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-8-5.5	04/02/04	5.5	ND	1.5 [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-8-10.5	04/02/04	10.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-8-15.0	04/02/04	15.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-8-18.0	04/02/04	18.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-9-4.0	04/01/04	4.0	ND	3.3 [7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-9-9.5	04/01/04	9.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-9-14.5	04/01/04	14.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

			Petroleum Hydrocarbons			Volatile Organic Compounds																	PNAs		
Sample ID	**Date Sampled**	**Depth BGS**	**Mineral Spirits**	**TPHd (Diesel)**	**TPHg (Gasoline)**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**MTBE**	**Acetone**	**2-Butanone**	**n-Butylbenzene**	**sec-Butylbenzene**	**tert-Butylbenzene**	**Isopropylbenzene**	**p-Isopropylbenzene**	**p-Isopropyltoluene**	**n-Propylbenzene**	**1,2,4-Trimethylbenzene**	**1,3,5-Trimethylbenzene**	**Other VOCs by 8260B**	**Napthalene**	**2-Methylnapthalene**	**15 Other PNAs by 8270C**
		ft.	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	**GC/MS**	mg/Kg	mg/Kg	mg/Kg
MWT-9-19.5	04/01/04	19.5	ND	14 [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-10-5.0	04/01/04	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-10-10.0	04/01/04	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-10-15.0	04/01/04	15.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-10-20	04/01/04	20.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-11-5	11/05/04	5.0	ND	1.1 [12]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-11-10	11/05/04	10.0	33 [13]	ND	**170** [14]	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-11-15	11/05/04	15.0	ND	1.4 [12]	27 [14]	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-11-19.5	11/05/04	19.5	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-12-5	11/05/04	5.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-12-10	11/05/04	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-12-15	11/05/04	15.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-12-19.5	11/05/04	19.5	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-13-5	11/05/04	5.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-13-10	11/05/04	10.0	40 [13]	ND	**520** [14]	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-13-15	11/05/04	15.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-13-19	11/05/04	19.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-14-5	11/05/04	5.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-14-10	11/05/04	10.0	110 [13]	ND	**360** [14]	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-14-15	11/05/04	15.0	12 [13]	ND	1.2 [14]	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-14-19.5	11/05/04	19.5	15 [13]	ND	82 [14]	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-2-5.0	04/07/04	5.0	29 [3]	ND	**860**	ND	ND	**19**	**87**	ND	ND	ND	2.9	ND	ND	0.098	ND	ND	4.4	27	9.8	ND	**7.2**	**1.1**	ND
MW-2-10.0	04/07/04	10.0	16 [3]	ND	**530**	ND	2.4	**9.2**	**47**	ND	ND	ND	2.1	ND	ND	0.77	ND	ND	3.4	21	7.4	ND	**5.0**	0.23	ND
MW-2-15.0	04/07/04	15.0	ND	ND	ND	0.03	ND	0.021	0.029	ND	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0085	ND	ND
MW-2-20.0	04/07/04	20.0	ND	ND	ND	ND	0.0062	ND	0.037	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3-5.0	04/07/04	5.0	Lost	Core																					
MW-3-10.0	04/07/04	10.0	Lost	Core																					
MW-3-14.0	04/07/04	14.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3-20.0	04/07/04	20.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4-5.5	04/30/04	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4-10.5	04/30/04	10.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4-15.5	04/30/04	15.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-4-19.5	04/30/04	19.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-5-6.0	04/30/04	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-5-10.0	04/30/04	10.0	27	ND	**1,000** [5]	ND	ND	0.55	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-5-15.5	04/30/04	15.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-5-19.5	04/30/04	19.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6-5.0	04/07/04	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6-10.0	04/07/04	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6-15.0	04/07/04	15.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-6-20.0	04/07/04	20.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6A-5.0 [15]	09/27/08	5.0	ND [2]	11	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

			Petroleum Hydrocarbons			Volatile Organic Compounds																	PNAs		
Sample ID	**Date Sampled**	**Depth BGS**	**Mineral Spirits**	**TPHd (Diesel)**	**TPHg (Gasoline)**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**MTBE**	**Acetone**	**2-Butanone**	**n-Butylbenzene**	**sec-Butylbenzene**	**tert-Butylbenzene**	**Isopropylbenzene**	**p-Isopropylbenzene**	**p-Isopropyltoluene**	**n-Propylbenzene**	**1,2,4-Trimethylbenzene**	**1,3,5-Trimethylbenzene**	**Other VOCs by 8260B**	**Napthalene**	**2-Methylnapthalene**	**15 Other PNAs by 8270C**
		ft.	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	**GC/MS**	mg/Kg	mg/Kg	mg/Kg
MW-6A-10.0	09/27/08	10.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-6A-15.0	09/27/08	15.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-6A-20.0	09/27/08	20.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-7-5.0	04/06/04	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7-10.0	04/06/04	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7-15.0	04/06/04	15.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-7-20.0	04/06/04	20.0	ND	7.9 [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8-5.0	04/07/04	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8-10.0	04/07/04	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8-15.0	04/06/04	15.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-8-20.0	04/06/04	20.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-9-5.0	09/27/08	5.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-9-10.0	09/27/08	10.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-9-15.0	09/27/08	15.0	ND	ND	6.5	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-9-20.0	09/27/08	20.0	ND	ND	2.7	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-10-5.0	09/27/08	5.0	ND	ND	0.92	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-10-10.0	09/27/08	10.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-10-15.0	09/27/08	15.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-10-20.0	09/27/08	20.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-11-5.0	09/27/08	5.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-11-10.0	09/27/08	10.0	79	47	**540** [3]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-11-15.0	09/27/08	15.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-11-20.0	09/27/08	20.0	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-12-5.0	02/09/09	5.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-12-10.0	02/09/09	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-12-15.0	02/09/09	15.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-12-20.0	02/09/09	20.0	ND	ND	1.0	0.086	0.0075	0.036	0.046	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-13-5.0	02/09/09	5.0	ND	3.9	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-13-10.0	02/09/09	10.0	93	110	3.3	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-13-15.0	02/09/09	15.0	ND	1.3	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-13-20.0	02/09/09	20.0	2.7	2.8	2.3	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-14-5.0	02/09/09	5.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-14-10.0	02/09/09	10.0	2,400	**1,700**	**5,600**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-14-15.0	02/09/09	15.0	ND	ND	2.5	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-14-20.0	02/09/09	20.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-15-5.0	02/09/09	5.0	1.2	15	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-15-10.0	02/09/09	10.0	2.3	1.6	1.6	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-15-15.0	02/09/09	15.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-15-20.0	02/09/09	20.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16A-5.0	02/09/09	5.0	9.4	8.8	8.5	**0.22**	ND	0.21	0.17	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16A-10.0	02/09/09	10.0	13	11	**860**	**6.0**	**13**	**12**	**56**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16A-15.0	02/09/09	15.0	ND	ND	2.0	0.10	0.019	0.027	0.055	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16A-20.0	02/09/09	20.0	Lost	Core																					
MW-16B-5.0	02/10/09	5.0	Lost	Core																					

			Petroleum Hydrocarbons			Volatile Organic Compounds																	PNAs		
Sample ID	Date Sam-pled	Depth BGS ft.	Min-eral Spirits mg/Kg	TPHd (Die-sel) mg/Kg	TPHg (Gaso-line) mg/Kg	Ben-zene mg/Kg	Tolu-ene mg/Kg	Ethyl-ben-zene mg/Kg	Total Xy-lenes mg/Kg	MTBE mg/Kg	Ace-tone mg/Kg	2-Bu-ta-none mg/Kg	n-Bu-tylben-zene mg/Kg	sec-Bu-tylben-zene mg/Kg	tert-Bu-tylben-zene mg/Kg	Isopro-pylben-zene mg/Kg	p-Isopro-pylben-zene mg/Kg	p-Isopro-pyltol-uene mg/Kg	n-Pro-pylben-zene mg/Kg	1,2,4-Tri-methyl-benzene mg/Kg	1,3,5-Tri-methyl-benzene mg/Kg	Other VOCs by 8260B GC/MS	Naptha-lene mg/Kg	2-Methyl-napthalene mg/Kg	15 Other PNAs by 8270C mg/Kg
MW-16B-10.0	02/10/09	10.0	49	43	**590**	**2.9**	8.6	**8.4**	**44**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16B-15.0	02/10/09	15.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16B-20.0	02/10/09	20.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16B-25.0	02/10/09	25.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16C-5.0	02/10/09	5.0	ND	1.9	1.7	0.12	ND	0.15	0.060	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16C-10.0	02/10/09	10.0	42	29	**2,300**	**9.6**	17	**30**	**160**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16C-15.0	02/10/09	15.0	ND	ND	6.1	0.13	0.12	0.11	0.54	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16C-20.0	02/10/09	20.0	ND	ND	ND	ND	ND	ND	0.014	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16C-25.0	02/10/09	25.0	ND	ND	0.39	0.0075	0.012	0.0090	0.038	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-16C-30.0	02/10/09	30.0	ND	ND	0.40	0.0076	0.011	0.0091	0.038	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Groundwater Extraction Pit																									
GEP-1-5.0	09/26/07	5.0	ND	6.7	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
GEP-1-10.0	09/26/07	10.0	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
GEP-1-15.0	09/26/07	15.0	**310**	**220**	**3,900**	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Concentrations in bold script exceed the 2008 San Francisco Bay Area RWQCB's Residential Environmental Screening Levels in shallow or deep soils, as appropriate, where groundwater is not a source of drinking water.

Notes:

(1) ND = Not Detected above the Method Detection Limit (MDL).
(2) na = Not analyzed
(3) The laboratory reports that the detected hydrocarbon does not match its mineral spirits standard.
(4) The laboratory reports that the detected hydrocarbon does not match its Diesel standard.
(5) The laboratory reports that the detected hydrocarbon does not match its standard for gasoline.
(6) Laboratory Method EPA 8260B analyzes for 108 Volatile Organic Compounds. Only those found are listed separately in this table.
(7) The laboratory reports that the compound reported reflects individual or discrete unidentified peaks detected in the diesel range; the pattern does not match a typical fuel standard.
(8) The laboratory reports that the hydrocarbon reported is in the early Diesel range and does not match the laboratory's Diesel standard.
(9) Laboratory Method EPA 8270C analyzes for 17 Polynuclear Aromatics. Only those found are listed separately in this table.
(10) Concentrations in **bold** script exceed the 2008 San Francisco Bay Area RWQCB's Environmental Screening Levels in shallow or deep soils, as appropriate, where groundwater is not a source of drinking water.
(11) MWT-1-20.0 was also analyzed for 65 Semi-volatile chemicals by GC/MD - EPA8270C. None were detected in the sample.
(12) Quantity of unknown hydrocarbon(s) in sample based on Diesel
(13) Quantity of unknown hydrocarbon(s) in sample based on Mineral Spirits
(14) Quantity of unknown hydrocarbon(s) in sample based on Gasoline
(15) When first drilled, MW-6A was designated MW-17.
(16) Concentrations of chemicals of concern that were detected in samples recovered from locations where soil has since been shipped off site are shown in *italic font*. At locations where the undisturbed in situ soil was excavated and the areas were restored with engineered fill derived from on-site soil, the concentrations are shown in smaller font.

TABLE 4

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TABLE 4

HEAVY METALS IN NATIVE AND IMPORTED SOIL
OAK WALK REDEVELOPMENT SITE [4]

Sample No.	Date Sampled	Depth BGS ft.	Antimony mg/Kg	Arsenic mg/Kg	Barium mg/Kg	Beryllium mg/Kg	Cadmium mg/Kg	Chromium III mg/Kg	Chromium VI mg/Kg	Cobalt mg/Kg	Copper mg/Kg	Lead mg/Kg	Molybdenum mg/Kg	Nickel mg/Kg	Selenium mg/Kg	Silver mg/Kg	Thallium mg/Kg	Vanadium mg/Kg	Zinc mg/Kg	Mercury mg/Kg
BE-4-5.5	04/01/04	5.5	ND [1]	*2.6* [3]	*110*	ND	ND	*27*	na	*2.6*	*17*	*4.3*	ND	*24*	ND	ND	ND	***22***	*31*	ND
BE-1-13.5	04/02/04	13.5	ND	1.3	110	ND	ND	35	ND	4.9	12	4.1	ND	46	ND	ND	ND	24	28	0.053
BE-3-19.5	04/02/04	19.5	ND	2.1	150	ND	ND	30	na	6.9	19	5.4	ND	26	ND	ND	ND	25	32	ND
Los Altos	08/21/07	19.5	na	na	na	na	ND	88	na	na	na	ND	na	63	na	na	na	na	28	na

Concentrations in bold script exceed the 2008 San Francisco Bay Area RWQCB's Residential Environmental Screening Levels in shallow or deep soils, as appropriate, where groundwater is not a source of drinking water.

Notes:

(1) ND = Not Detected above the Method Detection Limit (MDL). na = not analyzed

(2) At locations where the undisturbed in situ soil was excavated and restored with engineered fill derived from on-site soil, the concentrations are shown in *italic font* .

(3) No heavy metals were detected at concentrations greater than those that are typical of their natural presence in the alluvial materials that originated in the Oakland Hills to the east of the subject site (Lawrence Berkeley National Laboratory 1995, Bradford, et al 1996).

TABLE 5

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TABLE 5

RESULTS OF ANALYSES OF SOIL SAMPLES RECOVERED FROM OFF-SITE LOCATIONS

Sample ID	**Date Sampled**	**Sample Depth** *ft. BGS*	**TRPH** mg/Kg	**Motor Oil** mg/Kg	**Mineral Spirits** mg/Kg	**TPHd** mg/Kg	**Kero-sene** mg/Kg	**TPHg** mg/Kg	**Ben-zene** mg/Kg	**Tolu-ene** mg/Kg	**Ethyl Benzene** mg/Kg	**Total Xylenes** mg/Kg	**p-isopro-pyltoluene** mg/Kg	**Ace-tone** mg/Kg	**tert-Butyl-benzene** mg/Kg	**sec-Butyl-benzene** mg/Kg	**Naph-thalene** mg/Kg	**Other VOCs** mg/Kg	**PCBs** mg/Kg	**Lead** mg/Kg
Borings for Dunne Paint Site [3,4,5]																				
HAB-1-4	06/10/92	4.0	na [11]	ND [10]	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-1-7	06/10/92	7.0	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-2-4	06/10/92	4.0	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-2-7	06/10/92	7.0	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-3-4	06/10/92	4.0	na	ND	4.9	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-3-7	06/10/92	7.0	na	ND	1.5	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-4-4	06/10/92	4.0	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-4-7	06/10/92	7.0	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-5-4	06/10/92	4.0	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-5-7	06/10/92	7.0	na	ND	17	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-6-4	06/10/92	4.0	na	ND	3.4	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
HAB-6-7	06/10/92	7.0	na	ND	**620**	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na
CDB-1@11	11/04/02	11.0	na	ND	na	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND
CDB-2@6	11/04/02	6.0	na	ND	na	**160** [12]	na	94 [12]	ND	ND	ND	ND	ND	ND	ND	ND	0.025	ND	na	7.3
CDB-2@16	11/04/02	16.0	na	ND	na	13 [12]	na	**210** [12]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND
CDB-3@3	11/04/02	3.0	na	ND	na	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	15
CDB-3@13	11/04/02	13.0	na	ND	na	37 [12]	na	**250** [12]	ND	ND	ND	ND	ND	ND	ND	0.115	0.048	1,2,4 trimethylbenzene 0.740	na	ND
CDB-4@10	11/04/02	10.0	na	ND	na	52 [12]	na	74 [12]	ND	ND	ND	ND	ND	ND	ND	ND	ND	hexachlorobutadiene 0.092	na	ND
CDB-5@3	11/04/02	3.0	na	ND	na	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	24
CDB-5@13	11/04/02	13.0	na	ND	na	21 [12]	na	**180** [12]	ND	ND	ND	ND	ND	ND	ND	ND	0.413	ND	na	ND
CDB-6@9	11/04/02	9.0	na	ND	na	38 [12]	na	**440** [12]	ND	ND	ND	ND	ND	ND	0.0063	ND	0.081	ND	na	ND
CDB-7@4	11/04/02	4.0	na	5.5	na	**120** [12]	na	**250** [12]	ND	ND	ND	ND	ND	ND	ND	0.017	ND	ND	na	24
CDB-7@12	11/04/02	12.0	na	ND	na	76 [12]	na	**130** [12]	ND	ND	ND	ND	ND	ND	ND	ND	0.060	ND	na	ND
CDB-7@23	11/04/02	23.0	na	ND	na	7.0 [12]	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND
CDB-8@5	11/04/02	5.0	na	ND	na	130 [12]	na	**230** [12]	ND	ND	ND	ND	ND	ND	0.027	ND	ND	ND	na	3.0
CDB-8@17	11/04/02	17.0	na	ND	na	40 [12]	na	130 [12]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND
CDB-9@6	11/05/02	6.0	na	ND	na	4.8 [12]	na	6.2 [12]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	6.7
CDB-9@14	11/05/02	14.0	na	ND	na	100 [12]	na	**513** [12]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND

Sample ID	**Date Sampled**	**Sample Depth** *ft. BGS*	**TRPH** mg/Kg	**Motor Oil** mg/Kg	**Mineral Spirits** mg/Kg	**TPHd** mg/Kg	**Kero-sene** mg/Kg	**TPHg** mg/Kg	**Ben-zene** mg/Kg	**Tolu-ene** mg/Kg	**Ethyl Benzene** mg/Kg	**Total Xylenes** mg/Kg	**p-isopro-pyltoluene** mg/Kg	**Ace-tone** mg/Kg	**tert-Butyl-benzene** mg/Kg	**sec-Butyl-benzene** mg/Kg	**Naph-thalene** mg/Kg	**Other VOCs** mg/Kg	**PCBs** mg/Kg	**Lead** mg/Kg
CDB-10@6	11/05/02	6.0	na	ND	na	**3,500** [12]	na	**3,600** [12]	ND	ND	1.0	ND	ND	ND	ND	0.550	**14**	Isopropylbenzene 710 n-Propylbenzene 1,200 1,2,4-Trimethylbenzene 1,400	na	6.1
CDB-10@9	11/05/02	9.0	na	ND	na	**220** [12]	na	**380** [12]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND
CDB-10@25	11/05/02	25.0	na	ND	na	1.1 [12]	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND
CDB-11@3	11/05/02	3.0	na	ND	na	**4,300** [12]	na	**2,500** [12]	ND	ND	**3,500**	ND	ND	ND	ND	ND	**4,600**	n-Propylbenzene 2,000 1,2,4-Trimethylbenzene 8,600 1,2,5-Trimethylbenzene 4,200	na	100
CDB-11@10	11/05/02	10.0	na	ND	na	**720** [12]	na	**1,800** [12]	ND	ND	ND	ND	ND	ND	ND	ND	1.6	ND	na	ND
CDB-11@16	11/05/02	16.0	na	51	na	**510** [12]	na	**2,100** [12]	ND	ND	ND	ND	ND	ND	ND	ND	**3.2**	ND	na	ND
CDB-12@3	11/05/02	3.0	na	ND	na	1.6	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	**280**
CDB-13@14	11/05/02	14.0	na	ND	na	160 [12]	na	**400** [12]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	ND
CDB-14@3	11/05/02	3.0	na	24	na	9.4	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.012	ND	na	130
CDB-16@3	11/05/02	3.0	na	28	na	6.0	na	7.4 [12]	ND	ND	ND	ND	ND	ND	ND	ND	0.012	ND	na	5.0
OB-2	06/30/03	10.5	na	na	**160**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
OB-10	06/30/03	10.0	na	na	**430**	na	na	na	na	na	na	na	na	ND	na	ND	ND	na	na	na
B-1-3.5	02/10/05	3.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-1-7.5	02/10/05	7.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-1-11.5	02/10/05	11.5	na	na	180	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-2-3.5	02/10/05	3.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-2-7.5	02/10/05	7.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-2-12.5	02/10/05	12.5	na	na	9.6	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-3-3.5	02/10/05	3.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-3-7.5	02/10/05	7.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-3-11.5	02/10/05	11.5	na	na	**330**	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-4-3.5	02/10/05	3.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-4-7.5	02/10/05	7.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-4-11.5	02/10/05	11.5	na	na	**1,600**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-4-13.5	02/10/05	13.5	na	na	**1,400**	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-5-3.5	02/10/05	3.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-5-7.5	02/10/05	7.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-5-11.5	02/10/05	11.5	na	na	**4,900**	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-5-13.5	02/10/05	13.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-6-3.5	02/10/05	3.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-6-7.5	02/10/05	7.5	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-6-11.5	02/10/05	11.5	na	na	**380**	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-6-13.5	02/10/05	13.5	na	na	**260**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Sample ID	Date Sampled	Sample Depth *ft. BGS*	TRPH mg/Kg	Motor Oil mg/Kg	Mineral Spirits mg/Kg	TPHd mg/Kg	Kerosene mg/Kg	TPHg mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethyl Benzene mg/Kg	Total Xylenes mg/Kg	p-isopropyltoluene mg/Kg	Acetone mg/Kg	tert-Butylbenzene mg/Kg	sec-Butylbenzene mg/Kg	Naphthalene mg/Kg	Other VOCs mg/Kg	PCBs mg/Kg	Lead mg/Kg
Borings for Boysen Paint Site [3,5,9]																				
BH-A	2004	11.5	na	na	8.3	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-B	2004	11.5	na	na	**130**	na	na	na	ND	ND	ND	ND	ND	0.086	ND	ND	ND	ND	na	na
BH-C	2004	14.5	na	na	13	na	na	na	ND	ND	ND	ND	ND	0.052	ND	ND	ND	ND	na	na
BH-D	2004	15.5	na	na	5.4	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-E	2004	15.5	na	na	2.0	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-F	2004	19.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-G	2004	19.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-H	2004	7.5	na	na	14	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-I	2004	1.0	na	na	6.6	na	na	na	ND	ND	ND	ND	0.040	ND	0.015	0.040	0.040	ND	na	na
BH-J	2004	11.5	na	na	2.3	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-K	2004	15.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-L	2004	19.5	na	na	1.2	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-M	2004	11.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-N	2004	11.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-O	2004	20.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-P	2004	7.5	na	na	**140**	na	na	na	ND	ND	ND	ND	ND	0.085	0.0074	ND	ND	ND	na	na
BH-Q	2004	19.5	na	na	27	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-R	2004	11.5	na	na	14	na	na	na	ND	ND	ND	ND	ND	0.130	0.010	ND	ND	ND	na	na
BH-S	2004	11.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	0.0056	ND	ND	ND	na	na
BH-T	2004	11.5	na	na	6.6	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-U	2004	7.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-V	2004	11.5	na	na	12	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	2004	25.5	na	na	3.3	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-W	2004	7.5	na	na	24	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na

Sample ID	**Date Sampled**	**Sample Depth** *ft. BGS*	**TRPH** mg/Kg	**Motor Oil** mg/Kg	**Mineral Spirits** mg/Kg	**TPHd** mg/Kg	**Kerosene** mg/Kg	**TPHg** mg/Kg	**Benzene** mg/Kg	**Toluene** mg/Kg	**Ethyl Benzene** mg/Kg	**Total Xylenes** mg/Kg	**p-isopropyltoluene** mg/Kg	**Acetone** mg/Kg	**tert-Butylbenzene** mg/Kg	**sec-Butylbenzene** mg/Kg	**Naphthalene** mg/Kg	**Other VOCs** mg/Kg	**PCBs** mg/Kg	**Lead** mg/Kg
BH-X	2004	11.5	na	na	5.8	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-Y	2004	8.5	na	na	44	na	na	na	ND	ND	ND	ND	0.036	0.067	ND	ND	ND	ND	na	na
BH-Z	2004	11.5	na	na	51	na	na	na	ND	ND	ND	ND	0.026	0.100	ND	ND	0.028	ND	na	na
BH-AA	2004	11.5	na	na	**1,100**	na	na	na	ND	ND	ND	ND	0.058	ND	ND	ND	ND	ND	na	na
BH-BB	2004	11.5	na	na	**320**	na	na	na	ND	ND	ND	ND	0.017	ND	ND	ND	ND	ND	na	na
BH-CC	2004	11.5	na	na	31	na	na	na	ND	ND	ND	ND	0.032	ND	ND	ND	ND	ND	na	na
	2004	19.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-DD	Aug. 2005	11.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-EE	Aug. 2005	3.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	23.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-FF	Aug. 2005	3.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	23.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-GG	Aug. 2005	5.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	19.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-HH	Aug. 2005	5.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	11.5	na	na	7.1	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-II	Aug. 2005	14.5	na	na	19	na	na	na	ND	ND	ND	ND	ND	0.056	ND	ND	ND	ND	na	na
	Aug. 2005	24.5	na	na	7.1	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	34.5	na	na	7.1	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-JJ	Aug. 2005	11.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	15.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-KK	Aug. 2005	11.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	23.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-LL	Aug. 2005	11.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	23.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-MM	Aug. 2005	11.5	na	na	56	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	15.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
BH-NN	Aug. 2005	11.5	na	na	15	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
	Aug. 2005	15.5	na	na	ND	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-1-11.5	05/30/06	11.5	ND	ND	55	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-1-14	05/30/06	14	ND	ND	**110**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-2-7	05/30/06	7.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-2-15	05/30/06	15.0	ND	ND	ND	ND	ND	0.12	ND	0.00052	ND	ND	ND	0.020	ND	ND	ND	ND	na	na

Sample ID	Date Sampled	Sample Depth *ft. BGS*	TRPH mg/Kg	Motor Oil mg/Kg	Mineral Spirits mg/Kg	TPHd mg/Kg	Kero-sene mg/Kg	TPHg mg/Kg	Ben-zene mg/Kg	Tolu-ene mg/Kg	Ethyl Benzene mg/Kg	Total Xylenes mg/Kg	p-isopro-pyltoluene mg/Kg	Ace-tone mg/Kg	tert-Butyl-benzene mg/Kg	sec-Butyl-benzene mg/Kg	Naph-thalene mg/Kg	Other VOCs mg/Kg	PCBs mg/Kg	Lead mg/Kg
B-3-7	05/30/06	7.0	ND	ND	ND	ND	ND	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-4-7	05/30/06	7.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
B-5-7	05/30/06	7.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na
Borings and Confirmation Sampling for Celis Site [1,2,6]																				
LF-LFMW-1	07/08/93	4.5	77	16	na	**220**	na	**550**	0.84	1.2	5.6	2.7	na	na	na	na	na	na	na	na
	07/08/93	9.5	ND	ND	na	18	na	**470**	0.97	ND	6.6	8.9	na	na	na	na	na	na	na	na
	07/08/93	14.5	60	ND	na	16	na	8.4	0.14	0.17	0.081	0.37	na	na	na	na	na	na	na	na
LF-LFMW-2	07/08/93	9.5	30	ND	na	14	na	ND	4.7	35	13	68	na	na	na	na	na	na	na	na
	07/08/93	14.5	ND	ND	na	ND	na	75	0.009	0.012	ND	0.015	na	na	na	na	na	na	na	na
LF-LFMW-3	07/08/93	9.5	37	ND	na	ND	na	ND	0.062	0.28	1.1	1.1	na	na	na	na	na	na	na	na
	07/08/93	14.5	ND	ND	na	ND	na	**850**	0.014	ND	0.01	0.007	na	na	na	na	na	na	na	na
LF-LFMW-4	01/28/94	5	na	ND	na	ND	na	0.8	0.083	ND	ND	0.034	na	na	na	na	na	na	na	na
	01/28/94	10	na	ND	na	19	na	**220**	1.7	6.7	4.5	24	na	na	na	na	na	na	na	na
WC N-1	8/14/1994	8.0	ND	na	na	21	na	**920**	**2.6**	**21**	**11**	**57**	na	na	na	na	na	na	na	na
WC N-2	8/14/1994	8.0	ND	na	na	10	na	**250**	0.097	0.83	**2.5**	11	na	na	na	na	na	na	na	na
WC N-3	8/14/1994	8.0	ND	na	na	96	na	**390**	**0.38**	3	**3.6**	**17**	na	na	na	na	na	na	na	na
WC N-4	Late 1994	8.0	160	na	na	**310**	na	85	**0.16**	ND	1	1.3	na	na	na	na	na	na	na	na
WC W-1	8/14/1994	8.0	ND	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
WC W-2	8/14/1994	8.0	ND	na	na	34	na	**230**	**0.34**	0.61	2.3	6.9	na	na	na	na	na	na	na	na
WC W-3	8/14/1994	8.0	ND	na	na	**180**	na	20	0.012	0.01	0.029	0.043	na	na	na	na	na	na	na	na
WC W-4	8/14/1994	8.0	150	na	na	**500**	na	80	ND	0.073	0.26	0.99	na	na	na	na	na	na	na	na
WC S-1	8/14/1994	8.0	na	na	na	na	na	**800**	**1.7**	6	**9.9**	**41**	na	na	na	na	na	na	na	na
WC S-2	8/14/1994	8.0	ND	na	na	60	na	**430**	**0.4**	0.2	**4**	**12**	na	na	na	na	na	na	na	na
WC S-3	8/14/1994	8.0	na	na	na	na	na	**730**	**1.4**	ND	**11**	1.7	na	na	na	na	na	na	na	na
WC S-4	8/14/1994	8.0	ND	na	na	25	na	**560**	ND	ND	**5.6**	**13**	na	na	na	na	na	na	na	na
WC E-1	8/14/1994	8.0	na	na	na	na	na	**240**	**0.33**	3.5	**3.4**	**16**	na	na	na	na	na	na	na	na
WC E-2	8/14/1994	8.0	ND	na	na	2	na	**170**	**0.81**	3.4	1.8	8.9	na	na	na	na	na	na	na	na
WC E-3	8/14/1994	8.0	na	na	na	na	na	**660**	**2.9**	**18**	**9.2**	**46**	na	na	na	na	na	na	na	na
WC E-4	8/14/1994	8.0	ND	na	na	5.2	na	**380**	**2.6**	**12**	**4.9**	**24**	na	na	na	na	na	na	na	na
WC B-C-1	8/14/1994	9.5	ND	na	na	68	na	**260**	0.081	0.11	2	8.4	na	na	na	na	na	na	na	na
WC B-O&G-1	8/14/1994	9.5	ND	na	na	**160**	na	**490**	**2.4**	**9.9**	**6.3**	**27**	na	na	na	na	na	na	na	na
WC B-D-1	8/14/1994	9.5	**15,000**	na	na	**18,000**	na	**650**	**3.8**	1.7	**8.1**	**17**	na	na	na	na	na	na	na	na
WC B-G-1	8/14/1994	9.5	120	na	na	ND	na	**540**	**0.64**	ND	**6.5**	**12**	na	na	na	na	na	na	na	na
WC B-C-2	8/14/1994	9.5	ND	na	na	75	na	**1,000**	**2.4**	**10**	**11**	**49**	na	na	na	na	na	na	na	na
WC B-C-3	8/14/1994	9.5	ND	na	na	29	na	**690**	**2.2**	**15**	**7.3**	**39**	na	na	na	na	na	na	na	na
URS-SB-1-6-6.5	02/06/06	6.0	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-SB-1-10-10.	02/06/06	10.0	na	na	6.2	5.1	na	ND	**6.2**	5.1	ND	ND	na	na	na	na	na	na	na	na

Sample ID	Date Sampled	Sample Depth *ft. BGS*	TRPH mg/Kg	Motor Oil mg/Kg	Mineral Spirits mg/Kg	TPHd mg/Kg	Kero-sene mg/Kg	TPHg mg/Kg	Ben-zene mg/Kg	Tolu-ene mg/Kg	Ethyl Benzene mg/Kg	Total Xylenes mg/Kg	p-isopro-pyltoluene mg/Kg	Ace-tone mg/Kg	tert-Butyl-benzene mg/Kg	sec-Butyl-benzene mg/Kg	Naph-thalene mg/Kg	Other VOCs mg/Kg	PCBs mg/Kg	Lead mg/Kg
URS-SB-1-15.5-1	02/06/06	15.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-SB-1-18.5-1	02/06/06	18.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-SB-3-6-6.5	02/07/06	6.0	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-SB-3-11-11.	02/07/06	11.0	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	MTBE: 10, TBA: 10 DIPE: 10	na	na
URS-SB-3-15.5-1	02/07/06	15.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-SB-6-5.5-6	02/07/06	5.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-SB-6-11.5-1	02/07/06	11.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-SB-6-15.5-1	02/07/06	15.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-SB-6-19.5-2	02/07/06	19.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-MW-1-6.5	07/02/07	6.0	na	na	ND	1.9	na	ND	ND	1.9	ND	ND	na	na	na	na	na	na	na	na
URS-MW-1-11.0	07/02/07	10.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-MW-1-16.0	07/02/07	15.5	na	na	ND	11	na	ND	ND	11	ND	ND	na	na	na	na	na	na	na	na
URS-MW-2-5.5	07/02/07	5.0	na	na	ND	1.3	na	ND	ND	1.3	ND	ND	na	na	na	na	na	na	na	na
URS-MW-2-11.0	07/02/07	10.5	na	na	ND	1.4	na	ND	ND	1.4	ND	ND	na	na	na	na	na	na	na	na
URS-MW-2-16.0	07/02/07	15.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-MW-3-10.0	06/29/07	9.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-MW-3-15.0	06/29/07	14.5	na	na	ND	1.8	na	ND	ND	1.8	ND	ND	na	na	na	na	na	na	na	na
URS-MW-3-20.0	06/29/07	19.5	na	na	ND	1.3	na	ND	ND	1.3	ND	ND	na	na	na	na	na	na	na	na
URS-MW-4-9.0	06/29/07	8.5	na	na	ND	8.0	na	ND	ND	8.0	ND	ND	na	na	na	na	na	na	na	na
URS-MW-4-14.5	06/29/07	14.0	na	na	ND	6.7	na	ND	ND	6.7	ND	ND	na	na	na	na	na	na	na	na
URS-MW-4-20.0	06/29/07	19.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-MW-5-6.5	06/29/07	6.0	na	na	2.2	5.1	na	3.8	**2.2**	5.1	**3.8**	ND	na	na	na	na	na	na	na	na
URS-MW-5-10.0	06/29/07	9.5	na	na	68	13	na	120	**68**	13	**120**	ND	na	na	na	na	na	na	na	na
URS-MW-5-15.0	06/29/07	14.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na

Borings and Confirmation Sampling for San Francisco Bread Site [1,6,7,8]

Sample ID	Date Sampled	Sample Depth *ft. BGS*	TRPH mg/Kg	Motor Oil mg/Kg	Mineral Spirits mg/Kg	TPHd mg/Kg	Kero-sene mg/Kg	TPHg mg/Kg	Ben-zene mg/Kg	Tolu-ene mg/Kg	Ethyl Benzene mg/Kg	Total Xylenes mg/Kg	p-isopro-pyltoluene mg/Kg	Ace-tone mg/Kg	tert-Butyl-benzene mg/Kg	sec-Butyl-benzene mg/Kg	Naph-thalene mg/Kg	Other VOCs mg/Kg	PCBs mg/Kg	Lead mg/Kg
SMW-1-6	09/04/92	18.5	na	na	na	ND	na	ND	0.0078	0.0061	ND	ND	na	na	na	na	na	na	na	4.9
LFSB17-4.5	08/09/93	4.5	70	ND	na	40	na	**260**	ND	**22**	**12**	**69**	na	na	na	na	na	na	na	na
LFSB17-6.0	08/09/93	7	50	ND	na	70	na	**440**	ND	**27**	**8**	**43**	na	na	na	na	na	na	na	na
LFSB17-12.0	08/09/93	12	47	190	na	130	na	**500**	**190**	9	4	**23**	na	na	na	na	na	na	na	na
MW-3-5.0	04/07/04	5.0	Lost Core		na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-3-10.0	04/07/04	10.0	Lost Core		na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-3-15.0	04/07/04	15.0	ND	ND	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na
MW-3-20.0	04/07/04	120.0	ND	ND	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na
URS-MW-5-6.5	06/29/07	6.0	na	na	2.2	5.1	na	3.8	ND	ND	ND	ND	na	na	na	na	na	na	na	na
URS-MW-5-10.0	06/29/07	9.5	na	na	68	13	na	**120**	ND	ND	2.3	ND	na	na	na	na	na	na	na	na
URS-MW-5-15.0	06/29/07	14.5	na	na	ND	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na

Sample ID	**Date Sampled**	**Sample Depth** *ft. BGS*	**TRPH** mg/Kg	**Motor Oil** mg/Kg	**Mineral Spirits** mg/Kg	**TPHd** mg/Kg	**Kerosene** mg/Kg	**TPHg** mg/Kg	**Benzene** mg/Kg	**Toluene** mg/Kg	**Ethyl Benzene** mg/Kg	**Total Xylenes** mg/Kg	**p-isopropyltoluene** mg/Kg	**Acetone** mg/Kg	**tert-Butylbenzene** mg/Kg	**sec-Butylbenzene** mg/Kg	**Naphthalene** mg/Kg	**Other VOCs** mg/Kg	**PCBs** mg/Kg	**Lead** mg/Kg
Borings and Confirmation Sampling in 40th Street [1]																				
LFSB1-7.0	08/08/93	7	290	27	na	**240**	na	**850**	**5.4**	ND	**25**	**42**	na	na	na	na	na	na	na	na
LFSB1-9.5	08/08/93	9.5	130	ND	na	**220**	na	**180**	**0.89**	1.1	**4.3**	**18**	na	na	na	na	na	na	na	na
LFSB1-14.5	08/08/93	14.5	60	ND	na	ND	na	7.4	0.44	0.44	0.14	0.61	na	na	na	na	na	na	na	na
LFSB2-7.0	08/08/93	7	160	57	na	**790**	na	**780**	**8**	ND	**31**	**140**	na	na	na	na	na	na	ND	na
LFSB2-9.5	08/08/93	9.5	210	ND	na	**200**	na	**720**	**2.4**	5.2	**15**	**59**	na	na	na	na	na	na	na	na
LFSB2-14.5	08/08/93	14.5	43	12	na	ND	na	1.0	0.2	0.21	0.021	0.12	na	na	na	na	na	na	ND	na
LFSB3-9.5	08/07/93	9.5	37	ND	na	11	na	**580**	**9.7**	**50**	**15**	**90**	na	na	na	na	na	na	ND	na
LFSB3-14.5	08/07/93	14.5	37	ND	na	ND	na	0.9	0.092	0.16	0.031	0.17	na	na	na	na	na	na	ND	na
LFSB4-7.0	08/08/93	7	70	ND	na	13	na	**380**	**3**	5.2	**8.2**	**18**	na	na	na	na	na	na	na	na
LFSB4-14.5	08/08/93	14.5	210	ND	na	ND	na	ND	0.026	0.005	0.019	0.023	na	na	na	na	na	na	na	na
LFSB5-7.0	08/08/93	7	37	ND	na	15	na	**410**	**2.4**	0.6	**16**	6.3	na	na	na	na	na	na	na	na
LFSB5-14.5	08/08/93	14.5	93	ND	na	ND	na	ND	0.011	ND	0.008	0.008	na	na	na	na	na	na	na	na
LFSB6-9.5	08/08/93	9.5	67	ND	na	51	na	**490**	**2.7**	ND	**15**	**15**	na	na	na	na	na	na	na	na
LFSB6-14.5	08/08/93	14.5	ND	ND	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LFSB7-9.5	08/07/93	9.5	170	66	na	52	na	**750**	**2.5**	8.5	**22**	**93**	na	na	na	na	na	na	na	na
LFSB7-14.5	08/07/93	14.5	ND	ND	na	ND	na	2.8	ND	ND	0.029	0.03	na	na	na	na	na	na	na	na
LFSB8-9.5	08/08/93	9.5	130	ND	na	**110**	na	**2,800**	**22**	**9.5**	**82**	**290**	na	na	na	na	na	na	na	na
LFSB8-14.5	08/08/93	14.5	37	11	na	ND	na	ND	0.009	ND	ND	ND	na	na	na	na	na	na	na	na
LFSB9-7.0	08/07/93	7	ND	ND	na	14	na	**210**	**2.8**	**13**	**5.1**	**29**	na	na	na	na	na	na	na	na
LFSB9-9.5	08/07/93	9.5	na	na	na	na	na	**1,200**	**14**	**81**	**26**	**140**	na	na	na	na	na	na	na	na
LFSB9-14.5	08/07/93	14.5	77	ND	na	ND	na	ND	0.079	0.059	0.011	0.041	na	na	na	na	na	na	na	na
LFSB10-7.0	08/07/93	7	na	na	na	na	na	73	**2.6**	4.7	1.6	7.7	na	na	na	na	na	na	na	na
LFSB10-9.5	08/07/93	9.5	40	ND	na	ND	na	**1,100**	ND	7.8	ND	**22**	na	na	na	na	na	na	na	na
LFSB10-14.5	08/07/93	14.5	ND	ND	na	ND	na	8.6	0.48	0.29	0.1	0.48	na	na	na	na	na	na	na	na
LFSB11-14.5	08/09/93	14.5	40	11	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LFSB12-1.0	08/09/93	1	**4,600**	**400**	na	ND	na	ND	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB12-3.0	08/09/93	3	**420**	64	na	**560**	na	**6,500**	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB13-5.0	08/09/93	5	63	ND	na	ND	na	23	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB13-6.5	08/09/93	6.5	37	ND	na	ND	na	13	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB14-2.0	08/09/93	2	**2,200**	**480**	na	ND	na	42	na	na	na	na	na	na	na	na	na	na	0.22	na
LFSB14-4.5	08/09/93	4.5	47	ND	na	ND	na	ND	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB15-4.5	08/09/93	4.5	**480**	12	na	**140**	na	**4,700**	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB15-6.0	08/09/93	6	120	14	na	59	na	**3,700**	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB16-4.5	08/09/93	4.5	60	ND	na	ND	na	9	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB16-6.0	08/09/93	6	53	ND	na	ND	na	8	na	na	na	na	na	na	na	na	na	na	ND	na

Sample ID	**Date Sampled**	**Sample Depth** *ft. BGS*	**TRPH** mg/Kg	**Motor Oil** mg/Kg	**Mineral Spirits** mg/Kg	**TPHd** mg/Kg	**Kerosene** mg/Kg	**TPHg** mg/Kg	**Benzene** mg/Kg	**Toluene** mg/Kg	**Ethyl Benzene** mg/Kg	**Total Xylenes** mg/Kg	**p-isopropyltoluene** mg/Kg	**Acetone** mg/Kg	**tert-Butylbenzene** mg/Kg	**sec-Butylbenzene** mg/Kg	**Naphthalene** mg/Kg	**Other VOCs** mg/Kg	**PCBs** mg/Kg	**Lead** mg/Kg
LFSB18-1.0	08/09/93	1	**2,200**	320	na	ND	na	1	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB18-3.0	08/09/93	3	**1,100**	**390**	na	ND	na	ND	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB19-1.5	08/09/93	1.5	**2,200**	**530**	na	ND	na	ND	na	na	na	na	na	na	na	na	na	na	ND	na
LFSB19-3.0	08/09/93	3	**3,600**	**740**	na	ND	na	1	na	na	na	na	na	na	na	na	na	na	ND	na
LF-1-4.5	08/07/93	4.5	77	16	na	**220**	na	**550**	**0.84**	1.2	**5.6**	2.7	na	na	na	na	na	na	na	na
LF-1-9.5	08/07/93	9.5	ND	ND	na	18	na	**470**	**0.97**	ND	**6.6**	8.9	na	na	na	na	na	na	na	na
LF-1-14.5	08/07/93	14.5	60	ND	na	16	na	8.4	0.14	0.17	0.081	0.37	na	na	na	na	na	na	na	na
LF-2-9.5	08/07/93	9.5	30	ND	na	14	na	**740**	**4.70**	**35**	**13**	**68**	na	na	na	na	na	na	na	na
LF-2-14.5	08/07/93	14.5	ND	ND	na	ND	na	ND	0.009	0.012	ND	0.015	na	na	na	na	na	na	na	na
LF-3-9.5	08/07/93	9.5	37	ND	na	ND	na	75	0.062	0.28	1.1	1.1	na	na	na	na	na	na	na	na
LF-3-14.5	08/07/93	14.5	ND	ND	na	ND	na	ND	0.014	ND	0.01	0.007	na	na	na	na	na	na	na	na
LF-B1-2	08/30/94	2	ND	na	na	ND	na	0.8	0.008	ND	0.016	0.085	na	na	na	na	na	na	na	na
LF-B1-5	08/30/94	5	30	na	na	ND	na	**110**	**0.840**	0.520	**3.2**	12	na	na	na	na	na	na	na	na
LF-B1-10	08/30/94	10	30	na	na	ND	na	**690**	**12**	**50**	**18**	**99**	na	na	na	na	na	na	na	na
LF-B2-2	08/30/94	2	10	na	na	ND	na	**110**	**0.6**	2.9	**3.3**	**16**	na	na	na	na	na	na	na	na
LF-B2-5	08/30/94	5	10	na	na	1.0	na	66	**0.37**	0.8	0.79	3.5	na	na	na	na	na	na	na	na
LF-B2-10	08/30/94	10	30	na	na	ND	na	**830**	**13**	**52**	**21**	**110**	na	na	na	na	na	na	na	na
LF-B3-2	08/30/94	2	80	na	na	ND	na	**440**	**8.5**	36	**12**	**58**	na	na	na	na	na	na	na	na
LF-B3-5	08/30/94	5	200	na	na	8.0	na	**810**	**14**	**62**	**22**	**100**	na	na	na	na	na	na	na	na
LF-B3-10	08/30/94	10	50	na	na	ND	na	**390**	**7.1**	**22**	**7.2**	**38**	na	na	na	na	na	na	na	na
LF-B4-2	08/30/94	2	40	na	na	ND	na	49	**0.14**	0.12	2.3	11	na	na	na	na	na	na	na	na
LF-B4-5	08/30/94	5	**1,300**	na	na	28	na	**8,800**	**6.8**	7.3	**190**	**870**	na	na	na	na	na	na	na	na
LF-B4-10	08/30/94	10	110	na	na	3.0	na	**510**	**1.1**	0.96	**3.4**	**13**	na	na	na	na	na	na	na	na
LF-B5-2	08/30/94	2	10	na	na	ND	na	0.4	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B5-5	08/30/94	5	**2,400**	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B5-10	08/30/94	10	ND	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B6-2	08/30/94	2	20	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B6-5	08/30/94	5	10	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B6-10	08/30/94	10	ND	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B7-2	08/30/94	2	10	na	na	ND	na	27	**0.42**	ND	0.75	0.05	na	na	na	na	na	na	na	na
LF-B7-5	08/30/94	5	ND	na	na	ND	na	16	**0.67**	ND	ND	0.025	na	na	na	na	na	na	na	na
LF-B7-10	08/30/94	10	20	na	na	ND	na	**520**	**7.4**	**30**	14	**78**	na	na	na	na	na	na	na	na
LF-B8-2	08/30/94	2	50	na	na	5.0	na	3.4	**0.2**	ND	0.56	0.02	na	na	na	na	na	na	na	na
LF-B8-5	08/30/94	5	ND	na	na	ND	na	14	**0.3**	0.01	0.26	ND	na	na	na	na	na	na	na	na
LF-B8-10	08/30/94	10	20	na	na	ND	na	**140**	**2.1**	5.8	4	**21**	na	na	na	na	na	na	na	na
LF-B9-2	08/30/94	2	20	na	na	ND	na	2.8	**0.33**	0.005	0.41	0.07	na	na	na	na	na	na	na	na
LF-B9-5	08/30/94	5	ND	na	na	ND	na	40	**1.2**	0.013	2.6	0.15	na	na	na	na	na	na	na	na
LF-B9-10	08/30/94	10	20	na	na	ND	na	**190**	**4.3**	**11**	5.5	**28**	na	na	na	na	na	na	na	na
LF-B10-2	08/30/94	2	150	na	na	ND	na	29	0.038	0.048	0.18	**1.2**	na	na	na	na	na	na	na	na
LF-B10-5	08/30/94	5	30	na	na	ND	na	13	ND	0.02	0.05	ND	na	na	na	na	na	na	na	na

Sample ID	**Date Sampled**	**Sample Depth** *ft. BGS*	**TRPH** mg/Kg	**Motor Oil** mg/Kg	**Mineral Spirits** mg/Kg	**TPHd** mg/Kg	**Kero-sene** mg/Kg	**TPHg** mg/Kg	**Ben-zene** mg/Kg	**Tolu-ene** mg/Kg	**Ethyl Benzene** mg/Kg	**Total Xylenes** mg/Kg	**p-isopro-pyltoluene** mg/Kg	**Ace-tone** mg/Kg	**tert-Butyl-benzene** mg/Kg	**sec-Butyl-benzene** mg/Kg	**Naph-thalene** mg/Kg	**Other VOCs** mg/Kg	**PCBs** mg/Kg	**Lead** mg/Kg
LF-B10-10	08/30/94	10	ND	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B11-2	08/30/94	2	20	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B11-5	08/30/94	5	ND	na	na	ND	na	1	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B11-10	08/30/94	10	40	na	na	ND	na	**250**	**1.1**	0.35	**4.4**	**21**	na	na	na	na	na	na	na	na
LF-B12-2	08/30/94	2	30	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B12-5	08/30/94	5	ND	na	na	ND	na	0.9	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B12-10	08/30/94	10	30	na	na	ND	na	**160**	**0.97**	0.19	**4.1**	**20**	na	na	na	na	na	na	na	na
LF-B13-2	08/30/94	2	**600**	na	na	**220**	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B13-5	08/30/94	5	40	na	na	10	na	4.2	ND	ND	0.02	ND	na	na	na	na	na	na	na	na
LF-B13-10	08/30/94	10	20	na	na	3.0	na	6.9	**0.36**	ND	0.45	0.13	na	na	na	na	na	na	na	na
LF-B14-2	08/30/94	2	**410**	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B14-5	08/30/94	5	ND	na	na	ND	na	1.6	0.01	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B14-10	08/30/94	10	ND	na	na	ND	na	2.9	0.006	ND	0.01	ND	na	na	na	na	na	na	na	na
LF-B15-2	08/30/94	2	**420**	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B15-5	08/30/94	5	ND	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B15-10	08/30/94	10	20	na	na	ND	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B16-2	08/30/94	2	50	na	na	10	na	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na
LF-B16-5	08/30/94	5	ND	na	na	ND	na	28	**0.16**	ND	0.96	0.037	na	na	na	na	na	na	na	na
LF-B16-10	08/30/94	10	20	na	na	ND	na	**130**	**2.5**	5.4	**2.6**	**15**	na	na	na	na	na	na	na	na

Concentrations in bold script exceed the 2008 San Francisco Bay Area RWQCB's Residential Environmental Screening Levels in shallow or deep soils, as appropriate, where groundwater is not a source of drinking water.

NOTES:

(1) Data Source: Levine-Fricke 1994, 1993
(2) Data Source: Woodward-Clyde International-Americas 1997, 1998
(3) Data Source: Aqua Science Engineers, Inc. 2005a,b
(4) Data Source: Clayton Group Services 2007, 2004a,b, 2003, 2002
(5) Data Source: Hageman-Aquiar, Inc. 1992
(6) Data Source: URS 2006, 2007a
(7) Data Source: The San Joaquin Company 2005
(8) Data Source: SEACOR Science and Engineering Analysis Corporation 1992
(9) Data Source: Environmental Resource Management 2006
(10) ND = Not Detected above the Method Detection Limit (MDL).
(11) na = not analyzed
(12) Laboratory reports pattern is closer to mineral spirits or Stoddard solvent.

TABLE 6

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TABLE 6

RESULTS OF ANALYSES OF GROUNDWATER SAMPLES RECOVERED FROM TRENCHES, PITS AND WELLS ON THE OAK WALK REDEVELOPMENT SITE

		Petroleum Hydrocarbons			**Volatile Organic Compounds**																	**PNAs**	
Sample ID	**Date Sampled**	**TPHd (diesel)** µg/L	**Mineral Spirits** µg/L	**TPHg (gasoline)** µg/L	**Benzene** µg/L	**Toluene** µg/L	**Ethylbenzene** µg/L	**Total Xylenes** µg/L	**MTBE** µg/L	**Acetone** µg/L	**2-Butanone** µg/L	**n-Butylbenzene** µg/L	**sec-Butylbenzene** µg/L	**tert-Butylbenzene** µg/L	**Isopropylbenzene** µg/L	**p-Isopropylbenzene** µg/L	**p-Isopropyltoluene** µg/L	**n-pro--pylbenzene** µg/L	**1,2,4-trimethylbenzene** µg/L	**1,3,5-tri methylbenzene** µg/L	**Other VOCs** µg/L	**Naphthalene** µg/L	**15 Other PNAs by 8270C** µg/L
Trenches																							
T3-W	12/03/03	**2,300** [3]	na	**6,300** [5]	ND	ND	31	30	ND	ND	ND	100	47	ND	ND	23	ND	230	320	110	ND	12	na
T7-W	12/02/03	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na
T-10W	09/24/07	**6,100**	**9,100**	**70,000**	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na
W11	08/08/07	**4,500**	**5,800**	**1,800**	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Groundwater Extraction Pit																							
GEP-1A	09/26/07	**54,000**	**81,000**	**8,200**	1.4	3.6	ND	2.2	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na
GEP-1B	10/04/07	**530**	**810**	**1,100**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na
Wells																							
WCEW-1	5/19/04	ND	**600** [6]	**3,700**	**90**	0.66	**48**	56	170	ND	ND	ND	8.7	ND	12	1.8	ND	31	14	5.6	ND	8.3	ND
MW-2	5/19/04	ND	**2,100** [6]	**49,000**	**7,900**	**2,100**	**980**	**8,300**	770	ND	ND	100	ND	ND	ND	ND	ND	ND	1,600	460	ND	**490**	ND
	9/18/07	**1,400**	**1,500**	**8,300**	**1,500**	ND	**340**	21	84	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MW-3	5/19/04	ND	**420** [6]	**1,300**	ND	ND	ND	1.1	5.8	ND	ND	14	ND	ND	ND	ND	ND	ND	ND	12	ND	ND	ND
MW-4	5/19/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-5	5/19/04	ND	**330** [6]	**2,600** [5]	ND	ND	ND	ND	17	ND	ND	ND	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6	5/19/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	5/19/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8	5/19/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

		Petroleum Hydrocarbons			**Volatile Organic Compounds**																	**PNAs**	
Sample ID	**Date Sampled**	**TPHd (diesel)** μg/L	**Mineral Spirits** μg/L	**TPHg (gasoline)** μg/L	**Benzene** μg/L	**Toluene** μg/L	**Ethylbenzene** μg/L	**Total Xylenes** μg/L	**MTBE** μg/L	**Acetone** μg/L	**2-Butanone** μg/L	**n-Butylbenzene** μg/L	**sec-Butylbenzene** μg/L	**tert-Butylbenzene** μg/L	**Isopropylbenzene** μg/L	**p-Isopropylbenzene** μg/L	**p-Isopropyltoluene** μg/L	**n-pro--pylbenzene** μg/L	**1,2,4-tri-methylbenzene** μg/L	**1,3,5-tri methylbenzene** μg/L	**Other VOCs** μg/L	**Naphthalene** μg/L	**15 Other PNAs by 8270C** μg/L
MWT-1	5/19/04	ND	74 [6]	**350**	ND	ND	ND	ND	ND	ND	ND	8.0	ND	ND	1.0	ND	ND	1.0	ND	ND	ND	ND	ND
MWT-2	5/19/04	ND	**3,200 [6]**	**28,000**	**460**	ND	**1,200**	**2,700**	66	ND	ND	100	ND	ND	ND	ND	ND	310	1,600	490	ND	**340**	ND
MWT-3	5/19/04	ND	**450**	**1,000 [5]**	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-4	5/19/04	ND	88 [6]	**540** [5]	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-5	5/19/04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-6	5/19/04	ND	**980**	**4,200 [5]**	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-7	5/19/04	ND	**3,200**	**56,000 [5]**	0.78	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-8	5/19/04	ND	**370**	**800 [5]**	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	ND	ND	ND	ND	0.70	ND	ND	ND	ND
MWT-9	5/19/04	ND	ND	ND	ND	ND	ND	ND	0.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MWT-10	5/19/04	ND	ND	59 [5]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-11	11/6/04	ND	**3,500** [7]	**930** [8]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-12	11/6/04	ND	**830** [7]	**1,400** [8]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-13	11/6/04	ND	**440 [7]**	**1,100** [5]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MWT-14	11/6/04	ND	**1,200** [7]	**4,600** [5]	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Concentrations in bold script exceed the 2008 San Francisco Bay Area RWQCB's Residential Environmental Screening Levels in shallow soils where groundwater is not a source of drinking water.

Notes:

(1) ND = Not Detected above the Method Detection Limit (MDL).
(2) na = Not Analyzed.
(3) The laboratory reports that the detected hydrocarbon does not match its diesel standard.
(4) Laboratory Method 8260B tests for 66 Volatile Organic Comppunds. Only those detected are presented on this table.
(5) The laboratory reports that the detected hydrocarbon does not match its gasoline standard.
(6) The laboratory reports that the detected hydrocarbon does not match its mineral spirits standard.
(7) Quantity of unknown hydrocarbons in sample based on Mineral Spirits
(8) Quantity of unknown hydrocarbons in sample based on gasoline

TABLE 7

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TABLE 7

RESULTS OF ANALYSES OF GROUNDWATER SAMPLES RECOVERED FROM OFF-SITE LOCATIONS

		Petroleum Hydrocarbons							**Volatile Organic Compounds**															
Sample ID	**Date Sampled**	**TRPH**	**Motor Oil**	**TEPH**	**TPHd**	**Mineral Spirits**	**TPPH**	**TPHg**	**Ben-zene**	**Tolu-ene**	**Ethyl Benzene**	**Total Xylenes**	**MTBE**	**Naph-thalene**	**tert-Butyl Benzene**	**sec-Butyl Benzene**	**n-Butyl Benzene**	**1,2,4-Trimethyl benzene**	**Isopropyl benzene**	**Vinyl Chloride**	**1,1-Dichloro ethene**	**cis-1,2 Di-chloroethene**	**Other VOCs**
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Dunne Paint Site[3,4,5]																							
B-12	11/04/02	na[11]	**260**[12]	na	**17,000**	na	na	**9,200**	63	13	ND[10]	26	ND	38	ND	52	47	6.5	120	ND	ND	ND	n-Propylbenzene 47
B-14	11/04/02	na	ND	na	**220,000**	na	na	**170,000**	ND	2.0	ND	ND	ND	30	ND	ND	ND	ND	ND	ND	ND	ND	DIPE 2.4 Carbon Disulfide 2.4
B-15	11/04/02	na	ND	na	**16,000**	na	na	**4,000**	ND	ND	ND	ND	ND	ND	5.3	ND	ND	ND	ND	ND	ND	ND	ND
B-16	11/04/02	na	ND	na	**1,200,000**	na	na	**150,000**	ND	ND	ND	ND	ND	ND	6.4	ND	ND	ND	ND	ND	ND	ND	ND
OB-1	06/27/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OB-2	06/30/03	na	na	na	na	**12,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OB-3	06/27/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OB-4	06/27/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OB-5	06/27/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OB-6	06/27/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Trichloroethene 15; Tetrachloroethene 11
OB-7	06/27/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OB-8	06/27/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OB-9	06/27/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OB-10	06/30/03	na	na	na	na	**5,800**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CW-1	11/12/03	na	na	na	na	85	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03/12/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/15/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/14/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CW-2	11/12/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03/12/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/15/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/14/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CW-3	11/12/03	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	TCE 5.1
	03/12/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/15/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/14/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-D1	08/26/88	na	na	na	na	**1,000**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	01/18/89	na	na	na	na	ND	na	na	na	2.0	ND	1.1	na	na	na	na	na	na	na	na	na	na	na
	04/24/89	na	na	na	na	ND	na	na	na	ND	ND	1.8	na	na	na	na	na	na	na	na	na	na	na
	02/21/90	na	na	na	ND	ND	ND	na	ND	ND	0.4	1.3	na	na	na	na	na	na	na	na	na	na	na
	06/10/92	na	na	na	ND	ND	ND	na	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	06/10/93	na	na	**220**	na	na	**230**	na	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	09/24/93	na	na	na	na	ND	na	ND	na	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	09/29/93	na	na	na	na	110	na	na	na	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	12/14/99	na	na	na	na	ND	na	na	na	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	11/12/03	na	na	na	na	85	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03/12/04	na	na	na	na	**260**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/15/04	na	na	na	na	100	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/14/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sample ID	Date Sampled	TRPH µg/L	Motor Oil µg/L	TEPH µg/L	TPHd µg/L	Mineral Spirits µg/L	TPPH µg/L	TPHg µg/L	Benzene µg/L	Toluene µg/L	Ethyl Benzene µg/L	Total Xylenes µg/L	MTBE µg/L	Naphthalene µg/L	tert-Butyl Benzene µg/L	sec-Butyl Benzene µg/L	n-Butyl Benzene µg/L	1,2,4-Trimethyl benzene µg/L	Isopropyl benzene µg/L	Vinyl Chloride µg/L	1,1-Dichloro ethene µg/L	cis-1,2 Di-chloroethene µg/L	Other VOCs µg/L
MW-D2	08/26/88	na	na	na	na	**1,600**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	01/18/89	na	na	na	na	ND	na	na	na	6.3	ND	12	na	na	na	na	na	na	na	na	na	na	na
	04/24/89	na	na	na	na	ND	na	na	na	ND	ND	7.7	na	na	na	na	na	na	na	na	na	na	na
	02/21/90	na	na	na	na	**300**	na	na	na	ND	0.3	1.5	na	na	na	na	na	na	na	na	na	na	na
	06/10/92	na	na	ND	na	76	ND	na	na	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	06/10/93	na	na	**9,100**	ND	na	**6,200**	na	na	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	09/24/93	na	na	ND	ND	ND	ND	na	na	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	09/29/93	na	na	na	na	**220**	na	na	na	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	12/10/98	na	na	na	ND	180	95	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	12/14/99	na	na	na	na	100	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	11/12/03	na	na	na	na	**1,400**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03/12/04	na	na	na	na	**330**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/15/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/14/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-1-W	02/10/05	na	na	na	na	**330**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-2-W	02/10/05	na	na	na	na	**220**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-4-W	02/10/05	na	na	na	na	**1,600**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-5-W	02/10/05	na	na	na	na	**7,200**	na	na	ND	ND	ND	ND	ND	ND	5.3	ND	ND	ND	ND	ND	ND	ND	ND
B-6-W	02/10/05	na	na	na	na	**47,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boysen Paint Site[3,5,9]																							
MW-B1	09/30/91	na	na	**18,000**	ND	na	**29,000**	na	5	**6**	**250**	**980**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/10/93	na	na	**27,000**	na	na	**57,000**	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/29/93	na	na	na	na	**43,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	05/28/03	na	na	**1,100,000**	na	**26,000**	**37,000**	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/15/04	na	na	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL			LNAPL	LNAPL	LNAPL	LNAPL
	09/14/04	na	na	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	ND	ND	LNAPL	LNAPL	LNAPL	LNAPL
	12/16/04	na	na	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	ND	ND	LNAPL	LNAPL	LNAPL	LNAPL
	03/30/04	na	na	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	ND	ND	LNAPL	LNAPL	LNAPL	LNAPL
																		ND	ND				
MW-B2	06/10/93	na	na	**3,800**	na	na	510	na	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND
	09/29/93	na	na	na	na	**290,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/10/98	na	na	ND	ND	**150,000**	**2,400**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/14/99	na	na	na	na	**630**	na	na	na	na	na	na	na	na	na	na	na	ND	ND	na	na	na	na
	05/28/03	na	na	**22,000**	na	**26,000**	**1,600**	na	ND	ND	ND	ND	ND	ND	3.2	3.2	ND	ND	ND	ND	ND	ND	ND
	06/15/04	na	na	na	na	**3,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	33	ND	ND	ND	ND	ND	ND
	09/14/05	na	na	na	na	**410**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/16/04	na	na	na	na	**480**	na	na	ND	ND	ND	ND	ND	ND	1.8	1.4	ND	ND	ND	ND	ND	ND	ND
	03/30/05	na	na	na	na	**14,000**	na	na	ND	ND	ND	ND	ND	ND	5.8	4.1	ND	ND	ND	2.2	ND	0.57	ND
	06/27/05	na	na	na	na	**4,300**	na	na	ND	ND	ND	ND	ND	ND	5.9	4.7	ND	ND	ND	2.2	ND	ND	ND
MW-B3	06/10/93	na	na	**1,700**	na	na	**1,400**	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/29/93	na	na	na	na	**2,400**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/10/98	na	na	ND	ND	120	830	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/14/99	na	na	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	ND	ND	na	na	na	na
	05/28/03	na	na	ND	na	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/15/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/14/05	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/16/04	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03/30/05	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/27/05	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	TCE 3.4; 1,1,1-Trichloroethene 0.5
MW-B4	06/10/93	na	na	**36,000**	na	na	**36,000**	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/29/93	na	na	na	na	**1,400**	na	na	ND	ND	ND	ND	na	na	ND	ND	ND	na	na	ND	ND	ND	ND
	12/10/98	na	na	na	**1,000**	**7,500**	**2,700**	ND	ND	ND	ND	ND	na	na	ND	ND	ND	na	na	ND	ND	ND	ND
	12/14/99	na	na	na	na	**5,100**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	ND	na	na
	05/28/03	na	na	**7,000**	na	**990**	**14,000**	na	ND	ND	ND	ND	na	na	2.8	ND	ND	na	na	1.8	ND	ND	ND
	06/15/04	na	na	na	na	**1,300**	na	na	ND	ND	ND	ND	na	na	ND	ND	ND	na	na	ND	ND	ND	ND
	09/14/05	na	na	na	na	**400**	na	na	ND	ND	ND	ND	na	na	ND	ND	ND	na	na	ND	ND	ND	ND

Sample ID	Date Sampled	TRPH µg/L	Motor Oil µg/L	TEPH µg/L	TPHd µg/L	Mineral Spirits µg/L	TPPH µg/L	TPHg µg/L	Ben-zene µg/L	Tolu-ene µg/L	Ethyl Benzene µg/L	Total Xylenes µg/L	MTBE µg/L	Naph-thalene µg/L	tert-Butyl Benzene µg/L	sec-Butyl Benzene µg/L	n-Butyl Benzene µg/L	1,2,4-Trimethyl benzene µg/L	Isopropyl benzene µg/L	Vinyl Chloride µg/L	1,1-Dichloro ethene µg/L	cis-1,2 Di-chloroethene µg/L	Other VOCs µg/L
	12/16/04	na	na	na	na	**450**	na	na	ND	ND	ND	ND	na	na	4.6	ND	ND	na	na	ND	ND	ND	ND
	03/30/05	na	na	na	na	**3,000**	na	na	ND	ND	ND	ND	na	na	6.5	2.0	ND	na	na	1.3	ND	ND	ND
	06/27/05	na	na	na	na	**2,800**	na	na	ND	ND	ND	ND	na	na	7.1	3.0	ND	na	na	1.9	ND	ND	TCE 3.4 1,1,1-Trichloroethene 0.5
BES-1	04/21/94	na	na	**18,000**	na	**12,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/10/98	na	na	ND	na	**78,000**	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/14/99	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	ND	na	na
	05/28/03	na	na	**19,000**	na	na	**84,000**	na	ND	ND	ND	ND	ND	ND	4	ND	ND	ND	ND	20	1.5	17	trans-1,2 Dichlorothene 2.1
	06/18/03	na	na	na	na	**120,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	18	ND	14	ND
	06/15/04	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	09/14/05	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	12/16/04	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	03/30/05	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	06/27/05	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
MW-LD4	09/30/91	na	na	na	na	na	na	na	2.0	3.1	9.0	2.4	na	na	na	na	na	na	na	na	na	na	na
	04/06/93	na	na	**21,000**	na	na	**1,100**	na	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	09/29/93	na	na	na	na	**700**	na	na	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na	na
	12/10/98	na	na	na	170	130	83	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na
	12/14/99	na	na	na	na	**440,000**	na	na	na	na	na	na	ND	ND	na	na	na	na	na	na	na	na	na
	01/13/00	na	na	na	na	**630,000**	na	na	na	na	na	na	ND	ND	na	na	na	na	na	na	na	na	na
BH-A	2004	na	na	na	na	54	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-B	2004	na	na	na	na	**1,700,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	9.0	ND	ND	ND	ND	ND	ND
BH-C	2004	na	na	na	na	**230**	na	na	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND	0.51	ND	4.7	ND
BH-E	2004	na	na	na	na	**3,600**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-F	2004	na	na	na	na	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-G	2004	na	na	na	na	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	TCE 0.57
BH-H	2004	na	na	na	na	**1,200,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-I	2004	na	na	na	na	**57,000**	na	na	ND	ND	ND	ND	ND	ND	ND	35	ND	ND	ND	ND	ND	ND	n-Propylbenzene 20
BH-J	2004	na	na	na	na	**1,600,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-K	2004	na	na	na	na	**1,300**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-L	2004	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-M	2004	na	na	na	na	72	na	na	ND	0.64	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-N	2004	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-O	2004	na	na	na	na	ND	na	na	1.6	26	2.4	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-P	2004	na	na	na	na	**680**	na	na	ND	0.57	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-Q	2004	na	na	na	na	**110,000**	na	na	ND	ND	ND	ND	ND	ND	6.1	ND	ND	ND	ND	ND	ND	ND	ND
BH-R	2004	na	na	na	na	**880,000**	na	na	ND	ND	ND	ND	ND	ND	4.9	ND	ND	ND	ND	ND	ND	ND	ND
BH-S	2004	na	na	na	na	**520**	na	na	ND	0.64	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-T	2004	na	na	na	na	**11,000**	na	na	0.7	12	1.2	6.8	ND	ND	2.0	ND	ND	0.93	ND	ND	ND	ND	ND
BH-U	2004	na	na	na	na	**1,600**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-W	2004	na	na	na	na	**870,000**	na	na	ND	ND	ND	ND	ND	2.6	1.0	ND	ND	4.0	ND	ND	ND	ND	ND
BH-X	2004	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sample ID	Date Sampled	TRPH μg/L	Motor Oil μg/L	TEPH μg/L	TPHd μg/L	Mineral Spirits μg/L	TPPH μg/L	TPHg μg/L	Ben-zene μg/L	Tolu-ene μg/L	Ethyl Benzene μg/L	Total Xylenes μg/L	MTBE μg/L	Naph-thalene μg/L	tert-Butyl Benzene μg/L	sec-Butyl Benzene μg/L	n-Butyl Benzene μg/L	1,2,4-Trimethyl benzene μg/L	Isopropyl benzene μg/L	Vinyl Chloride μg/L	1,1-Dichloro ethene μg/L	cis-1,2 Di-chloroethene μg/L	Other VOCs μg/L
BH-Y	2004	na	na	na	na	**1,400,000**	na	na	ND	12	ND	12	ND	41	46	ND	ND	ND	ND	ND	ND	ND	ND
BH-Z	2004	na	na	na	na	**59,000**	na	na	ND	11	ND	7.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-AA	2004	na	na	na	na	**2,000,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-BB	2004	na	na	na	na	**1,100,000**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-DD	Aug. 2005	na	na	na	na	**970**	na	na	ND	2.9	0.58	3.8	ND	ND	ND	ND	ND	0.78	ND	ND	ND	ND	ND
BH-EE	Aug. 2005	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-FF	Aug. 2005	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-II-16-20'	Aug. 2005	na	na	na	na	160	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-II-23-27'	Aug. 2005	na	na	na	na	56	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-II-45-50'	Aug. 2005	na	na	na	na	68	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-JJ	Aug. 2005	na	na	na	na	**520**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-KK	Aug. 2005	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-LL	Aug. 2005	na	na	na	na	ND	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-MM	Aug. 2005	na	na	na	na	**3,500**	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH-NN	Aug. 2005	na	na	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B-1	05/31/06	na	na	na	ND	ND	na	**460**	ND	0.65	ND	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Acetone 47
B-2	05/30/06	na	na	na	ND	ND	na	120	ND	0.52	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Acetone 20
B-4	06/07/06	na	na	na	na	na	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Celis Site [1,2,6]																							
LF-LFMW-1	08/07/93	11	ND	na	**41,000**	na	na	**100,000**	**13,000**	**9,400**	**3,100**	**14,000**	na	na	na	na	na	na	na	na	na	na	na
LF-LFMW-2	08/07/93	ND	ND	na	95	na	na	**13,000**	**2,400**	**2,900**	**500**	**2,000**	na	na	na	na	na	na	na	na	na	na	na
LF-LFMW-3	08/07/93	ND	ND	na	**780**	na	na	**11,000**	**1,500**	**5,100**	**2,900**	**5,000**	na	na	na	na	na	na	na	na	na	na	na
LF-LFMW-4	01/28/94	na	160	na	**1,400**	na	na	**18,000**	**1,000**	**1,900**	**880**	**4,700.0**	na	na	na	na	na	na	na	na	na	na	na
	09/26/97	na	ND	na	**480**	na	na	**3,200**	**44**	**6.6**	**49**	**180**	ND	17	na	na	na	na	na	na	na	na	na
	07/10/07	na	na	na	**620**	**260**	na	**450**	3.5	ND	11	1.8	6.2	na	na	na	na	na	na	na	na	na	na
	10/31/07	na	na	na	**3,400**	**450**	na	**780**	1.3	ND	15	1.1	5.7	na	na	na	na	na	na	na	na	na	na
	01/18/08	na	na	na	**1,000**	**500**	na	**970**	4.1	ND	17	0.8	5.0	na	na	na	na	na	na	na	na	na	na
WCEW-1	09/26/97	na	ND	na	**180,000**	na	na	**110,000**	**2,800**	**4,900**	**3,100**	**12,000**	ND	**120**	na	na	na	na	na	na	na	na	ND
	12/05/97	na	ND	na	95	na	na	**4,700**	**2,100**	**1,800**	**2,500**	**10,000**	340	**170**	na	na	na	na	na	na	na	na	ND
	03/13/98	na	ND	na	**780**	na	na	**7,700**	**2,500**	**1,300**	**1,000**	**3,400**	570	**421**	na	na	na	na	na	na	na	na	ND
	06/02/98	na	**550**	na	**780**	na	na	**3,400**	**2,100**	**460**	**910**	**2,990**	350	**1,000**	na	na	na	na	na	na	na	na	ND
	5/19/2004[5]	na	na	na	ND	**600**	na	**3,700**	**90**	0.66	**48**	56	170	8.3	ND	8.7	ND	14	12	ND	ND	ND	1,3,5 Trimethylbenzene 5.6; p-Isopropylbenzene 1.8 n-Propylbenzene 31
SB-1-15-20	02/06/06	na	na	na	**310**	110	na	**220**	ND	ND	ND	ND	5.2	ND	ND	8.7	ND	ND	ND	ND	ND	ND	ND
URS-MW-1	07/10/07	na	na	na	**580**	**550**	na	**960**	ND	ND	ND	ND	1.7	na	na	na	na	na	na	na	na	na	na
	10/31/07	na	na	na	**670**	150	na	**270**	ND	ND	ND	ND	1.3	na	na	na	na	na	na	na	na	na	na
	01/18/08	na	na	na	**220**	79	na	150	ND	ND	ND	ND	1.1	na	na	na	na	na	na	na	na	na	na
URS-MW-2	07/10/07	na	na	na	**240**	ND	na	ND	ND	ND	ND	ND	140	ND	ND	ND	ND	ND	ND	ND	ND	ND	TBA 18
	10/31/07	na	na	na	180	ND	na	ND	ND	4.4	ND	5.1	160	na	na	na	na	na	na	na	na	na	na

Sample ID	Date Sampled	TRPH	Motor Oil	TEPH	TPHd	Mineral Spirits	TPPH	TPHg	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	Naphthalene	tert-Butyl Benzene	sec-Butyl Benzene	n-Butyl Benzene	1,2,4-Trimethyl benzene	Isopropyl benzene	Vinyl Chloride	1,1-Dichloro ethene	cis-1,2 Di-chloroethene	Other VOCs
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	01/18/08	na	na	na	170	ND	na	ND	ND	ND	ND	ND	160	na	na	na	na	na	na	na	na	na	na
URS-MW-3	07/10/07	na	na	na	ND	ND	na	ND	ND	ND	ND	ND	1.3	na	na	na	na	na	na	na	na	na	na
	10/31/07	na	na	na	50	ND	na	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na
	01/18/08	na	na	na	ND	ND	na	ND	ND	ND	ND	ND	ND	na	na	na	na	na	na	na	na	na	na
URS-MW-4	07/10/07	na	na	na	110	ND	na	ND	ND	ND	ND	ND	82	na	na	na	na	na	na	na	na	na	na
	10/31/07	na	na	na	170	ND	na	ND	ND	ND	ND	ND	7.2	na	na	na	na	na	na	na	na	na	na
	01/18/08	na	na	na	110	ND	na	ND	ND	ND	ND	ND	3.9	na	na	na	na	na	na	na	na	na	na
San Francisco Bread Site [1,6,7,8]																							
SMW-1	09/11/92	na	na	na	200	na	na	**1,400**	**470**	45	43	100	na	na	na	na	na	na	na	na	na	na	na
	12/03/92	na	na	na	na	na	na	ND	ND	ND	1.6	ND	na	na	na	na	na	na	na	na	na	na	na
	03/04/93	na	na	na	na	na	na	**700**	1.1	ND	ND	1.1	na	na	na	na	na	na	na	na	na	na	na
	06/04/93	na	na	na	na	na	na	**2,900**	**340**	58	**50**	**140**	na	na	na	na	na	na	na	na	na	na	na
	09/02/93	na	na	na	na	na	na	**1,500**	**340**	ND	ND	**140**	na	na	na	na	na	na	na	na	na	na	na
	12/01/93	na	na	na	na	na	na	**810**	**170**	23	22	39	na	na	na	na	na	na	na	na	na	na	na
	03/08/94	na	na	na	na	na	na	**5,800**	**1,700**	**430**	**230**	**490**	na	na	na	na	na	na	na	na	na	na	na
MW-3	05/19/04	na	na	na	ND	**420**	na	**1,300**	ND	ND	ND	1.1	5.8	ND	ND	ND	14	ND	ND	ND	ND	ND	1,3,5 Trimethylbenzene 12
URS-MW-5	07/10/07	na	na	na	**820**	160	na	**270**	0.6	ND	22	ND	99	na	na	na	na	na	na	na	na	na	na
	10/31/07	na	na	na	**1,400**	**1,400**	na	**2,500**	3.9	ND	**270**	ND	47	na	na	na	na	na	na	na	na	na	na
	01/18/08	na	na	na	**2,000**	**540**	na	**1,000**	3.3	ND	**110**	ND	49	na	na	na	na	na	na	na	na	na	na

Concentrations in bold script exceed the 2008 San Francisco Bay Area RWQCB's Residential Environmental Screening Levels in shallow soils where groundwater is not a source of drinking water.

Notes:

(1) Data Source: Levine-Fricke 1994, 1993
(2) Data Source: Woodward-Clyde International-Americas 1997, 1998
(3) Data Source: Aqua Science Engineers, Inc. 2005a,b
(4) Data Source: Clayton Group Services 2007, 2004a,b, 2003, 2002
(5) Data Source: Hageman-Aquiar, Inc. 1992
(6) Data Source: URS 2006, 2007a, 2009
(7) Data Source: The San Joaquin Company 2005
(8) Data Source: SEACOR Science and Engineering Analysis Corporation 1992
(9) Data Source: Environmental Resource Management 2006
(10) ND = Not Detected above the Method Detection Limit (MDL).
(11) na = Not Analyzed.

TABLE 8

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TABLE 8

RWQCB TIER 1 CONCENTRATION LIMITS (ESLs)
FOR CHEMICALS OF CONCERN IN SOIL, GROUNDWATER AND SOIL GAS

In **shallow** soils (<3m BGS; <1.5m BGS for soil gas) at sites where groundwater is ***not*** *a source of drinking water.*

	Limiting Concentrations to Protect Human Healtl				
	Soil		***Groundwater***	***Soil Gas for Vapor Intrusion***	
Chemical of Concern	Residential mg/Kg	Commercial mg/Kg	Resid. or Comm. µg/L	Residential $\mu g/m^3$	Commercial $\mu g/m^3$
Acetone	0.50	0.50	1,500	666,000	1,800,000
Aroclor® 1260 (PCBs)	0.22	0.74	0.014	n/a	n/a
Antimony	6.3	40	30	n/a	n/a
Arsenic	0.39	1.6	36	n/a	n/a
Barium	750	1,500	1,000	n/a	n/a
Benzene	0.12	0.27	46	84	280
Beryllium	4.0	8.0	0.53	n/a	n/a
2-Butatone (Metyl Ethyl Ketone)	13	13	14,000	1,000,000	2,900,000
n-Butylbenzene (1-Phenylbutane)	ne	ne	ne	ne	ne
sec-Butylbenzene (Butyl Benzene)	ne	ne	ne	ne	ne
tert-Butylbenzene	ne	ne	ne	ne	ne
Cadmium	1.7	7.4	0.25	n/a	n/a
Chromium III	750	750	180	n/a	n/a
Chromium VI	8.0	8.0	11	n/a	n/a
Cobalt	40	80	3.0	n/a	n/a
Copper	230	230	3.1	n/a	n/a
Ethyl benzene	2.3	4.7	43	980	3,300
Lead	200	750	2.5	n/a	n/a
Mercury	1.3	10	0.025	n/a	n/a
2-Methylnaphthalene	0.25	0.25	2.1	ne	ne
4-Methylphenol	ne	ne	ne	ne	ne
Methyl Teritary Butyl Ether	8.4	8.4	1,800	9,400	31,000
Methylene Chloride	7.2	17	2,200	5,200	17,000

Chemical of Concern	**Limiting Concentrations to Protect Human Health**				
	Soil		***Groundwater***	***Soil Gas for Vapor Intrusion***	
	Residential mg/Kg	Commercial mg/Kg	Resid. or Comm. µg/L	Residential $\mu g/m^3$	Commercial $\mu g/m^3$
Molybdenum	40	40	240	n/a	n/a
Naphthalene	1.3	2.8	24	72	240
Nickel	150	150	8.2	n/a	n/a
Isopropylbenzene (Cumene)	ne	ne	ne	ne	ne
p-Isopropylbenzene	ne	ne	ne	ne	ne
p-Isopropyltoluene (p-Cymene)	ne	ne	ne	ne	ne
n-Propylbenzene (Isocumene)	ne	ne	ne	ne	ne
Selinium	10	10	5.0	n/a	n/a
Silver	20	40	0.19	n/a	n/a
Tetrachlorethene	0.47	0.90	120	410	4100
Thallium	1.3	16	4.0	n/a	n/a
Toluene	9.3	9.3	130	63,000	180,000
TPHd, TPHms (Diesel and Mineral Spirits)	100	180	210	10,000	29,000
TPHg (Gasoline)	100	180	210	10,000	29,000
Trichloroethene	1.9	4.1	360	1,200	4,100
1,2,4 Trimethylbenzene	ne	ne	ne	ne	ne
1,3,5 Trimethylbenzene	ne	ne	ne	ne	ne
Vanadium	16	200	19	n/a	n/a
Xylene Isomers (Total)	11.0	11.0	100	21,000	58,000
Zinc	600	600	81	n/a	n/a

Notes:

n/a = not applicable to soil gas

ne = not established in the RWQCB ESL guidance document (California Regional Water Quality Control Board San Francisco Bay Region (2008), *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater.* California Regional Water Quality Control Board San Francisco Bay Region INTERIM FINAL. November 2007 (Revised May 2008).

TABLE 9

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TABLE 9

RWQCB TIER 1 CONCENTRATION LIMITS (ESLs) FOR CHEMICALS OF CONCERN IN SOIL AND GROUNDWATER

In **deep** soils (>3m BGS) at sites where groundwater is ***not*** *a source of drinking water.*

	Limiting Concentrations to Protect Human Health				
	Soil		***Groundwater***	***Soil Gas for Vapor Intrusion***	
Chemical of Concern	Residential mg/Kg	Commercial mg/Kg	Resid. or Comm. µg/L	Residential *µg/m³*	Commercial *µg/m³*
Acetone	0.50	0.50	1,500	666,000	1,800,000
Aroclor® 1260 (PCBs)	6.3	6.3	0.014	n/a	n/a
Antimony	310	310	30	n/a	n/a
Arsenic	15	15	36	n/a	n/a
Barium	2,500	2,600	1,000	n/a	n/a
Benzene	2.0	2.0	46	84	280
Beryllium	98	98	0.53	n/a	n/a
2-Butatone (Metyl Ethyl Ketone)	13	13	14,000	1,000,000	2,900,000
n-Butylbenzene (1-Phenylbutane)	ne	ne	ne	ne	ne
sec-Butylbenzene (Butyl Benzene)	ne	ne	ne	ne	ne
tert-Butylbenzene	ne	ne	ne	ne	ne
Cadmium	39	39	0.25	n/a	n/a
Chromium III	2,500	5,000	180	n/a	n/a
Chromium VI	0.53	0.53	11	n/a	n/a
Cobalt	94	94	3.0	n/a	n/a
Copper	2,500	5,000	3.1	n/a	n/a
Ethyl benzene	4.7	4.7	43	980	3,300
Lead	750	750	2.5	n/a	n/a
Mercury	58	58	0.025	n/a	n/a
2-Methylnaphthalene	0.25	0.25	2.1	ne	ne
4-Methylphenol	ne	ne	ne	ne	ne
Methyl Teritary Butyl Ether	8.4	8.4	1,800	9,400	31,000
Methylene Chloride	34	34	2,200	5,200	17,000

Chemical of Concern	**Limiting Concentrations to Protect Human Health**				
	Soil		***Groundwater***	***Soil Gas for Vapor Intrusion***	
	Residential mg/Kg	Commercial mg/Kg	Resid. or Comm. µg/L	Residential *µg/m³*	Commercial *µg/m³*
Molybdenum	2,500	3,900	240	n/a	n/a
Naphthalene	4.8	4.8	24	72	240
Nickel	260	260	8.2	n/a	n/a
Isopropylbenzene (Cumene)	ne	ne	ne	ne	ne
p-Isopropylbenzene	ne	ne	ne	ne	ne
p-Isopropyltoluene (p-Cymene)	ne	ne	ne	ne	ne
n-Propylbenzene (Isocumene)	ne	ne	ne	ne	ne
Selinium	2,500	3,900	5.0	n/a	n/a
Silver	2,500	3,900	0.19	n/a	n/a
Tetrachlorethene	17	17	120	410	4100
Thallium	62	62	4.0	n/a	n/a
Toluene	9.3	9.3	130	63,000	180,000
TPHd, TPHms (Diesel and Mineral Spirits)	180	180	210	10,000	29,000
TPHg (Gasoline)	180	180	210	10,000	29,000
Trichloroethene	33	33	360	1,200	4,100
1,2,4 Trimethylbenzene	ne	ne	ne	ne	ne
1,3,5 Trimethylbenzene	ne	ne	ne	ne	ne
Vanadium	770	770	19	n/a	n/a
Xylene Isomers (Total)	11	11	100	21,000	58,000
Zinc	2,500	5,000	81	n/a	n/a

Notes:

n/a = not applicable to soil gas
ne = not established in the RWQCB ESL guidance document (California Regional Water Quality Control Board San Francisco Bay Region (2008), *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater.* California Regional Water Quality Control Board San Francisco Bay Region INTERIM FINAL. November 2007 (Revised May 2008).

TABLE 10

SJC

Table 10

RESULTS OF ANALYSES OF SOIL SAMPLES RECOVERED FROM FLOORS OF REMEDIAL EXCAVATIONS
August 10 - 30, 2007

Sample ID	**Date Sampled**	**Elevation** NAVD *ft.*	**TPHd (diesel)** mg/Kg	**Mineral Spirits** mg/Kg	**TPHg (gasoline)** mg/Kg	**Benzene** mg/Kg	**Toluene** mg/Kg	**Ethylbenzene** mg/Kg	**Total Xylenes** mg/Kg
Remedial Excavation No. 1									
W275N08	08/28/07	36.62	3.0	1.7	9.7	ND	ND	ND	ND
W275N30	08/28/07	36.73	29	40	**510**	**0.97**	2.8	**8.5**	**51**
W275N55	08/30/07	36.06	32	26	**140**	ND	ND	ND	ND
W275N80	08/30/07	36.73	18	19	85	ND	ND	ND	ND
W275N105	08/28/07	36.74	54	ND	1.7	0.014	0.048	0.087	0.57
W305N08	08/28/07	36.13	ND	ND	1.9	ND	ND	ND	ND
W305N30	08/28/07	36.04	3.1	4.1	**130**	ND	2.0	1.8	9.3
W305N55	08/28/07	36.10	4.1	5.7	59	ND	ND	ND	2.6
W305N80	08/28/07	35.29	8.2	10	0.32	ND	ND	ND	ND
W305N115	08/28/07	36.47	ND	ND	ND	ND	ND	ND	ND
W335N08	08/28/07	35.69	ND	ND	ND	ND	ND	ND	ND
W335N30	08/28/07	35.66	42	57	**140**	ND	ND	ND	4.1
W335N55	08/28/07	34.96	6.5	8.4	7.7	ND	ND	ND	ND
W335N80	08/28/07	35.50	ND	ND	ND	ND	ND	ND	ND
W335N105	08/28/07	35.40	100	**140**	**120**	ND	ND	ND	ND
Remedial Excavation No. 2									
W0N0	08/14/07	40.81	28	6.3	3.2	ND	ND	ND	ND
W0N25	08/14/07	40.54	ND	ND	ND	ND	ND	ND	ND
W0N35	08/14/07	40.42	ND	ND	ND	ND	ND	ND	ND
W0N50	08/14/07	40.25	ND	ND	ND	ND	ND	ND	ND
W0N65	08/14/07	40.81	ND	ND	ND	ND	ND	ND	ND
W15N61	08/10/07	40.57	ND	ND	ND	ND	ND	ND	ND
W25N0	08/14/07	39.47	ND	ND	ND	ND	ND	ND	ND
W25N25	08/14/07	39.94	ND	ND	ND	ND	ND	ND	ND
W25N50	08/17/07	40.71	ND	ND	ND	ND	ND	ND	ND
W25N75	08/17/07	41.05	ND	ND	ND	ND	ND	ND	ND
W50N0	08/22/07	39.95	3.0	ND	ND	ND	ND	ND	ND
W50N50	08/17/07	40.41	ND	ND	ND	ND	ND	ND	ND
W50N75	08/17/07	40.44	ND	ND	ND	ND	ND	ND	ND
W75N0	08/22/07	40.61	19	24	**350**	ND	3.9	**8.1**	**21**
W75N25	08/22/07	40.22	26	29	**280**	ND	3.9	**2.9**	9.2
W75N50	08/17/07	40.19	ND	ND	0.90	0.0077	ND	ND	ND
W75N75	08/17/07	40.92	ND	ND	ND	ND	ND	ND	ND
W100N0	08/23/07	40.38	13	14	**180**	ND	1.6	**2.9**	**16**
W100N25	08/23/07	40.72	18	15	**150**	ND	ND	2.3	ND
W100N50	08/17/07	40.23	ND	ND	0.70	0.0094	ND	0.0051	ND
W100N75	08/17/07	40.21	ND	ND	ND	ND	ND	ND	ND

Sample ID	**Date Sampled**	**Elevation** NAVD *ft.*	**TPHd (diesel)** mg/Kg	**Mineral Spirits** mg/Kg	**TPHg (gasoline)** mg/Kg	**Benzene** mg/Kg	**Toluene** mg/Kg	**Ethylbenzene** mg/Kg	**Total Xylenes** mg/Kg
W125N0	08/23/07	40.54	7.1	9.2	72	ND	ND	1.2	3.9
W125N25	08/27/07	40.36	32	31	100	ND	ND	ND	ND
W125N50	08/27/07	39.72	9.3	7.6	**150**	ND	ND	ND	ND
W125N75	08/17/07	40.53	ND	ND	ND	ND	ND	ND	ND
W150N0	08/23/07	39.65	10	9.9	96	ND	ND	1.1	3.2
W150N25	08/23/07	40.09	18	21	**290**	ND	ND	**6.0**	8.2
W150N50	08/17/07	39.32	ND	ND	ND	ND	ND	ND	ND
W175N0	08/23/07	39.93	2.6	1.6	2.9	ND	ND	ND	ND
W175N25	08/23/07	40.39	2.8	2.4	9.0	0.020	ND	0.11	0.0099
W175N50	08/27/07	39.89	ND	ND	ND	ND	ND	ND	2.4
W175N75	08/27/07	39.13	ND	ND	ND	ND	ND	ND	ND
W200N0	08/27/07	40.30	ND	ND	0.47	ND	ND	ND	ND
W200N50	08/27/07	40.06	5.6	5.2	93	ND	ND	1.6	ND
W200N75	08/27/07	39.92	**940**	**1300**	**5100**	ND	ND	**50**	**270**
W213N25	08/27/07	40.76	6.8	5.4	6.5	ND	ND	0.055	ND

Notes:

(1) Concentrations in **bold** script exceed the 2008 San Francisco Bay Area RWQCB's Environmental Screening Levels for residential property in shallow soils where groundwater is not a source of drinking water.

(2) ND = Not Detected above the Method Detection Limit (MDL).

TABLE 11

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TABLE 11

REPRESENTATIVE CONCENTRATIONS OF CHEMICALS OF CONCERN IN SOIL AND GROUNDWATER USED IN HEALTH RISK ANALYSIS FOR CORRECTIVE MEASURES DESIGN

SOIL

	Building 3		**Building 1**	
	Pre-Remediation *mg/Kg*	Post-Remediation *mg/Kg*	Pre-Remediation *mg/Kg*	Post-Remediation *mg/Kg*
Chemical of Concern	**Concentrations**			
Benzene	13	13	1.1	1.1
Toluene	140	140	9.0	9.0
Ethylbenzene	80	80	13.0	13.0
Xylene (mixed isomers)	430	430	75	75
Methyl tertiary-butyl ether	ND	ND	0.005	0.005
Acetone	ND	ND	0.065	0.065
n-Butylbenzene	8.4	8.4	2.6	2.6
sec-Butylbenzene	3.1	3.1	ND	ND
Cumene (isopropylbenzene)	2.7	2.7	1.1	1.1
p-isopropylbenzene	ND	ND	ND	ND
n-propylbenzene	13	13	4.4	4.4
1,2,4-trimethylbenzene	32	32	23.0	23.0
1,3,5-trimethylbenzene	12	12	8.1	8.1
Naphthalene	18	18	4.2	4.2

GROUNDWATER

	Building 3		**Building 1**	
	Pre-Remediation *µg/L*	Post-Remediation *µg/L*	Pre-Remediation *µg/L*	Post-Remediation *µg/L*
Chemical of Concern	**Concentrations**			
Benzene	7,900	3,160	90	90
Toluene	2,100	840	0.66	0.66
Ethylbenzene	980	392	48	48
Xylene (mixed isomers)	8,300	3,320	56	56
Methyl tertiary-butyl ether	770	308	170	170
Acetone	ND	ND	ND	ND
n-Butylbenzene	100	40	ND	ND
sec-Butylbenzene	ND	ND	8.7	8.7
Cumene (isopropylbenzene)	ND	ND	12	12
p-isopropylbenzene	ND	ND	1.8	1.8
n-propylbenzene	ND	ND	31	31
1,2,4-trimethylbenzene	1,600	640	14	14
1,3,5-trimethylbenzene	460	184	5.6	5.6
Naphthalene	490	196	8.3	8.3

Note: ND = Not detected above the Method Detection Level (MDL) of the analytical method employed

TABLE 12

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TABLE 12

HYDRAULIC CONDUCTIVITY OF NATIVE AND IMPORTED CLAY SOILS

Sample No.	**Recovered From**	**Soil Type**	**Condition**	**Dry Density** lb/ft ^{3}	**Moisture Content** %	**Hydraulic Conductivity** cm/sec
BG-2-6.5	Boring BG-2 at 6.5 ft BGS	Black silty Clay	In Situ	-	-	2.51E-09
MW-7-6.0	Boring MW-7 at 6.0 ft BGS	Dark brown silty Clay	In Situ	-	-	2.95E-08
Bulk-1	Clean Soil Stockpile	Dark gray sandy Clay	90% Compaction	102.0	20.1	1.52E-08
Bulk-2	Clean Soil Stockpile	Dark gray sandy Clay	90% Compaction	103.5	17.7	7.82E-08
Bulk-3	Clean Soil Stockpile	Dark gray fat Clay	90% Compaction	97.0	22.5	4.33E-08
Los Altos II	Los Altos Borrow Pit	Brown sandy Clay	90% Compaction	114.9	15.2	3.56E-08

TABLE 13

SJC

TABLE 13

RESULTS OF SOIL GAS SURVEY

Soil in Bottom of Test Boring

Sample ID	Date Sampled	Depth BGS ft.	Mineral Spirits mg/Kg	TPHd (diesel) mg/Kg	TPHg (gasoline) mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethylbenzene mg/Kg	Total Xylenes mg/Kg	MTBE mg/Kg	Acetone mg/Kg	2-Butanone mg/Kg	n-Butylbenzene mg/Kg	sec-Butylbenzene mg/Kg	tert-Butylbenzene mg/Kg	Isopropylbenzene mg/Kg	p-Isopropyltoluene mg/Kg	n-Propylbenzene mg/Kg	1,2,4-Trimethylbenzene mg/Kg	1,3,5-Trimethylbenzene mg/Kg	Napthalene mg/Kg	Other VOCs by 8260B GC/MS
SG-1-5.0	10/29/07	5.0	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SG-2-5.0	10/29/07	5.0	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SG-3-5.0	10/29/07	5.0	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SG-4-5.0	10/29/07	5.0	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SG-5-5.0	10/29/07	5.0	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SG-6-5.0	10/29/07	5.0	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SG-7-5.0	09/24/07	5.0	ND	9.1	na	ND	ND	0.0065	0.019	ND	ND	ND	ND	ND	ND	0.005	ND	0.016	0.019	0.0049	ND	ND
SG-8-5.0	09/24/07	5.0	ND	10.0	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SG-9-5.0	09/24/07	5.0	ND	6.0	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SG-10-5.0	09/24/07	5.0	4.8	33.0	na	0.021	ND	0.041	0.096	ND	0.082	ND	0.018	0.019	ND	0.049	ND	0.190	0.099	0.022	0.014	ND

Soil Gas

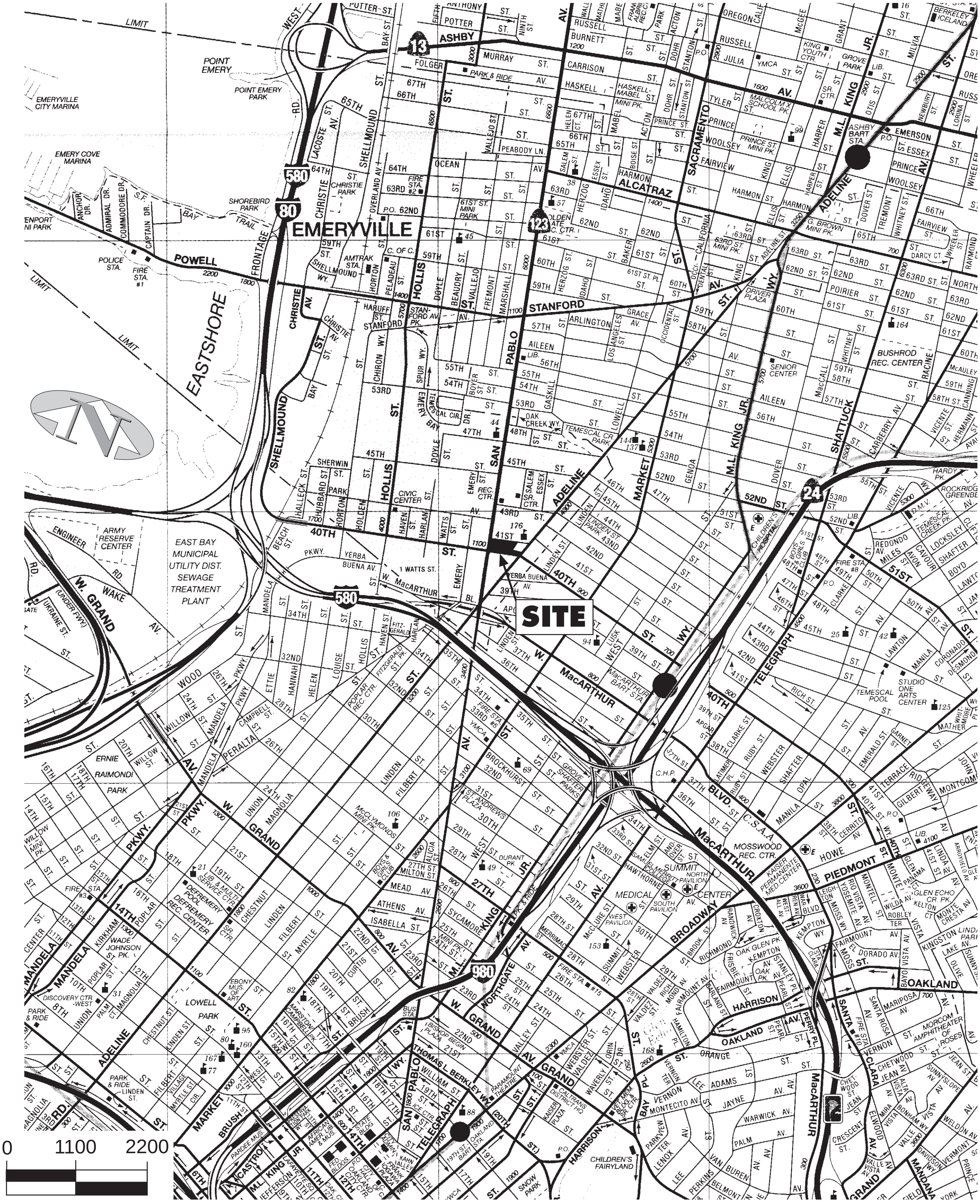
Sample ID	Date Sampled	Depth BGS ft.	Benzene $\mu g/m^3$	Toluene $\mu g/m^3$	Ethylbenzene $\mu g/m^3$	Total Xylenes $\mu g/m^3$	MTBE $\mu g/m^3$	Acetone $\mu g/m^3$	2-Butanone $\mu g/m^3$	trichlorofluoromethane $\mu g/m^3$	1,2,4-Trimethylbenzene $\mu g/m^3$	1,3,5-Trimethylbenzene $\mu g/m^3$	Carbon disulfide $\mu g/m^3$	Methylene Chloride $\mu g/m^3$	4-ethyltoluene $\mu g/m^3$	Other VOCs by 8260B GC/MS
SG-1	10/29/07	5.0	ND	ND	ND	ND	ND	47	ND	ND	ND	ND	ND	ND	ND	ND
SG-2	10/29/07	5.0	14	57	21	70	ND	120	ND	26	ND	ND	32	ND	ND	ND
SG-3	10/29/07	5.0	ND	ND	ND	ND	ND	94	ND	20	ND	ND	ND	ND	ND	ND
SG-4	10/29/07	5.0	ND	8.8	ND	ND	ND	130	ND	ND	ND	ND	ND	ND	ND	ND
SG-5	10/29/07	5.0	13	75	35	140	ND	77	ND	ND	ND	ND	ND	ND	15	ND
SG-6	10/29/07	5.0	ND	ND	ND	ND	ND	93	ND	ND	ND	ND	ND	ND	ND	ND
SG-7	09/24/07	5.0	35	9.6	ND	ND	ND	220	58	ND	ND	ND	47	9.3	ND	ND
SG-8	09/24/07	5.0	29	9.0	ND	ND	ND	220	77	ND	ND	ND	ND	7.5	ND	ND
SG-9	09/24/07	5.0	72	16	29	48	ND	370	39	ND	ND	ND	ND	ND	ND	ND
SG-10	09/24/07	5.0	**840**	33	370	620	ND	430	90	ND	ND	ND	ND	ND	25	ND

Concentrations in bold script exceed the 2008 San Francisco Bay Area RWQCB's Residential Environmental Screening Levels in shallow soils where groundwater is not a source of drinking water.

Note: ND = Not Detected above the Method Detection Limit (MDL).

FIGURES

SJC

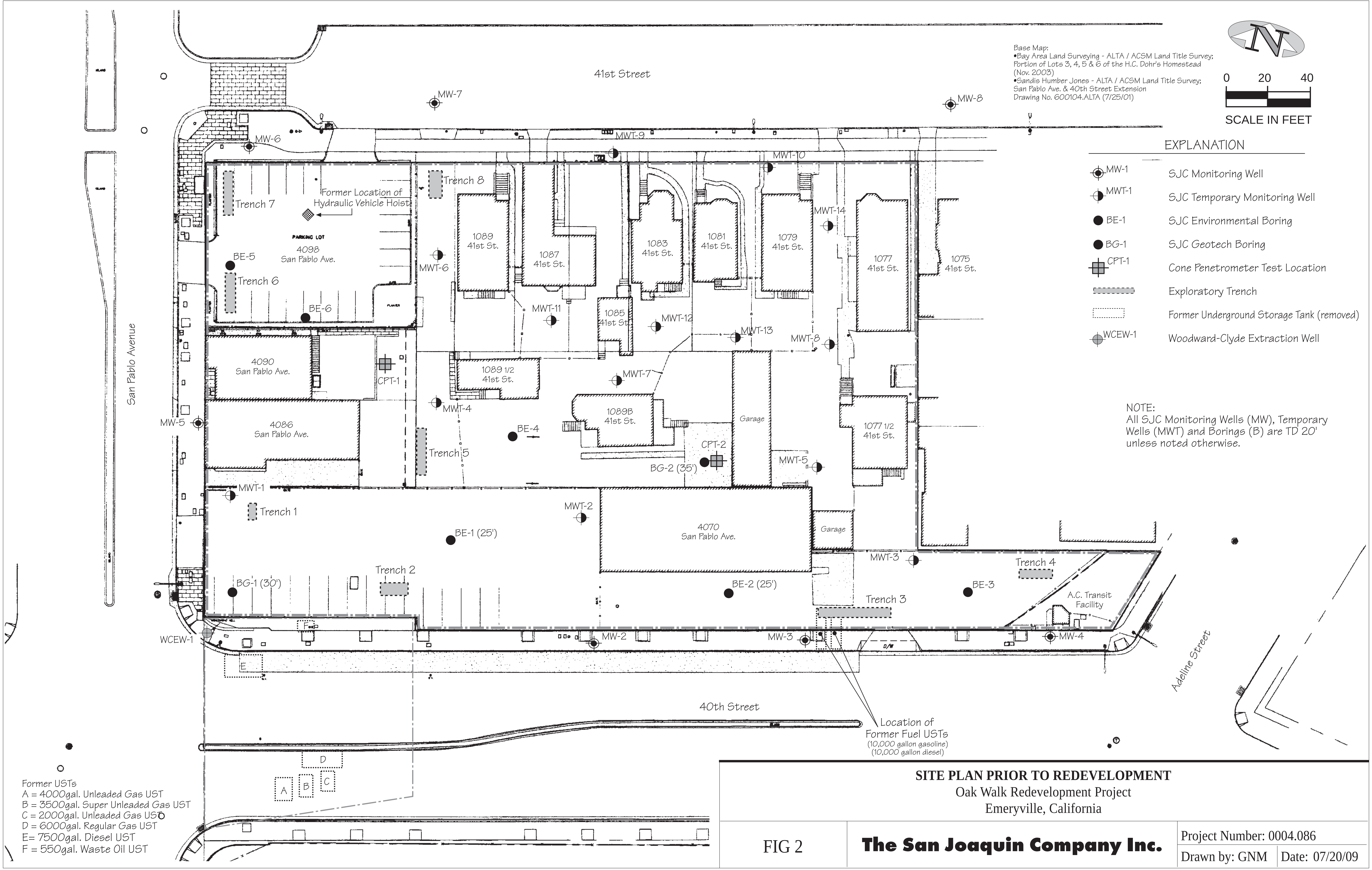


Basemap: AAA; Oakland-Berkeley-Alameda (12/02)

SITE LOCATION

Oak Walk Redevelopment Project
Emeryville, California

FIG 1	**The San Joaquin Company Inc.**	Project Number: 0004.086
		Drawn by: GNM Date: 07/11/09



Base Map:
•Bay Area Land Surveying - ALTA / ACSM Land Title Survey;
Portion of Lots 3, 4, 5 & 6 of the H.C. Dohr's Homestead
(Nov. 2003)
•Sandis Humber Jones - ALTA / ACSM Land Title Survey;
San Pablo Ave. & 40th Street Extension
Drawing No. 600104.ALTA (7/25/01)

EXPLANATION

MW-1	SJC Monitoring Well
MWT-1	SJC Temporary Monitoring Well
● BE-1	SJC Environmental Boring
● BG-1	SJC Geotech Boring
CPT-1	Cone Penetrometer Test Location
▨	Exploratory Trench
☐	Former Underground Storage Tank (removed)
WCEW-1	Woodward-Clyde Extraction Well

NOTE:
All SJC Monitoring Wells (MW), Temporary Wells (MWT) and Borings (B) are TD 20' unless noted otherwise.

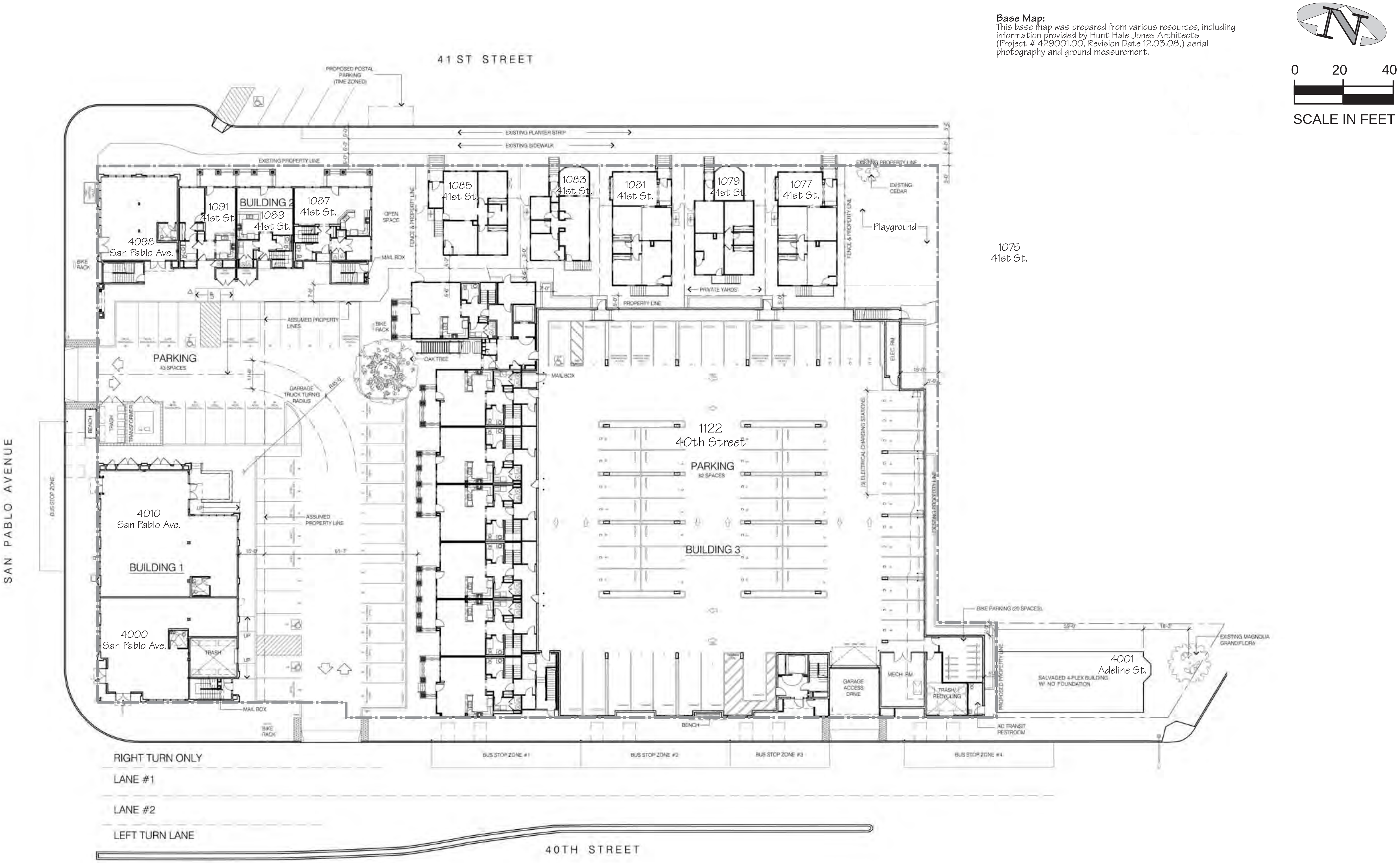
Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

SITE PLAN PRIOR TO REDEVELOPMENT
Oak Walk Redevelopment Project
Emeryville, California

FIG 2

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 07/20/09



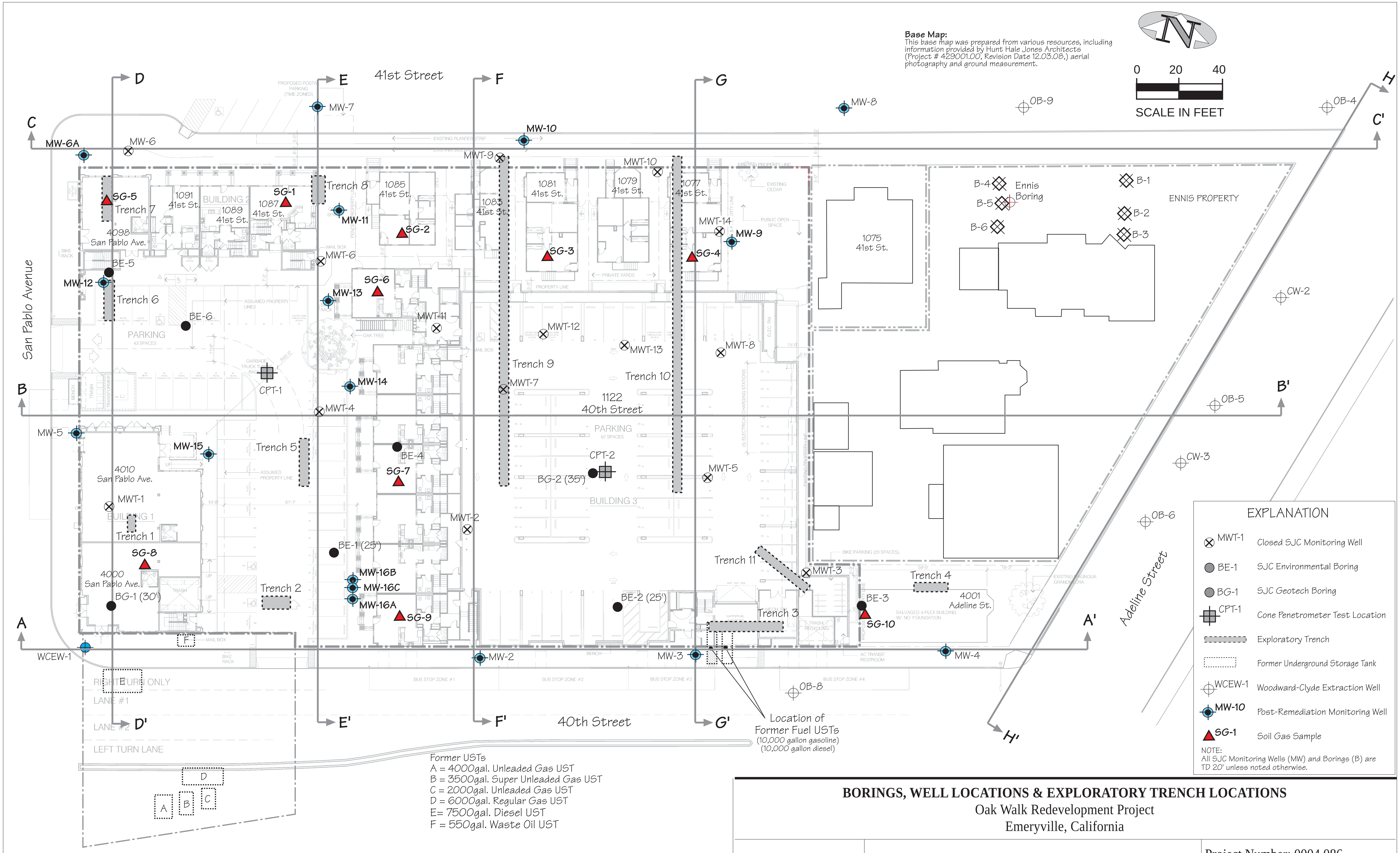
Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

PLAN OF REDEVELOPED SITE
Oak Walk Redevelopment Project
Emeryville, California

FIG 3

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 07/20/09



Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

BORINGS, WELL LOCATIONS & EXPLORATORY TRENCH LOCATIONS
Oak Walk Redevelopment Project
Emeryville, California

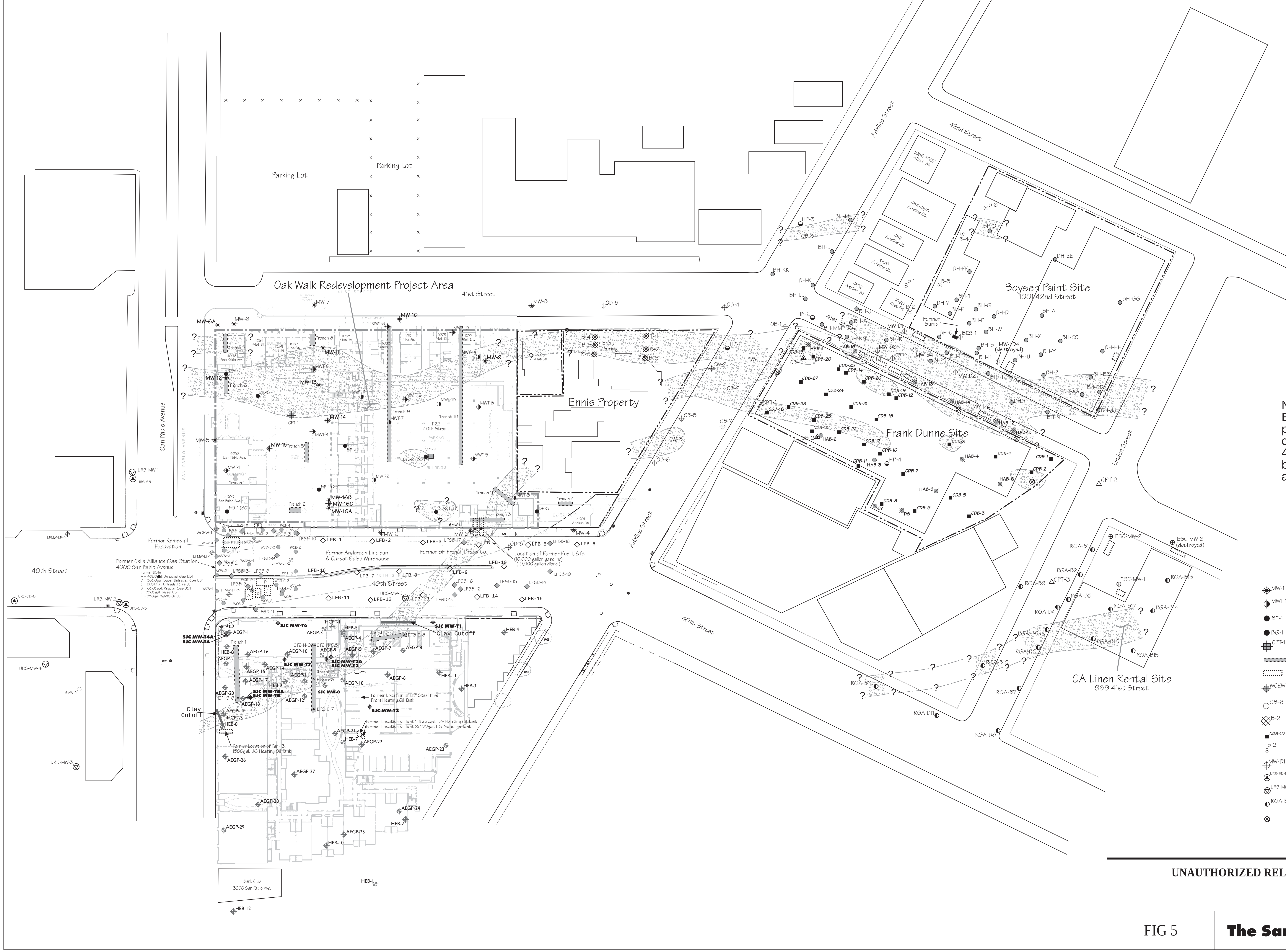
FIG 4

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 07/07/09

Base Map:
This base map was prepared from various resources, including information provided by:

- Hunt Hale Jones Architects
(Project # 429001.00, Revision Date 12.03.08,)
- Bay Area Land Surveying - ALTA / ACSM Land Title Survey;
Portion of Lots 3, 4, 5 & 6 of the H.C. Dohr's Homestead
(Nov. 2003)
- Sandis Humber Jones - ALTA / ACSM Land Title Survey;
San Pablo Ave. & 40th Street Extension
Drawing No. 600104.ALTA (7/25/01)
- Clayton Group Services - Monitoring Well Locations
Former Dunner Paints 1007 41st St. Oakland,
Figure 2, Project No. 70-03365.04 (12/05/03)
- Clayton Group Services - Historical Subject Property Plan
1007 41st St & 4050 Adeline St., Oakland,
Figure 3, Project No. 70-03365.00 (09/06/02)
- Aerial Photography and Ground Measurement



Note:
Except on Andante and Frank Dunn sites, location and continuity of paleo streambed deposits are tentative. Continuity of paleo streambed channels as shown on Boyson Paint Site, 41st Street, Ennis Property, 40th Street, California Linen Rental, and Adeline Street are assumed based on a preponderance of available boring log, hydrostratigraphic and geochemical data.

EXPLANATION

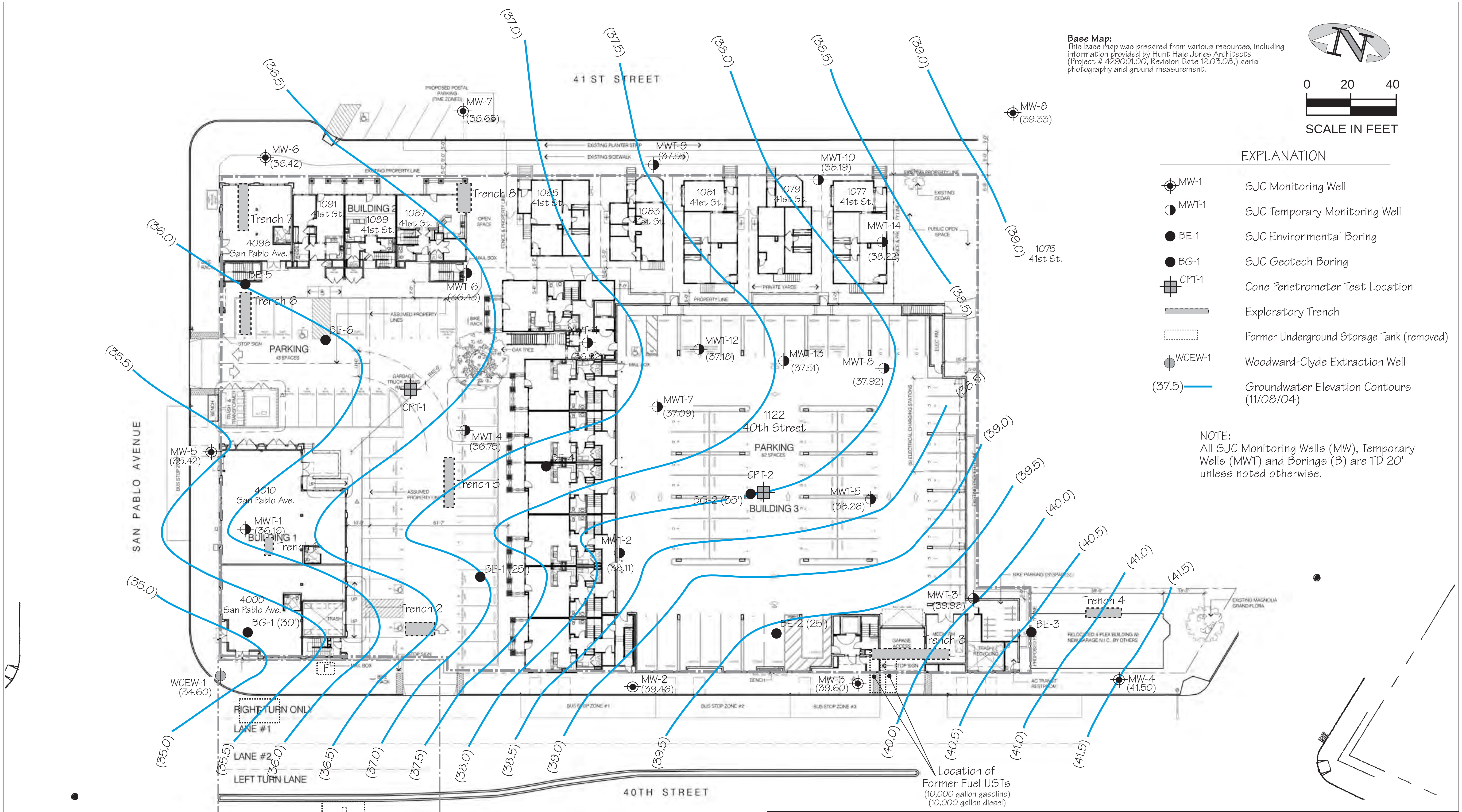
MW-1	SJC Monitoring Well (Oak Walk)	WCW-1	Woodward-Clyde Soil Sample
MWT-1	SJC Temporary Monitoring Well (Oak Walk)	LFSB-14	Levine • Fricke Soil Boring
BE-1	SJC Environmental Boring (Oak Walk)	LFB-1	Levine • Fricke Soil Boring
BG-1	SJC Geotech Boring (Oak Walk)	LFMW-LF-2	Levine • Fricke Monitoring Well
CPT-1	Cone Penetrometer Test Location (Oak Walk)	**HEB-2**	Harza Exploratory Boring
	Exploratory Trench	SMW-1	SECOR Monitoring Well
	Underground Storage Tank (removed)	**AEGP-6**	APEX Envirotech , Inc. Boring
WCEW-1	Woodward-Clyde Extraction Well	**SJC MW-T1**	SJC Temporary Monitoring Well (SNK Andante)
OB-6	Clayton Monitoring Well (CW) & Temporary Monitoring Well (OB)		Paleo Streambed, Gravelly Areas
B-2	Clayton Boring (Ennis)	ET1-S-6	Trench Soil Sample Location
CDB-10	Clayton Boring (Dunn)	MW-D1	Dunne Paints Monitoring Well
B-2	ERM Boring (6/06)	HP-2	ASE Boring
MW-B1	Kozel Property Monitoring Well	BH-S	ASE Temporary Well
URS-SB-1	URS Geoprobe Soil Boring	ESC-MW-1	Environmental Strategies Corp Monitoring Well
URS-MW-3	URS Monitoring Well	**HAB-4**	Hageman-Aguiar, Inc. Soil Boring
RGA-B17	RGA Environmental Boring	CPT-2	Cone Penetrometer Test (SCI)
⊗	Extraction Well	SB-2	Soil Boring (SCI)

UNAUTHORIZED RELEASE SITES IN NEIGHBORHOOD OF SUBJECT PROPERTY
Oak Walk Redevelopment Project
Emeryville, California

FIG 5

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/18/09



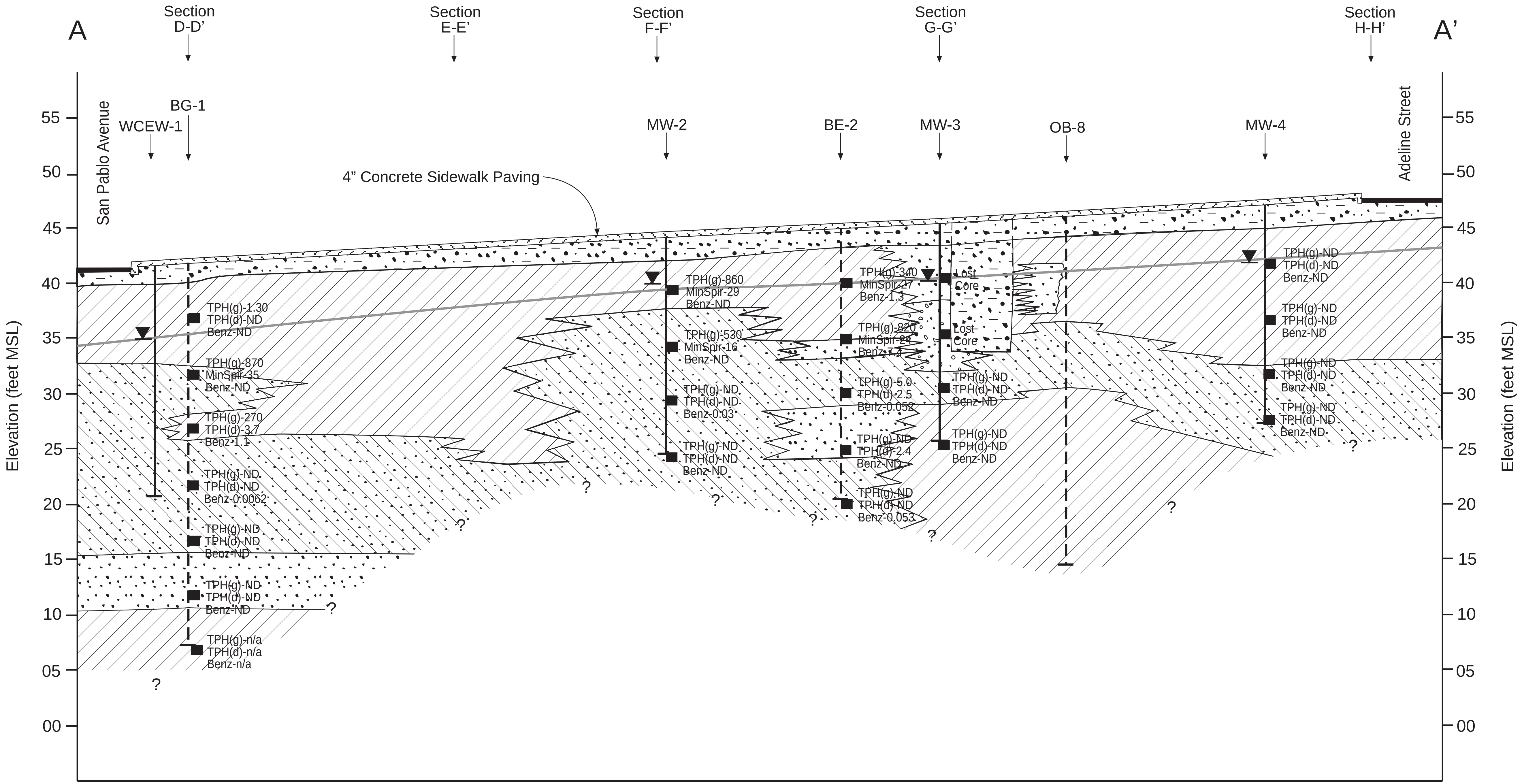
Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

GROUNDWATER CONTOURS (11/08/04)
Oak Walk Redevelopment Project
Emeryville, California

FIG 6

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 07/01/09



EXPLANATION

▨ Clays and Silty Clays

▨ Sandy Clay and Clays with some Silt, Sand or Gravel

▨ Silts, Clayey Gravel and Sands

▨ Gravel

▨ Gravelly Fill

▨ Engineered Fill

▨ A/B/ Gravel Fill

▼ Water Table (11/08/04)

Gasoline-340
MineralSpirits/TPH(d)-27
Benzene-ND
Soil Sample Analysis Results (mg/kg)

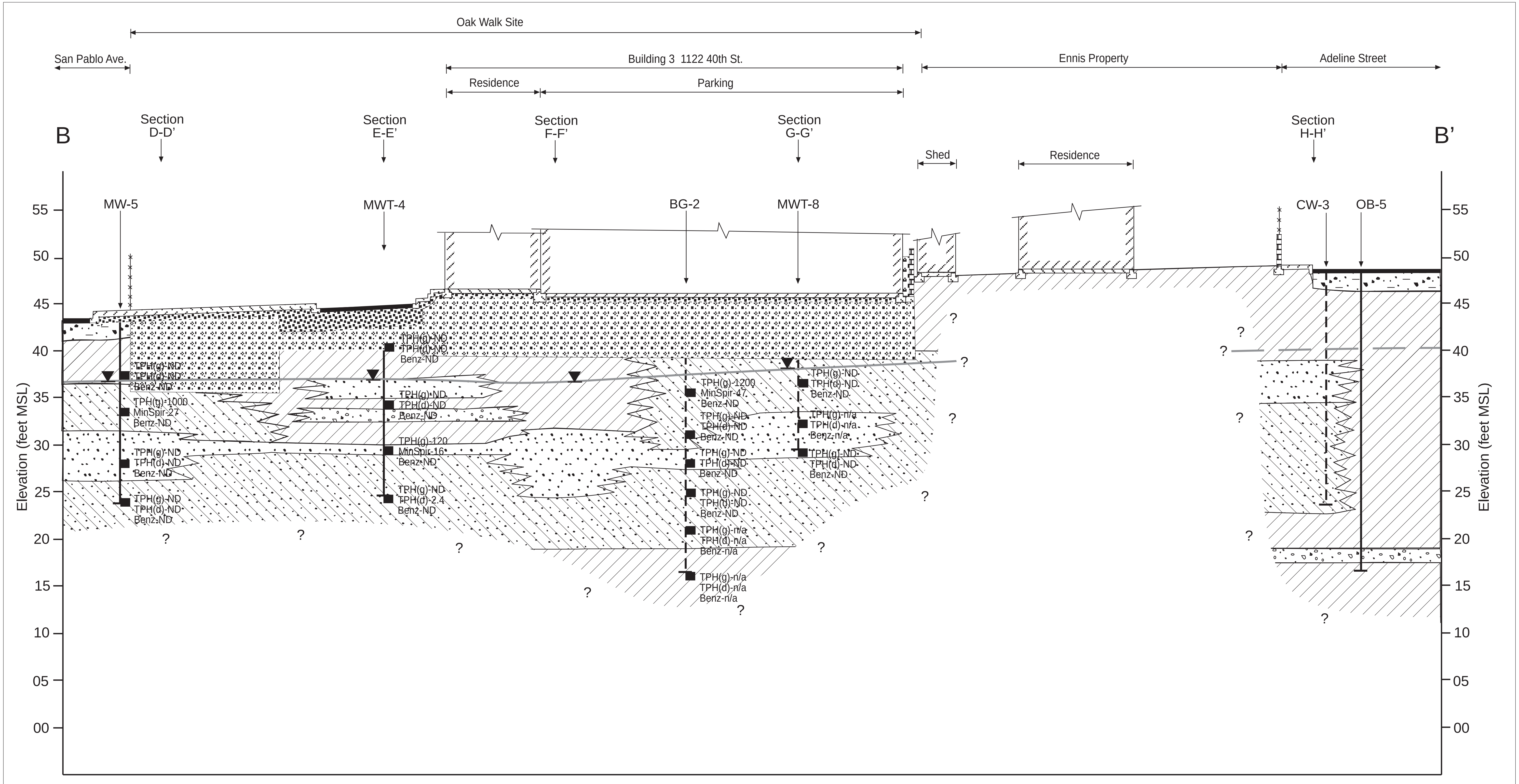
0 40 80
HORIZONTAL SCALE IN FEET

HYDROSTRATIGRAPHIC SECTION A-A'
Oak Walk Redevelopment Project
Emeryville, California

FIG 7

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 07/30/09



EXPLANATION

▨	Clays and Silty Clays	░	Gravel	▦	Engineered Fill
▧	Sandy Clay and Clays with some Silt, Sand or Gravel	░	Gravelly Fill	▩	A/B/ Gravel Fill
░	Silts, Clayey Gravel and Sands	▼	Water Table (11/08/04)		
		Gasoline-340 MineralSpirits/TPH(d)-27 Benzene-ND	Soil Sample Analysis Results (mg/kg)		

0 40 80

HORIZONTAL SCALE IN FEET

HYDROSTRATIGRAPHIC SECTION B-B'

Oak Walk Redevelopment Project

Emeryville, California

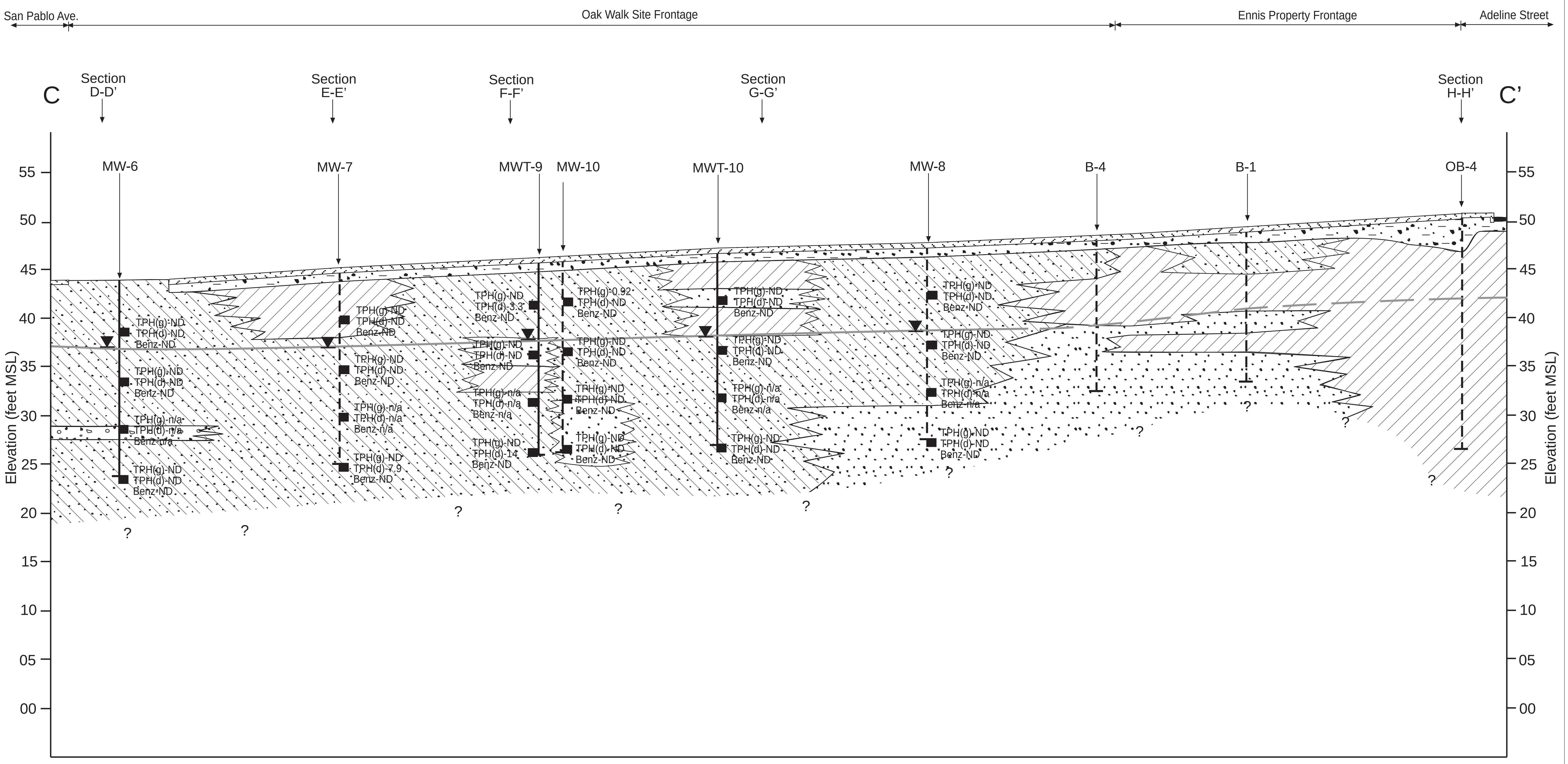
FIG 8

The San Joaquin Company Inc.

Project Number: 0004.086

Drawn by: GNM

Date: 07/29/09



EXPLANATION

▨ Clays and Silty Clays

▨ Sandy Clay and Clays with some Silt, Sand or Gravel

⁘ Silts, Clayey Gravel and Sands

⁘ Gravel

⁘ Gravelly Fill

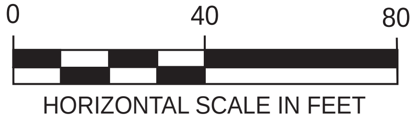
▼ Water Table (11/08/04)

Gasoline-340
MineralSpirits/TPH(d)-27
Benzene-ND

■ Soil Sample Analysis Results (mg/kg)

▩ Engineered Fill

▩ A/B/ Gravel Fill



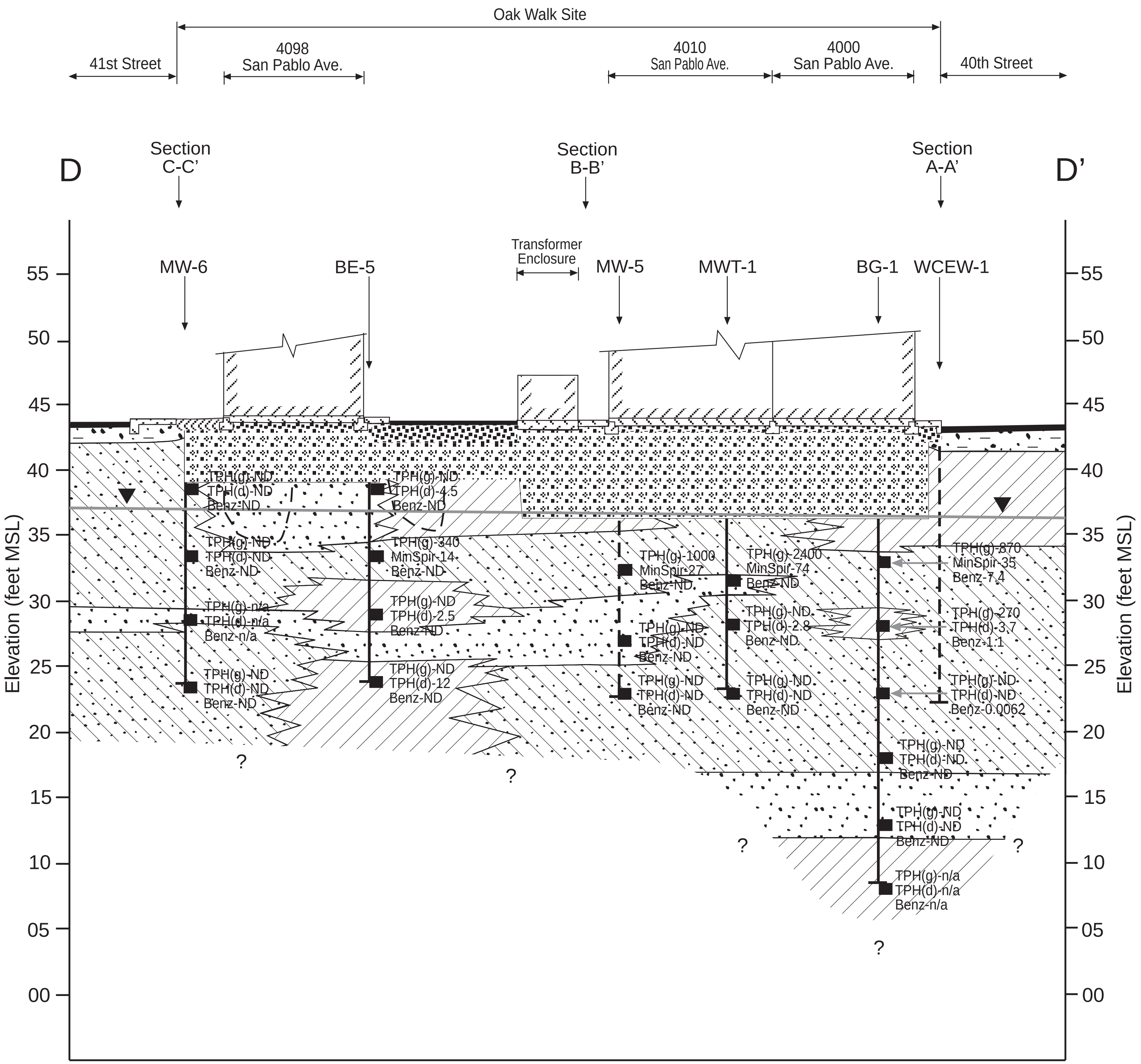
HYDROSTRATIGRAPHIC SECTION C-C'

Oak Walk Redevelopment Project
Emeryville, California

FIG 9

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 07/31/09



EXPLANATION

▨ Clays and Silty Clays

▨ Sandy Clay and Clays with some Silt, Sand or Gravel

░ Silts, Clayey Gravel and Sands

░ Gravel

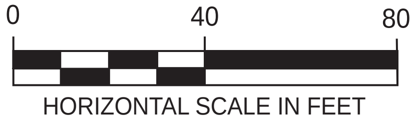
░ Gravelly Fill

▼ Water Table (11/08/04)

Gasoline-340
MineralSpirits/TPH(d)-27
Benzene-ND
Soil Sample Analysis Results (mg/kg)

▦ Engineered Fill

▦ A/B/ Gravel Fill

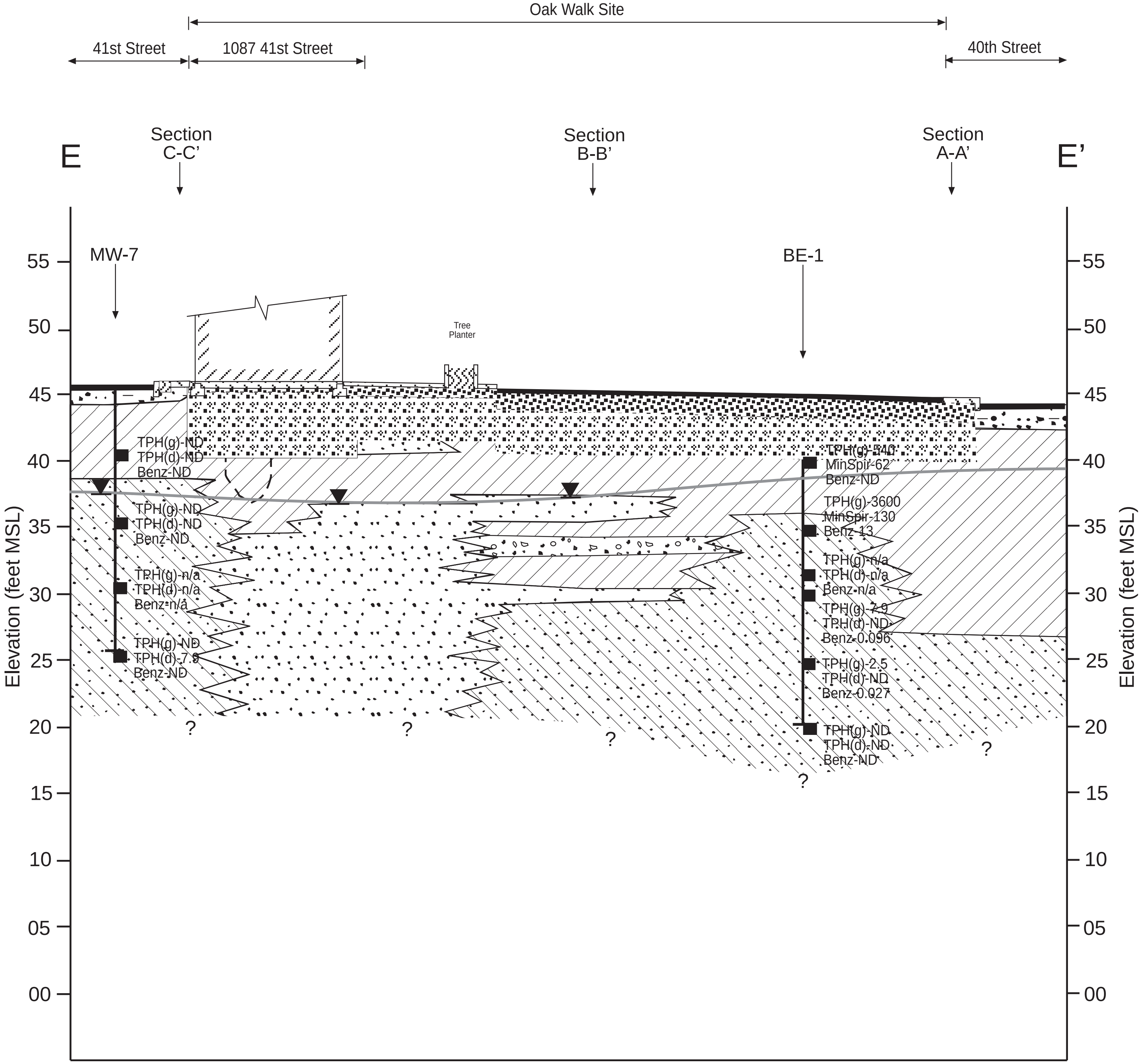


HYDROSTRATIGRAPHIC SECTION D-D'
Oak Walk Redevelopment Project
Emeryville, California

FIG 10

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/22/09



EXPLANATION

▨ Clays and Silty Clays

▨ Sandy Clay and Clays with some Silt, Sand or Gravel

▨ Silts, Clayey Gravel and Sands

▨ Gravel

▨ Gravelly Fill

▼ Water Table (11/08/04)

Gasoline-340
MineralSpirits/TPH(d)-27
Benzene-ND
Soil Sample Analysis Results (mg/kg)

▨ Engineered Fill

▨ A/B/ Gravel Fill

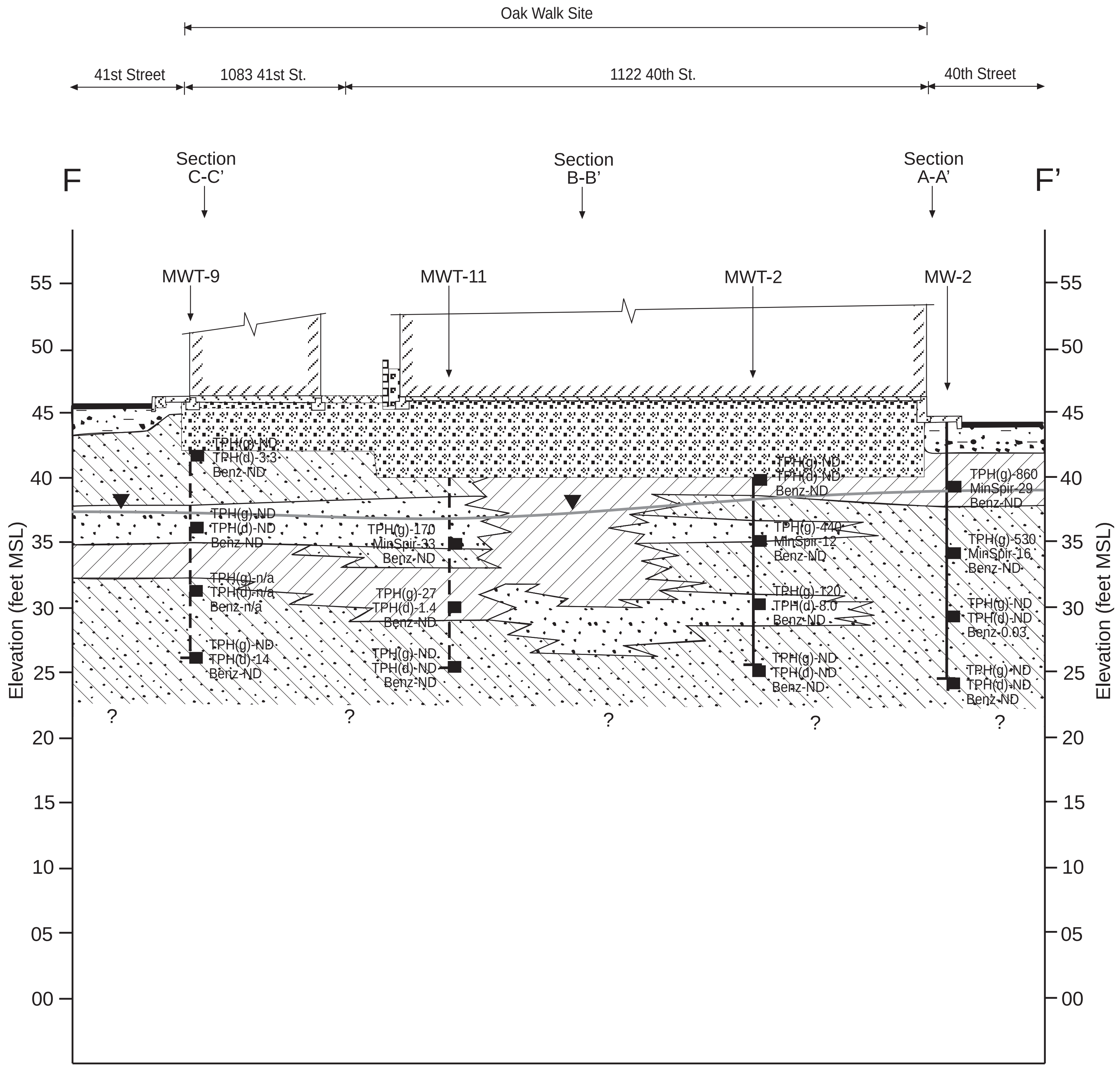
0 40 80
HORIZONTAL SCALE IN FEET

HYDROSTRATIGRAPHIC SECTION E-E'
Oak Walk Redevelopment Project
Emeryville, California

FIG 11

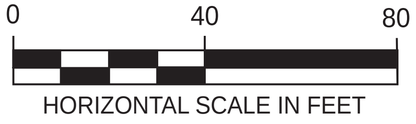
The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/23/09



EXPLANATION

- ▨ Clays and Silty Clays
- ▨ Sandy Clay and Clays with some Silt, Sand or Gravel
- ⁘ Silts, Clayey Gravel and Sands
- ⁘ Gravel
- ⁘ Gravelly Fill
- ▼ Water Table (11/08/04)
- Gasoline-340 MineralSpirits/TPH(d)-27 Benzene-ND Soil Sample Analysis Results (mg/kg)
- ▦ Engineered Fill
- ▦ A/B/ Gravel Fill

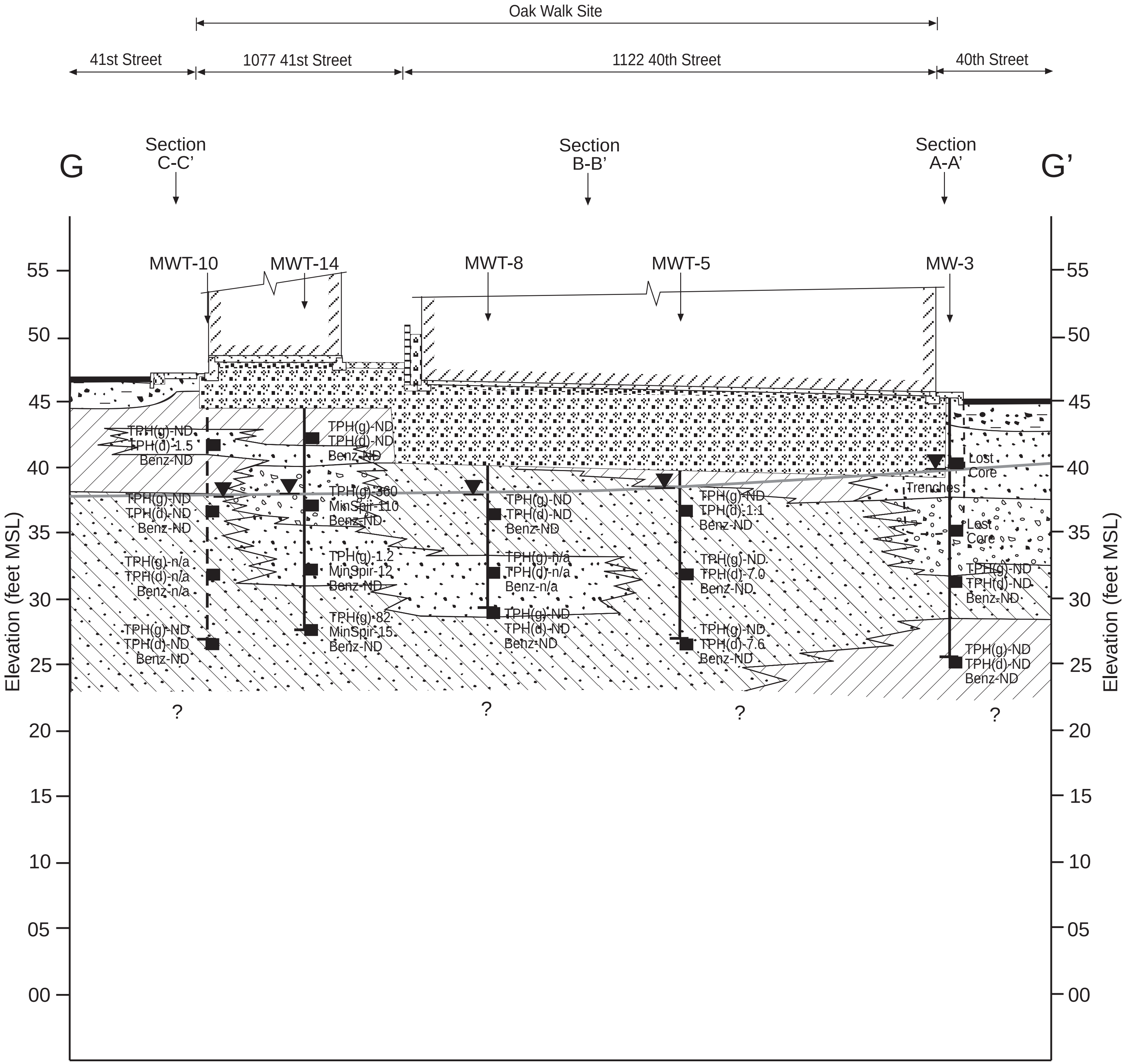


HYDROSTRATIGRAPHIC SECTION F-F'
Oak Walk Redevelopment Project
Emeryville, California

FIG 12

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/23/09



EXPLANATION

▨ Clays and Silty Clays

▨ Sandy Clay and Clays with some Silt, Sand or Gravel

▨ Silts, Clayey Gravel and Sands

▨ Gravel

▨ Gravelly Fill

▼ Water Table (11/08/04)

Gasoline-340
MineralSpirits/TPH(d)-27
Benzene-ND
■ Soil Sample Analysis Results (mg/kg)

▨ Engineered Fill

▨ A/B/ Gravel Fill

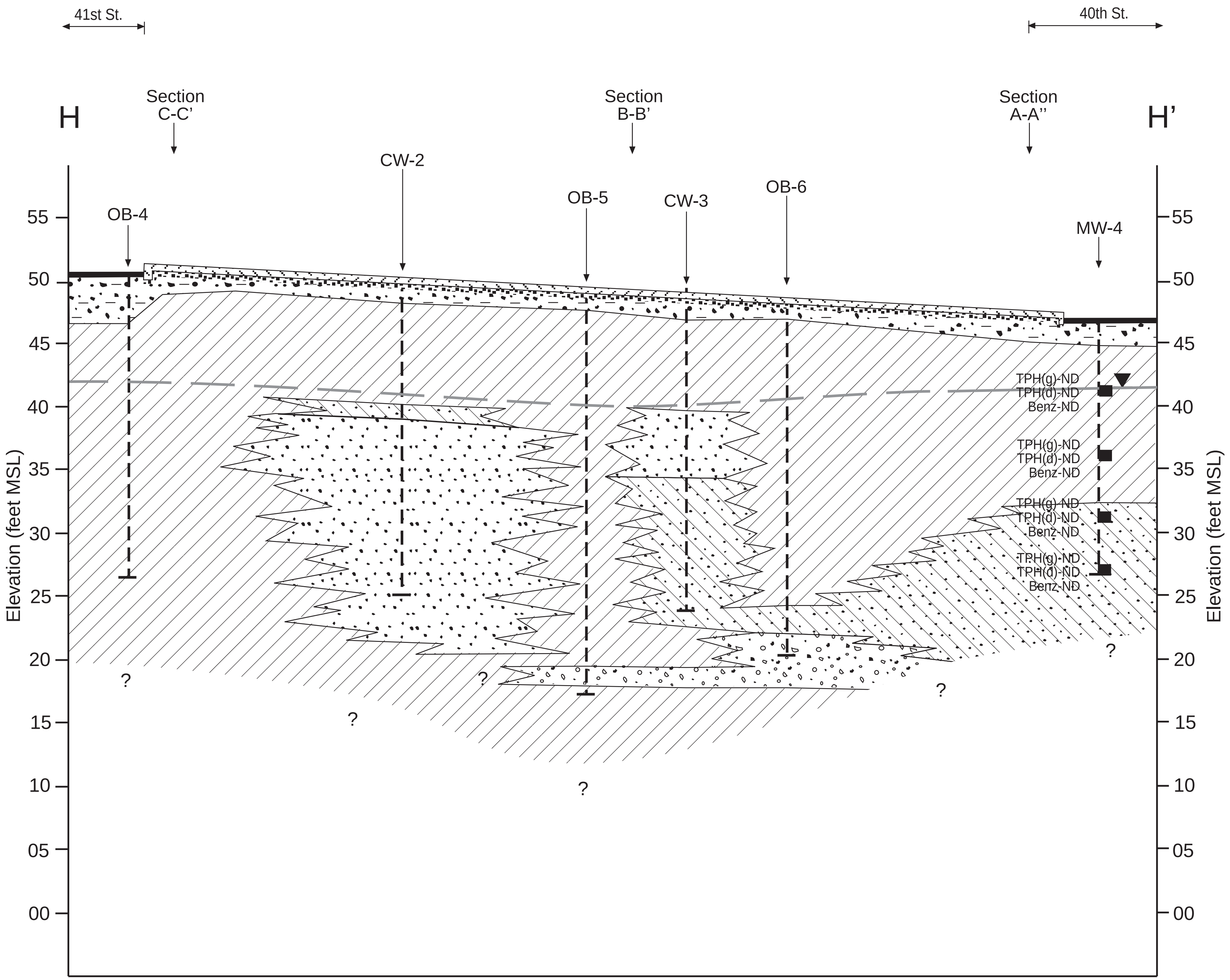
0 40 80
HORIZONTAL SCALE IN FEET

HYDROSTRATIGRAPHIC SECTION G-G'
Oak Walk Redevelopment Project
Emeryville, California

FIG 13

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/23/09



EXPLANATION

▨ Clays and Silty Clays

☐ Sandy Clay and Clays with some Silt, Sand or Gravel

⁙ Silts, Clayey Gravel and Sands

⁘ Gravel

⁘ Gravelly Fill

▼ Water Table (11/08/04)

Gasoline-340
MineralSpirits/TPH(d)-27
Benzene-ND
Soil Sample Analysis Results (mg/kg)

▩ Engineered Fill

▩ A/B/ Gravel Fill

0 40 80
HORIZONTAL SCALE IN FEET

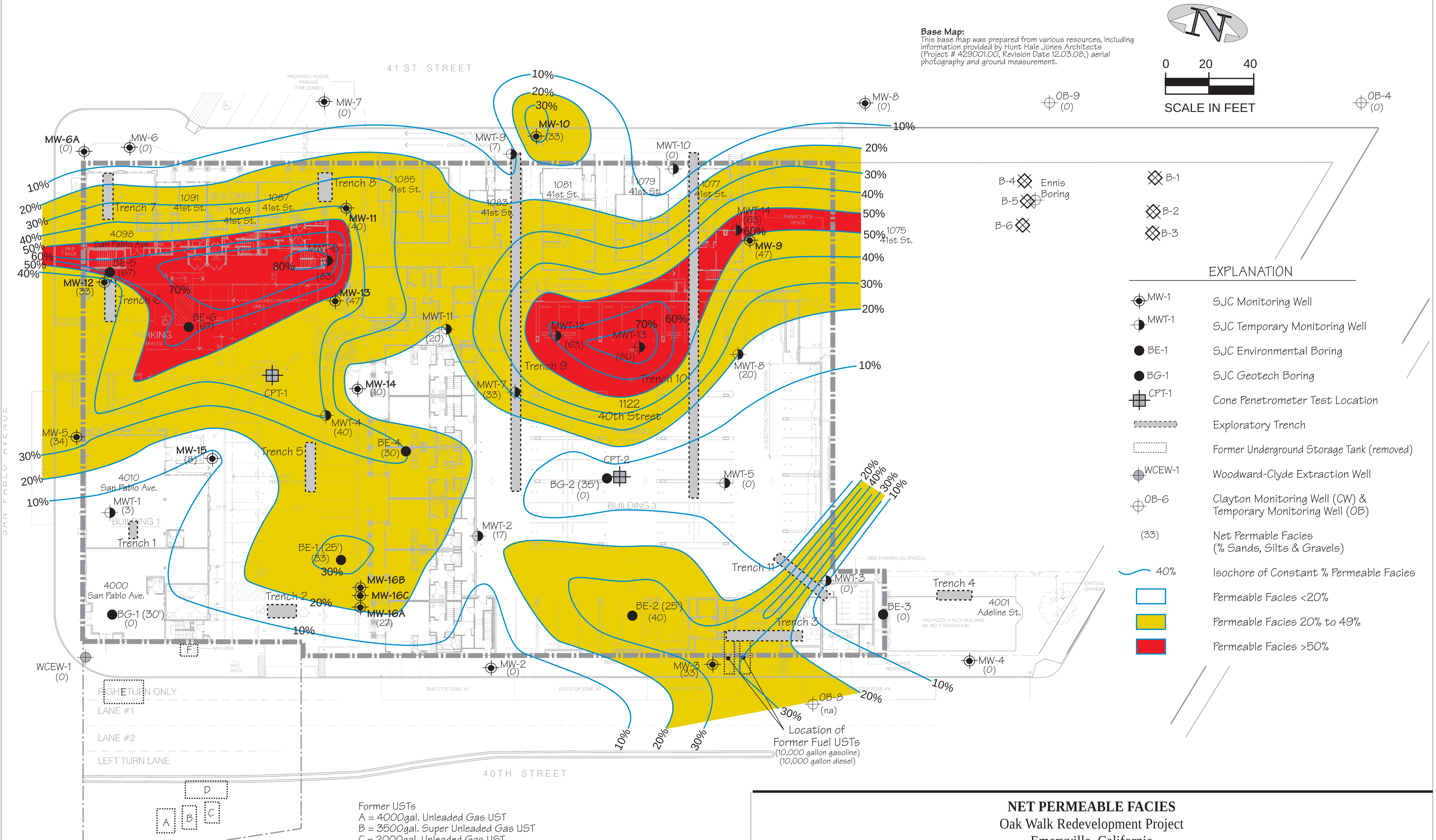
HYDROSTRATIGRAPHIC SECTION H-H'
Oak Walk Redevelopment Project
Emeryville, California

FIG 14

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/23/09

Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.



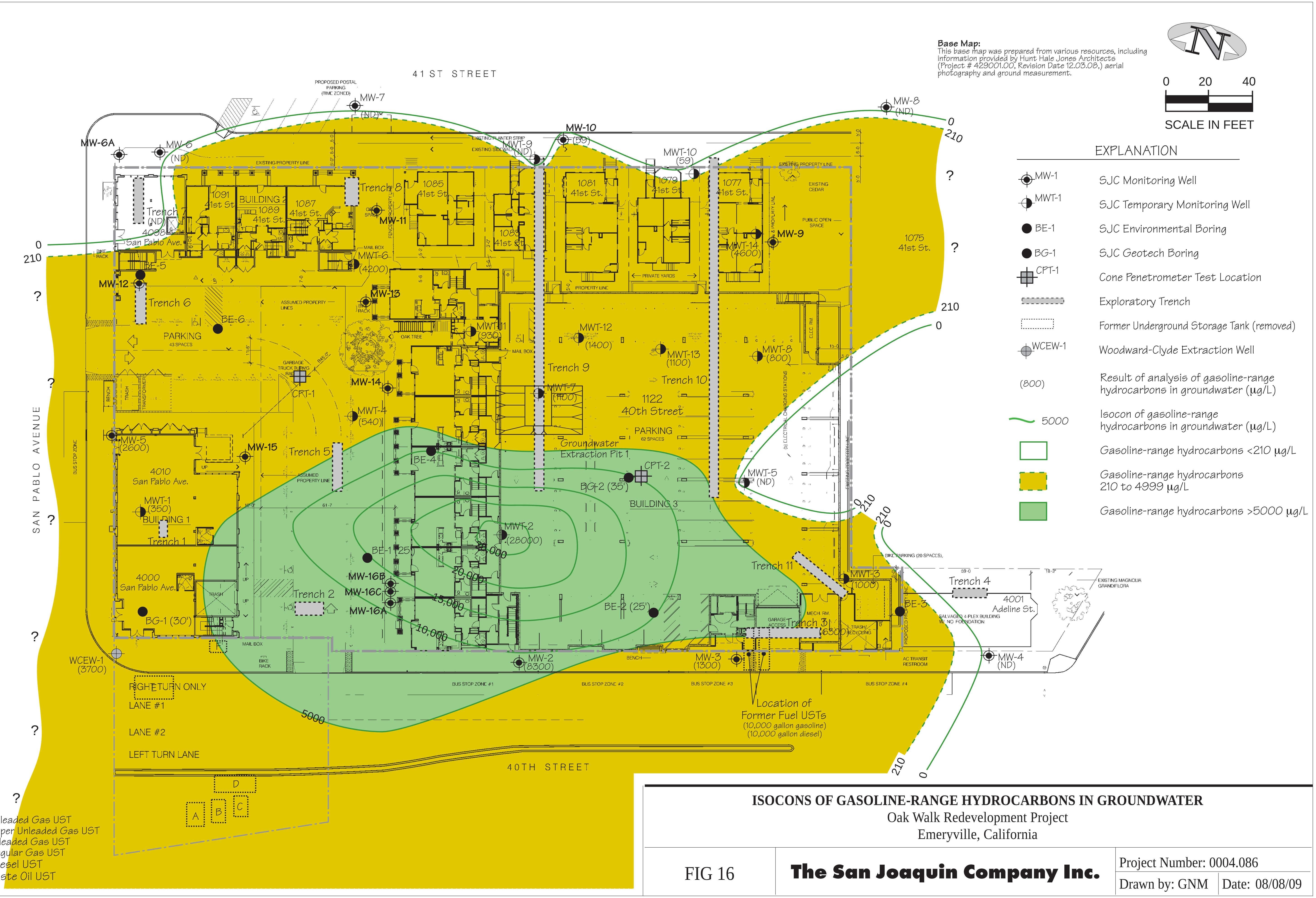
Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

NET PERMEABLE FACIES
Oak Walk Redevelopment Project
Emeryville, California

FIG 15

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 07/01/09



Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

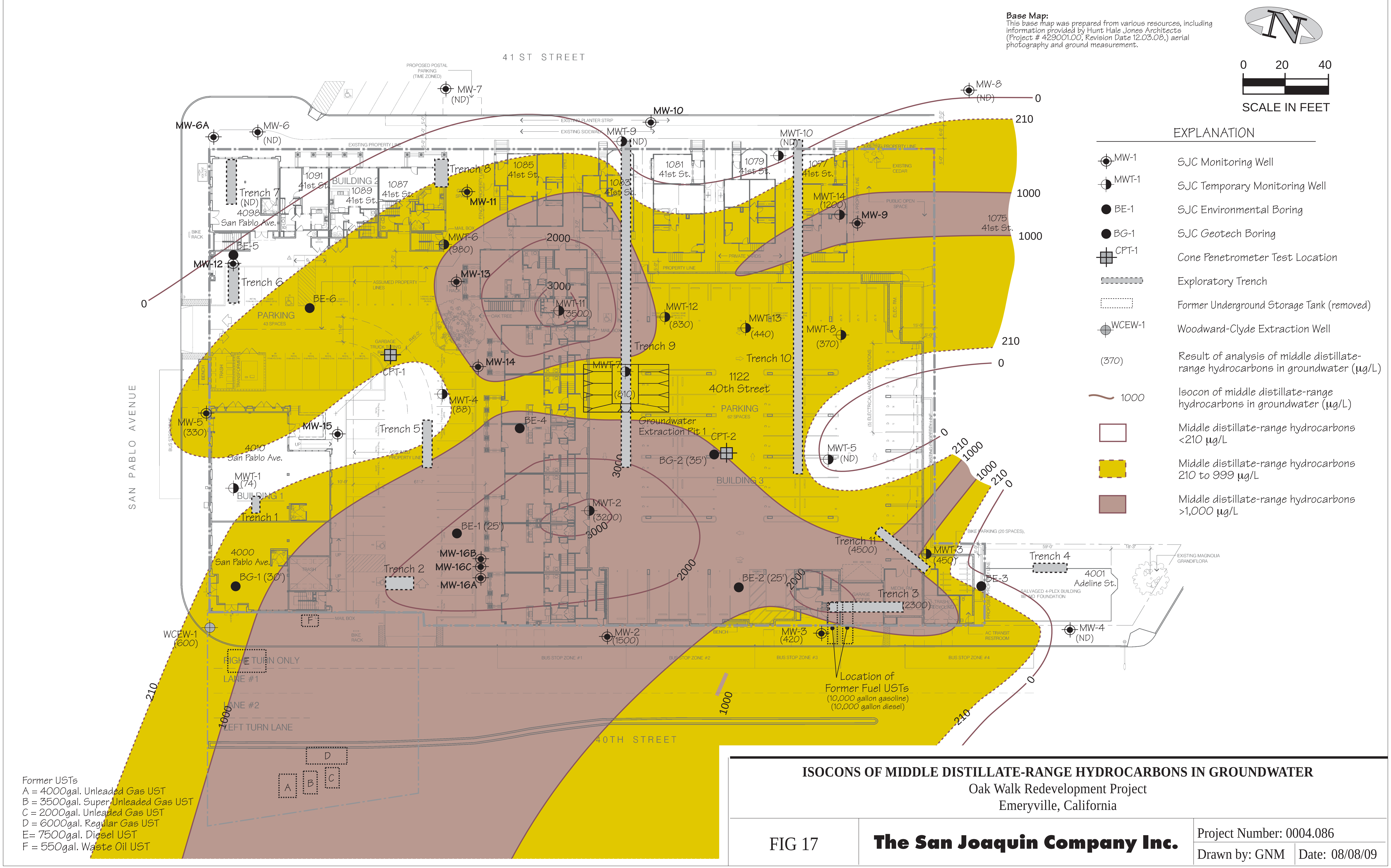
Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

ISOCONS OF GASOLINE-RANGE HYDROCARBONS IN GROUNDWATER
Oak Walk Redevelopment Project
Emeryville, California

FIG 16

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/08/09

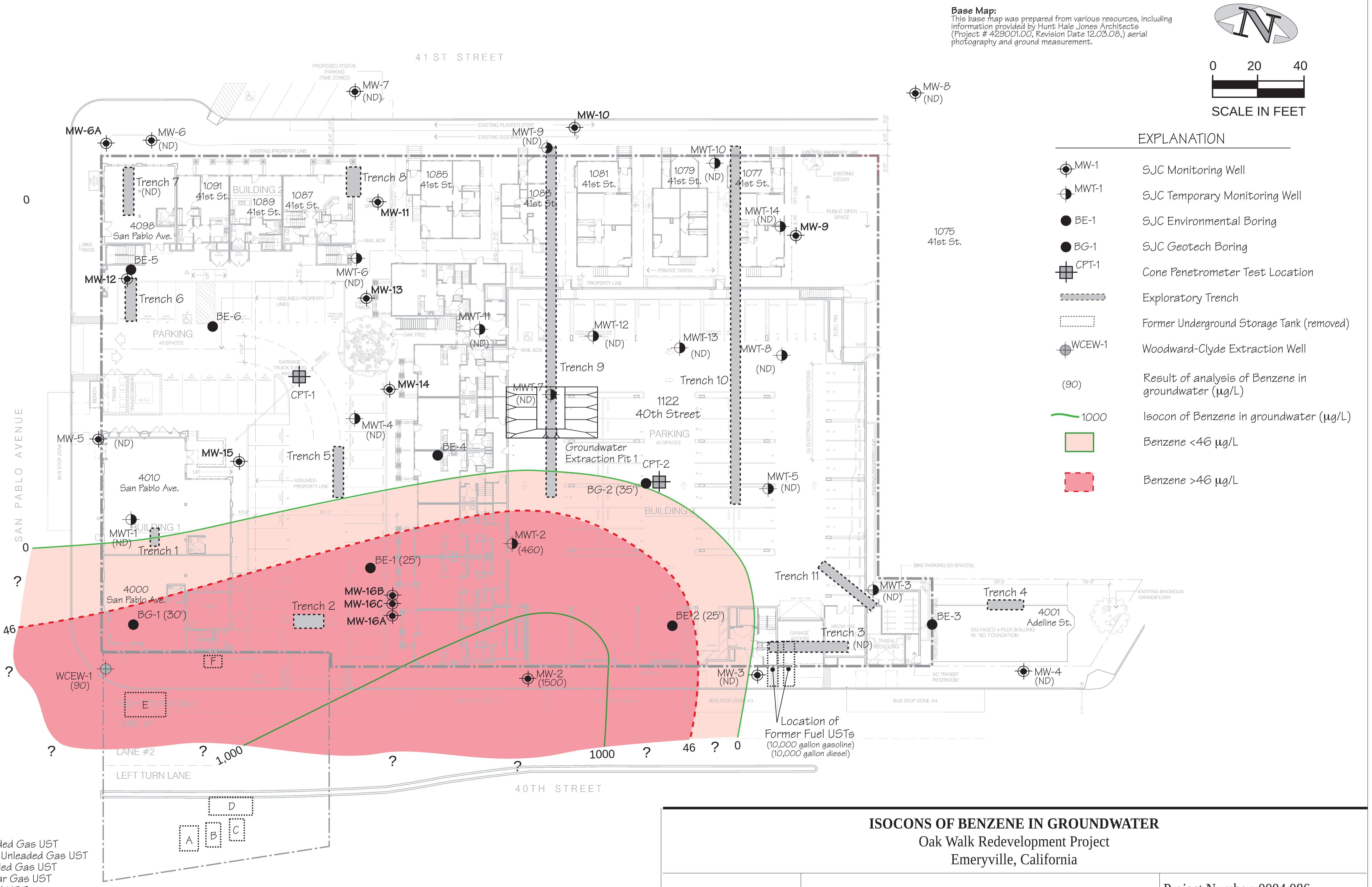


ISOCONS OF MIDDLE DISTILLATE-RANGE HYDROCARBONS IN GROUNDWATER
Oak Walk Redevelopment Project
Emeryville, California

FIG 17

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/08/09



Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

EXPLANATION

MW-1	SJC Monitoring Well
MWT-1	SJC Temporary Monitoring Well
● BE-1	SJC Environmental Boring
● BG-1	SJC Geotech Boring
CPT-1	Cone Penetrometer Test Location
▬	Exploratory Trench
⬚	Former Underground Storage Tank (removed)
WCEW-1	Woodward-Clyde Extraction Well
(90)	Result of analysis of Benzene in groundwater (µg/L)
1000	Isocon of Benzene in groundwater (µg/L)
🟧	Benzene <46 µg/L
🟥	Benzene >46 µg/L

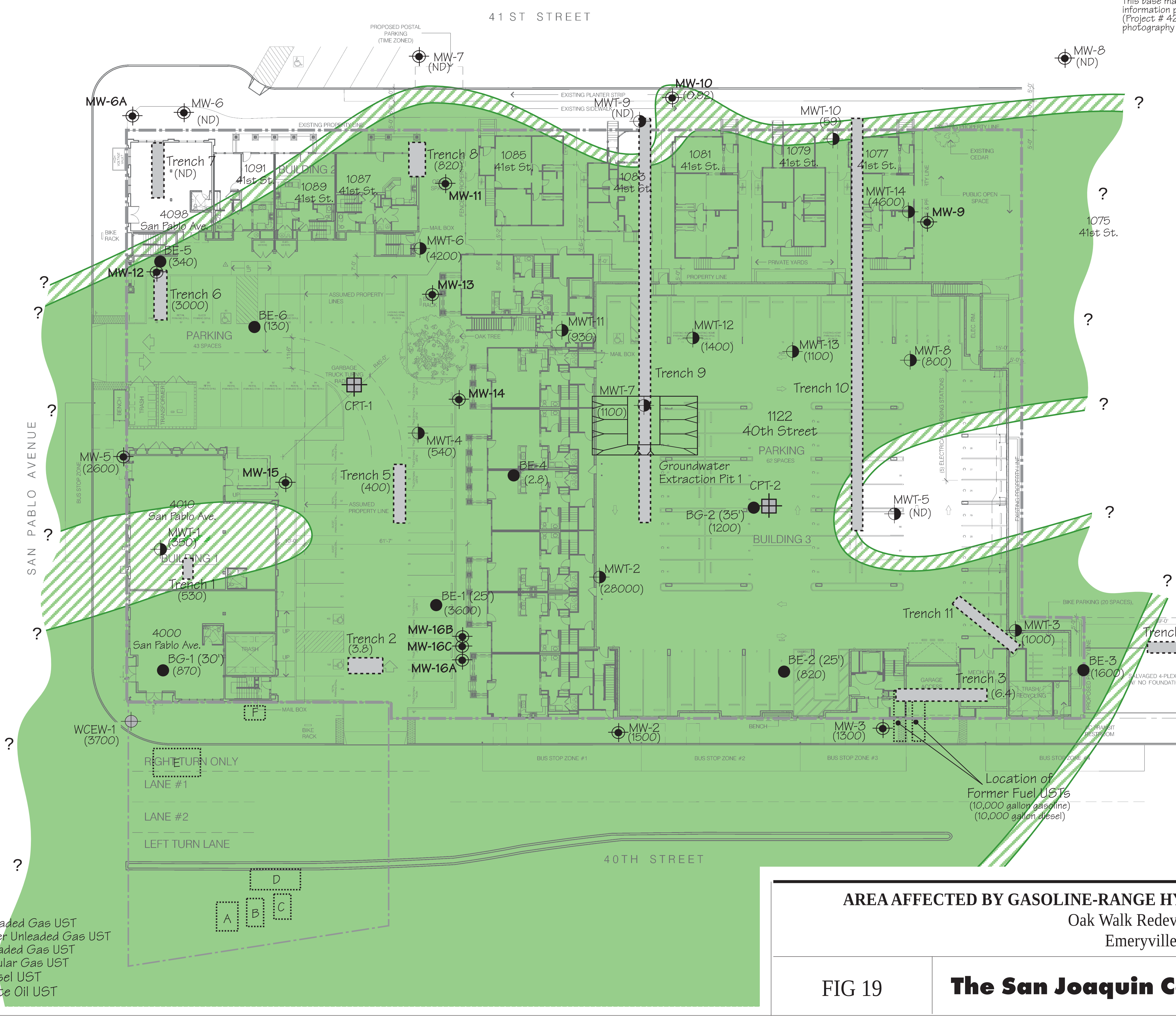
Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

ISOCONS OF BENZENE IN GROUNDWATER
Oak Walk Redevelopment Project
Emeryville, California

FIG 18

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/10/09



Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

N

0 20 40

SCALE IN FEET

EXPLANATION

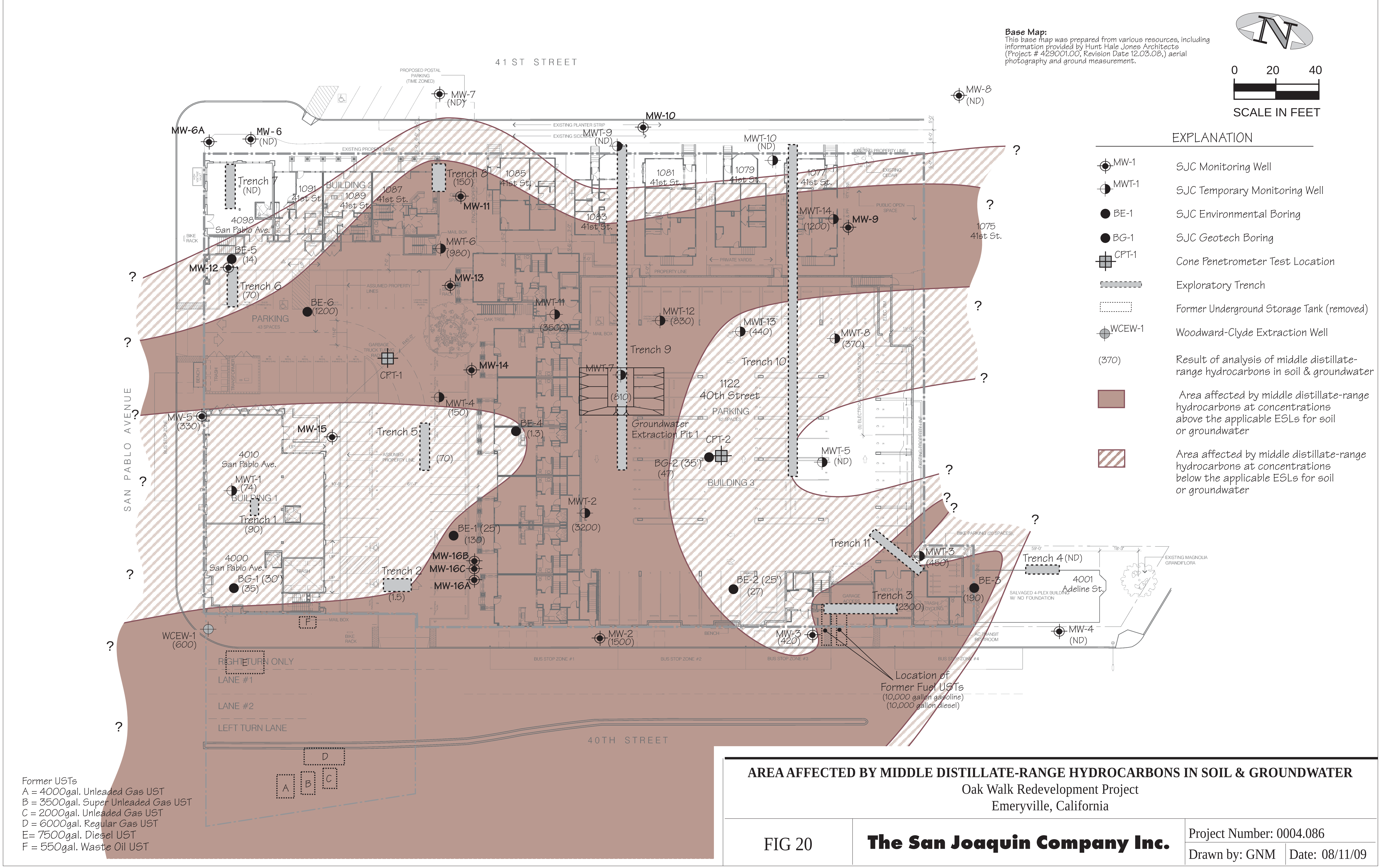
MW-1	SJC Monitoring Well
MWT-1	SJC Temporary Monitoring Well
● BE-1	SJC Environmental Boring
● BG-1	SJC Geotech Boring
CPT-1	Cone Penetrometer Test Location
▨	Exploratory Trench
☐	Former Underground Storage Tank (removed)
WCEW-1	Woodward-Clyde Extraction Well
(800)	Result of analysis of gasoline-range hydrocarbons in groundwater (µg/l)
🟩	Area affected by gasoline-range hydrocarbons at concentrations above the applicable ESLs for soil or groundwater (µg/l)
▨	Area affected by gasoline-range hydrocarbons at concentrations below the applicable ESLs for soil or groundwater (µg/l)

AREA AFFECTED BY GASOLINE-RANGE HYDROCARBONS IN SOIL & GROUNDWATER
Oak Walk Redevelopment Project
Emeryville, California

FIG 19

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/10/09



Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

EXPLANATION

MW-1	SJC Monitoring Well
MWT-1	SJC Temporary Monitoring Well
● BE-1	SJC Environmental Boring
● BG-1	SJC Geotech Boring
CPT-1	Cone Penetrometer Test Location
▬	Exploratory Trench
☐	Former Underground Storage Tank (removed)
WCEW-1	Woodward-Clyde Extraction Well
(370)	Result of analysis of middle distillate-range hydrocarbons in soil & groundwater
■	Area affected by middle distillate-range hydrocarbons at concentrations above the applicable ESLs for soil or groundwater
▨	Area affected by middle distillate-range hydrocarbons at concentrations below the applicable ESLs for soil or groundwater

Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

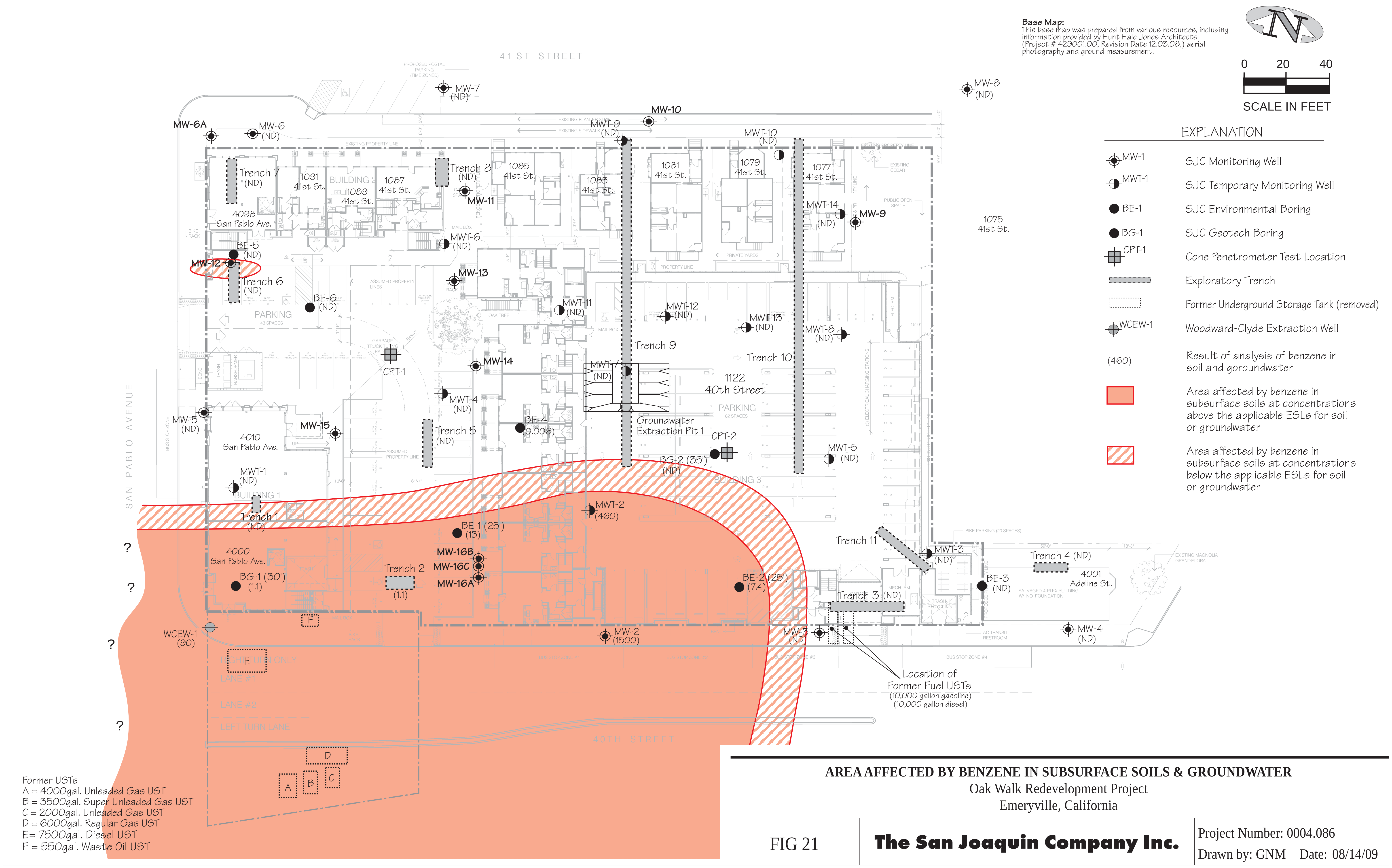
AREA AFFECTED BY MIDDLE DISTILLATE-RANGE HYDROCARBONS IN SOIL & GROUNDWATER

Oak Walk Redevelopment Project
Emeryville, California

FIG 20

The San Joaquin Company Inc.

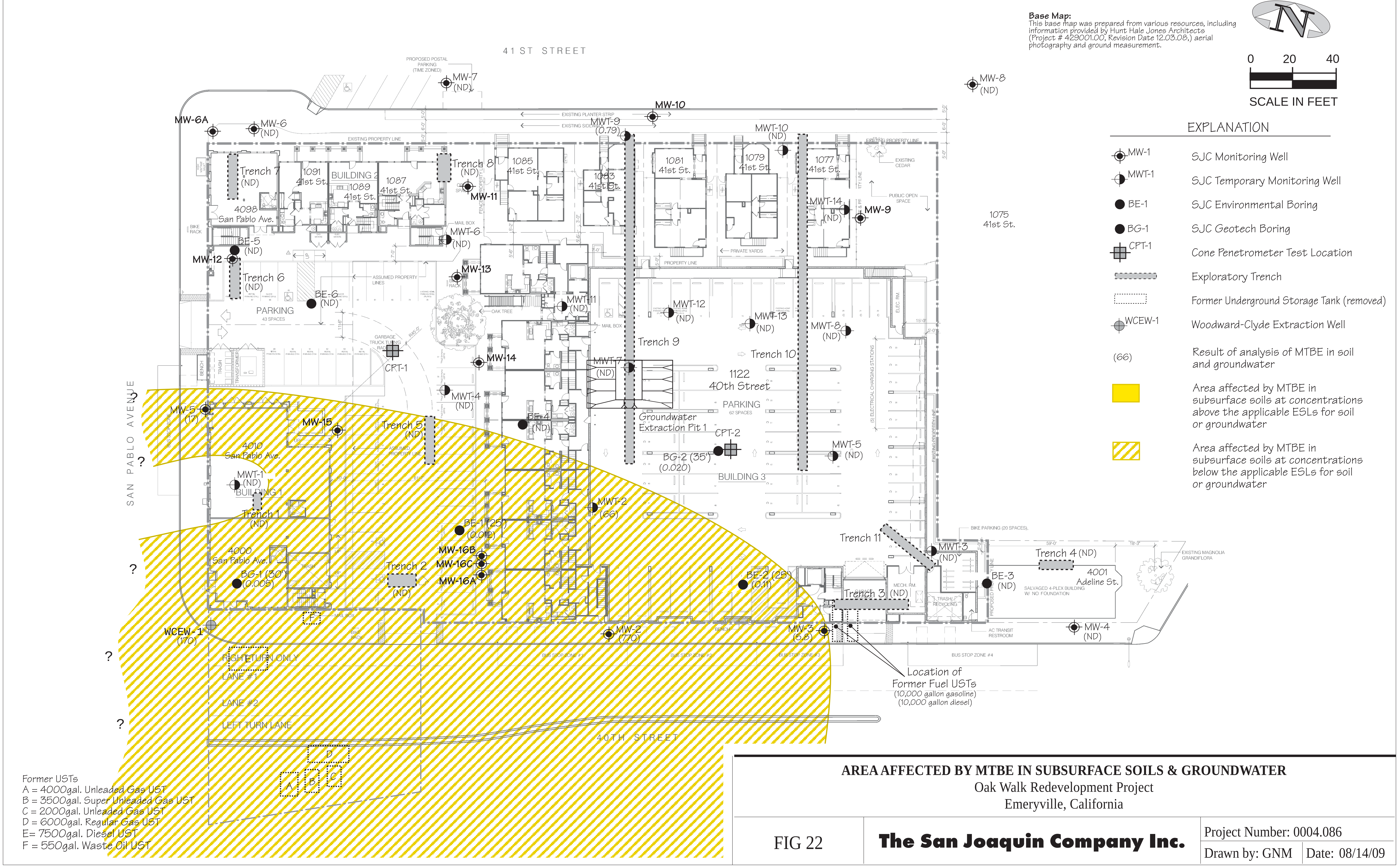
Project Number: 0004.086
Drawn by: GNM
Date: 08/11/09



Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

AREA AFFECTED BY BENZENE IN SUBSURFACE SOILS & GROUNDWATER
Oak Walk Redevelopment Project
Emeryville, California

FIG 21	**The San Joaquin Company Inc.**	Project Number: 0004.086
		Drawn by: GNM Date: 08/14/09



Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

EXPLANATION

⌖	MW-1	SJC Monitoring Well
⌖	MWT-1	SJC Temporary Monitoring Well
●	BE-1	SJC Environmental Boring
●	BG-1	SJC Geotech Boring
⊞	CPT-1	Cone Penetrometer Test Location
▬		Exploratory Trench
⬚		Former Underground Storage Tank (removed)
⌖	WCEW-1	Woodward-Clyde Extraction Well
(66)		Result of analysis of MTBE in soil and groundwater
🟨		Area affected by MTBE in subsurface soils at concentrations above the applicable ESLs for soil or groundwater
▨		Area affected by MTBE in subsurface soils at concentrations below the applicable ESLs for soil or groundwater

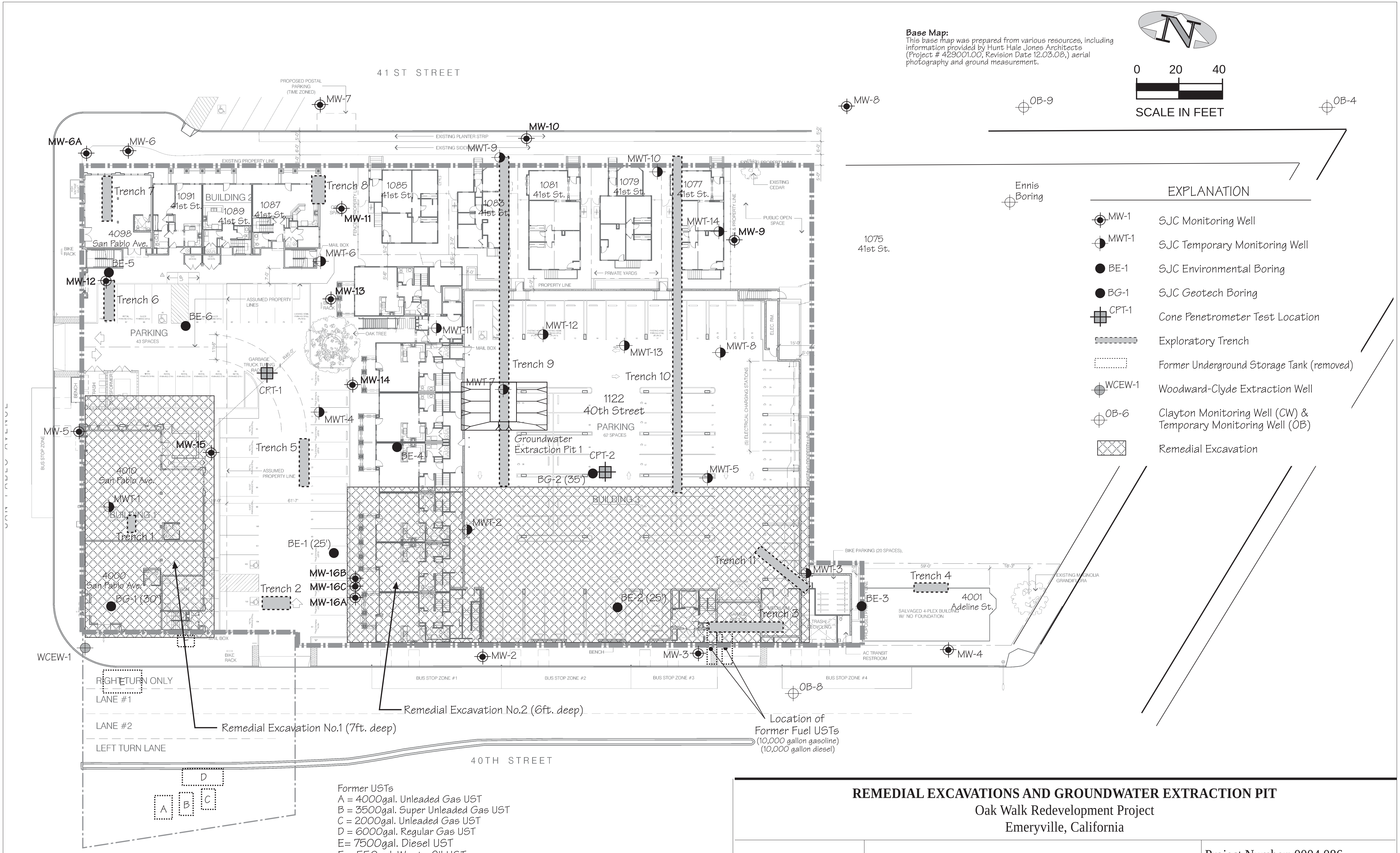
Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

AREA AFFECTED BY MTBE IN SUBSURFACE SOILS & GROUNDWATER
Oak Walk Redevelopment Project
Emeryville, California

FIG 22

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/14/09



Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

EXPLANATION

MW-1	SJC Monitoring Well
MWT-1	SJC Temporary Monitoring Well
● BE-1	SJC Environmental Boring
● BG-1	SJC Geotech Boring
CPT-1	Cone Penetrometer Test Location
▬	Exploratory Trench
☐	Former Underground Storage Tank (removed)
WCEW-1	Woodward-Clyde Extraction Well
OB-6	Clayton Monitoring Well (CW) & Temporary Monitoring Well (OB)
▨	Remedial Excavation

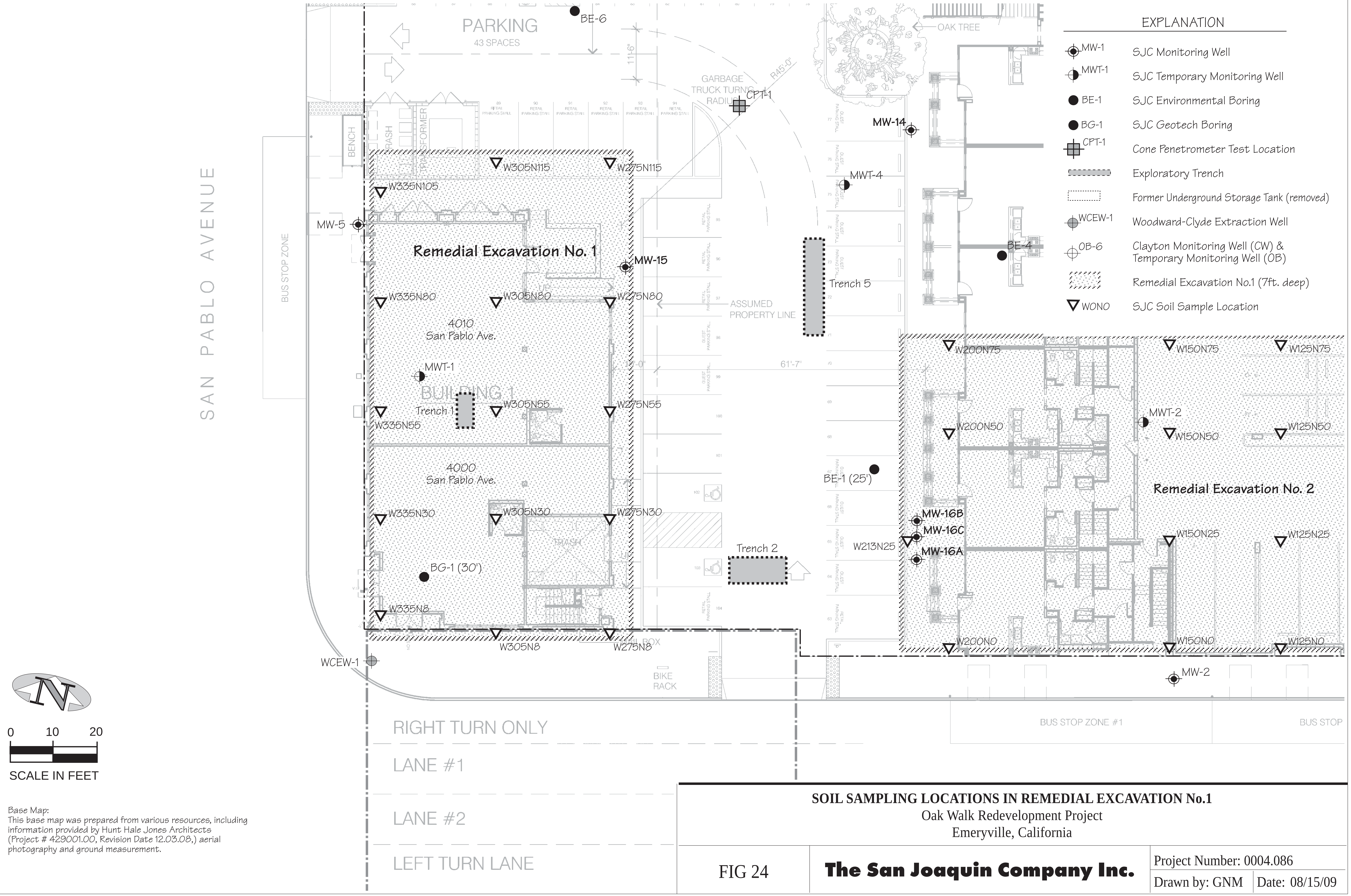
Former USTs
A = 4000gal. Unleaded Gas UST
B = 3500gal. Super Unleaded Gas UST
C = 2000gal. Unleaded Gas UST
D = 6000gal. Regular Gas UST
E= 7500gal. Diesel UST
F = 550gal. Waste Oil UST

REMEDIAL EXCAVATIONS AND GROUNDWATER EXTRACTION PIT
Oak Walk Redevelopment Project
Emeryville, California

FIG 23

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/15/09



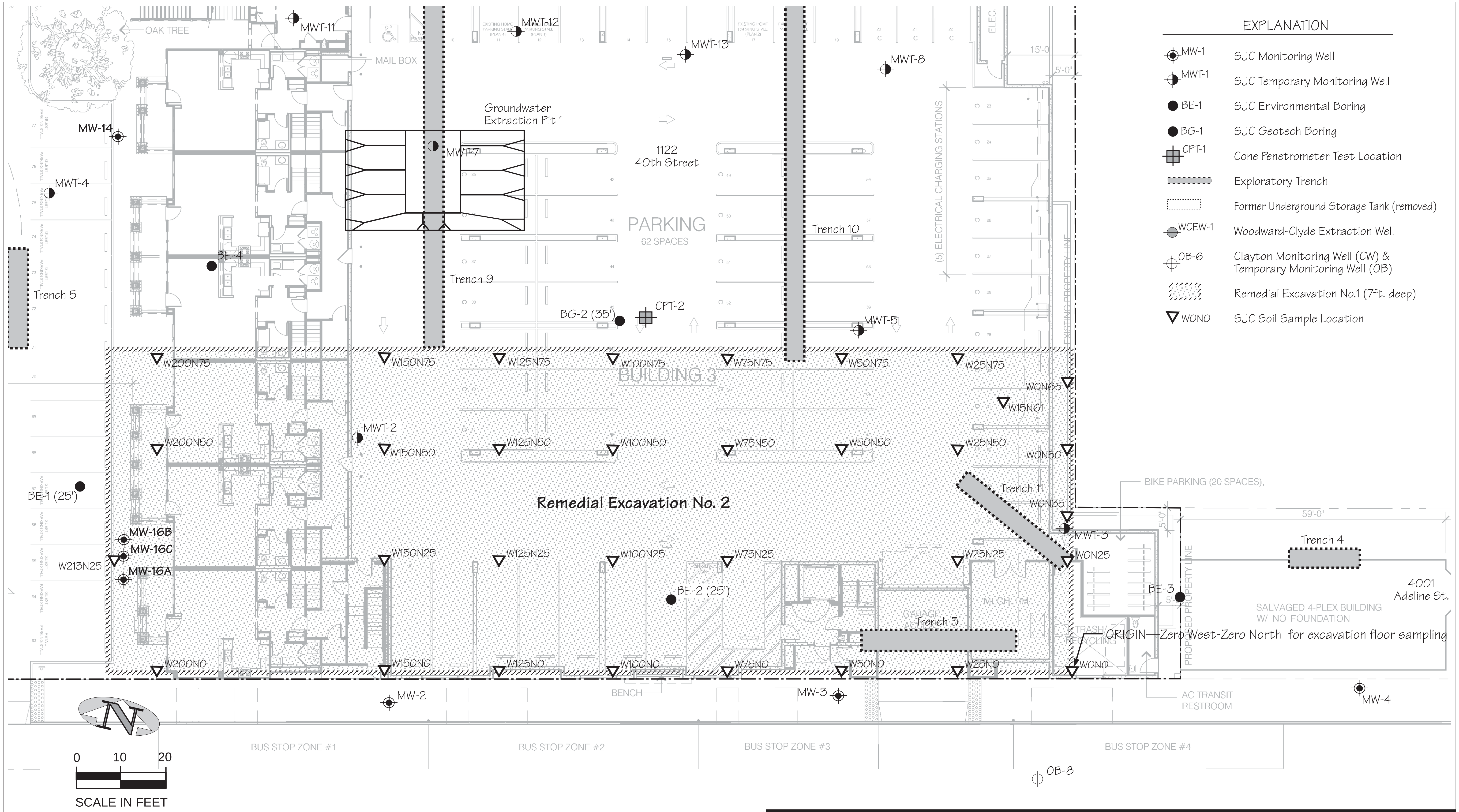
Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

SOIL SAMPLING LOCATIONS IN REMEDIAL EXCAVATION No.1
Oak Walk Redevelopment Project
Emeryville, California

FIG 24

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/15/09



Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

SOIL SAMPLING LOCATIONS IN REMEDIAL EXCAVATION No.2

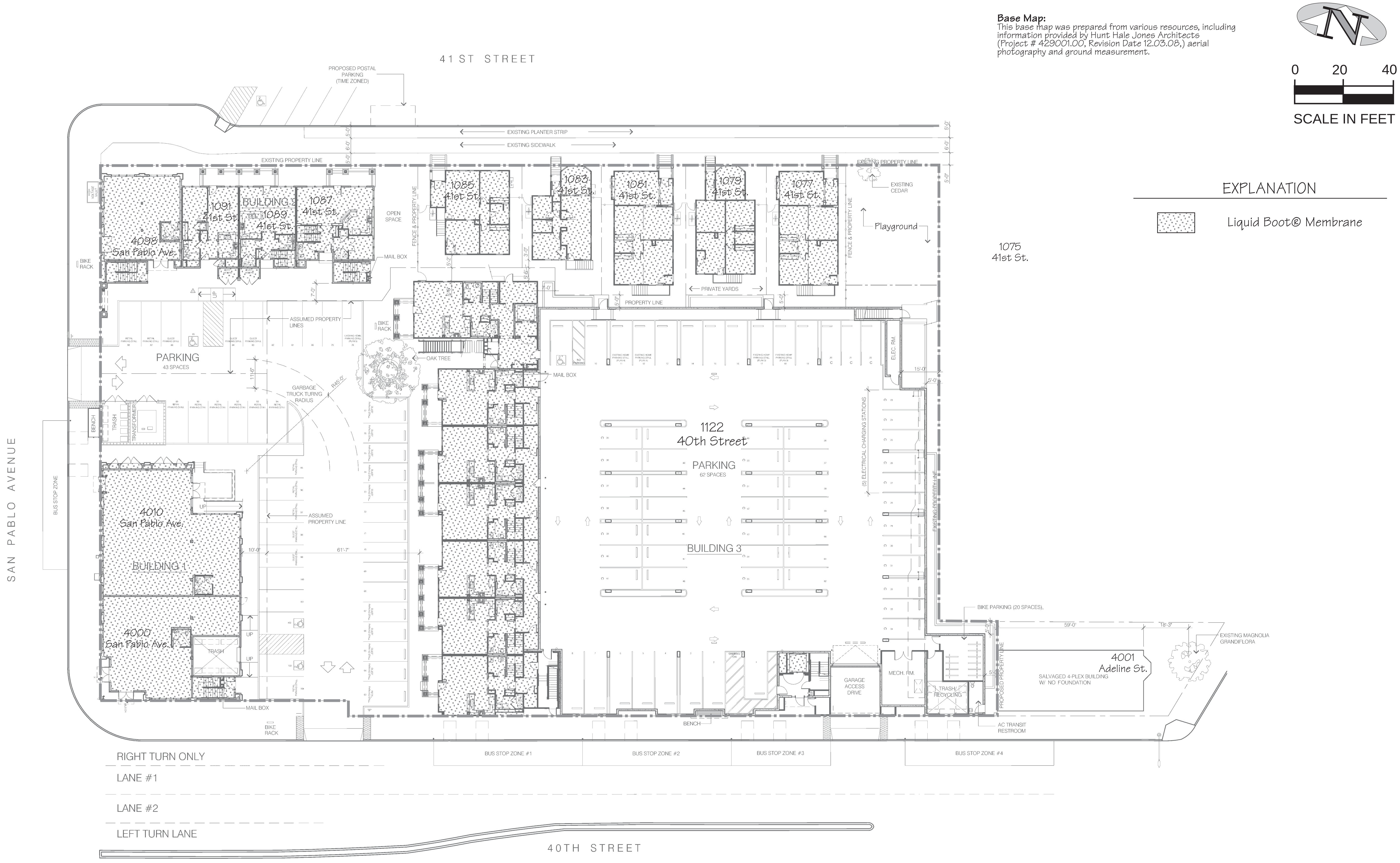
Oak Walk Redevelopment Project
Emeryville, California

FIG 25

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/15/09

Base Map:
This base map was prepared from various resources, including information provided by Hunt Hale Jones Architects (Project # 429001.00, Revision Date 12.03.08,) aerial photography and ground measurement.

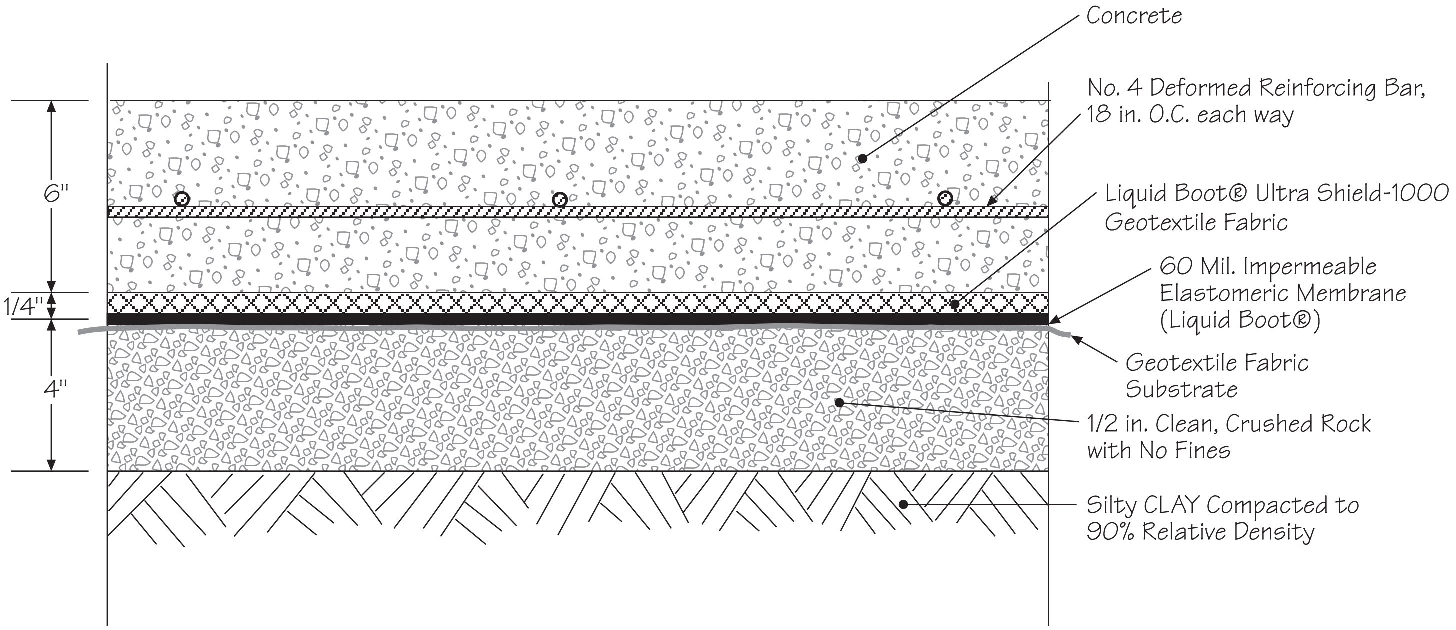


GROUND FLOOR SLABS UNDERLAIN BY LIQUID BOOT® MEMBRANE
Oak Walk Redevelopment Project
Emeryville, California

FIG 26

The San Joaquin Company Inc.

Project Number: 0004.086
Drawn by: GNM
Date: 08/15/09



FLOOR SLAB WITH LIQUID BOOT® MEMBRANE

Oak Walk Redevelopment Project

Emeryville, California

FIG 27	**The San Joaquin Company Inc.**	Project Number: 0004.086
		Drawn by: GNM — Date: 07/20/09

PLATES

SJC

Plate 1: Aerial Photograph of Oak Walk Site Prior to Redevelopment. Note: Property is outlined.

PLATE 2 Remedial Excavation No. 1

PLATE 3 Remedial Excavation No. 2

PLATE 4 Groundwater Extraction Pit (Note: Groundwater became clear after extraction of 21,000 gallons.)

PLATE 5 Residence Being Transported for Restoration at 1085 41st. Street

Plate 6: Smoke Testing Liquid Boot at Building 1

Plate 7: Protective Ultra Shield-1000 Fabric Installed over Liquid Boot at Building 3

Plate 8: Oak Walk Development Seen From San Pablo Ave. at 41st Street

Plate 9: Residences on Podium Level of Building 3

Plate 10: Restored Residences on 41st Street

APPENDIX A

Trench, Boring and Well Logs

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 43.3 - 43.2 ft.

Trench Length at Surface: 13.0 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 8.5 ft.

Depth to First Water: n/a ft.

Depth to Water on: Not measured ft.

NOTES:
1. Uniform Soil Classifications are from field observations only. No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet MSL.

3. Ground surface elevations adjusted to conform to common datum reference as site borings (April 2005).

Trench ID: **Trench 1**

Project: Oak Walk Project

Project No.: 0004.081

Owner: Bay Rock Residential LLC

Location: San Pablo Avenue, Emeryville, California

Date Excavated: 12/03/03

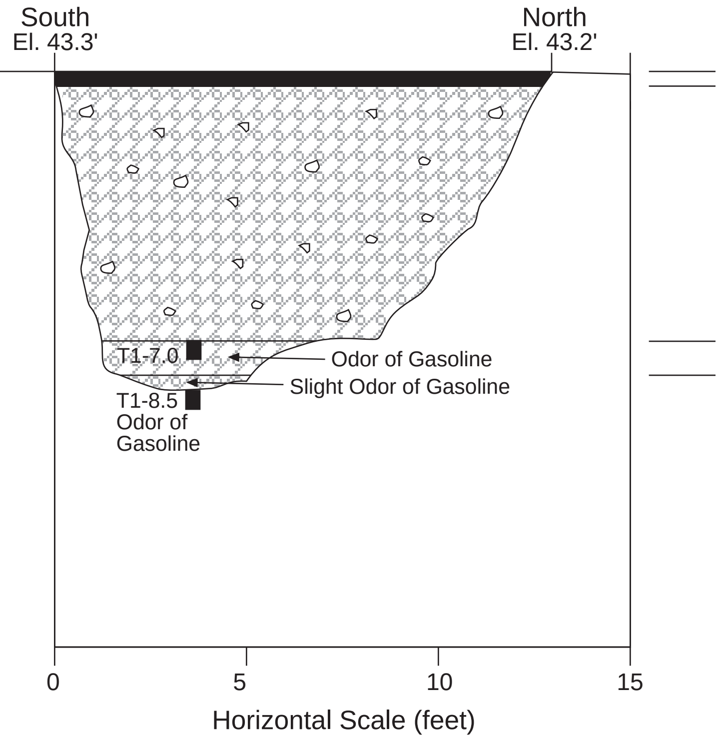
Excavation By: Dietz Irrigation

Logged By: D J Watkins

Equipment Operator: H B Dietz

Equipment Used: Case Excavator

Depth (Feet)	Sample	Trench Log / Description
0		Bituminous Macadam 4 in.
2		
4		(SC) - Brown / black, Silty CLAY with bricks and other debris (FILL)
6		
	soil	(SC) - Grey / green with brown stiff Silty CLAY
8	soil	(SC) - Brown, medium soft Silty CLAY
10		
12		
14		
16		
18		
20		
22		
24		
26		
28		
30		



Exploratory Trench 1
Average trench width 4 feet, Trench Length 13 feet

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 44.6 - 45.1 ft.

Trench Length at Surface: 12.5 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 8.5 ft.

Depth to First Water: n/a ft.

Depth to Water on: Not measured ft.

NOTES:
1. Uniform Soil Classifications are from field observations only. No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet MSL.

3. Ground surface elevations adjusted to conform to common datum reference as site borings (April 2005).

Trench ID: **Trench 2**

Project: Oak Walk Project

Project No.: 0004.081

Owner: Bay Rock Residential LLC

Location: San Pablo Avenue, Emeryville, California

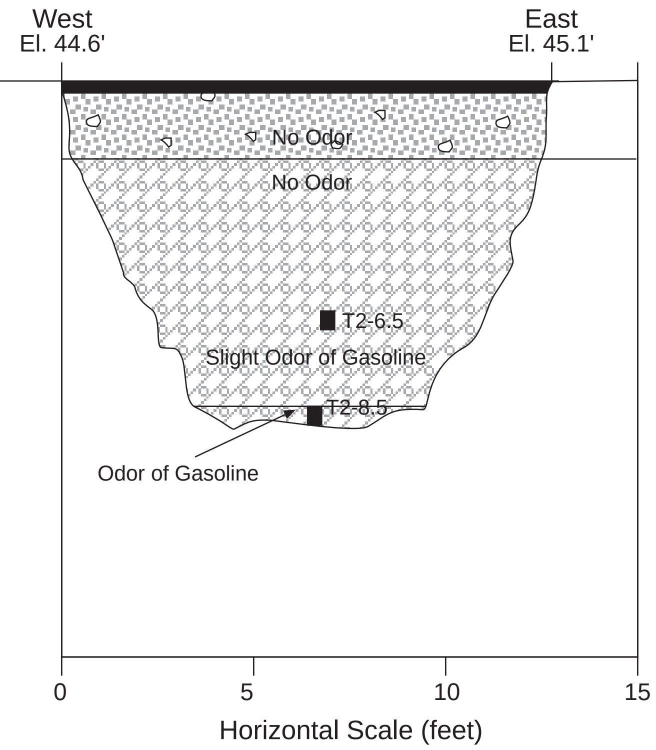
Date Excavated: 12/03/03

Excavation By: Dietz Irrigation

Logged By: D J Watkins

Equipment Operator: H B Dietz

Equipment Used: Case Excavator



Depth (Feet)	Sample	Trench Log / Description
0		Bituminous Macadam 3 in. (SP) - Light brown, Sandy Gravel (FILL)
2		
4		
6	soil	(SC) - Dark gray / black, soft Silty CLAY (FILL)
8	soil	(SC) - Grey / green, medium soft Silty CLAY
10		
12		
14		
16		
18		
20		
22		
24		
26		
28		
30		

Exploratory Trench 2
Average trench width 4 feet, Trench Length 12.5 feet

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 47.2 - 47.7 ft.

Trench Length at Surface: 31.0 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 9.5 ft.

Depth to First Water: 9.0 ft.

Depth to Water on: Not measured ft.

NOTES:
1. Uniform Soil Classifications are from field observations only. No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet MSL.

3. Ground surface elevations adjusted to conform to common datum reference as site borings (April 2005).

Trench ID: **Trench 3**

Project: Oak Walk Project

Project No.: 0004.081

Owner: Bay Rock Residential LLC

Location: San Pablo Avenue, Emeryville, California

Date Excavated: 12/03/03

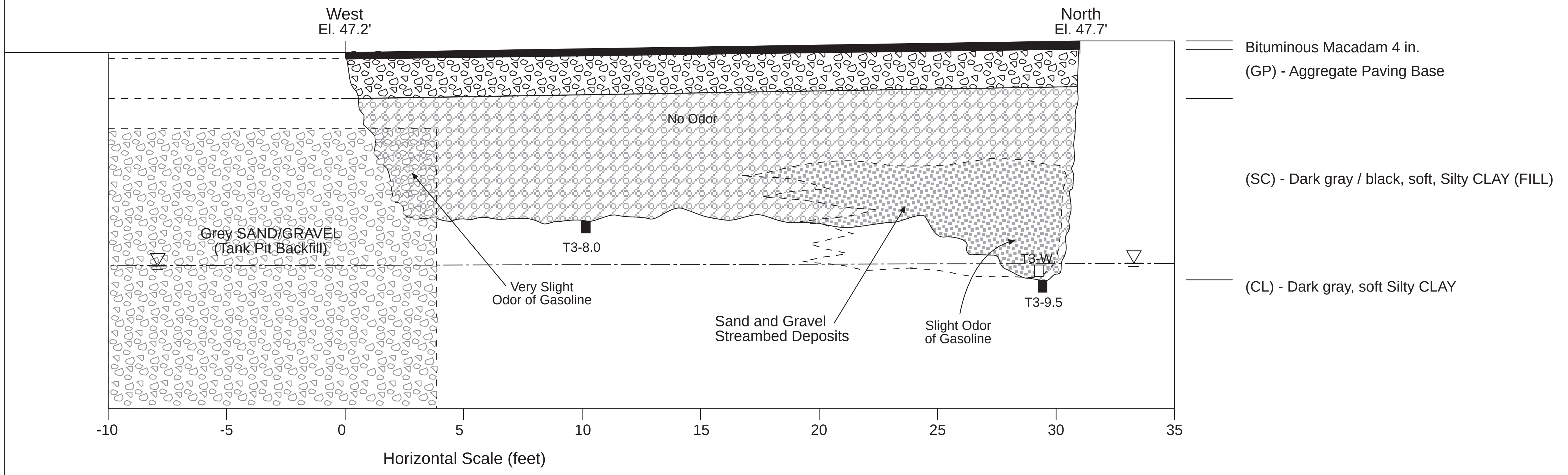
Excavation By: Dietz Irrigation

Logged By: D J Watkins

Equipment Operator: H B Dietz

Equipment Used: Case Excavator

Depth (Feet)	Sample	Trench Log / Description
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30	soil water soil	



Exploratory Trench 3
Average trench width 4 feet, Trench Length 31 feet

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 48.0 - 48.13 ft.

Trench Length at Surface: 14.0 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 10.5 ft.

Depth to First Water: n/a ft.

Depth to Water on: Not measured ft.

NOTES:
1. Uniform Soil Classifications are from field observations only. No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet MSL.

3. Ground surface elevations adjusted to conform to common datum reference as site borings (April 2005).

Trench ID: **Trench 4**

Project: Oak Walk Project

Project No.: 0004.081

Owner: Bay Rock Residential LLC

Location: San Pablo Avenue, Emeryville, California

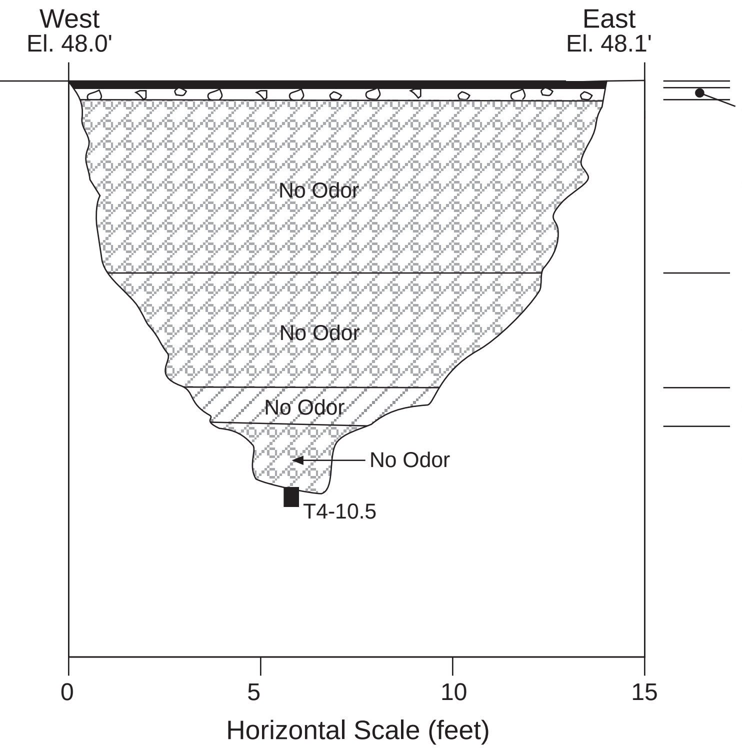
Date Excavated: 12/03/03

Excavation By: Dietz Irrigation

Logged By: D J Watkins

Equipment Operator: H B Dietz

Equipment Used: Case Excavator



Depth (Feet)	Sample	Trench Log / Description
0		Bituminous Macadam, 2 in. (GP) - Aggregate paving base, 4in.
2		(SC) - Dark gray / black, soft Silty CLAY with some glass (FILL)
4		
6		(SC) - Light brown, medium stiff Silty CLAY
8		(CL) - Gray / green, moderately stiff CLAY
10		(SC) - Light brown, medium stiff Silty CLAY
	soil	
12		
14		
16		
18		
20		
22		
24		
26		
28		
30		

Exploratory Trench 4
Average trench width 4 feet, Trench Length 14.0 feet

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 45.1 - 45.2 ft.

Trench Length at Surface: 21.0 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 8.5 ft.

Depth to First Water: n/a ft.

Depth to Water on: Not measured ft.

NOTES:
1. Uniform Soil Classifications are from field observations only. No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet MSL.

3. Ground surface elevations adjusted to conform to common datum reference as site borings (April 2005).

Trench ID: **Trench 5**

Project: Oak Walk Project

Project No.: 0004.081

Owner: Bay Rock Residential LLC

Location: San Pablo Avenue, Emeryville, California

Date Excavated: 12/02/03

Excavation By: Dietz Irrigation

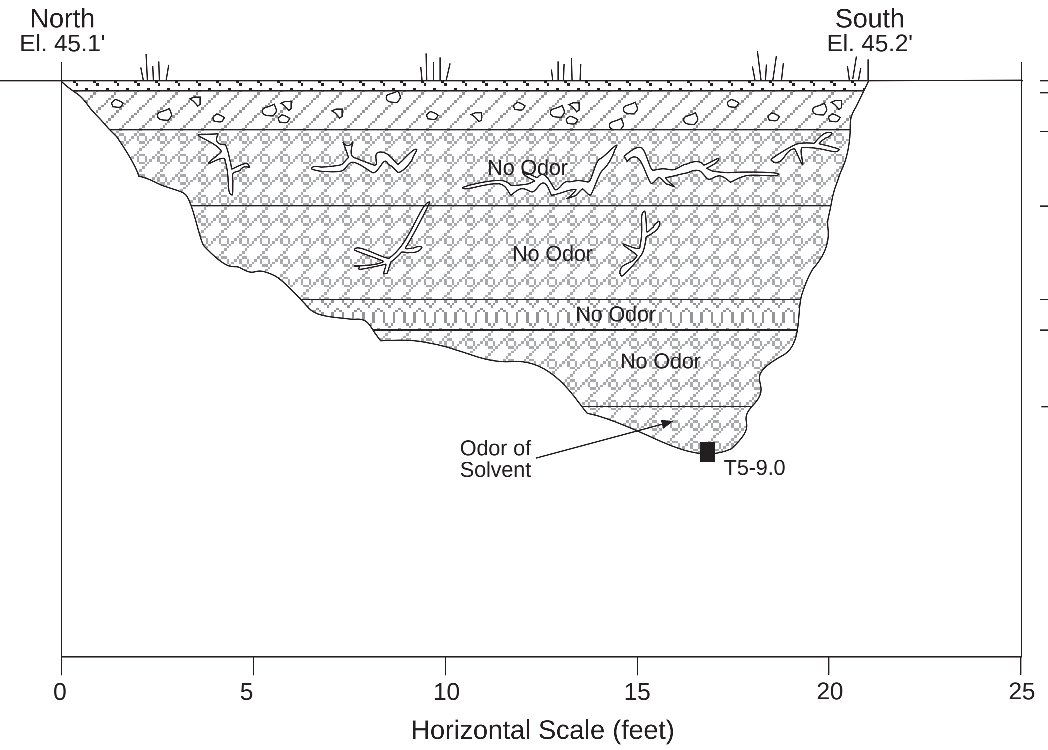
Logged By: D J Watkins

Equipment Operator: H B Dietz

Equipment Used: Case Excavator

Depth (Feet)	Sample
0	
2	
4	
6	
8	
10	soil
12	
14	
16	
18	
20	
22	
24	
26	
28	
30	

Trench Log / Description



Topsoil under grass, 3 in.

Random FILL

(SC) - Brown, soft Silty CLAY with heavy tree roots

(SC) - Brown, soft Silty CLAY with tree roots

(Pt) - Vegetative Matter with dryrot fungus in Silty CLAY

(SC) - Brown, medium stiff Silty CLAY

(SC) - Grey/ green, medium stiff Silty CLAY

Exploratory Trench 5
Average trench width 4 feet, Trench Length 21.0 feet

The San Joaquin Company Inc.

Trench Log

Trench ID: **Trench 6**

Project: Oak Walk Project

Project No.: 0004.081

Owner: Bay Rock Residential LLC

Location: San Pablo Avenue, Emeryville, California

Date Excavated: 12/02/03

Excavation By: Dietz Irrigation

Logged By: D J Watkins

Equipment Operator: H B Dietz

Equipment Used: Case Excavator

Surface Elevation: 44.1 - 43.6 ft.

Trench Length at Surface: 17.25 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 8.5 ft.

Depth to First Water: n/a ft.

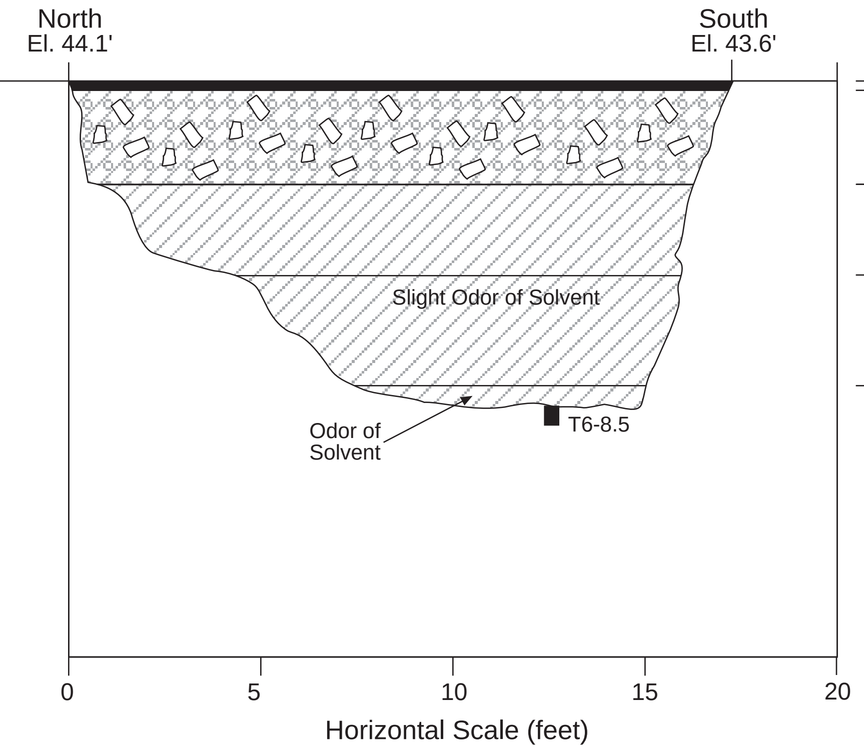
Depth to Water on: Not measured ft.

NOTES:
1. Uniform Soil Classifications are from field observations only. No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet MSL.

3. Ground surface elevations adjusted to conform to common datum reference as site borings (April 2005).

Depth (Feet)	Sample	Trench Log / Description
0		Bituminous macadam, 2in.
2		(SC) - Silty CLAY with bricks (Random FILL)
4		(CL) - Dark grey / black, medium soft Silty CLAY (FILL)
6		(CL) - Light brown, medium firm Silty CLAY
8	soil	(CL) - Grey/ green, medium soft Silty CLAY with some Gravel
10		
12		
14		
16		
18		
20		
22		
24		
26		
28		
30		



Exploratory Trench 6
Average trench width 4 feet, Trench Length 17.25 feet

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 43.9 - 43.8 ft.

Trench Length at Surface: 21.5 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 9.5 ft.

Depth to First Water: 8.0 ft.

Depth to Water on: Not measured ft.

NOTES:
1. Uniform Soil Classifications are from field observations only. No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet MSL.

3. Ground surface elevations adjusted to conform to common datum reference as site borings (April 2005).

Trench ID: **Trench 7**

Project: Oak Walk Project

Project No.: 0004.081

Owner: Bay Rock Residential LLC

Location: San Pablo Avenue, Emeryville, California

Date Excavated: 12/02/03

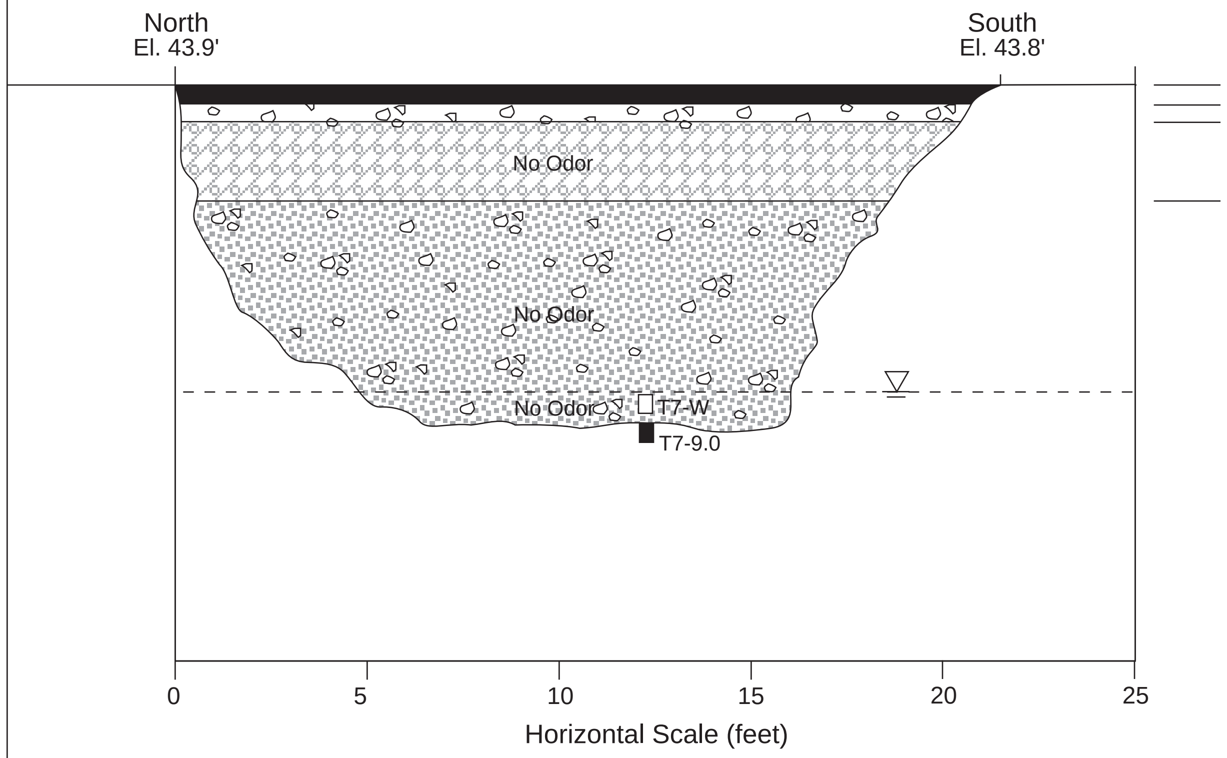
Excavation By: Dietz Irrigation

Logged By: D J Watkins

Equipment Operator: H B Dietz

Equipment Used: Case Excavator

Depth (Feet)	Sample	Trench Log / Description



Bituminous macadam, 6 in.
Gravel and Sand Pavement Base, 6in.
(SC) - Grey Silty CLAY (FILL)

(SP) - Subrounded, medium loose SAND & GRAVEL (to 1in. sieve size)

Exploratory Trench 7
Average trench width 4 feet, Trench Length 21.5 feet

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 45.2 - 45.4 ft.
Trench Length at Surface: 13.5 ft.
Trench Width at Surface: 4.0 ft.
Maximum Depth of Trench: 9.0 ft.

Depth to First Water: n/a ft.
Depth to Water on: Not measured ft.

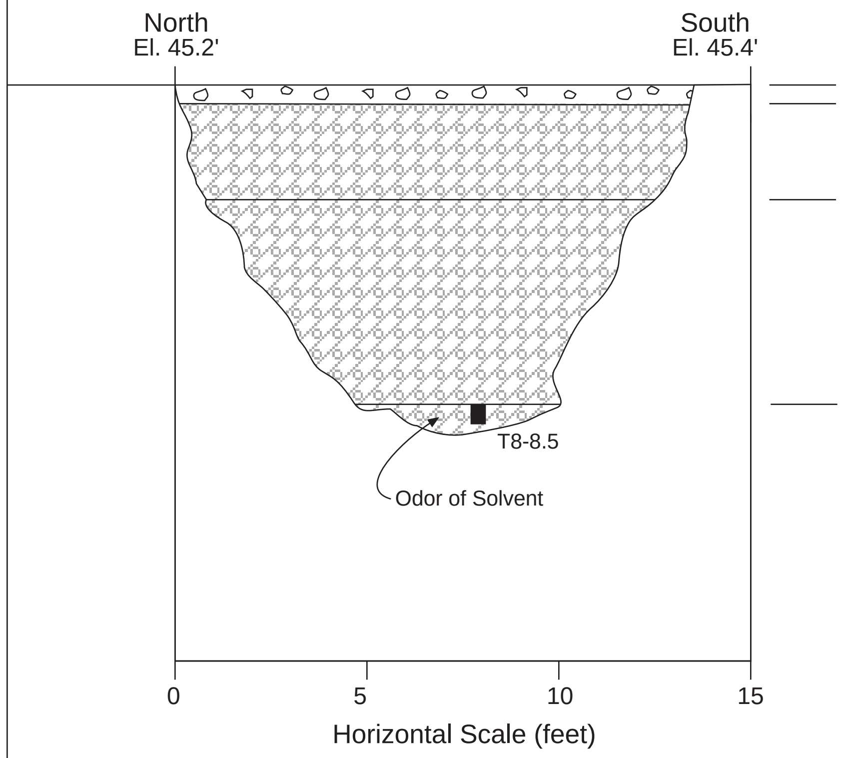
NOTES:
1. Uniform Soil Classifications are from field observations only. No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet MSL.

3. Ground surface elevations adjusted to conform to common datum reference as site borings (April 2005).

Trench ID: **Trench 8**
Project: Oak Walk Project
Project No.: 0004.081
Owner: Bay Rock Residential LLC
Location: San Pablo Avenue, Emeryville, California
Date Excavated: 12/02/03
Excavation By: Dietz Irrigation
Logged By: D J Watkins
Equipment Operator: H B Dietz
Equipment Used: Case Excavator

Depth (Feet)	Sample	Trench Log / Description
0		(GP) - Aggregate paving base, 4in.
2		(SC) - Dark gray / black, soft Silty CLAY (FILL)
4		
6		(SC) - Light brown, soft to slightly firm Silty CLAY
8	soil	(SC) - Gray / green, moderately firm Silty CLAY
10		
12		
14		
16		
18		
20		
22		
24		
26		
28		
30		



Exploratory Trench 8
Average trench width 4 feet, Trench Length 13.5 feet

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 44.78 - 45.94 ft.

Trench Length at Surface: 153.6 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 20.5 ft.

Depth to First Water: 17.0 ft.

Depth to Water on: 10/01/07 : 11.0ft ft.

NOTES:
1. Uniform Soil Classifications are from field observations only.
No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet NAVD.

Trench ID: **Trench 9**

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: San Pablo Avenue, Emeryville, California

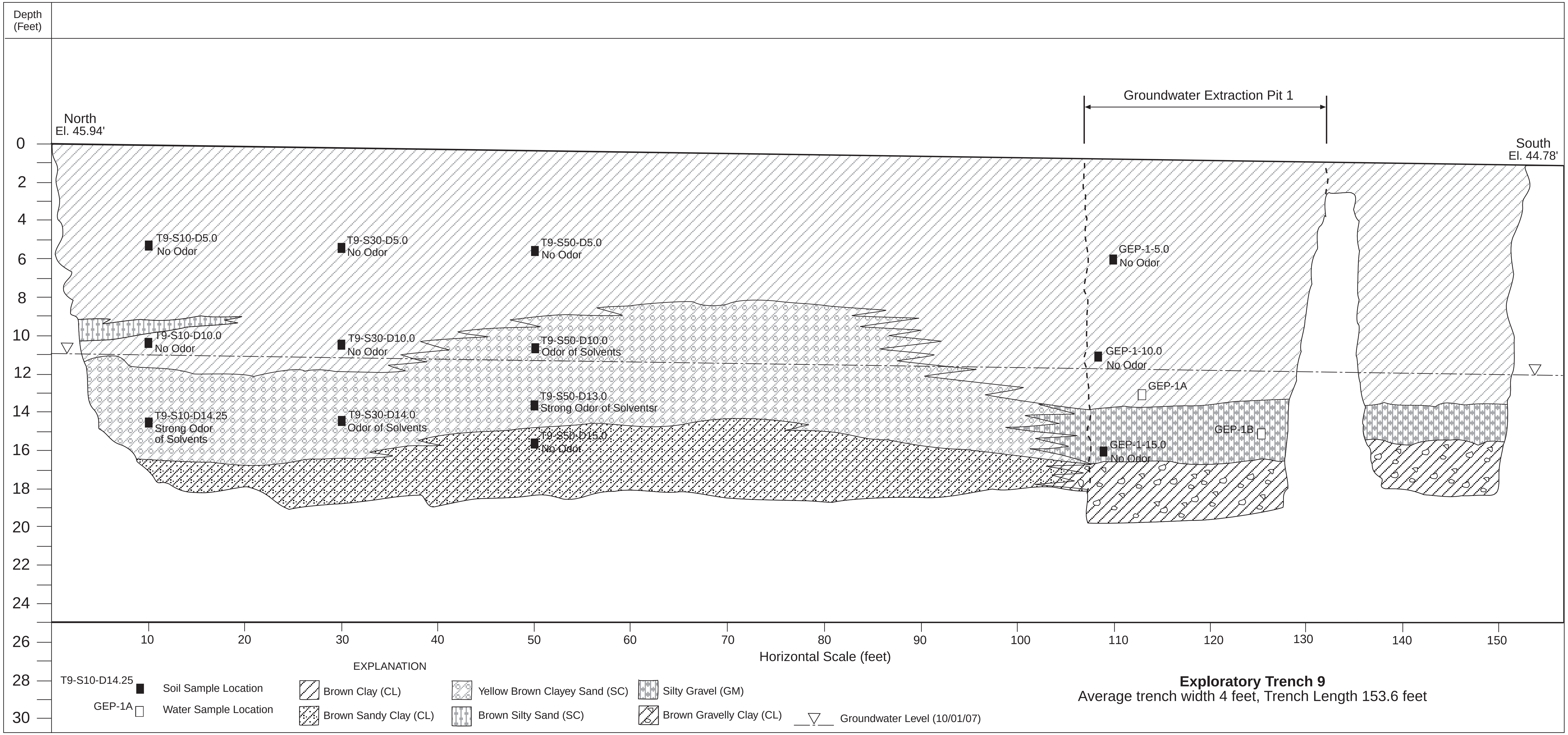
Date Excavated: 09/21/07 - 09/24/07

Excavation By: Dietz Engineering & Construction, Inc.

Logged By: D J Watkins

Equipment Operator: J.C. Dietz

Equipment Used: Case Excavator



Exploratory Trench 9
Average trench width 4 feet, Trench Length 153.6 feet

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 45.66 - 47.11 ft.

Trench Length at Surface: 156.8 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 20.5 ft.

Depth to First Water: 17.0 ft.

Depth to Water on: 09/21/07 : 12.5ft ft.

NOTES:
1. Uniform Soil Classifications are from field observations only.
No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet NAVD.

Trench ID: **Trench 10**

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: San Pablo Avenue, Emeryville, California

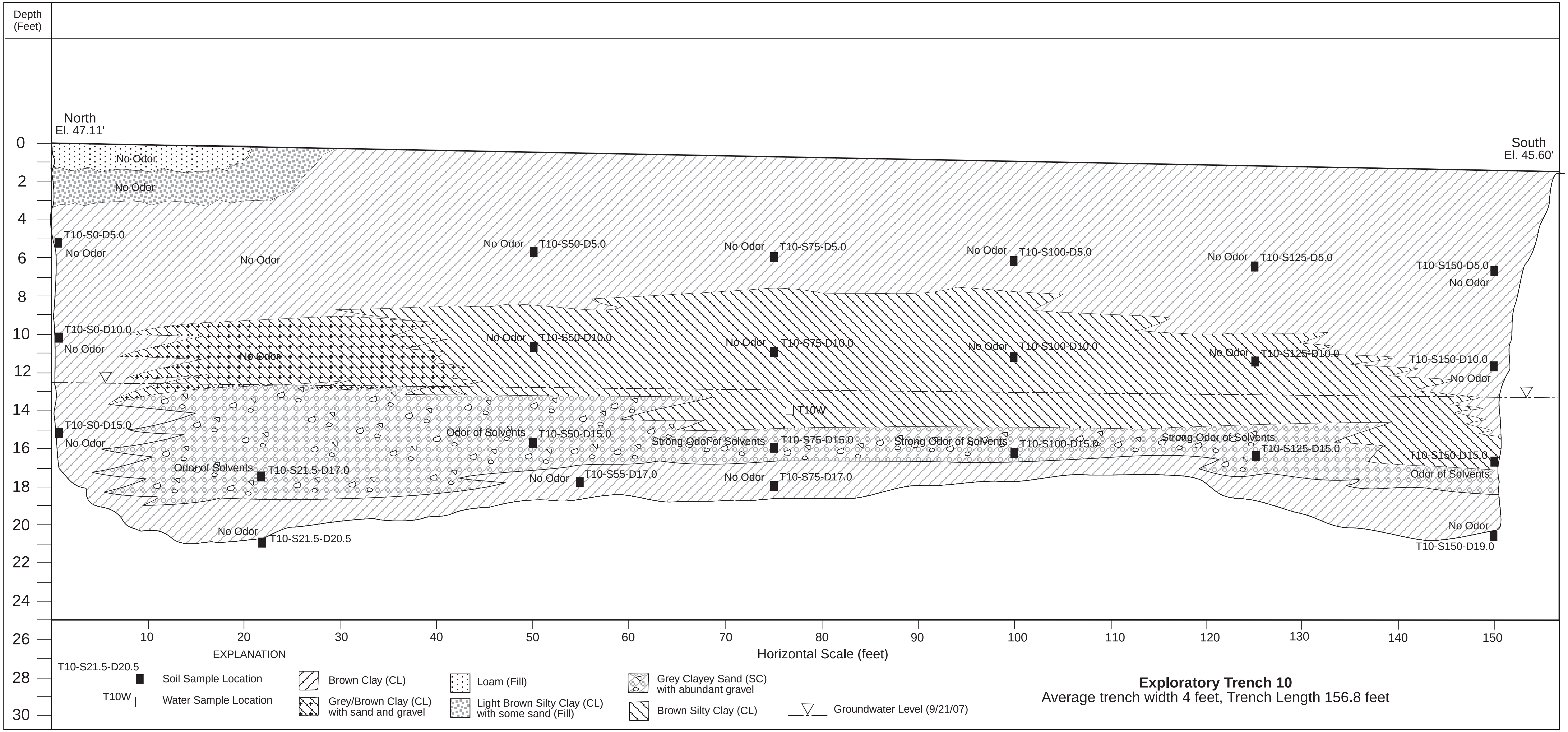
Date Excavated: 09/21/07 - 09/24/07

Excavation By: Dietz Engineering & Construction, Inc.

Logged By: D J Watkins

Equipment Operator: J.C. Dietz

Equipment Used: Case Excavator



Exploratory Trench 10
Average trench width 4 feet, Trench Length 156.8 feet

The San Joaquin Company Inc.

Trench Log

Surface Elevation: 46.61 - 48.95 ft.

Trench Length at Surface: 29.5 ft.

Trench Width at Surface: 4.0 ft.

Maximum Depth of Trench: 15.0 ft.

Depth to First Water: n/a ft.

Depth to Water on: 08/08/07 : 10.87ft ft.

NOTES:
1. Uniform Soil Classifications are from field observations only.
No geotechnical engineering laboratory tests were performed.

2. All Elevations are in feet NAVD.

Trench ID: **Trench 11**

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: San Pablo Avenue, Emeryville, California

Date Excavated: 08/08/07

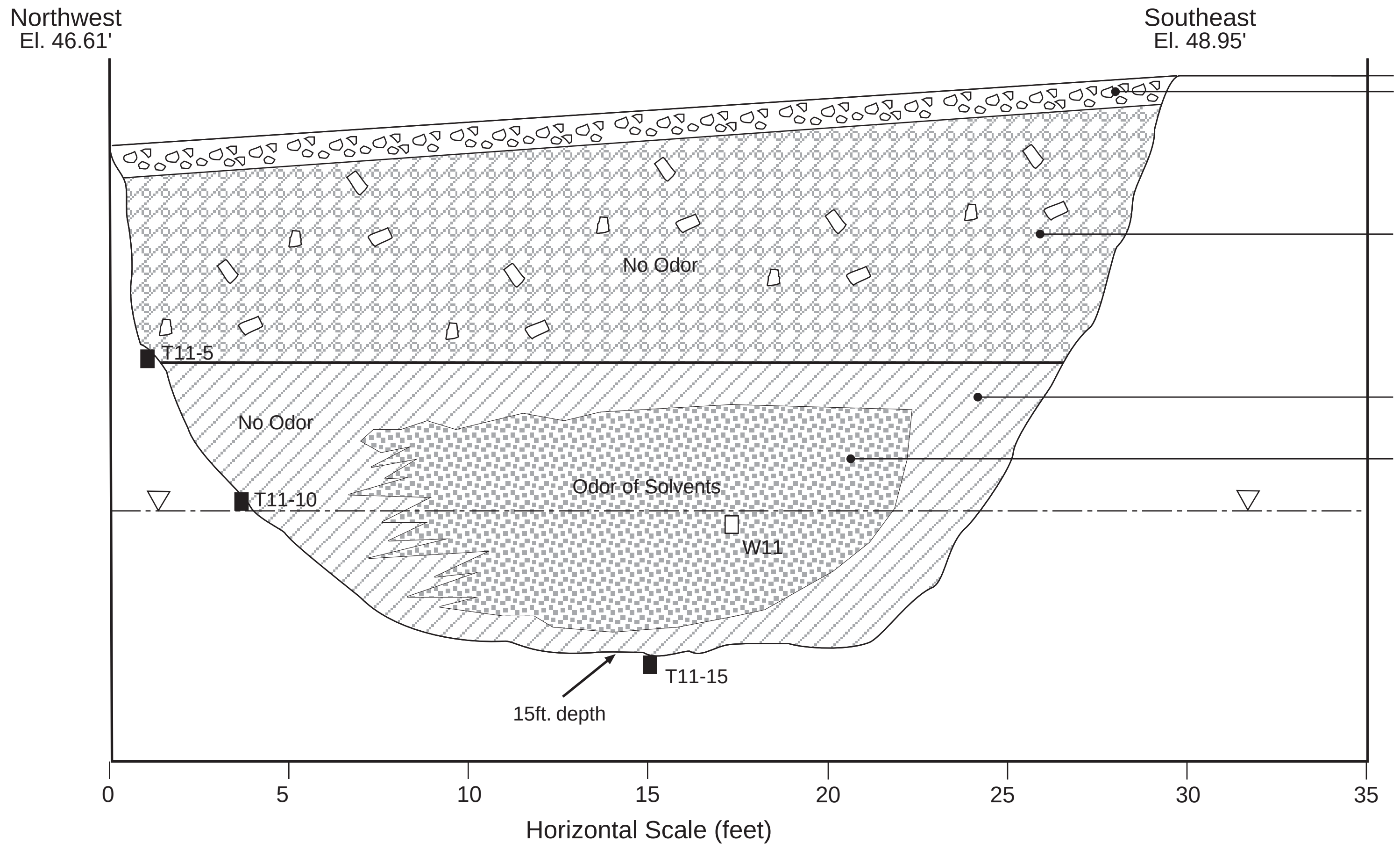
Excavation By: Dietz Engineering & Construction, Inc.

Logged By: D J Watkins

Equipment Operator: J.C. Dietz

Equipment Used: Case Excavator

Depth (Feet)	Sample	Trench Log / Description
0		
2		
4		
6		
8	soil	
10		
12	soil water	
14		
16	soil	
18		
20		
22		
24		
26		
28		
30		



(GP) - Aggregate paving base, 4in. (FILL)

(SC) - Light brown, medium stiff Silty CLAY, with some Gravel and inclusions of crockery and other artifacts (FILL)

(SC) - Dark grey, medium stiff Silty CLAY

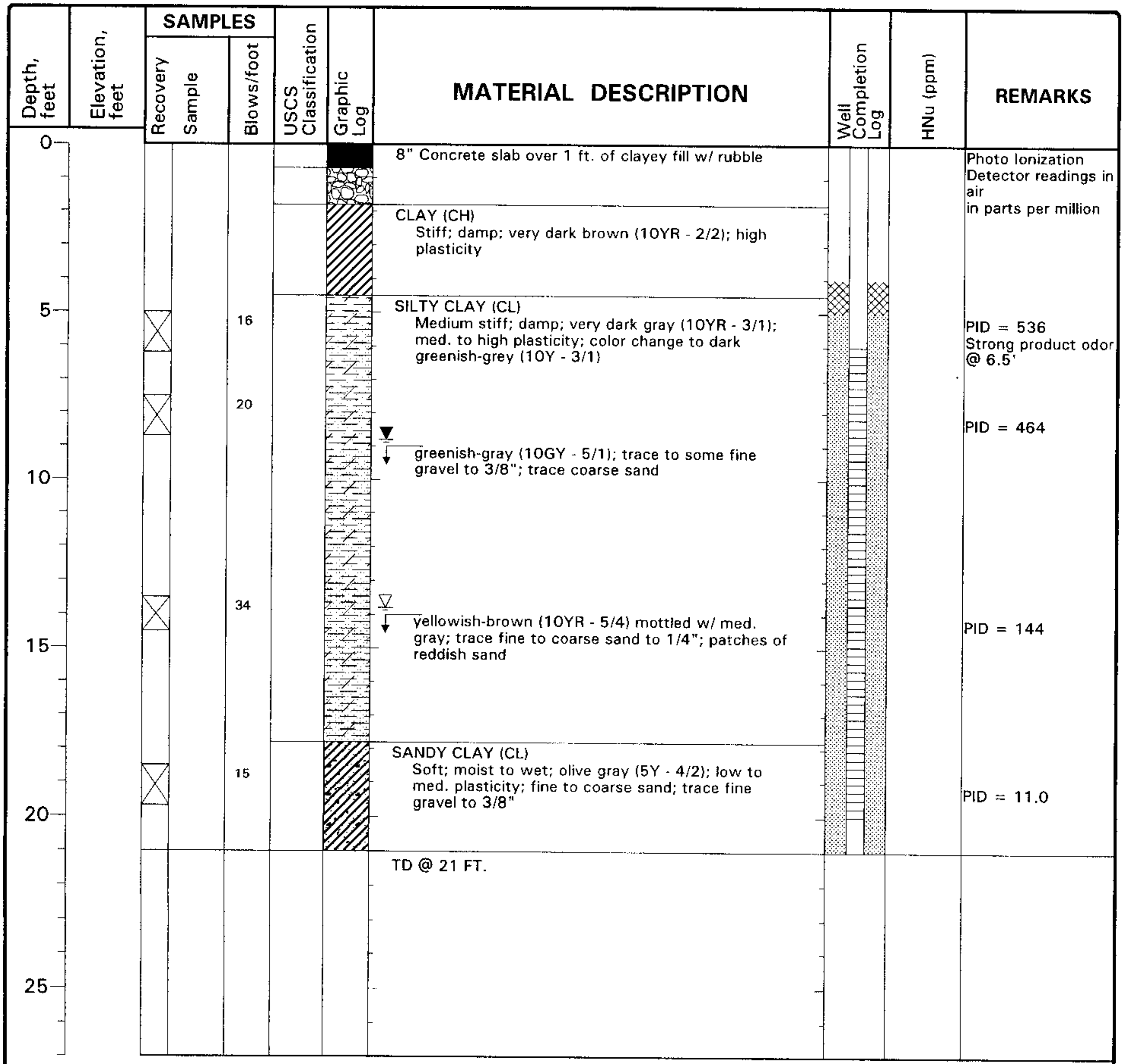
(SC) - Gray SAND and Gravel streambed deposits, loose

Exploratory Trench 11
Average trench width 4 feet, Trench Length 29.5 feet

Project: 40th Street UST, Emeryville, CA
Project Number: 94114NA
Location: Northeast corner of San Pablo Ave. and 40th St.

Log of Well EW-1

Date(s) Drilled	3/24/97	Total Depth Drilled (feet)	21.0	Top of Casing Elevation (feet)		Groundwater Level (feet)	First ∇ 13.8 Completion ▼ 8.8 12 Hours ∇
Logged by	W. Dittman	Checked by		Diameter of Hole (inches)	10	Diameter of Well (inches)	4
Number of Samples	Disturbed	Undisturbed 4					
Drilling Company	Gregg Drilling	Drilling Method	Hollow Stem Auger	Drill Rig Type	Mobile B61		
Sampler Type	2" cal mod	Drill Bit Size	10"	Type of Well Casing	4" PVC Sch. 40		
Screen Perforation	0.020" Slotted 6-20ft	Type of Sand Pack	#3 Lonestar Sand 5-21ft				
Type of Seals	Neat Cement 1 to 4 ft.; Bentonite Pellets 4 to 5 ft.						
Comments							



Depth, feet	Elevation, feet	SAMPLES Recovery	Sample	Blows/foot	USCS Classification	MATERIAL DESCRIPTION	HNu (ppm)	REMARKS
0						8" Concrete slab over 1 ft. of clayey fill w/ rubble		Photo Ionization Detector readings in air in parts per million
						CLAY (CH) Stiff; damp; very dark brown (10YR - 2/2); high plasticity		
5		☒		16		SILTY CLAY (CL) Medium stiff; damp; very dark gray (10YR - 3/1); med. to high plasticity; color change to dark greenish-grey (10Y - 3/1)		PID = 536 Strong product odor @ 6.5'
		☒		20				PID = 464
10						▼ greenish-gray (10GY - 5/1); trace to some fine gravel to 3/8"; trace coarse sand		
15		☒		34		∇ yellowish-brown (10YR - 5/4) mottled w/ med. gray; trace fine to coarse sand to 1/4"; patches of reddish sand		PID = 144
20		☒		15		SANDY CLAY (CL) Soft; moist to wet; olive gray (5Y - 4/2); low to med. plasticity; fine to coarse sand; trace fine gravel to 3/8"		PID = 11.0
						TD @ 21 FT.		
25								

3/27/97 SFOUADW EMERY

Woodward-Clyde Consultants

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: MW-2

Project: Oak Walk

Project No.: 0004.083

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 44.40 ft.

Surface Elevation: 44.70 ft.

Depth to Water: 5.98 ft.

Date Installed: 04/07/04

Total depth of Boring: 20 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

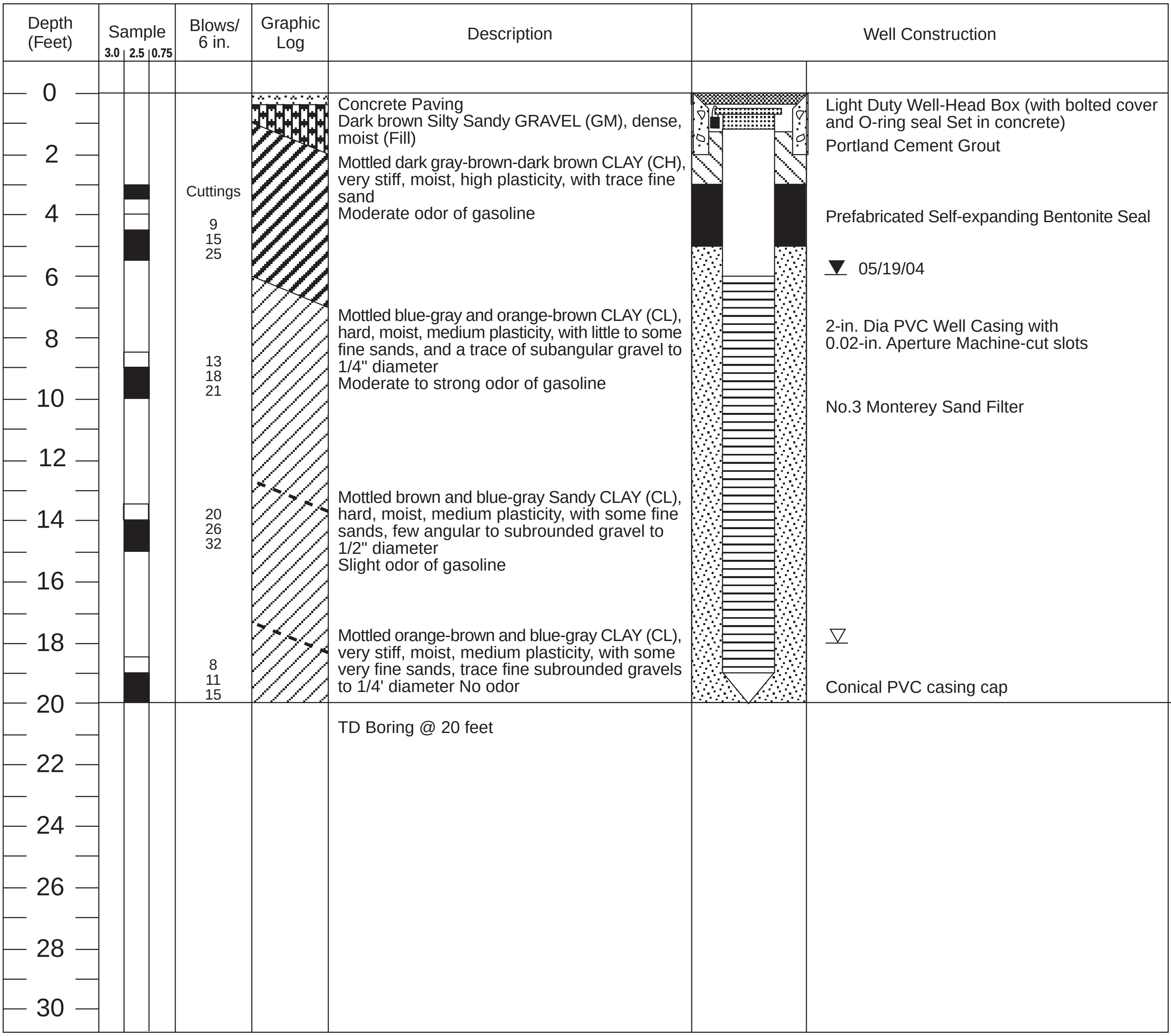
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Hollow Stem Auger

Driller: Don Kiersnas

Logged By: Dennis Alexander



Concrete Paving
Dark brown Silty Sandy GRAVEL (GM), dense, moist (Fill)

Mottled dark gray-brown-dark brown CLAY (CH), very stiff, moist, high plasticity, with trace fine sand
Moderate odor of gasoline

Mottled blue-gray and orange-brown CLAY (CL), hard, moist, medium plasticity, with little to some fine sands, and a trace of subangular gravel to 1/4" diameter
Moderate to strong odor of gasoline

Mottled brown and blue-gray Sandy CLAY (CL), hard, moist, medium plasticity, with some fine sands, few angular to subrounded gravel to 1/2" diameter
Slight odor of gasoline

Mottled orange-brown and blue-gray CLAY (CL), very stiff, moist, medium plasticity, with some very fine sands, trace fine subrounded gravels to 1/4' diameter No odor

TD Boring @ 20 feet

Light Duty Well-Head Box (with bolted cover and O-ring seal Set in concrete)

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

▼ 05/19/04

2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots

No.3 Monterey Sand Filter

▽

Conical PVC casing cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-3**

Project: Oak Walk

Project No.: 0004.083

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 45.49 ft.

Surface Elevation: 45.9 ft.

Depth to Water: 5.66 ft.

Date Installed: 04/07/04

Total depth of Boring: 20 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

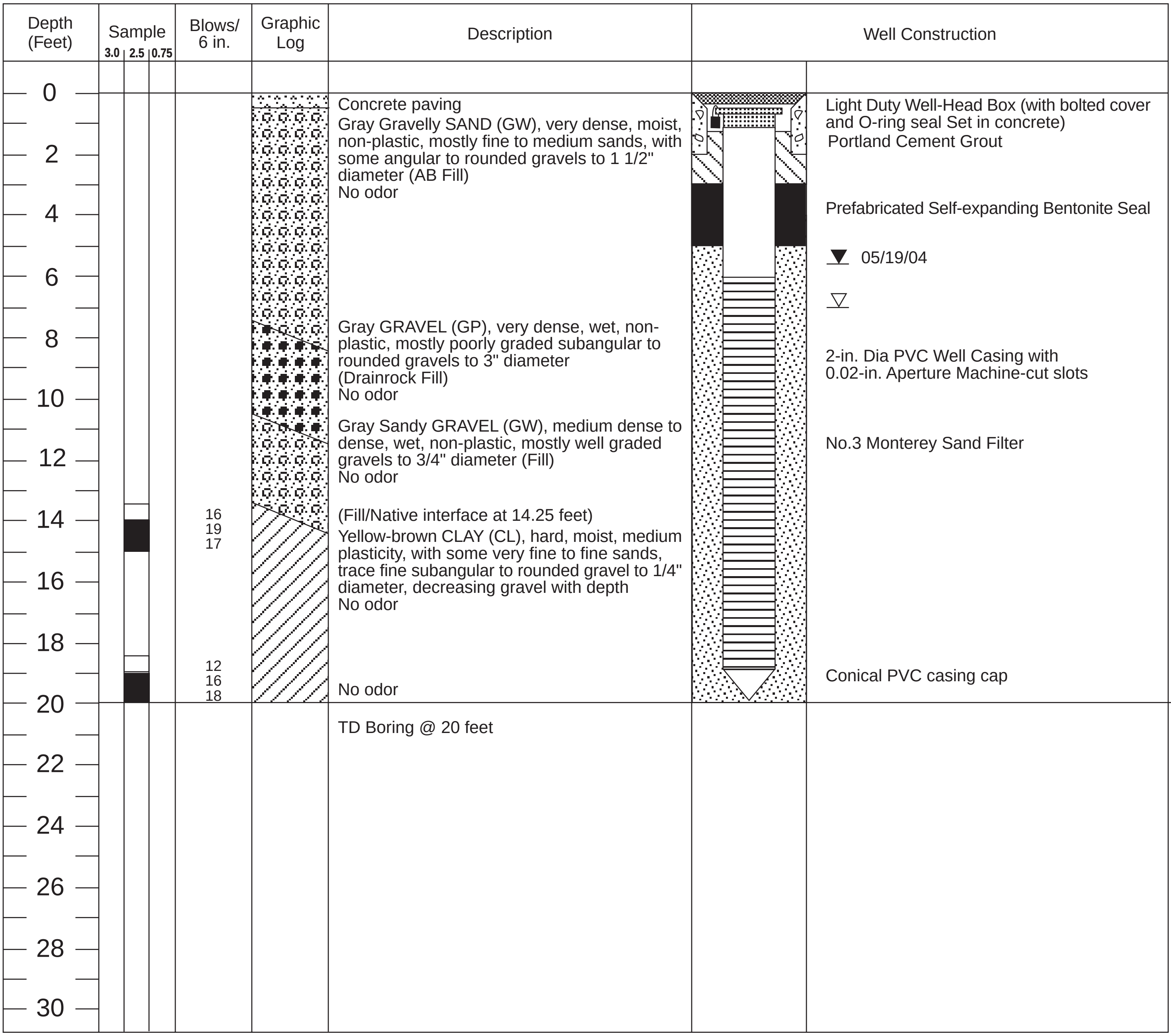
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Hollow Stem Auger

Driller: Don Kiersnas

Logged By: Dennis Alexander



Concrete paving

Gray Gravelly SAND (GW), very dense, moist, non-plastic, mostly fine to medium sands, with some angular to rounded gravels to 1 1/2" diameter (AB Fill)
No odor

Gray GRAVEL (GP), very dense, wet, non-plastic, mostly poorly graded subangular to rounded gravels to 3" diameter (Drainrock Fill)
No odor

Gray Sandy GRAVEL (GW), medium dense to dense, wet, non-plastic, mostly well graded gravels to 3/4" diameter (Fill)
No odor

(Fill/Native interface at 14.25 feet)

Yellow-brown CLAY (CL), hard, moist, medium plasticity, with some very fine to fine sands, trace fine subangular to rounded gravel to 1/4" diameter, decreasing gravel with depth
No odor

No odor

TD Boring @ 20 feet

Light Duty Well-Head Box (with bolted cover and O-ring seal Set in concrete)

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

▼ 05/19/04

▽

2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots

No.3 Monterey Sand Filter

Conical PVC casing cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-4**

Project: Oak Walk

Project No.: 0004.083

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 47.31 ft.

Surface Elevation: 47.5 ft.

Depth to Water: 6.19 ft.

Date Installed: 04/30/04

Total depth of Boring: 20 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2.0 in.

Total depth of Well: 20 ft.

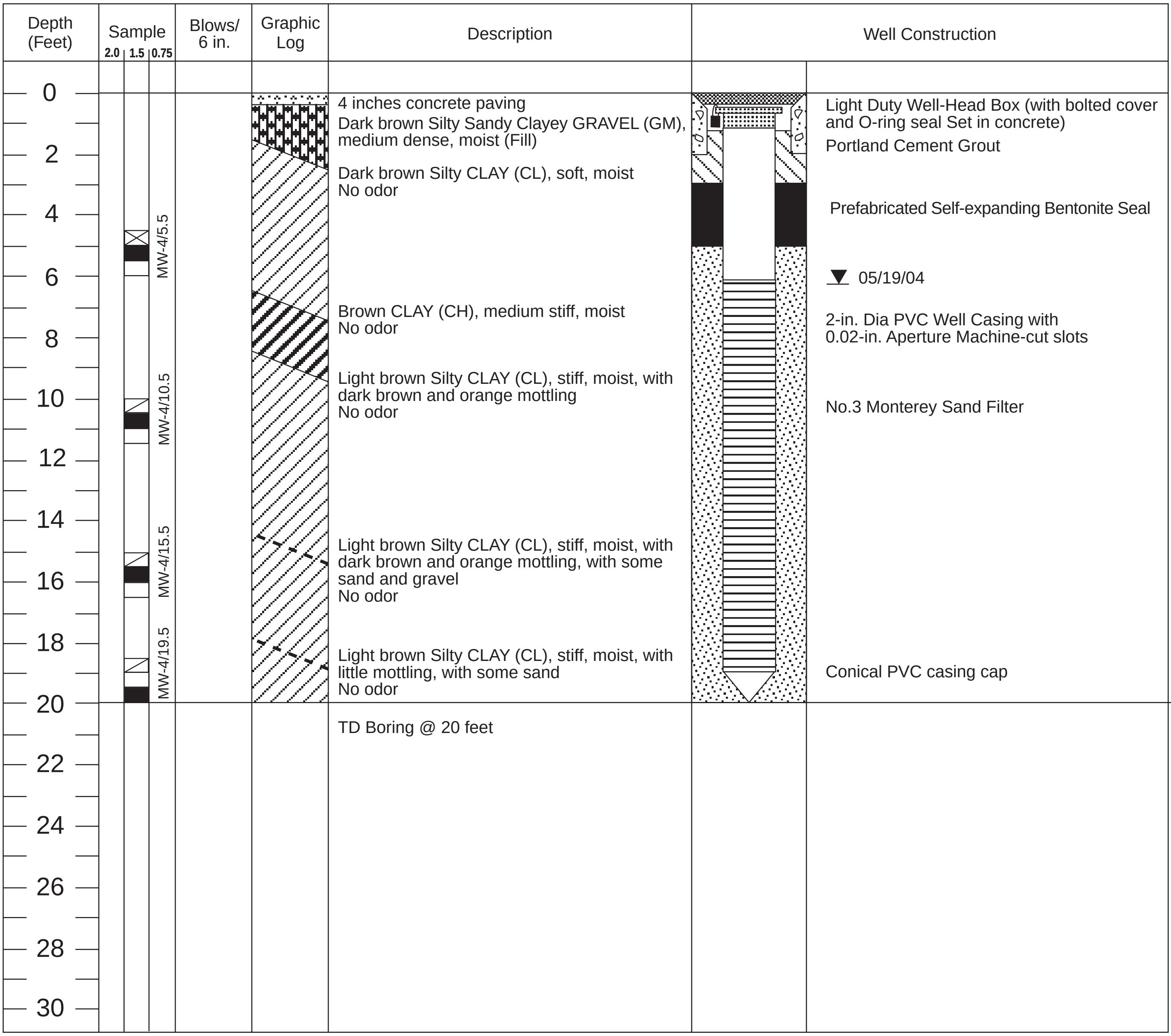
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Hollow Stem Auger

Driller: Bobby Deason

Logged By: Steve Flexser



Depth (Feet)	Sample	Blows/ 6 in.	Description	Well Construction
0			4 inches concrete paving	Light Duty Well-Head Box (with bolted cover and O-ring seal Set in concrete)
			Dark brown Silty Sandy Clayey GRAVEL (GM), medium dense, moist (Fill)	Portland Cement Grout
2			Dark brown Silty CLAY (CL), soft, moist No odor	
4				Prefabricated Self-expanding Bentonite Seal
	MW-4/5.5			
6				▼ 05/19/04
8			Brown CLAY (CH), medium stiff, moist No odor	2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots
10	MW-4/10.5		Light brown Silty CLAY (CL), stiff, moist, with dark brown and orange mottling No odor	No.3 Monterey Sand Filter
12				
14				
16	MW-4/15.5		Light brown Silty CLAY (CL), stiff, moist, with dark brown and orange mottling, with some sand and gravel No odor	
18	MW-4/19.5		Light brown Silty CLAY (CL), stiff, moist, with little mottling, with some sand No odor	Conical PVC casing cap
20			TD Boring @ 20 feet	

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: MW-5

Project: Oak Walk

Project No.: 0004.083

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 42.51 ft.

Surface Elevation: 42.9 ft.

Depth to Water: 7.39 ft.

Date Installed: 04/30/04

Total depth of Boring: 20 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2.0 in.

Total depth of Well: 20 ft.

Casing Material: PVC

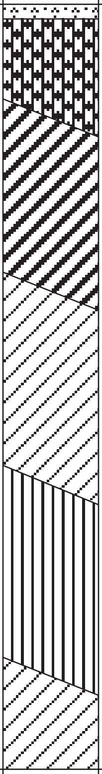
Drilling Company: Gregg Drilling & Testing

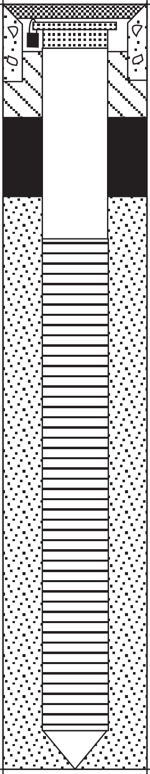
Drilling Method: Hollow Stem Auger

Driller: Bobby Deason

Logged By: Steve Flexser

Depth (Feet)	Sample 2.0 | 1.5 | 0.75	Blows/ 6 in.	Graphic Log	Description	Well Construction
0				4 inches concrete Dark brown Silty Sandy GRAVEL (GM), medium dense, moist (Fill)	Light Duty Well-Head Box (with bolted cover and O-ring seal Set in concrete)
2					Portland Cement Grout
4				Dark brown Silty CLAY (CH), soft, moist, with minor gravel No odor	Prefabricated Self-expanding Bentonite Seal
6	MW-5/6.0				
8				Blue gray CLAY (CL), very stiff, moist to wet, with abundant gravel and sand, with inclusions of orange sandy silt. Moderate odor of gasoline	▼ 05/19/04 2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots
10	MW-5/11.0				▽
12					No.3 Monterey Sand Filter
14				Dark gray Clayey SILT (ML), medium stiff, wet, with orange mottling, with some gravel No odor	
16	MW-5/15.5				
18	MW-5/19.5			Light brown and gray mottled CLAY (CL), stiff, wet, very sandy, with gravel, with orange silt inclusions No odor	
20				TD Boring @ 20 feet	Conical PVC casing cap
22					
24					
26					
28					
30					





The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-6**

Project: Oak Walk

Project No.: 0004.083

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 43.35 ft.

Surface Elevation: 43.9 ft.

Depth to Water: 7.16 ft.

Date Installed: 04/07/04

Total depth of Boring: 20 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

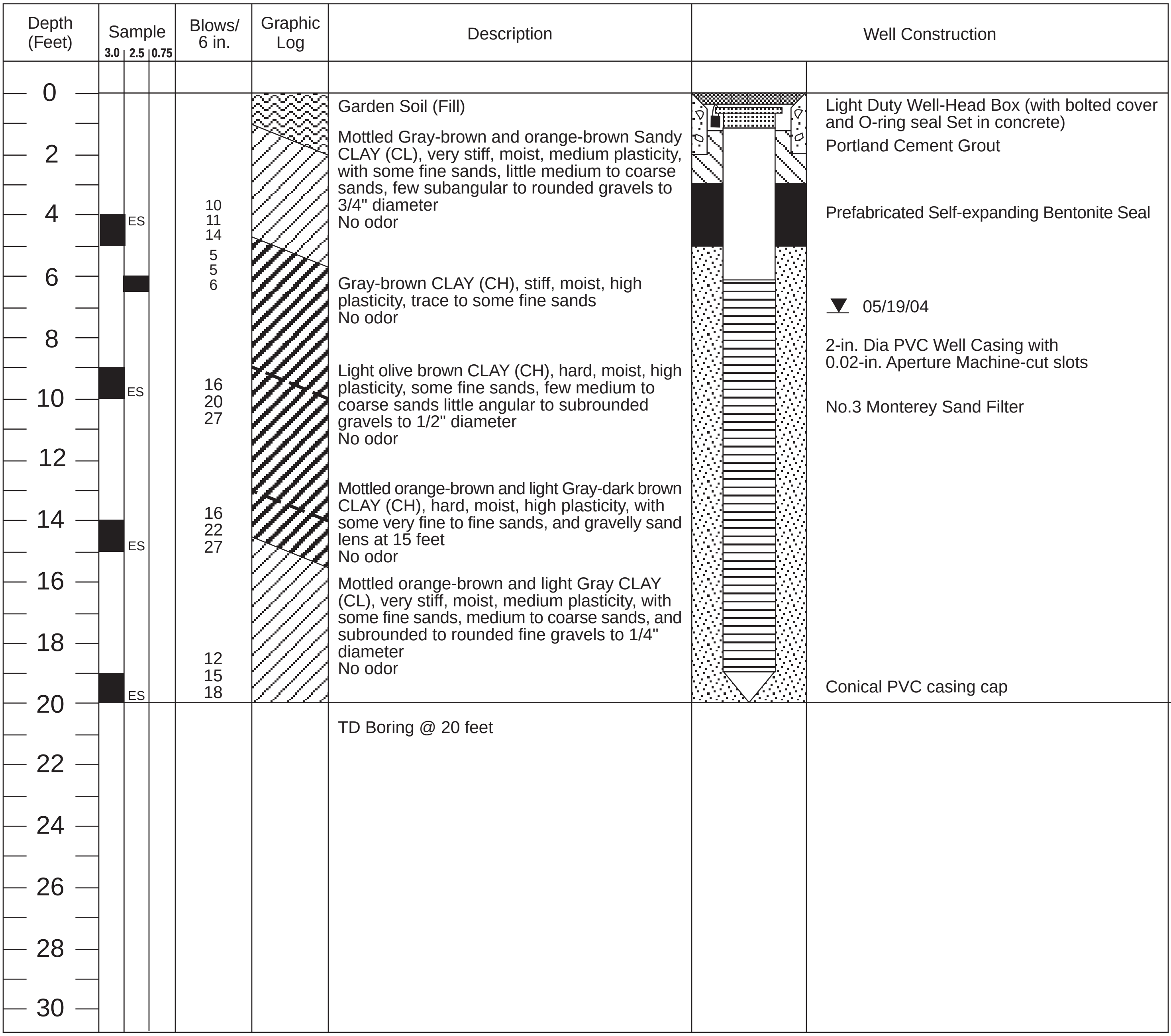
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Hollow Stem Auger

Driller: Don Kiersnas

Logged By: Dennis Alexander



Depth (Feet)	Sample 3.0 | 2.5 | 0.75	Blows/ 6 in.	Graphic Log	Description	Well Construction
0				Garden Soil (Fill)	Light Duty Well-Head Box (with bolted cover and O-ring seal Set in concrete)
2				Mottled Gray-brown and orange-brown Sandy CLAY (CL), very stiff, moist, medium plasticity, with some fine sands, little medium to coarse sands, few subangular to rounded gravels to 3/4" diameter No odor	Portland Cement Grout
4	■ ES	10 11 14			Prefabricated Self-expanding Bentonite Seal
6	■	5 5 6		Gray-brown CLAY (CH), stiff, moist, high plasticity, trace to some fine sands No odor	▼ 05/19/04
8					2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots
10	■ ES	16 20 27		Light olive brown CLAY (CH), hard, moist, high plasticity, some fine sands, few medium to coarse sands little angular to subrounded gravels to 1/2" diameter No odor	No.3 Monterey Sand Filter
12					
14	■ ES	16 22 27		Mottled orange-brown and light Gray-dark brown CLAY (CH), hard, moist, high plasticity, with some very fine to fine sands, and gravelly sand lens at 15 feet No odor	
16				Mottled orange-brown and light Gray CLAY (CL), very stiff, moist, medium plasticity, with some fine sands, medium to coarse sands, and subrounded to rounded fine gravels to 1/4" diameter No odor	
18					
20	■ ES	12 15 18		TD Boring @ 20 feet	Conical PVC casing cap
22					
24					
26					
28					
30					

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-6A**

Project: Bay Rock Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 43.18 ft.

Surface Elevation: 43.6 ft.

Depth to Water: 8.30 ft.

Date Installed: 09/27/08

Total depth of Boring: 20.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

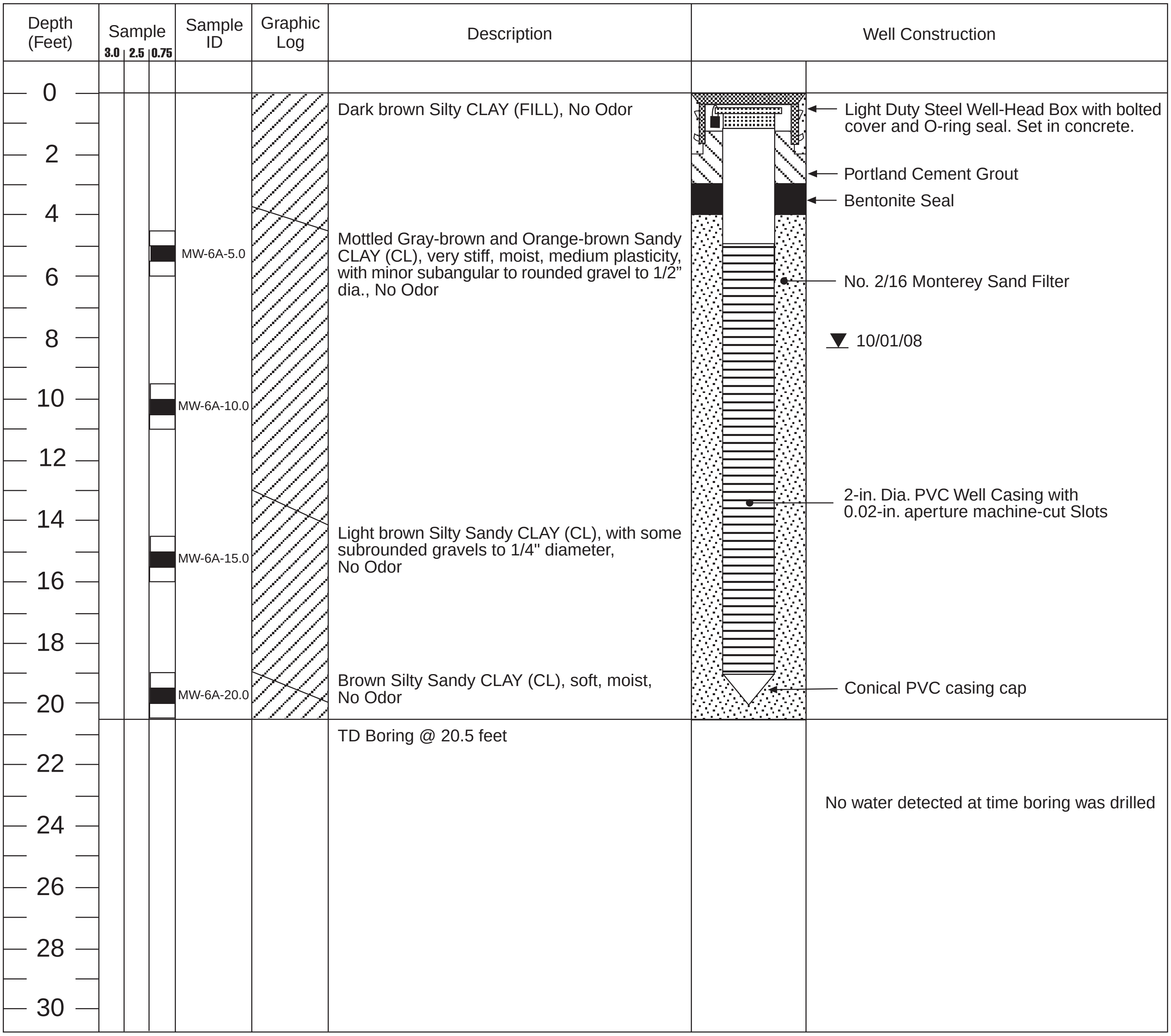
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Open Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins



Dark brown Silty CLAY (FILL), No Odor

Mottled Gray-brown and Orange-brown Sandy CLAY (CL), very stiff, moist, medium plasticity, with minor subangular to rounded gravel to 1/2" dia., No Odor

Light brown Silty Sandy CLAY (CL), with some subrounded gravels to 1/4" diameter, No Odor

Brown Silty Sandy CLAY (CL), soft, moist, No Odor

TD Boring @ 20.5 feet

Light Duty Steel Well-Head Box with bolted cover and O-ring seal. Set in concrete.

Portland Cement Grout

Bentonite Seal

No. 2/16 Monterey Sand Filter

2-in. Dia. PVC Well Casing with 0.02-in. aperture machine-cut Slots

Conical PVC casing cap

No water detected at time boring was drilled

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: MW-7

Project: Oak Walk

Project No.: 0004.083

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 44.75 ft.

Surface Elevation: 45.2 ft.

Depth to Water: 8.40 ft.

Date Installed: 04/06/04

Total depth of Boring: 20 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

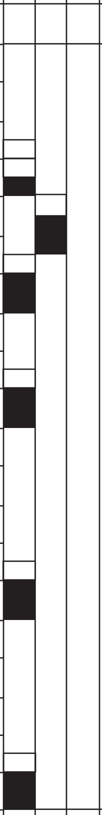
Casing Material: PVC

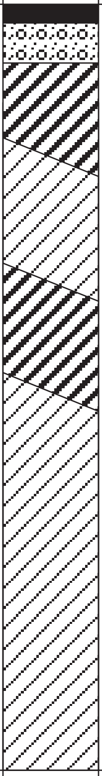
Drilling Company: Gregg Drilling & Testing

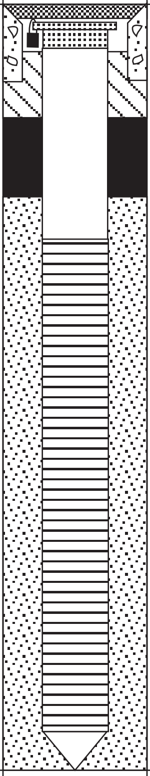
Drilling Method: Hollow Stem Auger

Driller: Don Kiersnas

Logged By: Dennis Alexander







Depth (Feet)	Blows/ 6 in.	Description	Well Construction
0		5" Bituminous Macadam paving Class II Cal Trans paving base (GW)	Heavy Duty Well-Head Box (with bolted cover and O-ring seal Set in concrete)
2	13 21 25	Dark Gray-brown CLAY (CH), hard, moist, high plasticity, with some fine sand, trace angular gravel to 1/2" diameter. No odor	Portland Cement Grout
4	6 9 13	Dark brown CLAY (CL), very stiff, moist, medium plasticity, little to some fine sands, trace angular to subangular gravel to 1-1/2" diameter No odor	Prefabricated Self-expanding Bentonite Seal
6	9 11 13		2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots
8	9 18 28	Mottled olive-brown and orange-brown CLAY (CH), hard, moist, high plasticity, with some fine sands, few medium to coarse sands, trace angular gravels to 1/2" diameter, and small sandy lenses with trace gravel No odor	▼ 05/20/04
10			No.3 Monterey Sand Filter
12		Mottled orange-brown and light olive brown CLAY (CL), very stiff, moist to wet, medium plasticity, with some fine sands, few medium to coarse sands, and few angular to rounded gravels to 1" diameter No odor	
14	13 21 33		
16		Decreasing sands and gravels to 18 feet	
18			▽
	9 11 12	No odor	Conical PVC casing cap
20		TD Boring @ 20 feet	
22			
24			
26			
28			
30			

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-8**

Project: Oak Walk

Project No.: 0004.083

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 48.38 ft.

Surface Elevation: 48.5 ft.

Depth to Water: 9.65 ft.

Date Installed: 04/07/04

Total depth of Boring: 20 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

Casing Material: PVC

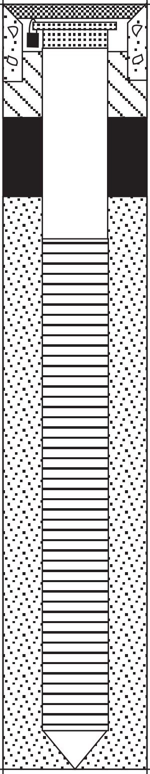
Drilling Company: Gregg Drilling & Testing

Drilling Method: Hollow Stem Auger

Driller: Don Kiersnas

Logged By: Dennis Alexander

Depth (Feet)	Sample 3.0 | 2.5 | 0.75	Blows/ 6 in.	Graphic Log	Description	Well Construction
0				5" Bituminous Macadam 12" Class II CalTrans Paving base (GW)	Heavy Duty Well-Head Box (with bolted cover and O-ring seal Set in concrete)
2		15 21 24		Dark Gray and dark brown CLAY (CH), very stiff, moist, high plasticity, with some fine sand and medium to coarse sands. No odor	Portland Cement Grout
4		4 5 6		Mottled brown and Gray CLAY (CH), stiff, moist, high plasticity, few to minor fine sands. No odor	Prefabricated Self-expanding Bentonite Seal
6		8 11 15		Mottled Gray and brown CLAY (CL), very stiff, moist, medium plasticity, with some fine sands and trace medium sands. No odor	
8		19 24 36		Mottled light brown and orange-brown CLAY (CH), very stiff, moist, high plasticity, with some very fine to fine sands, few medium to coarse sands, some angular to subrounded gravels to 1/2" diameter No odor	2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots ▼ 05/19/04
10					
12					No.3 Monterey Sand Filter
14		13 17 26		Decreasing coarse sands and gravels with depth No odor	
16					
18		14 18 21		Mottled brown, light brown and orange-brown Clayey SAND (SC), dense, moist, low plasticity, fine to medium sands, with minor coarse sands, some angular to rounded gravels to 3/4" diameter. No odor	▽ Conical PVC casing cap
20				TD Boring @ 20 feet	
22					
24					
26					
28					
30					



The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-09**

Project: Bay Rock Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 47.85 ft.

Surface Elevation: 48.0 ft.

Depth to Water: 10.75 ft.

Date Installed: 09/27/08

Total depth of Boring: 20.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

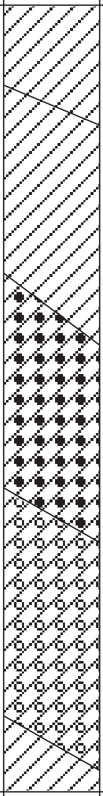
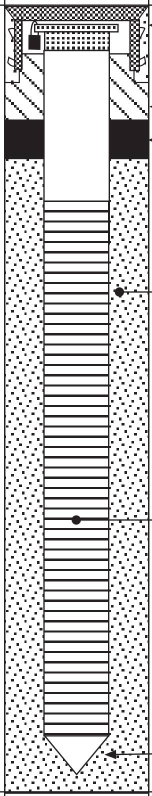
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Open Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins

Depth (Feet)	Sample			Sample ID	Graphic Log	Description	Well Construction
	3.0	2.5	0.75				
0						Brown Silty CLAY (FILL), loose, with vegetative matter, No Odor	 Light Duty Steel Well-Head Box with bolted cover and O-ring seal. Set in concrete.
2							Portland Cement Grout
4						Brown Silty CLAY (CL), stiff, No Odor	Bentonite Seal
6			■	MW-9-5.0			
8							No.2/16 Monterey Sand Filter
10			■	MW-9-10.0		Gray and Orange-brown Silty Sandy GRAVEL (GC) to 1/2" dia. with some Clay, stiff, moist, dense, increasing density and moisture with depth, slight odor of solvents	▼ 10/01/08
12							
14						Gray/brown Silty Clayey SAND (SC), with some subrounded gravels to 3/4" dia., No Odor	2-in. Dia. PVC Well Casing with 0.02-in. aperture machine-cut Slots
16			■	MW-9-15.0		Increasing density and moisture with depth	▽ First Water
18							
20			■	MW-9-20.0		Brown Silty CLAY (CL), medium stiff, wet, No Odor	Conical PVC casing cap
22						TD Boring @ 20.5 feet	
24							
26							
28							
30							

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-10**

Project: Bay Rock Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 45.66 ft.

Surface Elevation: 45.9 ft.

Depth to Water: 9.39 ft.

Date Installed: 09/27/08

Total depth of Boring: 20.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

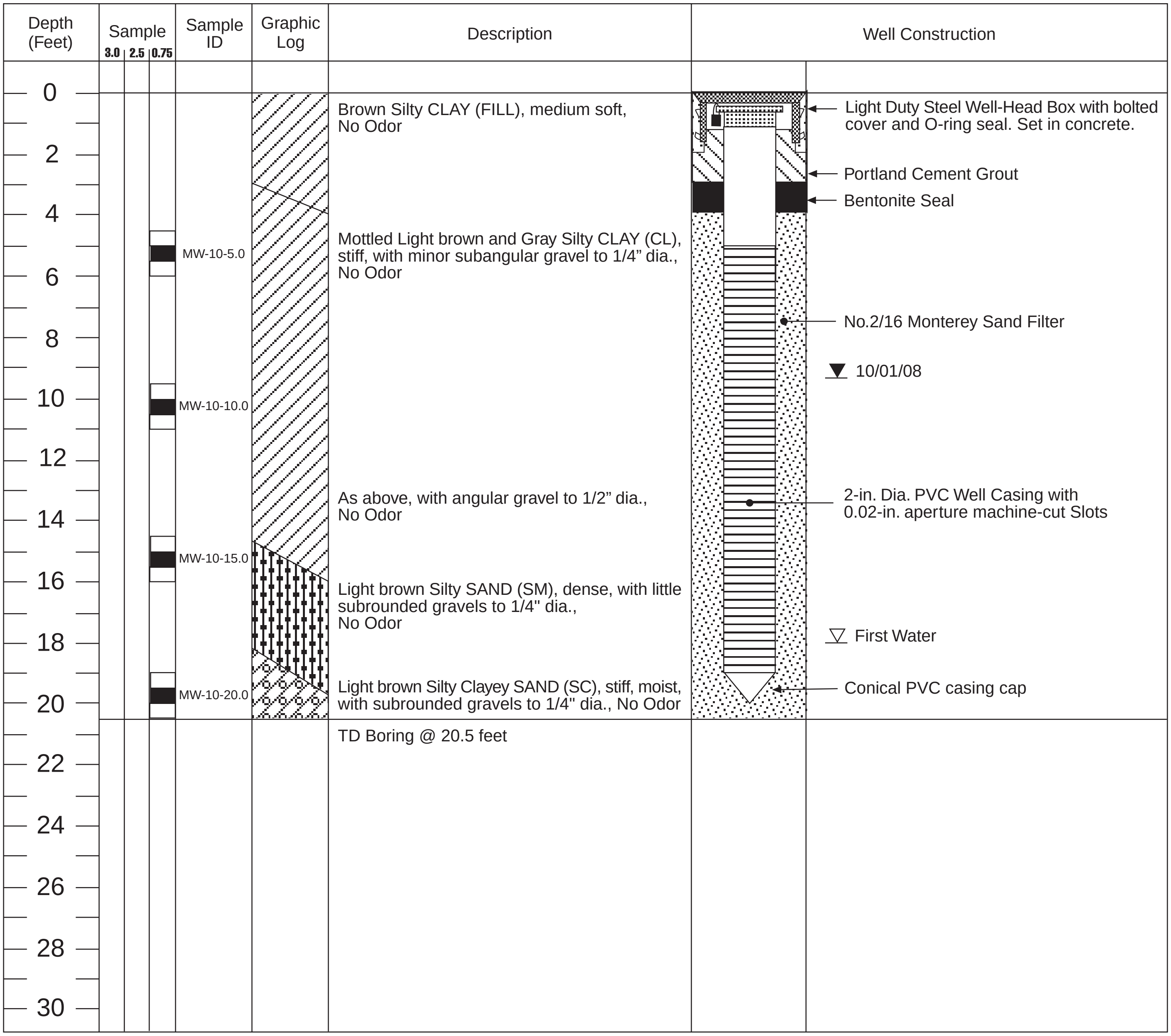
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Open Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins



Brown Silty CLAY (FILL), medium soft, No Odor

Mottled Light brown and Gray Silty CLAY (CL), stiff, with minor subangular gravel to 1/4” dia., No Odor

As above, with angular gravel to 1/2” dia., No Odor

Light brown Silty SAND (SM), dense, with little subrounded gravels to 1/4" dia., No Odor

Light brown Silty Clayey SAND (SC), stiff, moist, with subrounded gravels to 1/4" dia., No Odor

TD Boring @ 20.5 feet

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-11**

Project: Bay Rock Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 45.10 ft.

Surface Elevation: 45.5 ft.

Depth to Water: 9.79 ft.

Date Installed: 09/27/08

Total depth of Boring: 20.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

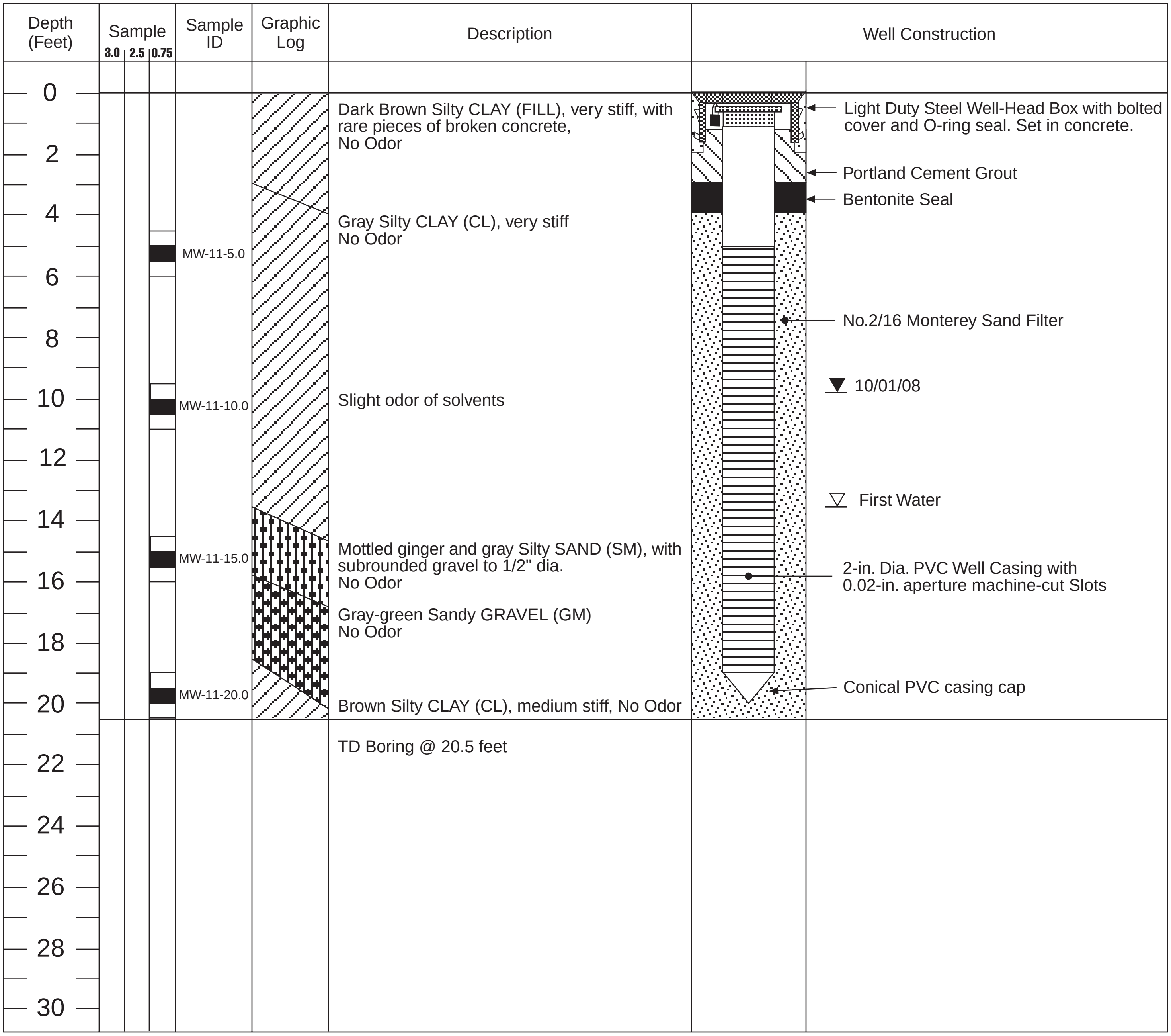
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Open Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins



Dark Brown Silty CLAY (FILL), very stiff, with rare pieces of broken concrete,
No Odor

Gray Silty CLAY (CL), very stiff
No Odor

Slight odor of solvents

Mottled ginger and gray Silty SAND (SM), with subrounded gravel to 1/2" dia.
No Odor

Gray-green Sandy GRAVEL (GM)
No Odor

Brown Silty CLAY (CL), medium stiff, No Odor

TD Boring @ 20.5 feet

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-12**

Project: Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 42.93 ft.

Surface Elevation: 43.2 ft.

Depth to Water: 6.67 ft.

Date Installed: 02/09/09

Total depth of Boring: 20.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

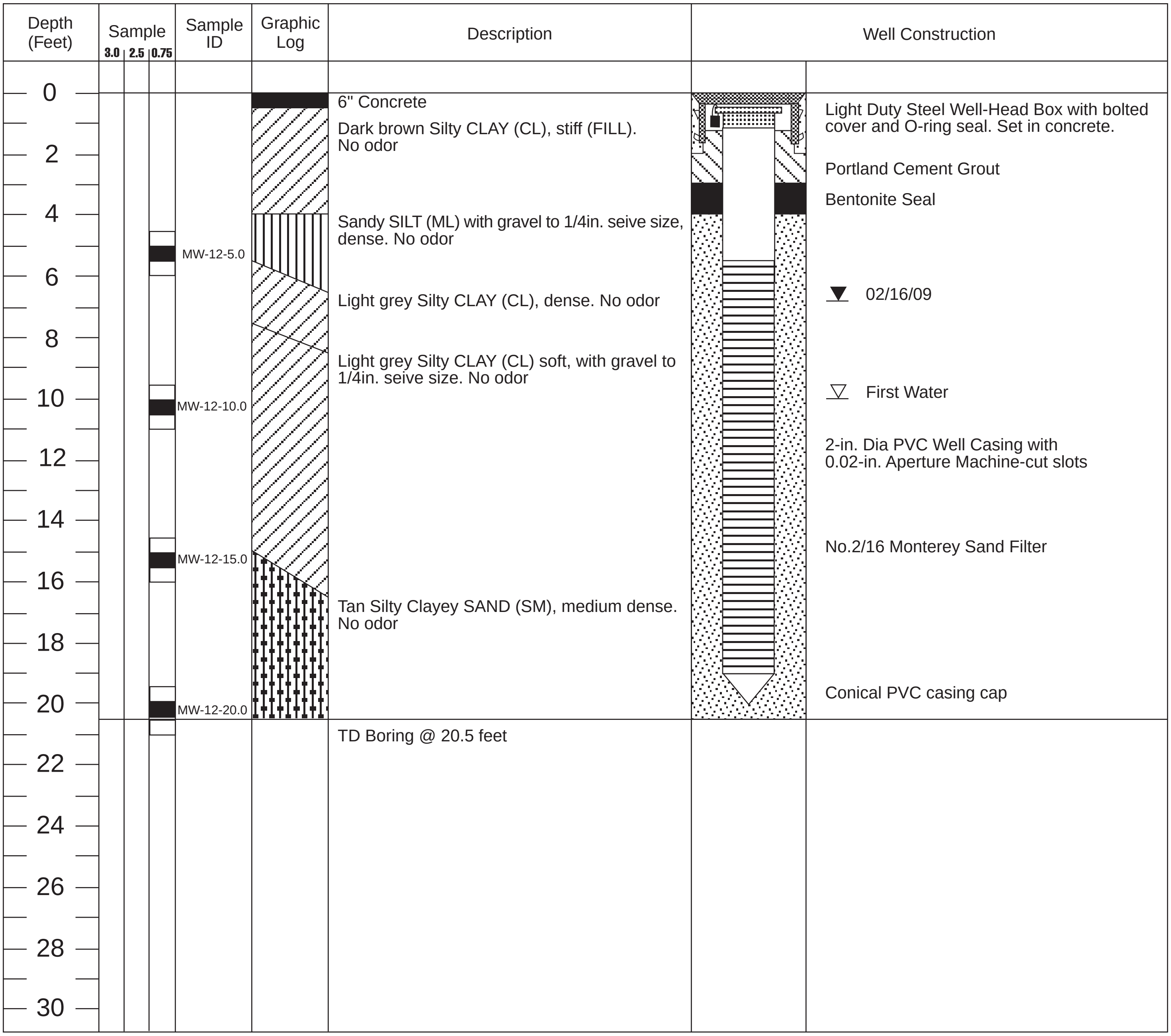
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Hollow Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins



Sample ID	Description	Well Construction
	6" Concrete	Light Duty Steel Well-Head Box with bolted cover and O-ring seal. Set in concrete.
	Dark brown Silty CLAY (CL), stiff (FILL). No odor	Portland Cement Grout
		Bentonite Seal
	Sandy SILT (ML) with gravel to 1/4in. seive size, dense. No odor	
MW-12-5.0		
	Light grey Silty CLAY (CL), dense. No odor	▼ 02/16/09
	Light grey Silty CLAY (CL) soft, with gravel to 1/4in. seive size. No odor	
MW-12-10.0		▽ First Water
		2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots
MW-12-15.0		No.2/16 Monterey Sand Filter
	Tan Silty Clayey SAND (SM), medium dense. No odor	
MW-12-20.0		Conical PVC casing cap
	TD Boring @ 20.5 feet	

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: MW-13

Project: Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 45.56 ft.

Surface Elevation: 45.9 ft.

Depth to Water: 5.56 ft.

Date Installed: 02/09/09

Total depth of Boring: 20.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

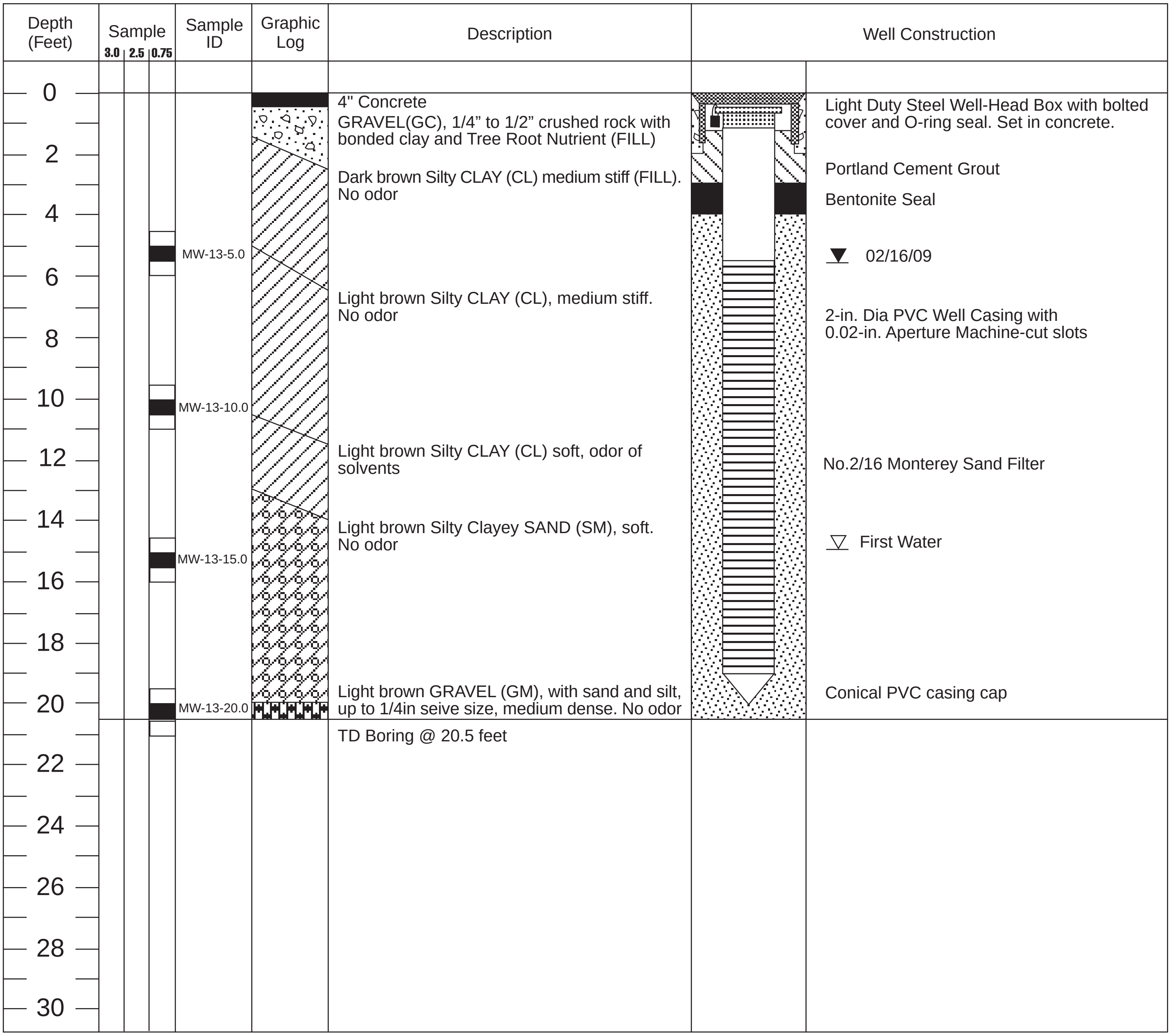
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Hollow Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins



Sample IDs: MW-13-5.0, MW-13-10.0, MW-13-15.0, MW-13-20.0

Description:

4" Concrete

GRAVEL(GC), 1/4” to 1/2” crushed rock with bonded clay and Tree Root Nutrient (FILL)

Dark brown Silty CLAY (CL) medium stiff (FILL). No odor

Light brown Silty CLAY (CL), medium stiff. No odor

Light brown Silty CLAY (CL) soft, odor of solvents

Light brown Silty Clayey SAND (SM), soft. No odor

Light brown GRAVEL (GM), with sand and silt, up to 1/4in seive size, medium dense. No odor

TD Boring @ 20.5 feet

Well Construction:

Light Duty Steel Well-Head Box with bolted cover and O-ring seal. Set in concrete.

Portland Cement Grout

Bentonite Seal

▼ 02/16/09

2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots

No.2/16 Monterey Sand Filter

▽ First Water

Conical PVC casing cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-14**

Project: Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 45.19 ft.

Surface Elevation: 45.7 ft.

Depth to Water: 6.51 ft.

Date Installed: 02/09/09

Total depth of Boring: 20.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20 ft.

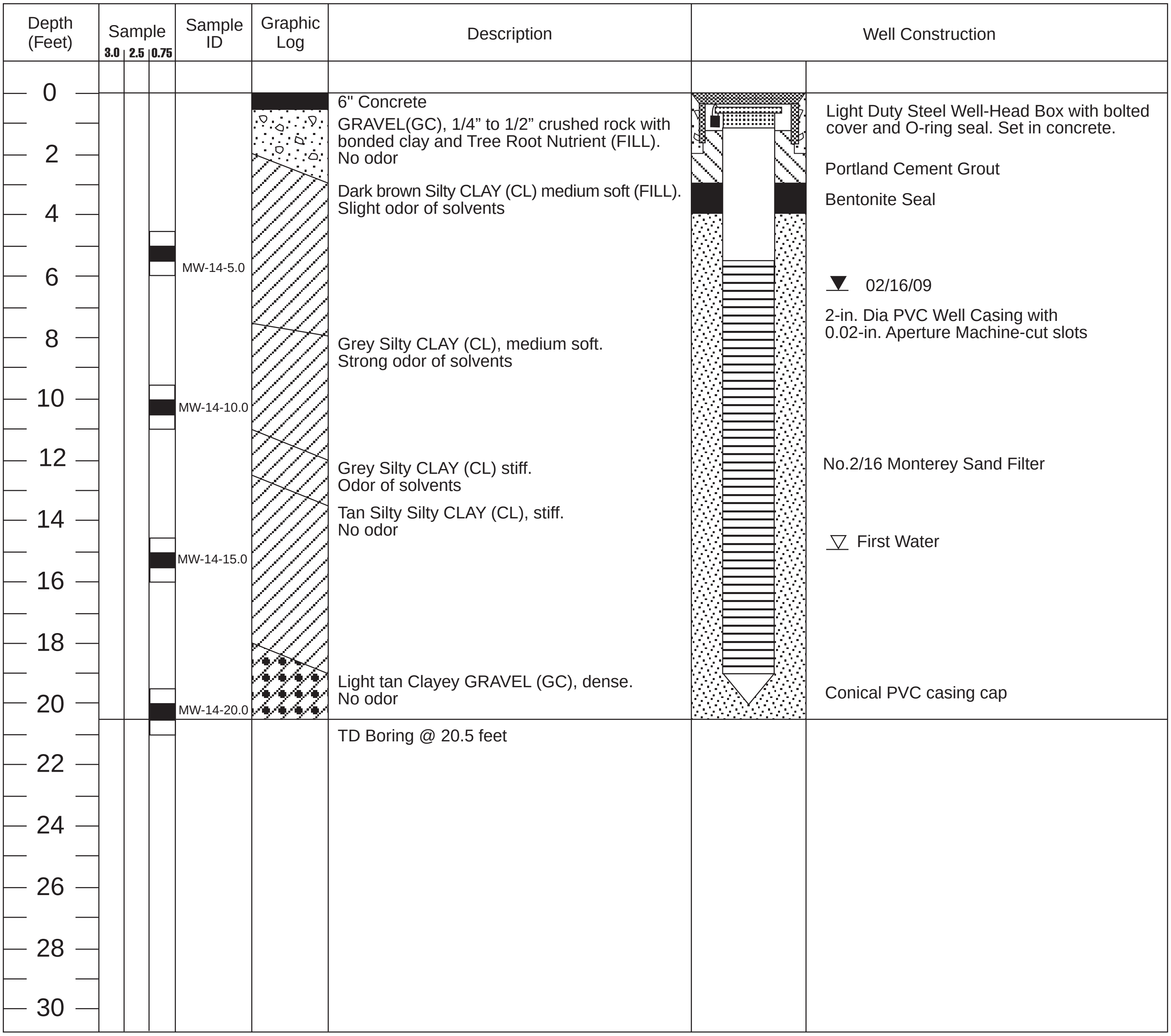
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Hollow Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins



6" Concrete

GRAVEL(GC), 1/4” to 1/2” crushed rock with bonded clay and Tree Root Nutrient (FILL). No odor

Dark brown Silty CLAY (CL) medium soft (FILL). Slight odor of solvents

Grey Silty CLAY (CL), medium soft. Strong odor of solvents

Grey Silty CLAY (CL) stiff. Odor of solvents

Tan Silty Silty CLAY (CL), stiff. No odor

Light tan Clayey GRAVEL (GC), dense. No odor

TD Boring @ 20.5 feet

Light Duty Steel Well-Head Box with bolted cover and O-ring seal. Set in concrete.

Portland Cement Grout

Bentonite Seal

▼ 02/16/09

2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots

No.2/16 Monterey Sand Filter

▽ First Water

Conical PVC casing cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-15**

Project: Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 43.55 ft.

Surface Elevation: 43.8 ft.

Depth to Water: 6.22 ft.

Date Installed: 02/09/09

Total depth of Boring: 20.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 20.5 ft.

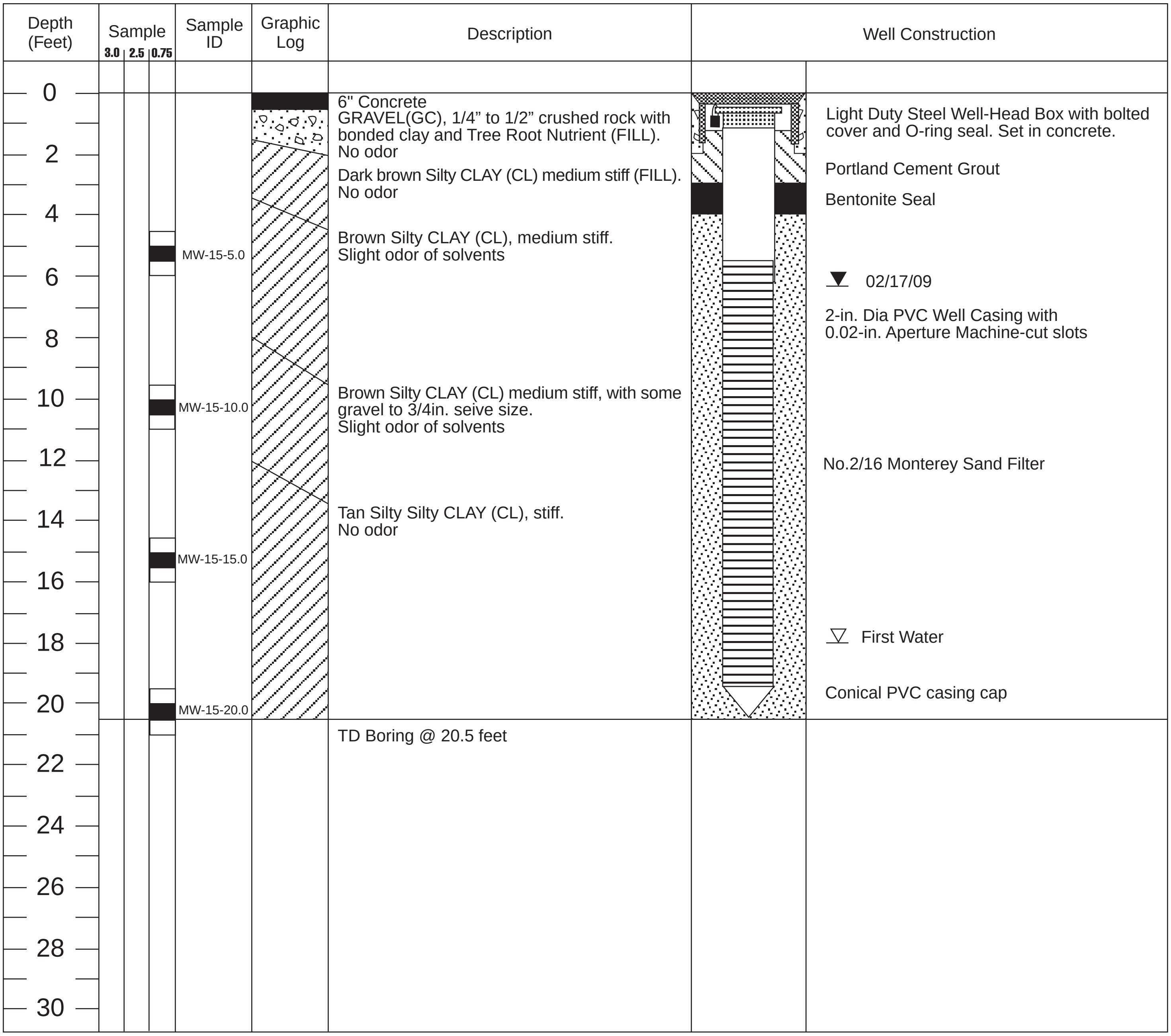
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Hollow Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins



Depth (Feet)	Sample ID	Description	Well Construction
0		6" Concrete GRAVEL(GC), 1/4" to 1/2" crushed rock with bonded clay and Tree Root Nutrient (FILL). No odor	Light Duty Steel Well-Head Box with bolted cover and O-ring seal. Set in concrete.
2		Dark brown Silty CLAY (CL) medium stiff (FILL). No odor	Portland Cement Grout
4			Bentonite Seal
5	MW-15-5.0	Brown Silty CLAY (CL), medium stiff. Slight odor of solvents	
6			▼ 02/17/09 2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots
10	MW-15-10.0	Brown Silty CLAY (CL) medium stiff, with some gravel to 3/4in. seive size. Slight odor of solvents	
12			No.2/16 Monterey Sand Filter
14		Tan Silty Silty CLAY (CL), stiff. No odor	
15	MW-15-15.0		
18			▽ First Water
20	MW-15-20.0		Conical PVC casing cap
20.5		TD Boring @ 20.5 feet	

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-16A**

Project: Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 44.50 ft.

Surface Elevation: 44.8 ft.

Depth to Water: 6.14 ft.

Date Installed: 02/10/09

Total depth of Boring: 15.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 15 ft.

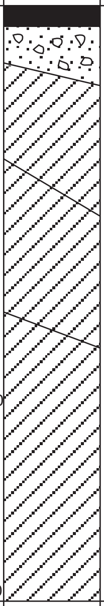
Casing Material: PVC

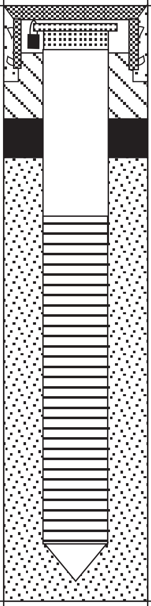
Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Hollow Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins





Depth (Feet)	Sample 3.0 2.5 0.75	Sample ID	Graphic Log	Description	Well Construction
0				6" Concrete GRAVEL(GC), 1/4" to 1/2" crushed rock with bonded clay and Tree Root Nutrient (FILL). No odor	Light Duty Steel Well-Head Box with bolted cover and O-ring seal. Set in concrete.
2				Black Silty CLAY (CL) medium soft. No odor	Portland Cement Grout Bentonite Seal
4		MW-16A-5.0			
6				Grey Silty CLAY (CL), with some gravel to 1/8in. seive size, medium stiff. Slight odor of gasoline	▼ 02/16/09 2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots
8					
10		MW-16A-10.0		Light brown Silty CLAY (CL) with grey mottling, medium stiff. Odor of gasoline	No.2/16 Monterey Sand Filter
12					▽ First Water
14		MW-16A-15.0		Slight odor of gasoline	Conical PVC casing cap
16				TD Boring @ 15.5 feet	
18					
20					
22					
24					
26					
28					
30					

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-16B**

Project: Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 44.59 ft.

Surface Elevation: 44.8 ft.

Depth to Water: 9.0 ft.

Date Installed: 02/10/09

Total depth of Boring: 25.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 25.0 ft.

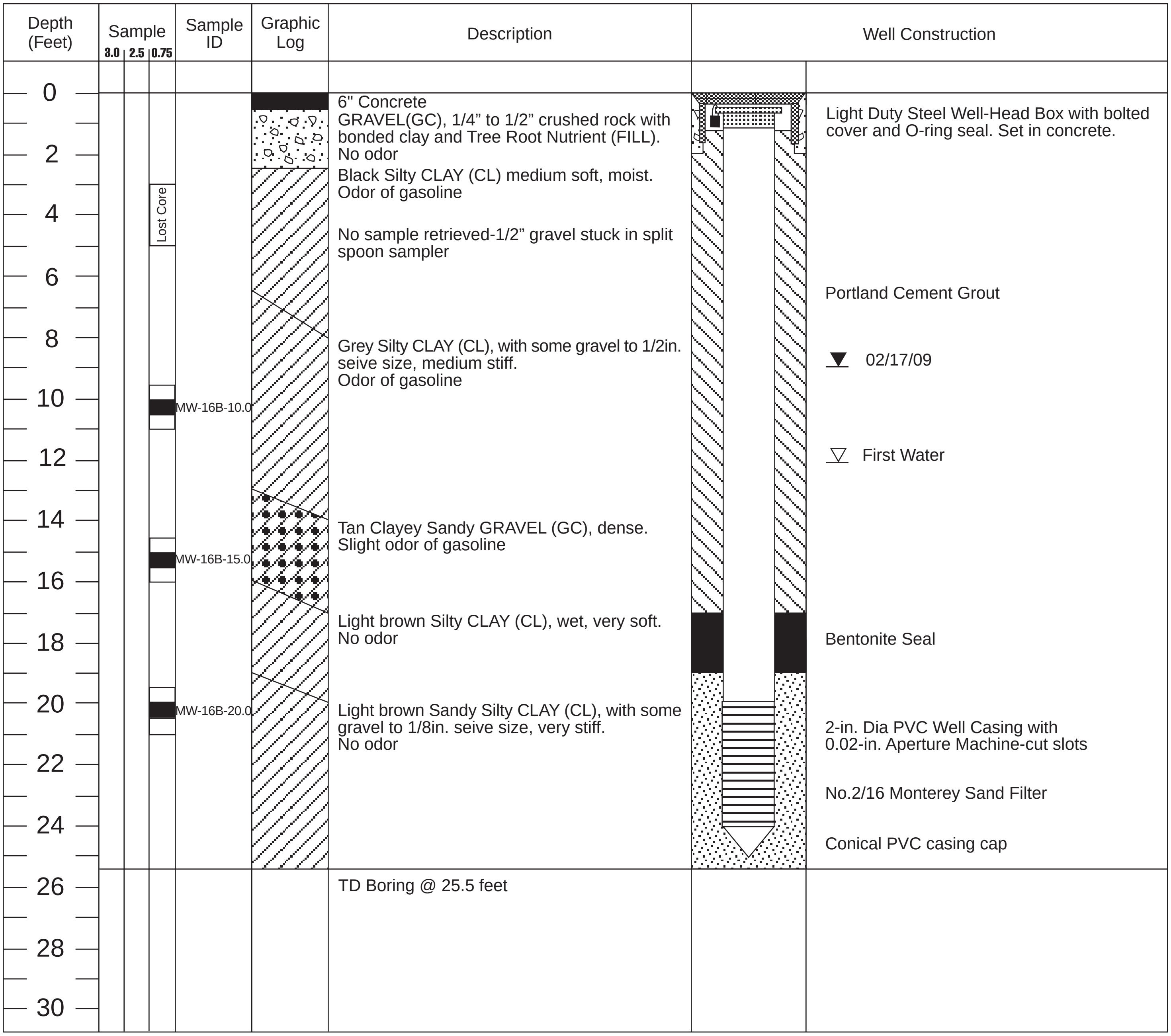
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Hollow Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins



6" Concrete

GRAVEL(GC), 1/4" to 1/2" crushed rock with bonded clay and Tree Root Nutrient (FILL). No odor

Black Silty CLAY (CL) medium soft, moist. Odor of gasoline

No sample retrieved-1/2" gravel stuck in split spoon sampler

Grey Silty CLAY (CL), with some gravel to 1/2in. seive size, medium stiff. Odor of gasoline

Tan Clayey Sandy GRAVEL (GC), dense. Slight odor of gasoline

Light brown Silty CLAY (CL), wet, very soft. No odor

Light brown Sandy Silty CLAY (CL), with some gravel to 1/8in. seive size, very stiff. No odor

TD Boring @ 25.5 feet

Light Duty Steel Well-Head Box with bolted cover and O-ring seal. Set in concrete.

Portland Cement Grout

▼ 02/17/09

▽ First Water

Bentonite Seal

2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots

No.2/16 Monterey Sand Filter

Conical PVC casing cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-16C**

Project: Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 44.48 ft.

Surface Elevation: 44.8 ft.

Depth to Water: 13.95 ft.

Date Installed: 02/10/09

Total depth of Boring: 35.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 35.0 ft.

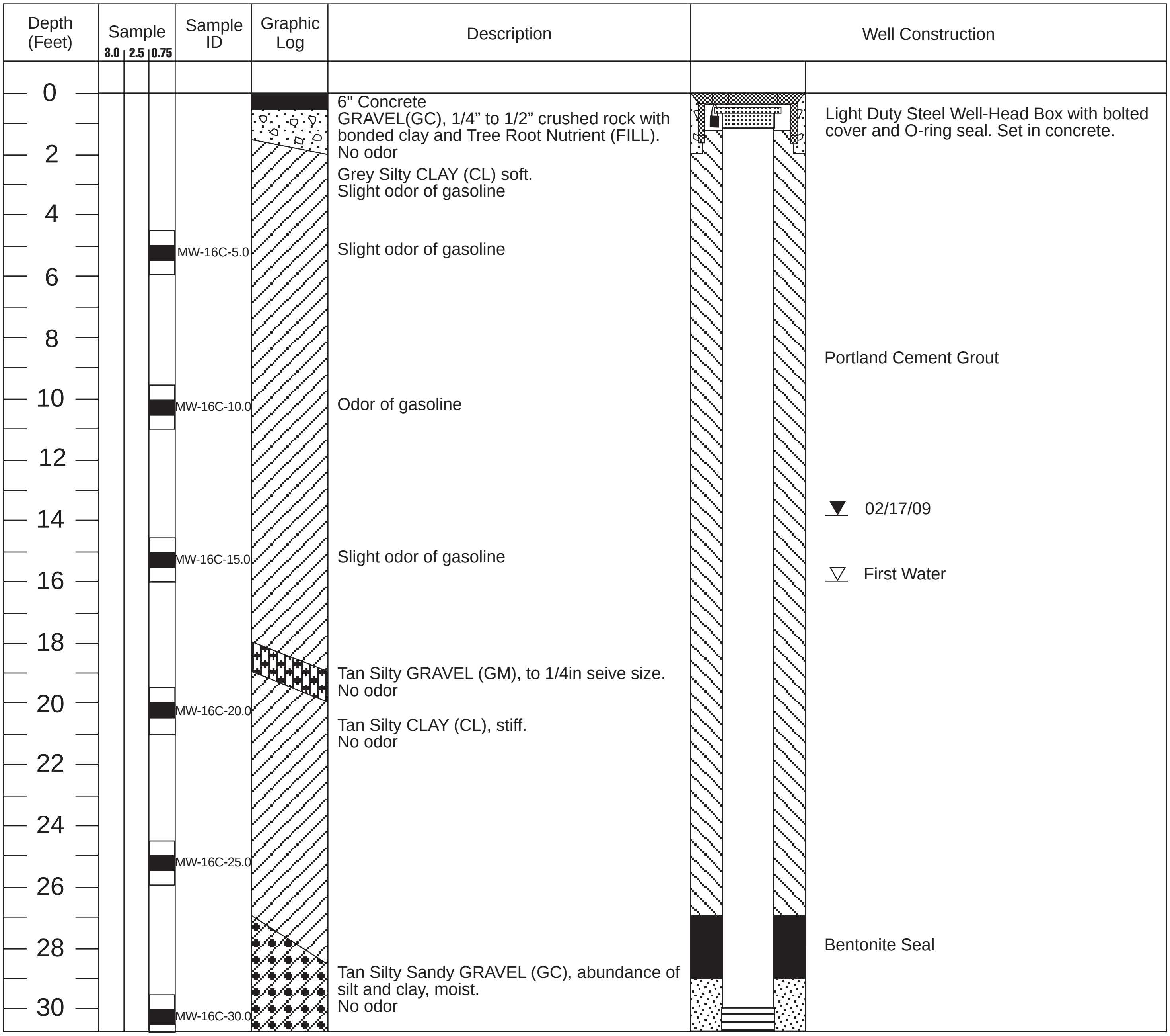
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Hollow Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins



6" Concrete

GRAVEL(GC), 1/4” to 1/2” crushed rock with bonded clay and Tree Root Nutrient (FILL). No odor

Grey Silty CLAY (CL) soft. Slight odor of gasoline

Slight odor of gasoline

Odor of gasoline

Slight odor of gasoline

Tan Silty GRAVEL (GM), to 1/4in seive size. No odor

Tan Silty CLAY (CL), stiff. No odor

Tan Silty Sandy GRAVEL (GC), abundance of silt and clay, moist. No odor

Light Duty Steel Well-Head Box with bolted cover and O-ring seal. Set in concrete.

Portland Cement Grout

▼ 02/17/09

▽ First Water

Bentonite Seal

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MW-16C**

Project: Oak Walk

Project No.: 0004.087

Owner: Bay Rock Oaks LLC

Location: Emeryville, California

Top of Casing Elevation: 44.48 ft.

Surface Elevation: 44.8 ft.

Depth to Water: 13.95 ft.

Date Installed: 02/10/09

Total depth of Boring: 35.5 ft.

Boring Diameter: 8 in.

Well Casing Diameter: 2 in.

Total depth of Well: 35.0 ft.

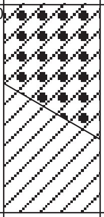
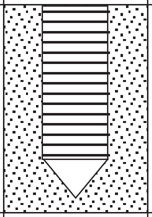
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Hollow Stem Auger

Driller: Jesse Pattison

Logged By: Dai Watkins

Depth (Feet)	Sample			Sample ID	Graphic Log	Description	Well Construction	
	3.0	2.5	0.75					
30			■	MW-16C-30.0		Tan Silty Sandy GRAVEL (GC), abundance of silt and clay, moist. No odor		2-in. Dia PVC Well Casing with 0.02-in. Aperture Machine-cut slots
32								No.2/16 Monterey Sand Filter
34			Lost Core			Light brown Silty CLAY (CL), very soft. No odor Lost core		Conical PVC casing cap
36						TD Boring @ 35.5 feet		
38								
40								
42								
44								
46								
48								
50								
52								
54								
56								
58								
60								

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: MWT-1

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 42.98 ft.

Surface Elevation: 43.32 ft.

Depth to Water: 8.43 ft.

Date Installed: 04/02/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

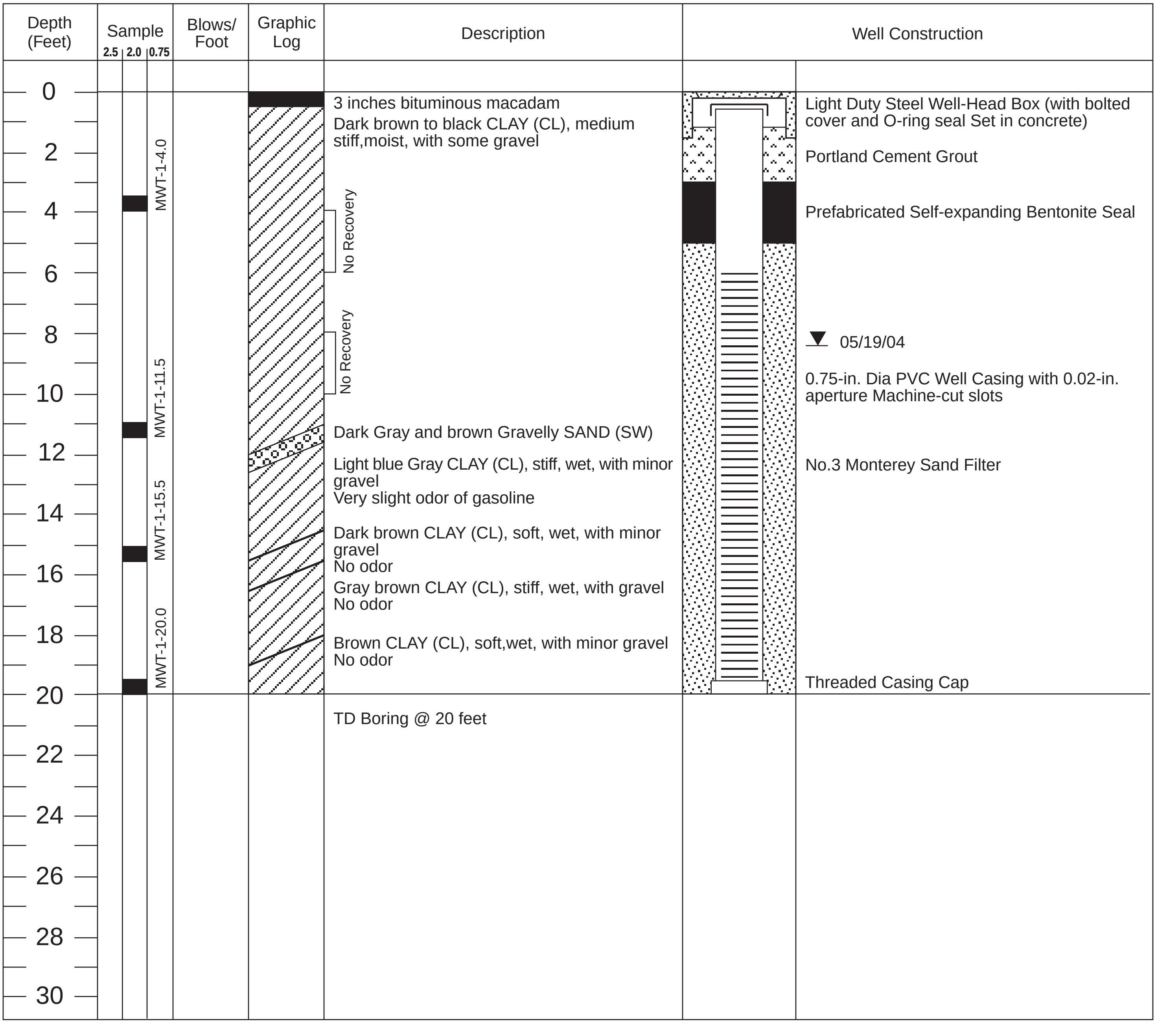
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser



3 inches bituminous macadam

Dark brown to black CLAY (CL), medium stiff,moist, with some gravel

Dark Gray and brown Gravelly SAND (SW)

Light blue Gray CLAY (CL), stiff, wet, with minor gravel
Very slight odor of gasoline

Dark brown CLAY (CL), soft, wet, with minor gravel
No odor

Gray brown CLAY (CL), stiff, wet, with gravel
No odor

Brown CLAY (CL), soft,wet, with minor gravel
No odor

TD Boring @ 20 feet

Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete)

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

0.75-in. Dia PVC Well Casing with 0.02-in. aperture Machine-cut slots

No.3 Monterey Sand Filter

Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-2**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 45.28 ft.

Surface Elevation: 45.70 ft.

Depth to Water: 7.69 ft.

Date Installed: 04/02/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

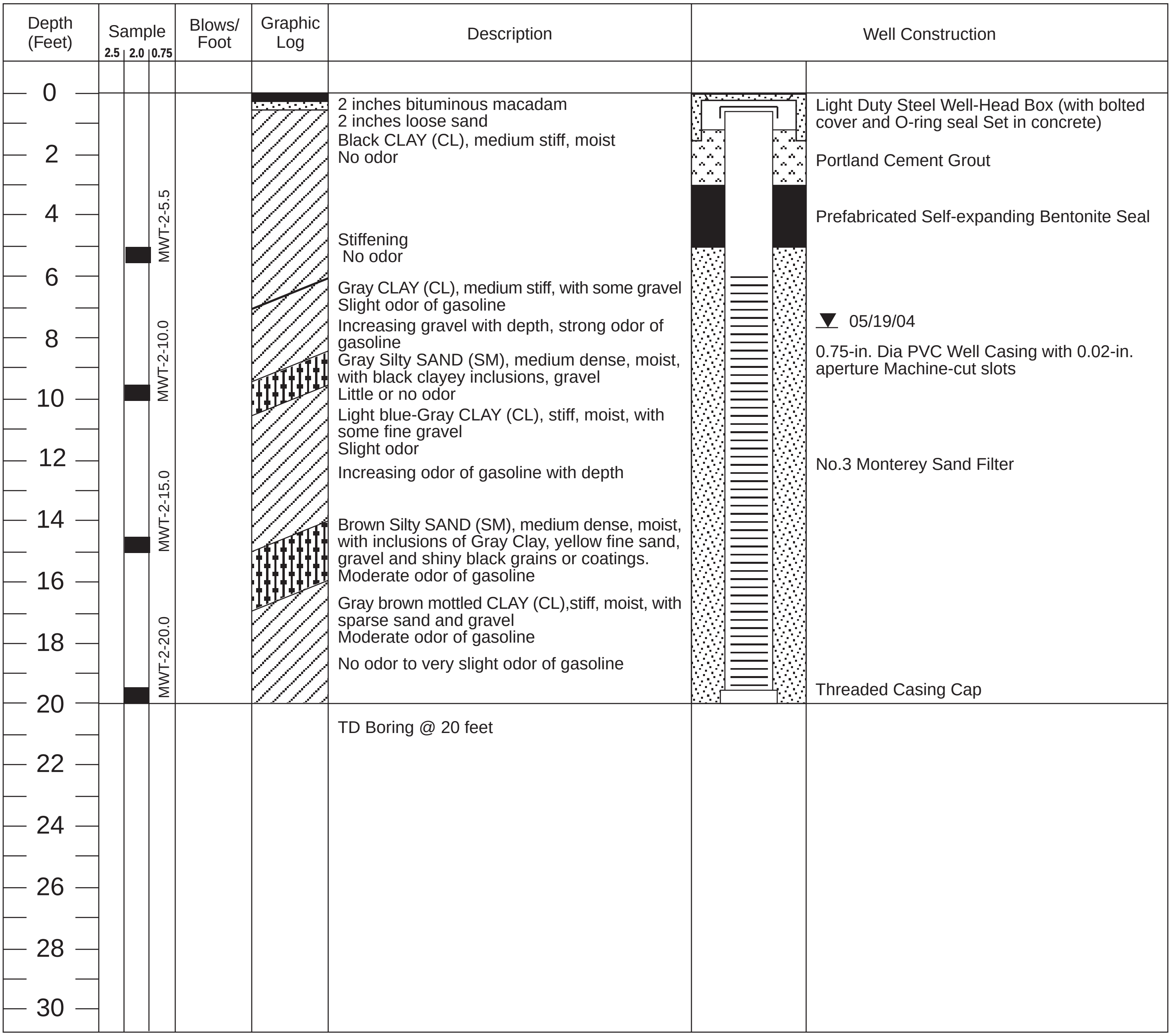
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser



Description

2 inches bituminous macadam
2 inches loose sand
Black CLAY (CL), medium stiff, moist
No odor

Stiffening
No odor

Gray CLAY (CL), medium stiff, with some gravel
Slight odor of gasoline
Increasing gravel with depth, strong odor of gasoline
Gray Silty SAND (SM), medium dense, moist, with black clayey inclusions, gravel
Little or no odor
Light blue-Gray CLAY (CL), stiff, moist, with some fine gravel
Slight odor
Increasing odor of gasoline with depth

Brown Silty SAND (SM), medium dense, moist, with inclusions of Gray Clay, yellow fine sand, gravel and shiny black grains or coatings.
Moderate odor of gasoline
Gray brown mottled CLAY (CL),stiff, moist, with sparse sand and gravel
Moderate odor of gasoline
No odor to very slight odor of gasoline

TD Boring @ 20 feet

Well Construction

Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete)

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

▼ 05/19/04

0.75-in. Dia PVC Well Casing with 0.02-in. aperture Machine-cut slots

No.3 Monterey Sand Filter

Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: MWT-3

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 47.64 ft.

Surface Elevation: 47.93 ft.

Depth to Water: 7.64 ft.

Date Installed: 04/02/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

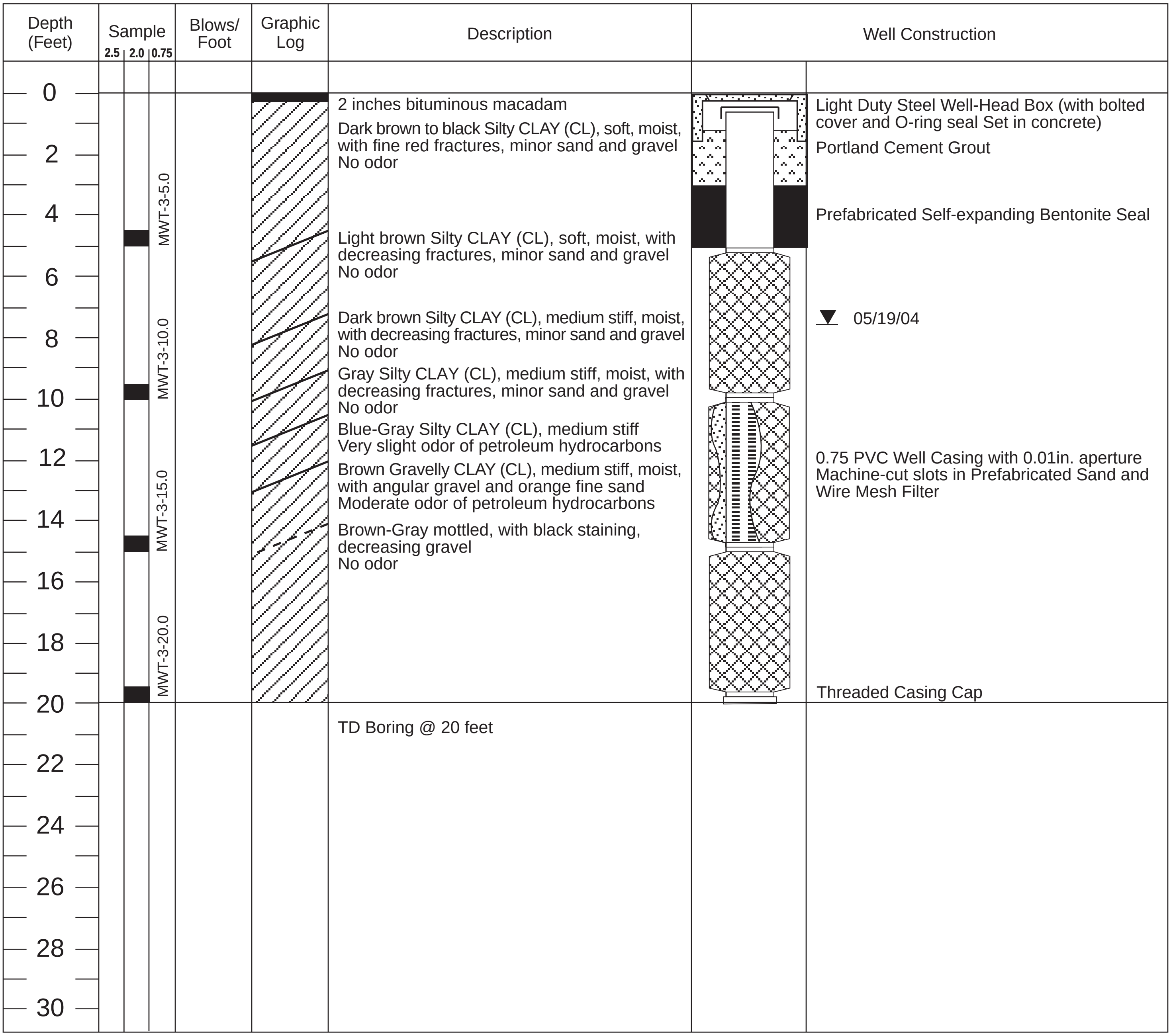
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser



Depth (Feet)	Sample	Description	Well Construction
0		2 inches bituminous macadam Dark brown to black Silty CLAY (CL), soft, moist, with fine red fractures, minor sand and gravel No odor	Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete) Portland Cement Grout
4			Prefabricated Self-expanding Bentonite Seal
5	MWT-3-5.0	Light brown Silty CLAY (CL), soft, moist, with decreasing fractures, minor sand and gravel No odor	
8		Dark brown Silty CLAY (CL), medium stiff, moist, with decreasing fractures, minor sand and gravel No odor	▼ 05/19/04
10	MWT-3-10.0	Gray Silty CLAY (CL), medium stiff, moist, with decreasing fractures, minor sand and gravel No odor	
11		Blue-Gray Silty CLAY (CL), medium stiff Very slight odor of petroleum hydrocarbons	
12		Brown Gravelly CLAY (CL), medium stiff, moist, with angular gravel and orange fine sand Moderate odor of petroleum hydrocarbons	0.75 PVC Well Casing with 0.01in. aperture Machine-cut slots in Prefabricated Sand and Wire Mesh Filter
14		Brown-Gray mottled, with black staining, decreasing gravel No odor	
15	MWT-3-15.0		
20	MWT-3-20.0	TD Boring @ 20 feet	Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-4**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 44.74 ft.

Surface Elevation: 45.15 ft.

Depth to Water: 8.43 ft.

Date Installed: 04/01/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

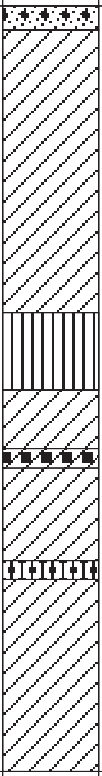
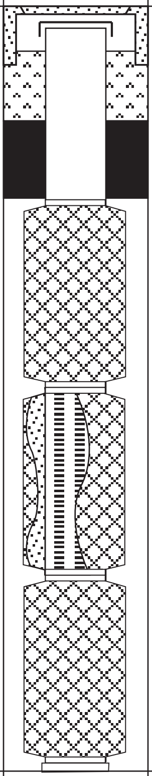
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser

Depth (Feet)	Sample 2.5 | 2.0 | 0.75	Blows/ Foot	Graphic Log	Description	Well Construction
0				4 inches GRAVEL (GP) road base	 Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete)
				Dark brown to black CLAY (CL), medium stiff, moist, with fine white and red cracks, some gravel No odor	Portland Cement Grout
4	MWT-4-4.0				Prefabricated Self-expanding Bentonite Seal
8				Dark brown SILT (ML), stiff, moist, with fine sand	▼ 05/19/04
10	MWT-4-10.0			Gray green Silty CLAY (CL), stiff, moist No odor	
12				Clayey GRAVEL (GC)	0.75 PVC Well Casing with 0.01in. aperture Machine-cut slots in Prefabricated Sand and Wire Mesh Filter
				Gray green Silty CLAY (CL), stiff, moist No odor	
14				Slight solvent odor	
15	MWT-4-15.0			Gray Clayey SAND (SM)	
16				Gray and brown mottled CLAY (CL), stiff, moist, with orange sandy silty inclusions of gravel, and yellow sand Slight odor of petroleum hydrocarbons	
19				No odor	
20	MWT-4-20.0				Threaded Casing Cap
				TD Boring @ 20 feet	
22					
24					
26					
28					
30					

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-5**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 47.10 ft.

Surface Elevation: 47.32 ft.

Depth to Water: 9.07 ft.

Date Installed: 04/02/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

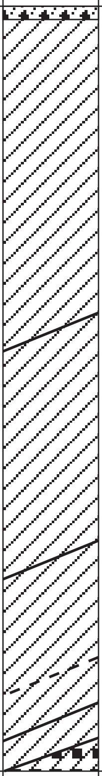
Casing Material: PVC

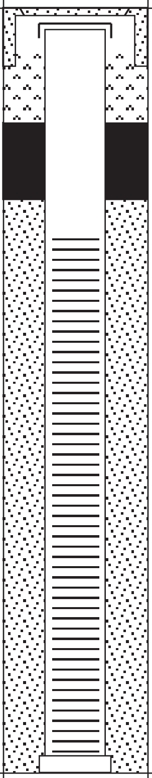
Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser





Depth (Feet)	Sample 2.5 2.0 0.75	Blows/ Foot	Description	Well Construction
0			2 inches GRAVEL (GP) road base Dark brown to black Silty CLAY (CL), medium stiff, moist No odor	Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete)
2				Portland Cement Grout
4	MWT-5-5.0		Stiffening with depth	Prefabricated Self-expanding Bentonite Seal
6				
8	MWT-5-10.0		Light brown CLAY (CL), stiff, moist, with gravel and orange silt inclusions No odor	0.75-in. Dia PVC Well Casing with 0.02-in. aperture Machine-cut slots ▼ 05/19/04
10				
12				No.3 Monterey Sand Filter
14	MWT-5-15.0		Gray and brown mottled CLAY (CL), stiff, moist, with minor gravel, root marks, interbedded gray sand and black clay No odor	
16			Soft, wet, with fine gravel No odor	
18	MWT-5-20.0		Brown CLAY (CL), soft, wet, decreasing gravel. No odor	
20			Gravelly CLAY (GC) TD Boring @ 20 feet	Threaded Casing Cap
22				
24				
26				
28				
30				

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-6**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 45.16 ft.

Surface Elevation: 45.41 ft.

Depth to Water: 9.05 ft.

Date Installed: 04/01/04

Total depth of Boring: 19.5 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 19.5 ft.

Casing Material: PVC

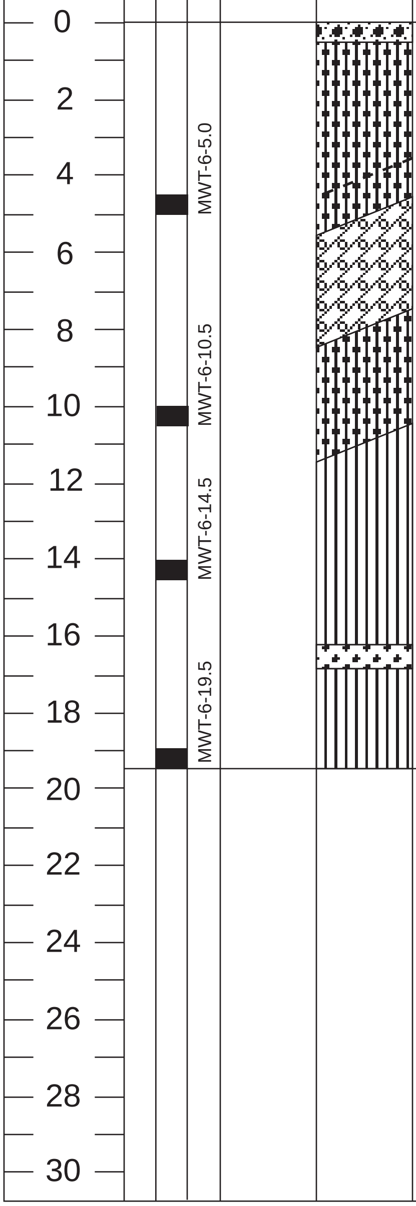
Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser

Depth (Feet)	Sample 2.5 | 2.0 | 0.75	Blows/ Foot	Graphic Log	Description	Well Construction



4 inches Gravel (GP) road base

Brown Silty SAND (SM), medium dense, moist, with fine gravel

Black, increasing silt, moist. No odor

Gray CLAY (CL), medium stiff, moist, with brown silty mottling, roots, minor gravel
No odor

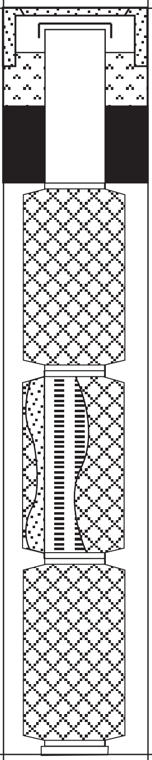
Brown Silty SAND (SM), medium dense, moist, with Gray clayey mottling, with chert gravel

Gray Clayey SILT (ML), medium stiff, moist, with gravel
Slight odor of solvent

Increasing sand and moisture

Light brown Fine SAND (SP), loose, wet, with some angular gravel
Dark brown Gravelly Sandy SILT (ML), medium stiff, wet
No odor

Push probe refusal at 19.5 feet
TD Boring @ 19.5 feet



Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete)

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

▼ 05/19/04

0.75 PVC Well Casing with 0.01in. aperture Machine-cut slots in Prefabricated Sand and Wire Mesh Filter

Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-7**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 46.61 ft.

Surface Elevation: 45.43 ft.

Depth to Water: 9.90 ft.

Date Installed: 04/01/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

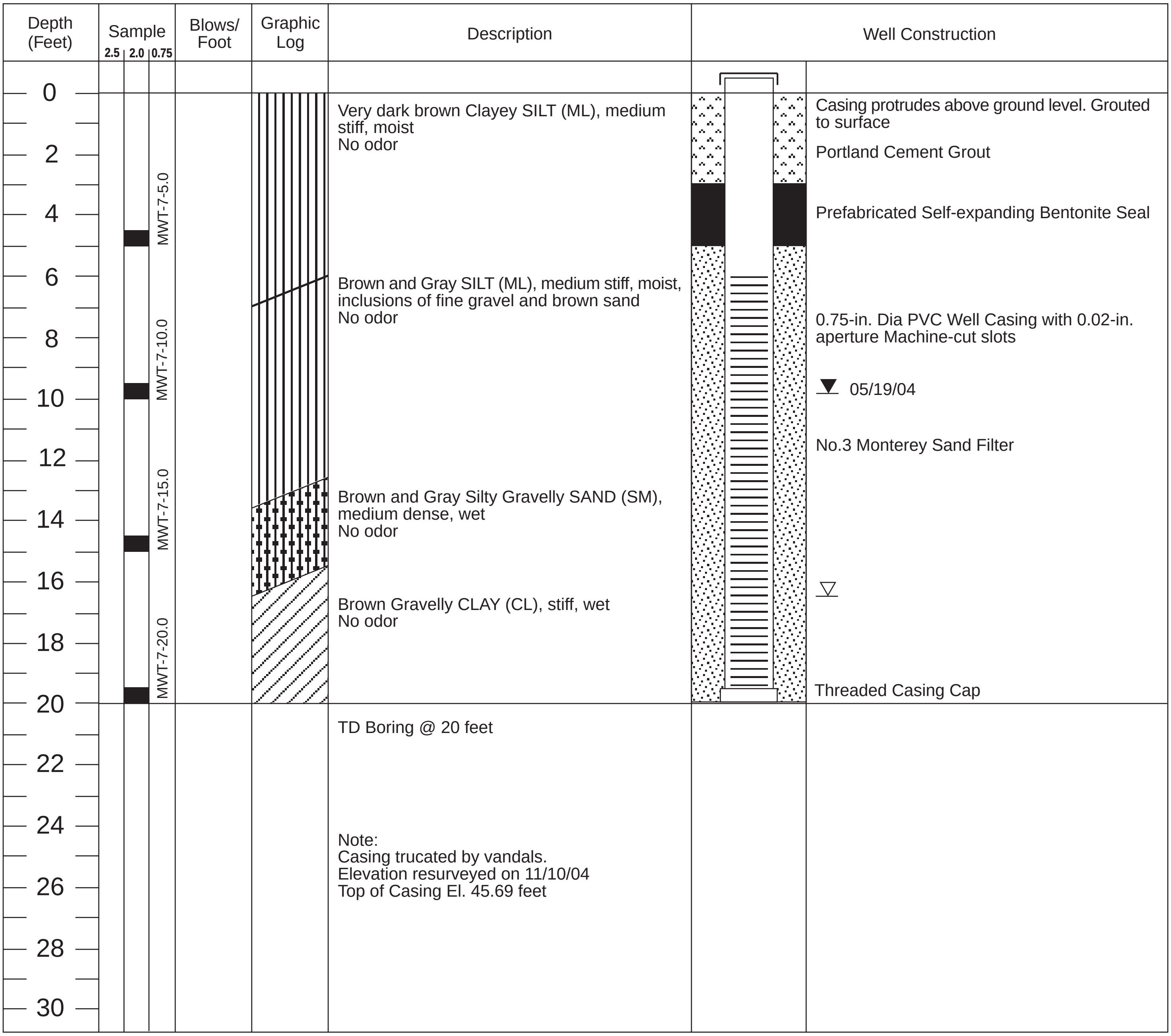
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser



Very dark brown Clayey SILT (ML), medium stiff, moist
No odor

Brown and Gray SILT (ML), medium stiff, moist, inclusions of fine gravel and brown sand
No odor

Brown and Gray Silty Gravelly SAND (SM), medium dense, wet
No odor

Brown Gravelly CLAY (CL), stiff, wet
No odor

TD Boring @ 20 feet

Note:
Casing trucated by vandals.
Elevation resurveyed on 11/10/04
Top of Casing El. 45.69 feet

Casing protrudes above ground level. Grouted to surface

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

0.75-in. Dia PVC Well Casing with 0.02-in. aperture Machine-cut slots

▼ 05/19/04

No.3 Monterey Sand Filter

▽

Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-8**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 47.23 ft.

Surface Elevation: 47.43 ft.

Depth to Water: 9.65 ft.

Date Installed: 04/02/04

Total depth of Boring: 18 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 18 ft.

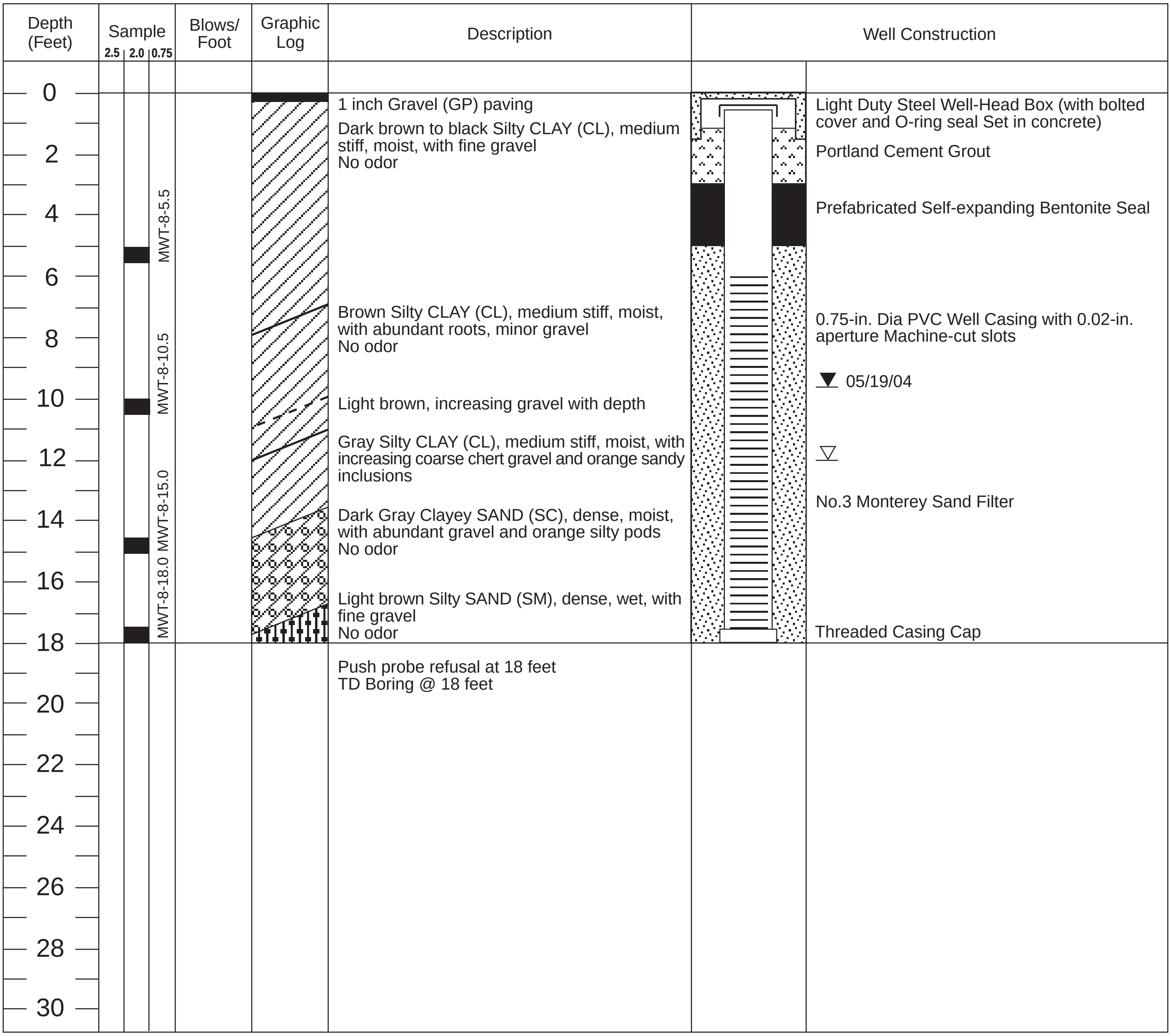
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser



1 inch Gravel (GP) paving

Dark brown to black Silty CLAY (CL), medium stiff, moist, with fine gravel
No odor

Brown Silty CLAY (CL), medium stiff, moist, with abundant roots, minor gravel
No odor

Light brown, increasing gravel with depth

Gray Silty CLAY (CL), medium stiff, moist, with increasing coarse chert gravel and orange sandy inclusions

Dark Gray Clayey SAND (SC), dense, moist, with abundant gravel and orange silty pods
No odor

Light brown Silty SAND (SM), dense, wet, with fine gravel
No odor

Push probe refusal at 18 feet
TD Boring @ 18 feet

Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete)

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

0.75-in. Dia PVC Well Casing with 0.02-in. aperture Machine-cut slots

▼ 05/19/04

▽

No.3 Monterey Sand Filter

Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: MWT-9

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 45.78 ft.

Surface Elevation: 46.14 ft.

Depth to Water: 8.70 ft.

Date Installed: 04/01/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

Casing Material: PVC

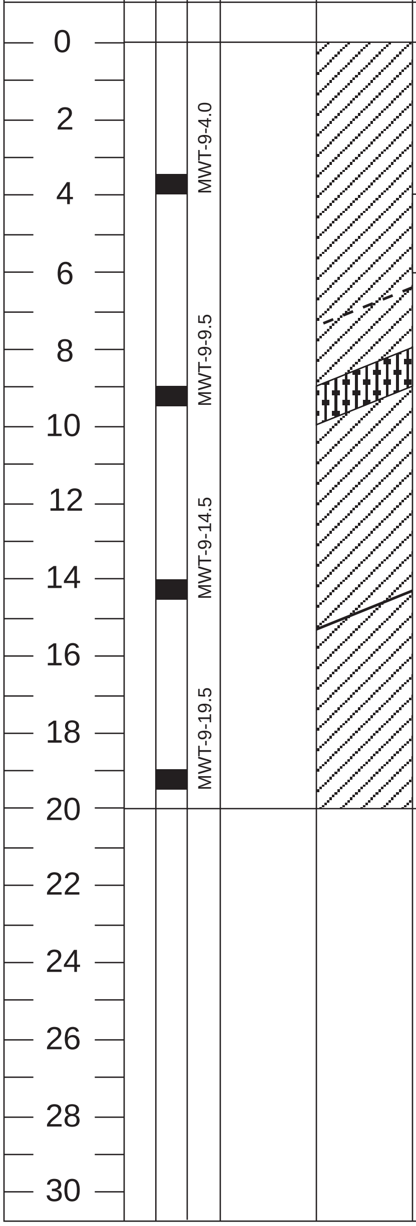
Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser

Depth (Feet)	Sample 2.5 | 2.0 | 0.75	Blows/ Foot	Graphic Log	Description	Well Construction



Dark brown CLAY (CL), stiff, moist, with minor gravel, and thin sandy-gravelly intervals
No odor

Light brown mottling

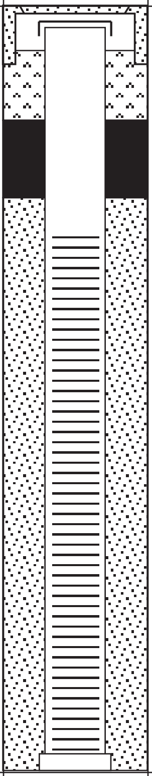
Brown Silty SAND (SM), medium dense, moist
No odor

Light brown CLAY (CL), very stiff, moist, with gray mottling around roots
No odor

CLAY (CL), very stiff, moist, with coarse sand and gravel
No odor

CLAY (CL), very stiff, moist, with coarse sand and gravel
No odor

TD Boring @ 20 feet



Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete)

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

▼ 05/19/04

0.75-in. Dia PVC Well Casing with 0.02-in. aperture Machine-cut slots

No.3 Monterey Sand Filter

Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-10**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 47.22 ft.

Surface Elevation: 47.38 ft.

Depth to Water: 9.53 ft.

Date Installed: 04/01/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

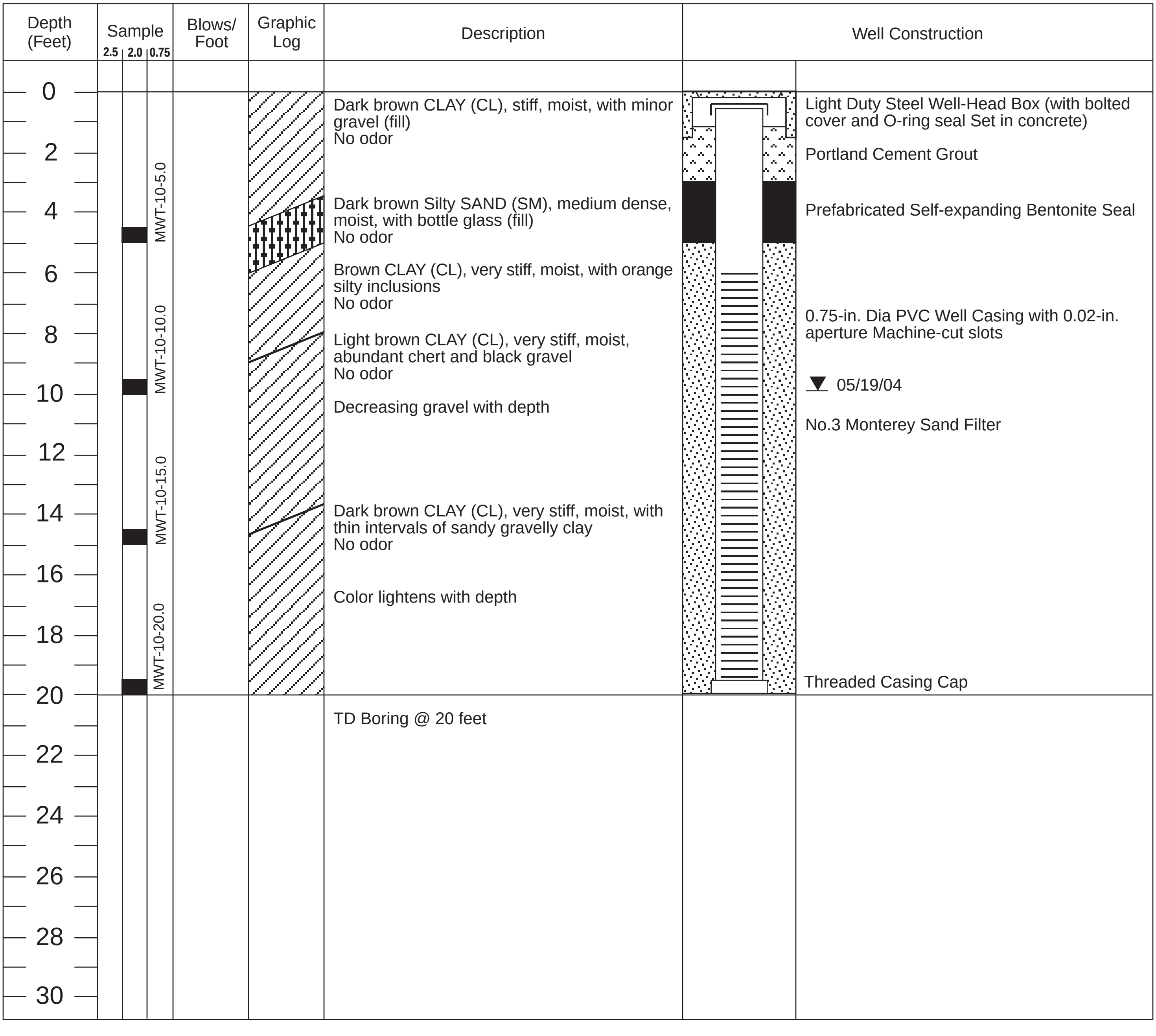
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Paul Rogers

Logged By: Steve Flexser



Dark brown CLAY (CL), stiff, moist, with minor gravel (fill)
No odor

Dark brown Silty SAND (SM), medium dense, moist, with bottle glass (fill)
No odor

Brown CLAY (CL), very stiff, moist, with orange silty inclusions
No odor

Light brown CLAY (CL), very stiff, moist, abundant chert and black gravel
No odor

Decreasing gravel with depth

Dark brown CLAY (CL), very stiff, moist, with thin intervals of sandy gravelly clay
No odor

Color lightens with depth

TD Boring @ 20 feet

Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete)

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

0.75-in. Dia PVC Well Casing with 0.02-in. aperture Machine-cut slots

▼ 05/19/04

No.3 Monterey Sand Filter

Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: MWT-11

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 46.63 ft.

Surface Elevation: 45.50 ft.

Depth to Water: 9.71 ft.

Date Installed: 11/05/04

Total depth of Boring: 20.0 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20.0 ft.

Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

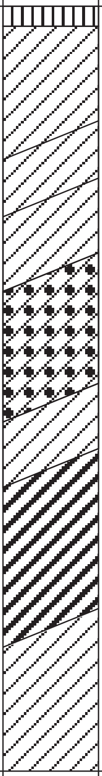
Driller: Jeramy Ness

Logged By: Dennis Alexander

Depth (Feet)	Sample 2.5 | 2.0 | 0.75	Blows/ Foot	Graphic Log	Description	Well Construction

Depth (Feet): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30

Sample: MWT-11-5.0, MWT-11-10.5, MWT-11-14.5, MWT-11-19.5



Dark brown Sandy SILT (ML), very soft, moist, low plasticity. No odor

Dark gray brown CLAY (CL), stiff, moist, high plasticity, with some fine sand, trace medium to coarse sand. No odor

Light gray and orange-brown mottled Gravelly CLAY (CL), very stiff, moist, medium plasticity, with some fine sand and angular to subrounded gravel to 3/4" dia. No odor

Yellow-brown Gravelly CLAY (CL), very stiff, moist, medium plasticity, with increasing sand and gravel with depth. No odor

Light gray to gray Clayey GRAVEL (GC), medium dense, moist, low plasticity, with little fine sand, poorly graded angular to rounded gravel to 1 in. dia.

Odor of petroleum hydrocarbons

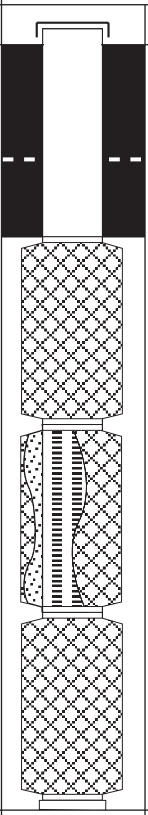
Gray Sandy CLAY (CL), stiff, moist, low to medium plasticity, with some fine sands, trace gravel to 1/2 in. dia. No odor

Olive brown and orange-brown mottled CLAY (CH), stiff to very stiff, moist, high plasticity, with little fine sand, trace medium to coarse sand No odor

Odor of petroleum hydrocarbons

Yellow brown, orange brown and dark brown mottled CLAY (CL), medium stiff to stiff, moist to wet, with little to some fine sand, trace angular to rounded gravel to 1/2 in. dia.

TD Boring @ 20 feet



Casing protrudes above ground level

Bentonite Pellet Seal

Prefabricated Self-expanding Bentonite Seal

▼ 11/08/04

0.75 PVC Well Casing with 0.01in. aperture Machine-cut slots in Prefabricated Sand and Wire Mesh Filter

Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-12**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 47.97 ft.

Surface Elevation: 46.10 ft.

Depth to Water: 10.79 ft.

Date Installed: 11/05/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

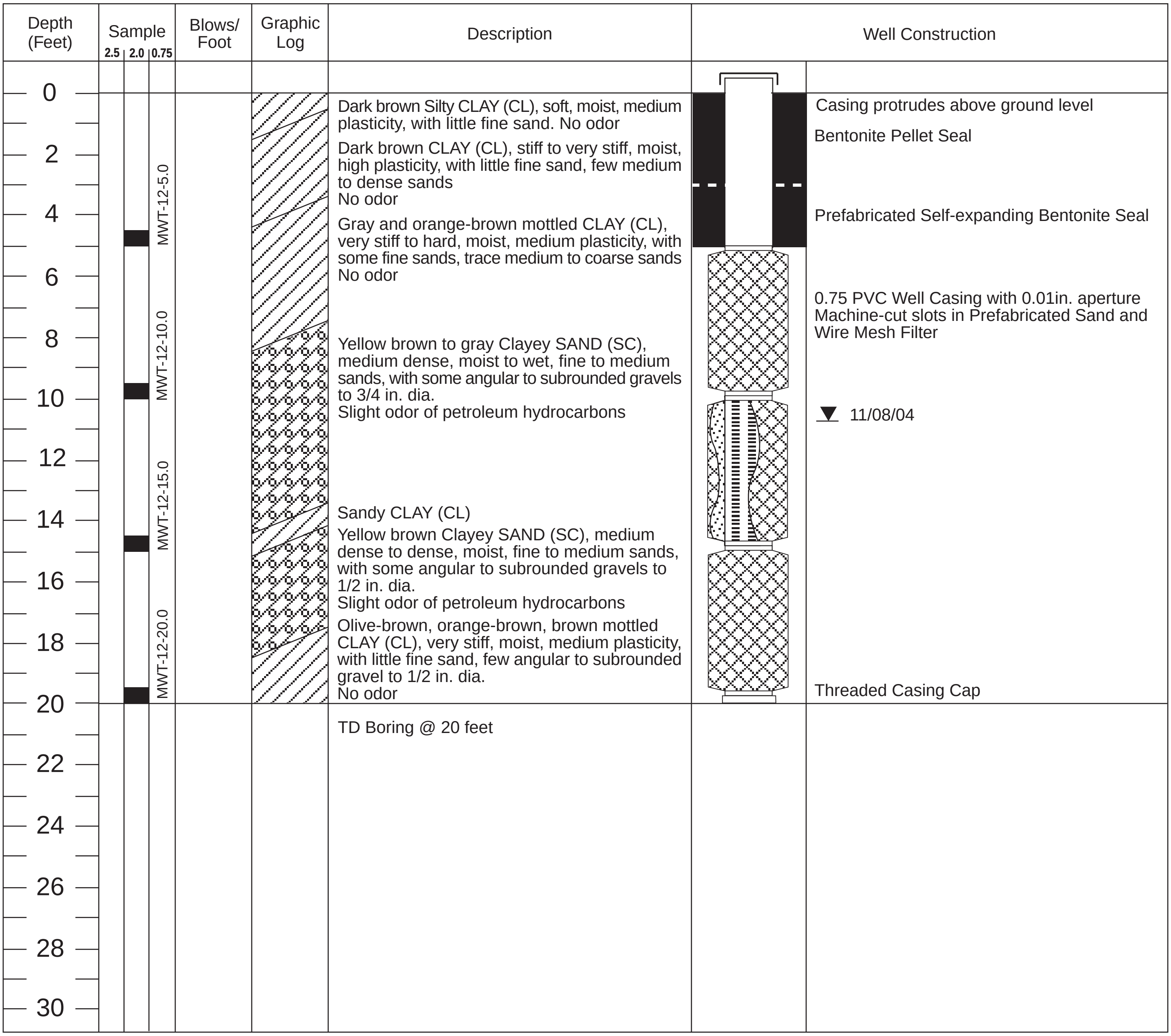
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Jeramy Ness

Logged By: Dennis Alexander



Dark brown Silty CLAY (CL), soft, moist, medium plasticity, with little fine sand. No odor

Dark brown CLAY (CL), stiff to very stiff, moist, high plasticity, with little fine sand, few medium to dense sands
No odor

Gray and orange-brown mottled CLAY (CL), very stiff to hard, moist, medium plasticity, with some fine sands, trace medium to coarse sands
No odor

Yellow brown to gray Clayey SAND (SC), medium dense, moist to wet, fine to medium sands, with some angular to subrounded gravels to 3/4 in. dia.
Slight odor of petroleum hydrocarbons

Sandy CLAY (CL)

Yellow brown Clayey SAND (SC), medium dense to dense, moist, fine to medium sands, with some angular to subrounded gravels to 1/2 in. dia.
Slight odor of petroleum hydrocarbons

Olive-brown, orange-brown, brown mottled CLAY (CL), very stiff, moist, medium plasticity, with little fine sand, few angular to subrounded gravel to 1/2 in. dia.
No odor

TD Boring @ 20 feet

Casing protrudes above ground level

Bentonite Pellet Seal

Prefabricated Self-expanding Bentonite Seal

0.75 PVC Well Casing with 0.01in. aperture Machine-cut slots in Prefabricated Sand and Wire Mesh Filter

Threaded Casing Cap

The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-13**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 48.16 ft.

Surface Elevation: 46.30 ft.

Depth to Water: 10.65 ft.

Date Installed: 11/05/04

Total depth of Boring: 20 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20 ft.

Casing Material: PVC

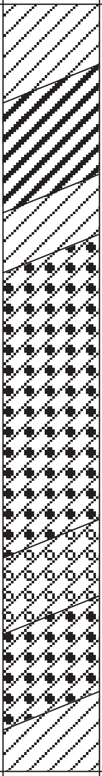
Drilling Company: Gregg Drilling & Testing

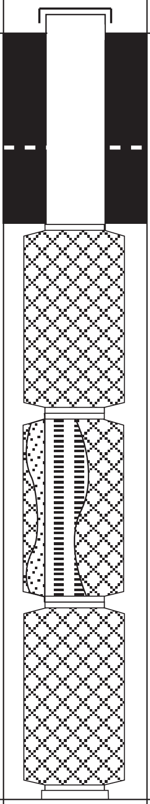
Drilling Method: Push Probe

Driller: Jeramy Ness

Logged By: Dennis Alexander

Depth (Feet)	Sample 2.5 | 2.0 | 0.75	Blows/ Foot	Graphic Log	Description	Well Construction
0				Dark brown Silty CLAY (CL), soft to medium soft, moist, medium plasticity, little fine sand No odor	Casing protrudes above ground level Bentonite Pellet Seal
2				Dark brown CLAY (CH), stiff to very stiff, moist, high plasticity, with few to little fine sand, decreasing plasticity with depth No odor	
4	MWT-13-5.0			Gray and orange-brown mottled CLAY (CL), very stiff, moist, medium plasticity, with little to some fine sands No odor	Prefabricated Self-expanding Bentonite Seal
6				Yellow-brown to gray Clayey GRAVEL (GC), medium dense to dense, moist, low plasticity, with some fine sand, poorly graded angular to subrounded gravel to 1 in. dia. Slight odor of petroleum hydrocarbons	0.75 PVC Well Casing with 0.01in. aperture Machine-cut slots in Prefabricated Sand and Wire Mesh Filter
10	MWT-13-10.0				▼ 11/08/04
12					
14	MWT-13-15.0			Gray to yellow brown Clayey SAND (SC), medium dense, wet, fine sands No odor	
16				Yellow-brown Clayey GRAVEL (GC), medium dense, wet, with some fine sands, poorly graded angular gravels to 1 in. dia. No odor	
18				Olive-brown, orange-brown mottled CLAY (CL), stiff, moist, medium plasticity, with little fine sand, trace angular to subrounded gravel to 1/2 in. dia. No odor	
20	MWT-13-20.0			TD Boring @ 20 feet	Threaded Casing Cap
22					
24					
26					
28					
30					





The San Joaquin Company Inc.

Monitoring Well Log

WELL No.: **MWT-14**

Project: Oak Walk

Project No.: 0004.082

Owner: Bay Rock Residential LLC

Location: Emeryville, California

Top of Casing Elevation: 47.85 ft.

Surface Elevation: 47.80 ft.

Depth to Water: 9.63 ft.

Date Installed: 11/05/04

Total depth of Boring: 20.0 ft.

Boring Diameter: 2 in.

Well Casing Diameter: 0.75 in.

Total depth of Well: 20.0 ft.

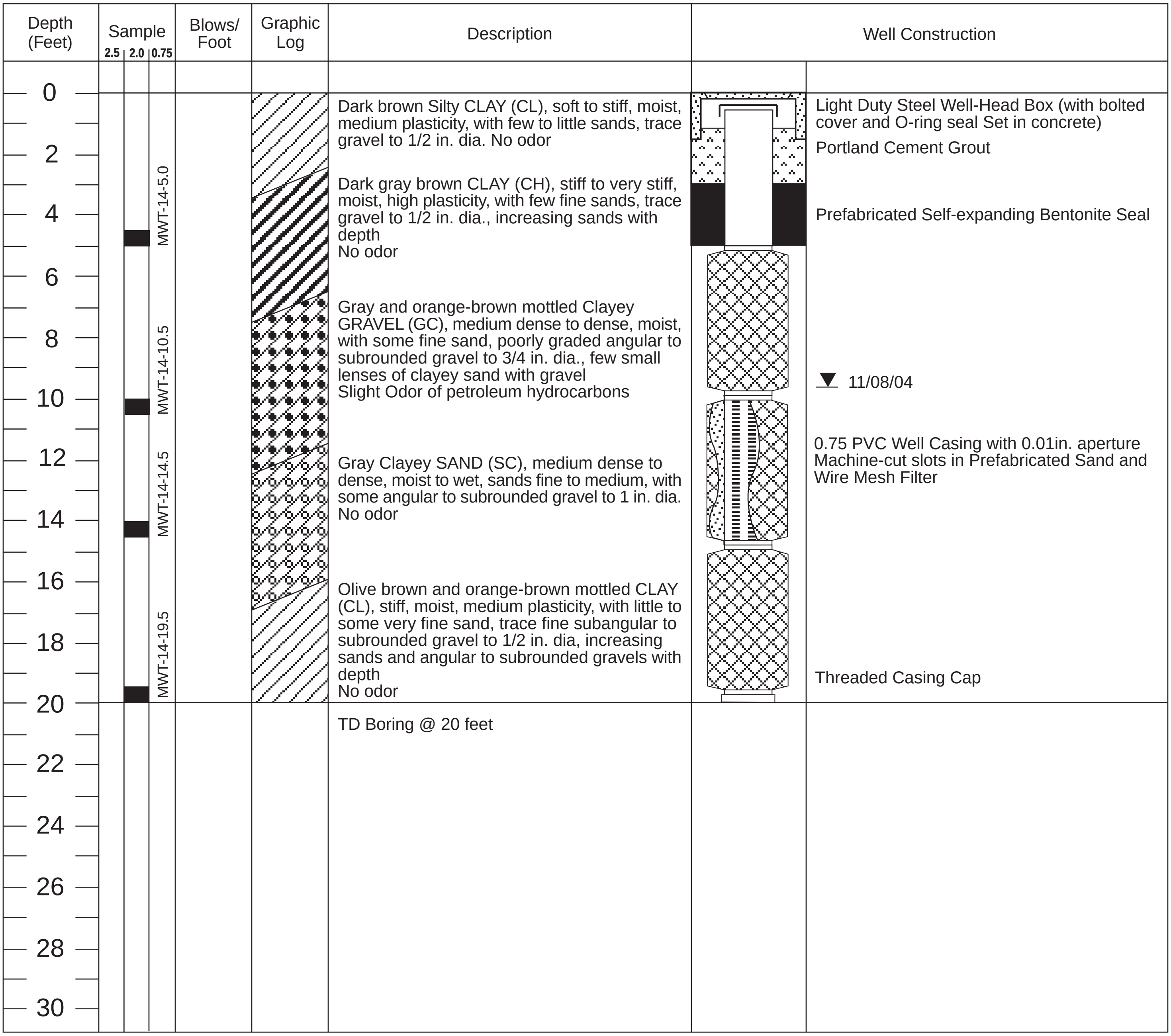
Casing Material: PVC

Drilling Company: Gregg Drilling & Testing

Drilling Method: Push Probe

Driller: Jeramy Ness

Logged By: Dennis Alexander



Dark brown Silty CLAY (CL), soft to stiff, moist, medium plasticity, with few to little sands, trace gravel to 1/2 in. dia. No odor

Dark gray brown CLAY (CH), stiff to very stiff, moist, high plasticity, with few fine sands, trace gravel to 1/2 in. dia., increasing sands with depth
No odor

Gray and orange-brown mottled Clayey GRAVEL (GC), medium dense to dense, moist, with some fine sand, poorly graded angular to subrounded gravel to 3/4 in. dia., few small lenses of clayey sand with gravel
Slight Odor of petroleum hydrocarbons

Gray Clayey SAND (SC), medium dense to dense, moist to wet, sands fine to medium, with some angular to subrounded gravel to 1 in. dia.
No odor

Olive brown and orange-brown mottled CLAY (CL), stiff, moist, medium plasticity, with little to some very fine sand, trace fine subangular to subrounded gravel to 1/2 in. dia, increasing sands and angular to subrounded gravels with depth
No odor

TD Boring @ 20 feet

Light Duty Steel Well-Head Box (with bolted cover and O-ring seal Set in concrete)

Portland Cement Grout

Prefabricated Self-expanding Bentonite Seal

▼ 11/08/04

0.75 PVC Well Casing with 0.01in. aperture Machine-cut slots in Prefabricated Sand and Wire Mesh Filter

Threaded Casing Cap

The San Joaquin Company, Inc.

Boring Log

BORING No.: **BG-1**

Project: Oak Walk

Project No.: 0004.083

Location: Emeryville, California

Date Drilled: 04/06/04

Surface Elevation: 43.3 ft.

Boring Diameter: 8 in.

Drilling Method: Hollow Stem Auger

Groundwater Depth: 18 ft.

Hammer Weight: 140 lbs.

Logged By: Dennis Alexander

Total depth of Boring: 35.0 ft.

Hammer Drop: 30 in.

Depth (Feet)	Sampler Outside Dia. (in.) 3.0 / 2.5 / 2.0	Blows/ 6 In.	Water Content (%)	Dry Density (PCF)	Other Lab Data	Description
0						3 inches Bituminous macadam Dark brown Silty Sandy GRAVEL (GM), dense, moist (fill)
1						Dark Gray-brown CLAY (CH), very stiff, moist, high plasticity, with few very fine to fine sands No odor
2						
3	3.0	7 9 15	31.8	87.1		
4						
5	2.5	6 9 11				Mottled Gray and brown CLAY (CH), very stiff, moist, with trace medium to coarse sands, and fine sands No odor
6						
7						
8						
9	3.0	11 17 26	22.3	102.9	uc = 1.75ksf	Light Gray and brown CLAY (CH), very stiff, moist, hight plasticity, with few fine sands, some angular to subrounded medium to coarse sands and gravels to 3/4" diameter, trace shells Moderate gasoline odor
10						
11						
12						
13						
14	3.0	10 19 25	19.7	108.4	uc = 2.42ksf	Mottled yellow-brown and light blue Gray CLAY (CH), hard, moist, high plasticity, with vein of very fine to fine sands, trace of medium to coarse sands Slight gasoline odor
15						
16						
17						Gray-brown Sandy CLAY (CL), very stiff, moist, medium plasticity, with some fine sands, trace medium to coarse sands No odor
18						▽
19	3.0	10 13 16	23.8	101.7	<200 = 66.2% LL = 42% PI = 24%	
20						

Graphic Log

The San Joaquin Company, Inc.

Boring Log

BORING No.: **BG-1**

Project: Oak Walk

Project No.: 0004.083

Location: Emeryville, California

Date Drilled: 04/06/04

Surface Elevation: 43.3 ft.

Boring Diameter: 8 in.

Drilling Method: Hollow Stem Auger

Groundwater Depth: 18 ft.

Hammer Weight: 140 lbs.

Logged By: Dennis Alexander

Total depth of Boring: 35.0 ft.

Hammer Drop: 30 in.

Depth (Feet)	Sampler Outside Dia. (in.) 3.0	2.5	2.0	Blows/ 6 In.	Water Content (%)	Dry Density (PCF)	Other Lab Data	Graphic Log	Description
20									Gray-brown Sandy CLAY (CL), very stiff, moist, medium plasticity, with some fine sands, trace medium to coarse sand No odor
21									
22									
23									Increasing sands and gravels to 23.5 feet
24	■			17 27 36	20.6	106.0	uc = 4.05ksf		Mottled yellow-brown and light Gray CLAY (CL), hard, moist, medium plasticity, with little to some fine sands, small lenses of angular to round gravels to 3/4" diameter No odor
25									
26									
27									Yellow-brown Clayey SILT (ML), hard, moist, low to medium plasticity, with little to some very fine sands No odor
28									
29	■			17 24 36	23.1	104.4			Yellow-brown Gravelly SAND (SW), dense, wet, non-plastic, well graded, with some subangular to rounded gravels to 1" diameter No odor
30									
31									
32									Yellow-brown CLAY (CL), very stiff, moist, medium plasticity, with little very fine to fine sands No odor
33									
34	■			11 13 15	29.6	94.5			
35									TD Boring at 35 feet
36									
37									
38									
39									
40									

The San Joaquin Company, Inc.

Boring Log

BORING No.: **BG-2**

Project: Oak Walk

Project No.: 0004.083

Location: Emeryville, California

Date Drilled: 04/06/04

Surface Elevation: 46.5 ft.

Boring Diameter: 8 in.

Drilling Method: Hollow Stem Auger

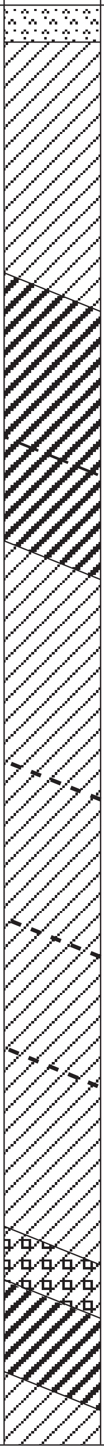
Groundwater Depth: 14.5 ft.

Hammer Weight: 140 lbs.

Logged By: Dennis Alexander

Total depth of Boring: 30.0 ft.

Hammer Drop: 30 in.



Depth (Feet)	Sampler Outside Dia. (in.) 3.0	2.5	2.0	Blows/ 6 In.	Water Content (%)	Dry Density (PCF)	Other Lab Data	Description
0								6 inches concrete
1								Dark Gray brown Silty CLAY (CL), very stiff, moist, medium plasticity, with little fine sands, trace fine gravel to 1/2" diameter No odor
2								
3	■			4 10 16	25.4	97.5		
4								Dark brown CLAY (CH), very stiff, moist, high plasticity, with little fine sands, few medium to coarse sands, trace angular to subrounded gravels to 3/4" diameter No odor
5		■		8 11 12				
6	■			9 22 28	18.7 25.7	109.0 97.7	uc = 1.23ksf perm = 2.51 E-9cm/sec	Dark brown CLAY (CH), hard, moist, high plasticity, with little fine sands, few medium to coarse sands, trace angular to subrounded gravels to 3/4" diameter No odor
7								
8					21.0	96.5	Shelby 26" Consol.	Gray Lean Sandy CLAY (CL), very stiff, moist, medium plasticity, with some fine sands, little medium to coarse sands, few fine gravels to 1/2" diameter Gasoline odor
9								
10								
11		■		14 19 25				Mottled light gray and brown Sandy CLAY (CL), hard, moist, medium plasticity, with some fine sands, increasing subangular gravels to few up to 1" diameter Gasoline odor
12					20.7	99.4	Shelby 15" Consol.	
13								Mottled brown and gray Sandy CLAY (CL), hard, moist, medium plasticity, increasing sands with depth No odor
14								▽
15		■		14 15 21				Mottled brown and gray Sandy CLAY (CL), hard, moist, medium plasticity, with some fine sands, few medium to coarse sands, some fine angular to rounded gravels to 1/2" diameter No odor
16								
17								
18	■			7 8 9	24.1	101.2	<200 = 34.8% LL = 34% PI = 17%	Yellow-brown with light gray streaks CLAYEY SAND (SC), medium dense, moist, medium plasticity, with little subangular to rounded gravels to 3/4" diameter No odor Lens of (CH) at 18.5-19.5'
19								
20								

The San Joaquin Company, Inc.

Boring Log

BORING No.: BG-2

Project: Oak Walk

Project No.: 0004.083

Location: Emeryville, California

Date Drilled: 04/06/04

Surface Elevation: 46.5 ft.

Boring Diameter: 8 in.

Drilling Method: Hollow Stem Auger

Groundwater Depth: 18 ft.

Hammer Weight: 140 lbs.

Logged By: Dennis Alexander

Total depth of Boring: 30.0 ft.

Hammer Drop: 30 in.

Depth (Feet)	Sampler Outside Dia. (in.) 3.0	2.5	2.0	Blows/ Foot	Water Content (%)	Dry Density (PCF)	Other Lab Data	Graphic Log	Description
20								▨	Interbedded lenses of yellow-brown CLAY (CH) and CLAY (CL), hard, moist, medium to high plasticity, with few to some fine sands, trace medium to coarse sand, trace to few angular to subrounded gravel up to 1/2" diameter No odor
21		■		8 13 17				▨	
22								▨	
23								▨	
24	■			17 20 33	26.3	98.3		▨	
25								▨	
26								▨	
27								▨	
28								▨	Yellow-brown CLAY (CH), hard, moist, high plasticity, with few very fine to fine sands No odor
29	■			10 17 26	24.4	100.7		▨	
30									TD Boring at 30 feet
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

The San Joaquin Company, Inc.

Boring Log

BORING No.: **BE-1**

Project: Oak Walk

Project No.: 0004.082

Location: Emeryville, California

Date Drilled: 04/02/04

Surface Elevation: 44.9 ft.

Boring Diameter: 2 in.

Drilling Method: Push Probe

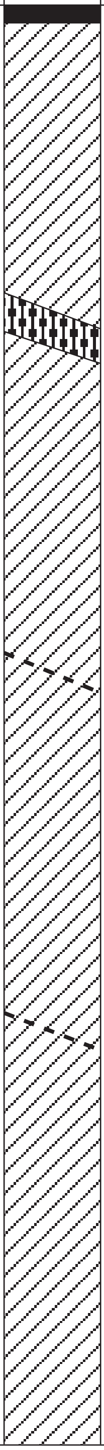
Groundwater Depth: n.a. ft.

Hammer Weight: n.a. lbs.

Logged By: Steve Flexser

Total depth of Boring: 25.0 ft.

Hammer Drop: n.a. in.



Depth (Feet)	Sampler Outside Dia. (in.) 3.0 | 2.5 | 2.0	Blows/ Foot	Water Content (%)	Dry Density (PCF)	Other Lab Data	Graphic Log	Description
0							3 inches bituminous macadam Black CLAY (CL), medium stiff, moist, with little gravel No odor
1							
2							
3							
4							Dark Gray-brown Silty SAND (SM), loose, dry No odor
5	BE-1-5.0						Black CLAY (CL), medium stiff, moist, with little gravel very slight odor of fuel hydrocarbons
6							
7							
8							Strong odor of fuel hydrocarbons
9							Black CLAY (CL), medium stiff, moist, with interbedded layers of Gray-green fine sand, gravel and weathered chert No odor
10	BE-1-10.0						
11							
12							
13							
14							Gray and light brown Gravelly CLAY (CL), very stiff, moist, with coarse gravel and inclusions of red sand Very slight fuel odor
15	BE-1-15.0						
16							
17							
18							
19	BE-1-20.0						
20							

(p1 of 2)

The San Joaquin Company, Inc.

Boring Log

BORING No.: **BE-1**

Project: Oak Walk

Project No.: 0004.083

Location: Emeryville, California

Date Drilled: 04/02/04

Surface Elevation: 44.9 ft.

Boring Diameter: 2 in.

Drilling Method: Push Probe

Groundwater Depth: n.a. ft.

Hammer Weight: n.a. lbs.

Logged By: Steve Flexser

Total depth of Boring: 25.0 ft.

Hammer Drop: n.a. in.

Depth (Feet)	Sampler Outside Dia. (in.)			Blows/ Foot	Water Content (%)	Dry Density (PCF)	Other Lab Data	Graphic Log	Description
	3.0	2.5	2.0						
20								▨	Gray and light brown Gravelly CLAY (CL), very stiff, moist, with coarse gravel and inclusions of red sand. With increasing gravel and sand with depth No odor
21								▨	
22								▨	
23								▨	
24		BE-1-25.0	■					▨	No odor
25									TD Boring at 25 feet
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

The San Joaquin Company, Inc.

Boring Log

BORING No.: **BE-2**

Project: Oak Walk

Project No.: 0004.082

Location: Emeryville, California

Date Drilled: 04/02/04

Surface Elevation: 46.6 ft.

Boring Diameter: 2 in.

Drilling Method: Push Probe

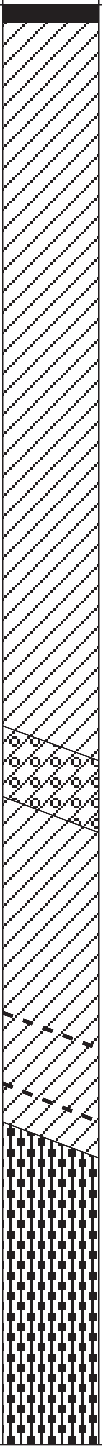
Groundwater Depth: n.a. ft.

Hammer Weight: n.a. lbs.

Logged By: Steve Flexser

Total depth of Boring: 25.0 ft.

Hammer Drop: n.a. in.

Depth (Feet)	Sampler Outside Dia. (in.)			Blows/ Foot	Water Content (%)	Dry Density (PCF)	Other Lab Data	Graphic Log	Description
	3.0	2.5	2.0						
0									3 inches bituminous macadam Black CLAY (CL), medium stiff, moist, with thin interbedded layers of coarse brown Sand and fine Gravel Very slight odor of fuel hydrocarbons
1									
2									
3									
4									Moderate odor of fuel hydrocarbons
5		BE-2-5.0	■						
6									
7									
8									
9									
10		BE-2-10.0	■						
11									Gray and orange Clayey SAND (SC), loose, wet
12									Gray and light brown CLAY (CL), soft, wet, with fine subrounded gravel Moderate odor of fuel hydrocarbons
13									
14									Gray-green CLAY (CL), medium stiff, wet, with interbedded layers of orange and black clay Slight odor of fuel hydrocarbons
15		BE-2-15.0	■						
16									Gray-green CLAY (CL), stiff, wet, with abundant gravel Slight odor of fuel hydrocarbons Silty SAND (SM), medium dense, wet, with interbedded layers of clay and multi-colored gravel Slight odor of fuel hydrocarbons
17									
18									
19									Moderate odor of fuel hydrocarbons
20		BE-2-20.0	■						

The San Joaquin Company, Inc.

Boring Log

BORING No.: **BE-2**

Project: Oak Walk

Project No.: 0004.083

Location: Emeryville, California

Date Drilled: 04/02/04

Surface Elevation: 46.6 ft.

Boring Diameter: 2 in.

Drilling Method: Push Probe

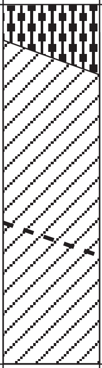
Groundwater Depth: n.a. ft.

Hammer Weight: n.a. lbs.

Logged By: Steve Flexser

Total depth of Boring: 25.0 ft.

Hammer Drop: n.a. in.

Depth (Feet)	Sampler Outside Dia. (in.)			Blows/ Foot	Water Content (%)	Dry Density (PCF)	Other Lab Data	Graphic Log	Description
	3.0	2.5	2.0						
20									
21									Light brown CLAY (CL), medium stiff, wet, with sandy inclusions Very slight odor of fuel hydrocarbons
22									
23									
24		BE-2-25.0	■						Light brown CLAY (CL), soft, wet, with rounded gravel, minor sand, and some black vitreous inclusions No Odor
25									TD Boring at 25 feet
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

The San Joaquin Company, Inc.

Boring Log

BORING No.: BE-3

Project: Oak Walk

Project No.: 0004.082

Location: Emeryville, California

Date Drilled: 04/02/04

Surface Elevation: 48.5 ft.

Boring Diameter: 2 in.

Drilling Method: Push Probe

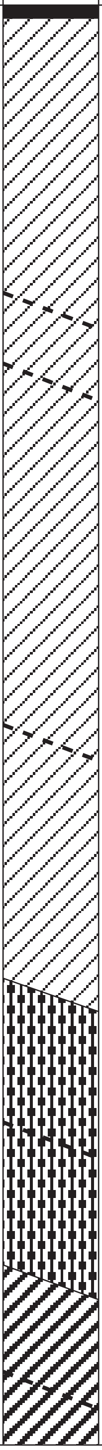
Groundwater Depth: n.a. ft.

Hammer Weight: n.a. lbs.

Logged By: Steve Flexser

Total depth of Boring: 20.0 ft.

Hammer Drop: n.a. in.



Depth (Feet)	Sampler Outside Dia. (in.) 3.0 | 2.5 | 2.0	Blows/ Foot	Water Content (%)	Dry Density (PCF)	Other Lab Data	Graphic Log	Description
0							2 inches bituminous macadam
1							Black CLAY (CL), medium stiff, moist, with few inclusions or root marks No odor
2							
3							
4							
5	BE-3-5.0						Gray CLAY (CL), medium stiff, moist No odor
6							Gray CLAY (CL), stiff, moist, increasing stiffness with depth No odor
7							
8							
9							
10	BE-3-10.0						Very slight odor of fuel hydrocarbons
11							Gray and brown mottled CLAY (CL), stiff, moist No odor
12							Moderate odor of fuel hydrocarbons
13							Slight odor of fuel hydrocarbons
14							Brown Silty SAND (SM), loose, wet, with some gravel No odor
15	BE-3-15.0						
16	BE-3-16.0				No Sample Recovered		Brown Silty SAND (SM), loose, wet, increasing gravel with depth
17							
18							Dark gray to black CLAY (CH), stiff, wet Strong odor of fuel hydrocarbons
19	BE-3-19.5						
20	BE-3-20.0						Gray CLAY (CH), stiff, wet, with coarse sand and gravel Moderate odor of fuel hydrocarbons

TD Boring @ 20 feet

The San Joaquin Company, Inc.

Boring Log

BORING No.: BE-4

Project: Oak Walk

Project No.: 0004.082

Location: Emeryville, California

Date Drilled: 04/01/04

Surface Elevation: 44.6 ft.

Boring Diameter: 2 in.

Drilling Method: Push Probe

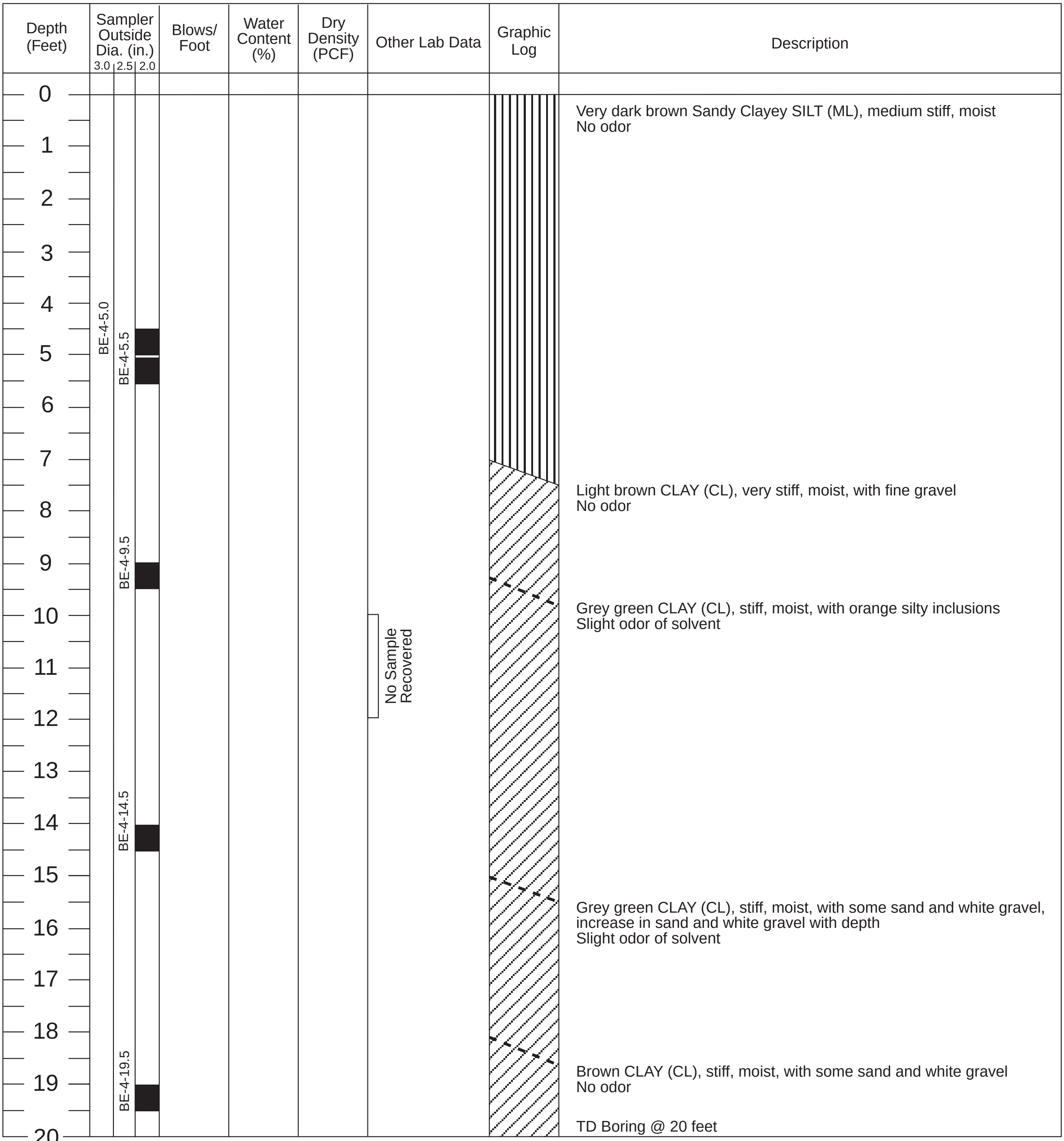
Groundwater Depth: n.a. ft.

Hammer Weight: n.a. lbs.

Logged By: Steve Flexser

Total depth of Boring: 20.0 ft.

Hammer Drop: n.a. in.



Very dark brown Sandy Clayey SILT (ML), medium stiff, moist
No odor

Light brown CLAY (CL), very stiff, moist, with fine gravel
No odor

Grey green CLAY (CL), stiff, moist, with orange silty inclusions
Slight odor of solvent

Grey green CLAY (CL), stiff, moist, with some sand and white gravel, increase in sand and white gravel with depth
Slight odor of solvent

Brown CLAY (CL), stiff, moist, with some sand and white gravel
No odor

TD Boring @ 20 feet

The San Joaquin Company, Inc.

Boring Log

BORING No.: BE-5

Project: Oak Walk

Project No.: 0004.082

Location: Emeryville, California

Date Drilled: 04/01/04

Surface Elevation: 43.8 ft.

Boring Diameter: 2 in.

Drilling Method: Push Probe

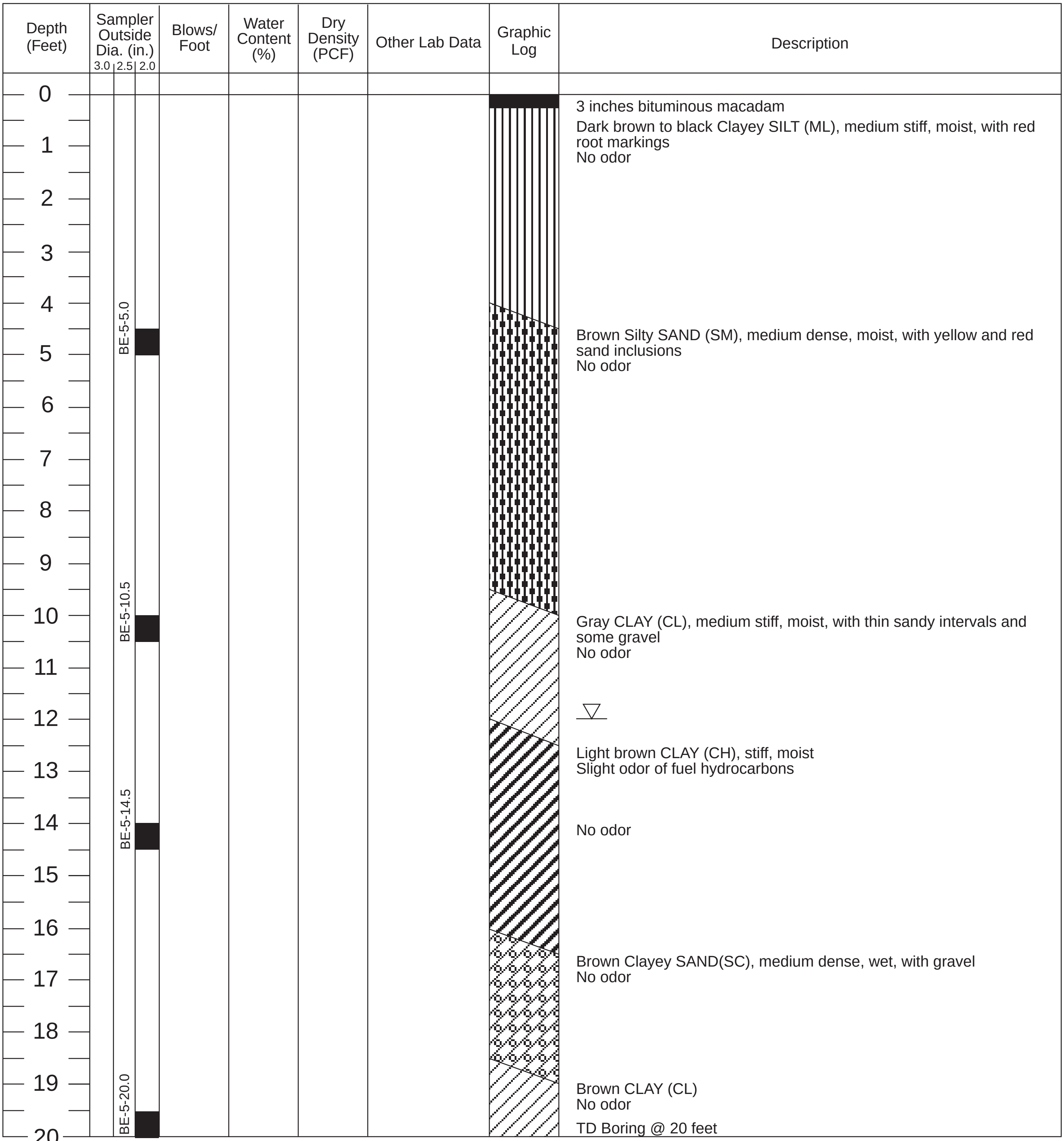
Groundwater Depth: 12 ft.

Hammer Weight: n.a. lbs.

Logged By: Steve Flexser

Total depth of Boring: 20.0 ft.

Hammer Drop: n.a. in.



3 inches bituminous macadam

Dark brown to black Clayey SILT (ML), medium stiff, moist, with red root markings
No odor

Brown Silty SAND (SM), medium dense, moist, with yellow and red sand inclusions
No odor

Gray CLAY (CL), medium stiff, moist, with thin sandy intervals and some gravel
No odor

Light brown CLAY (CH), stiff, moist
Slight odor of fuel hydrocarbons

No odor

Brown Clayey SAND(SC), medium dense, wet, with gravel
No odor

Brown CLAY (CL)
No odor

TD Boring @ 20 feet

The San Joaquin Company, Inc.

Boring Log

BORING No.: BE-6

Project: Oak Walk

Project No.: 0004.082

Location: Emeryville, California

Date Drilled: 04/01/04

Surface Elevation: 43.9 ft.

Boring Diameter: 2 in.

Drilling Method: Push Probe

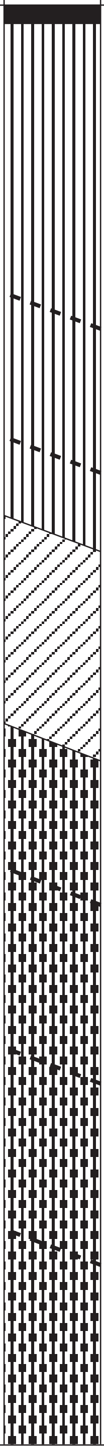
Groundwater Depth: 12 ft.

Hammer Weight: n.a. lbs.

Logged By: Steve Flexser

Total depth of Boring: 20.0 ft.

Hammer Drop: n.a. in.



Depth (Feet)	Sampler Outside Dia. (in.) 3.0 | 2.5 | 2.0	Blows/ Foot	Water Content (%)	Dry Density (PCF)	Other Lab Data	Graphic Log	Description
0							3 inches bituminous macadam Dark brown to black Sandy SILT (ML), medium stiff, moist No odor
1							
2							
3							
4	BE-6-4.0						
5							Dark brown to black Sandy SILT (ML), medium stiff, moist, with some sand, increasing sand with depth Very slight solvent odor
6							
7							Brown and gray mottled Sandy SILT (ML), medium stiff, moist, with orange root marks Very slight solvent odor
8							Black to dark brown CLAY (CL), stiff, moist Very slight solvent odor
9							
10	BE-6-10.0						
11							Brown Silty SAND (SM), medium dense, moist, with some angular weathered chert gravel, and roots Very slight solvent odor to no odor
12							▽
13							Black Silty SAND (SM), medium dense, moist, decreasing gravel with depth No odor
14							
15	BE-6-15.5						Gray Silty SAND (SM), medium dense, moist No odor
16							
17							
18							Gray and brown Silty SAND (SM), medium dense, moist No odor
19							
20	BE-6-20.0						

TD Boring @ 20 feet

(p1 of 1)

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-1

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 10/29/2007

Surface Elevation: 44.91 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0		▨	Dark grey Silty CLAY (CL) - FILL	
1				
2				
3				
4				
5	SG-1	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-2

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 10/29/2007

Surface Elevation: 45.93 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0		▨	Dark grey Silty CLAY (CL) - FILL	
1		▨		
2		▨		
3		▨		
4		▨		
5	SG-2	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-3

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 10/29/2007

Surface Elevation: 46.86 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0–5		▨	Dark grey Silty CLAY (CL) - FILL	
5	SG-3	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-4

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 10/29/2007

Surface Elevation: 47.46 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0		▨	Dark grey Silty CLAY (CL) - FILL	
1		▨		
2		▨		
3		▨		
4		▨		
5	SG-4	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-5

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 10/29/2007

Surface Elevation: 43.76 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0		▨	Dark grey Silty CLAY (CL) - FILL	
1		▨		
2		▨		
3		▨		
4		▨		
5	SG-5	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-6

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 10/29/2007

Surface Elevation: 45.91 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0		▨	Dark grey Silty CLAY (CL) - FILL	
1		▨		
2		▨		
3		▨		
4		▨		
5	SG-6	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-7

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 9/24/2007

Surface Elevation: 45.84 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0		▨	Dark grey Silty CLAY (CL) - FILL	
1		▨		
2		▨		
3		▨		
4		▨		
5	SG-7	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-8

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 9/24/2007

Surface Elevation: 42.51 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0		▨	Dark grey Silty CLAY (CL) - FILL	
1		▨		
2		▨		
3		▨		
4		▨		
5	SG-8	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-9

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 9/24/2007

Surface Elevation: 45.98 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0		▨	Dark grey Silty CLAY (CL) - FILL	
1		▨		
2		▨		
3		▨		
4		▨		
5	SG-9	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

The San Joaquin Company, Inc.

Boring Log

BORING No.: SG-10

Project: Oak Walk Project

Project No.: 0004.086

Owner: Bay Rock Oaks, LLC

Location: Oak Walk, Emeryville, California

Date Drilled: 9/24/2007

Surface Elevation: 47.31 ft.

Total depth of Boring: 5 ft.

Boring Diameter: 2 in.

Drilling Company: Gregg Drilling & Testing, Inc.

Drilling Method: Direct Push

Driller: Paul Rogers

Logged By: Dai Watkins

Depth (Feet)	Sample	Graphic Log	Description	Comments
0		▨	Dark grey Silty CLAY (CL) - FILL	
1		▨		
2		▨		
3		▨		
4		▨		
5	SG-10	■	TD Boring @ 5 feet	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

Clayton GROUP SERVICES

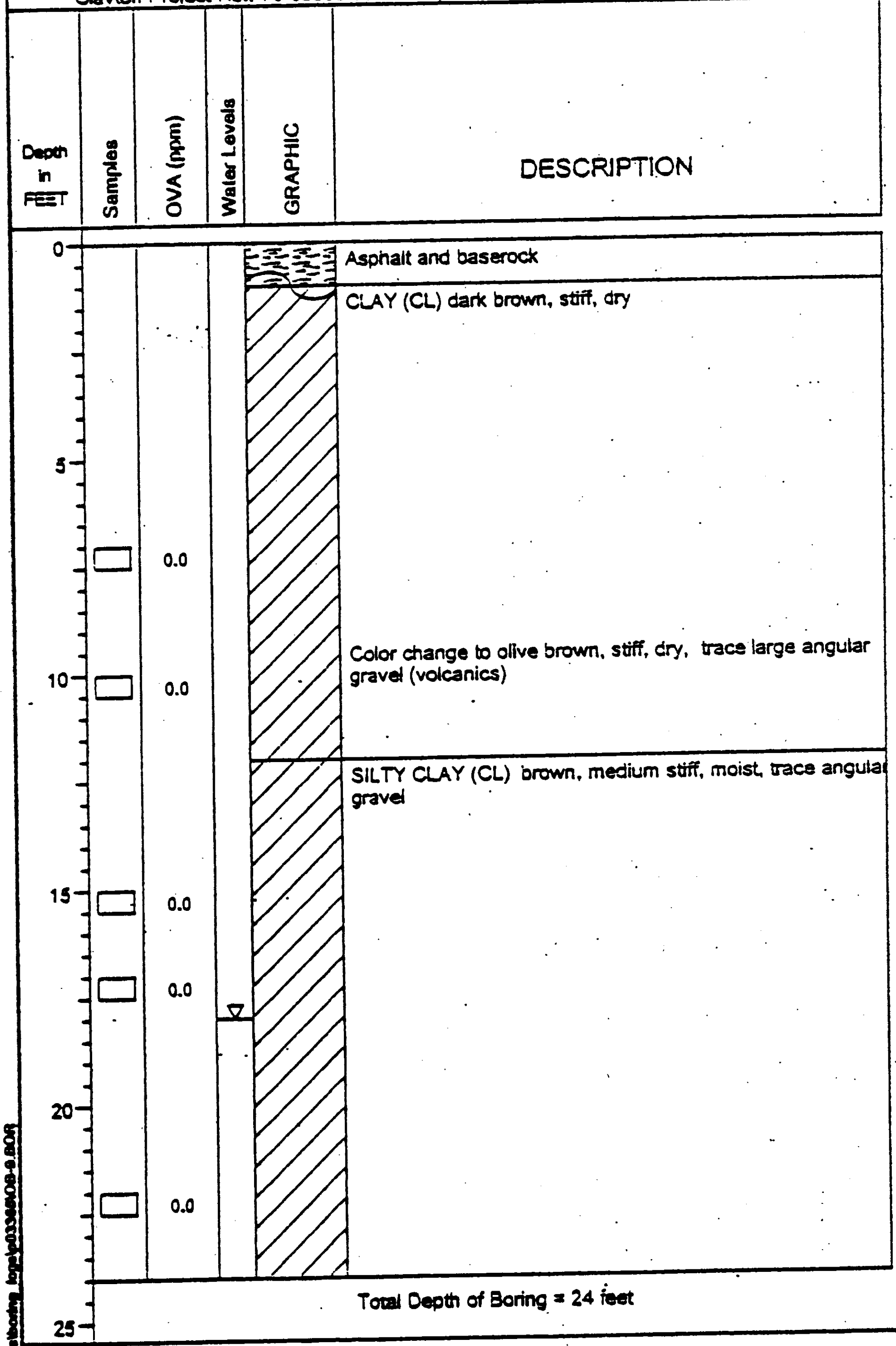
LOG OF BORING OB-9

(Page 1 of 1)

Green City Lofts LLC
Subsurface Investigation
1007 41st Street
Emeryville, California

Clayton Project No.: 70-03365.03

Date Started	: 06/27/03	Driller	: Gregg
Date Completed	: 06/27/03	Logged by	: Matt Reimer
Hole Diameter	: 2-inch		
Drilling Method	: Geoprobe		
Sampling Method	: Macrocore		



Asphalt and baserock

CLAY (CL) dark brown, stiff, dry

Color change to olive brown, stiff, dry, trace large angular gravel (volcanics)

SILTY CLAY (CL) brown, medium stiff, moist, trace angular gravel

Total Depth of Boring = 24 feet

Notes:
Borehole was initiated with hand auger to 4 feet bgs.
Static water level at 18 feet.
Grab groundwater sample taken at 11:20.
Borehole abandoned with neat cement grout.

Clayton GROUP SERVICES

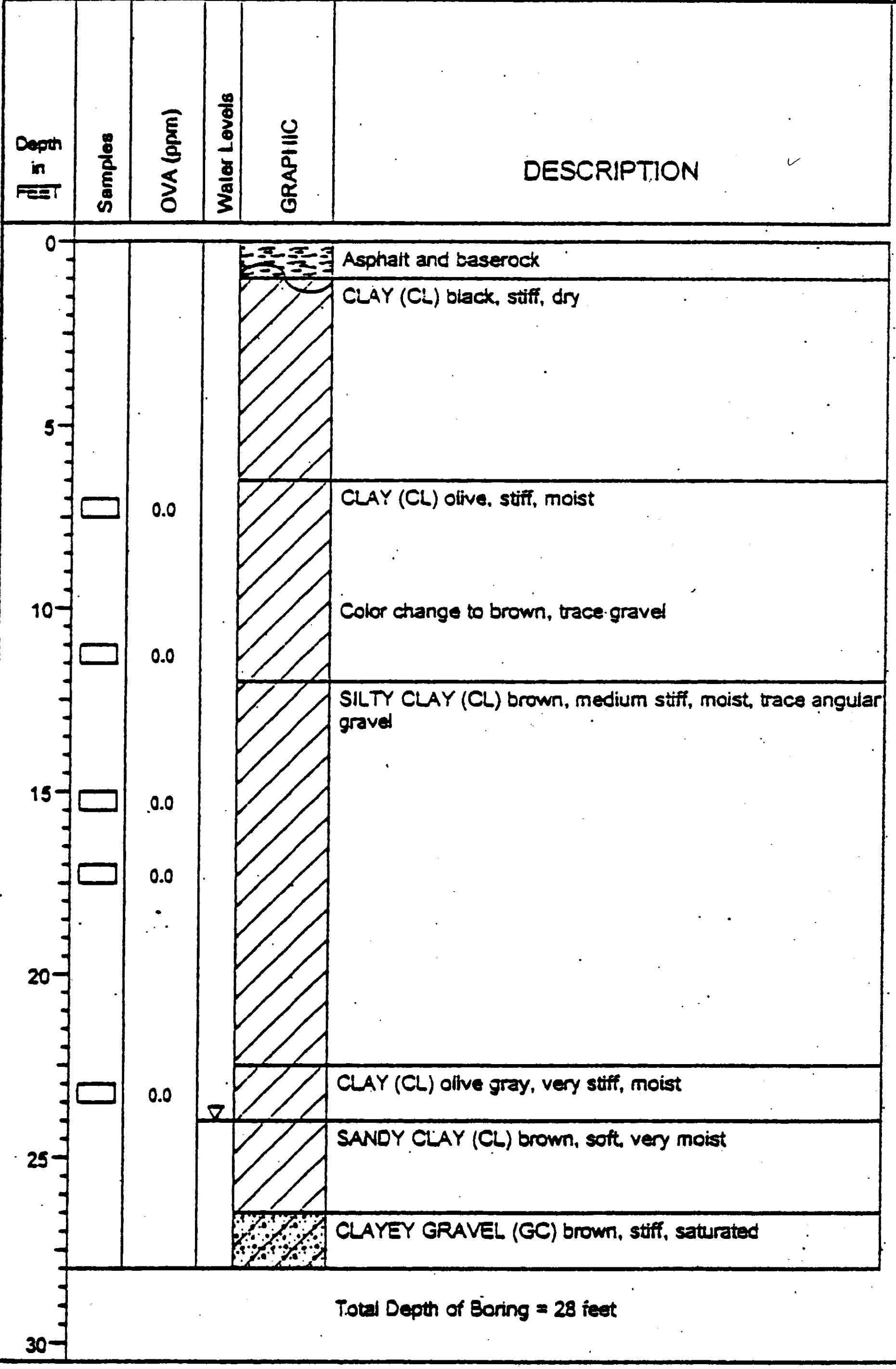
LOG OF BORING OB-6

(Page 1 of 1)

Green City Lofts LLC
Subsurface Investigation
1007 41st Street
Emeryville, California

Clayton Project No.: 70-03365.03

Date Started	: 06/27/03	Driller	: Gregg
Date Completed	: 06/27/03	Logged by	: Matt Reimer
Hole Diameter	: 2-inch		
Drilling Method	: Geoprobe		
Sampling Method	: Macrocore		



Asphalt and baserock

CLAY (CL) black, stiff, dry

CLAY (CL) olive, stiff, moist

Color change to brown, trace gravel

SILTY CLAY (CL) brown, medium stiff, moist, trace angular gravel

CLAY (CL) olive gray, very stiff, moist

SANDY CLAY (CL) brown, soft, very moist

CLAYEY GRAVEL (GC) brown, stiff, saturated

Total Depth of Boring = 28 feet

Notes:
Borehole was initiated with hand auger to 4 feet bgs.
Static water level at 24 feet. Grab groundwater sample taken at 15:40 p.m.
Borehole abandoned with neat cement grout.

06-04-2003 s:\ce\boring_logs\03365\OB-6.BOR

LOG OF BORING OB-5

(Page 1 of 1)

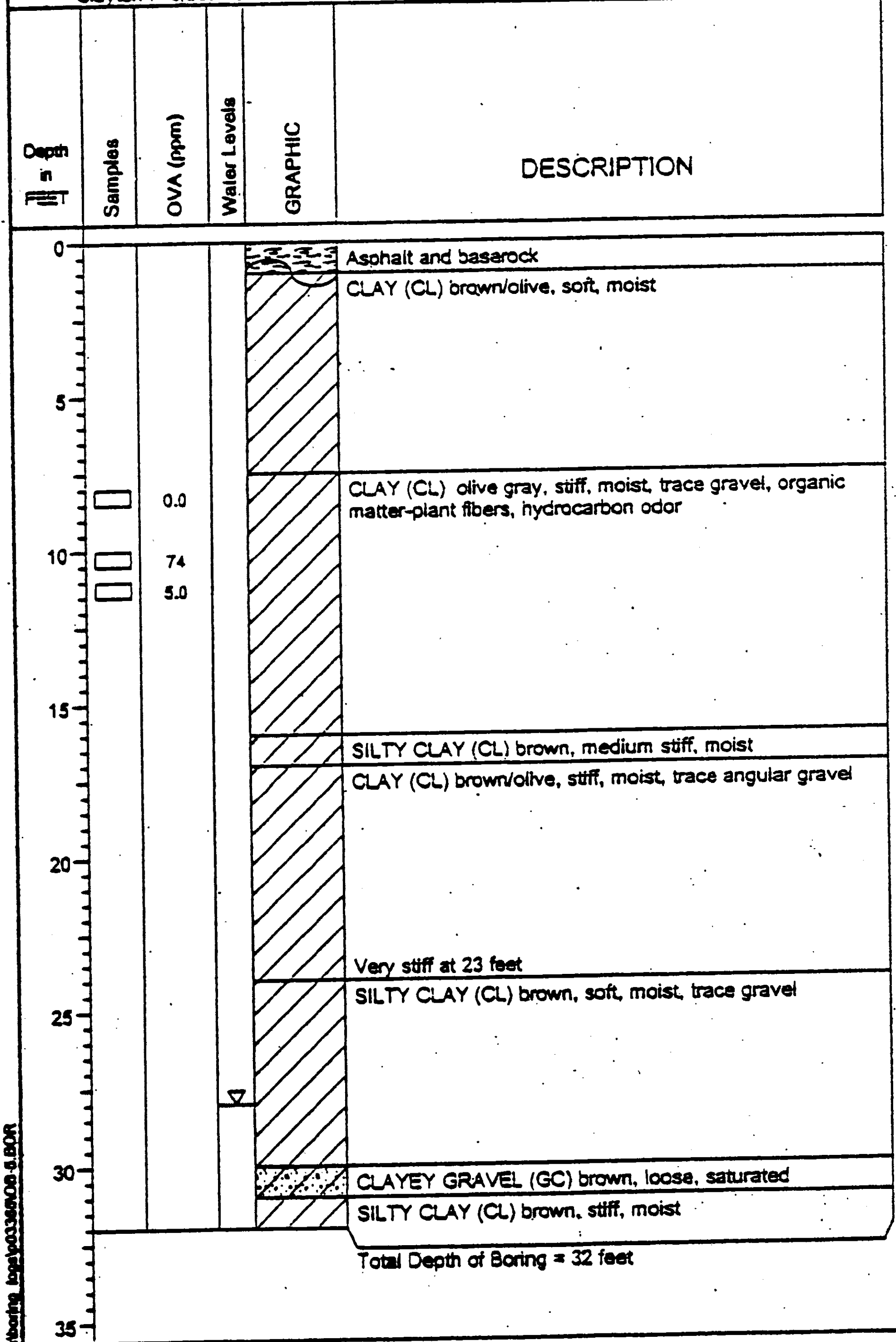
Clayton GROUP SERVICES

Green City Lofts LLC
Subsurface Investigation
1007 41st Street
Emeryville, California

Clayton Project No.: 70-03365.03

Date Started : 06/27/03
Date Completed : 06/27/03
Hole Diameter : 2-inch
Drilling Method : Geoprobe
Sampling Method : Macrocore

Driller : Gregg
Logged by : Matt Reimer



Asphalt and basarock

CLAY (CL) brown/olive, soft, moist

CLAY (CL) olive gray, stiff, moist, trace gravel, organic matter-plant fibers, hydrocarbon odor

SILTY CLAY (CL) brown, medium stiff, moist

CLAY (CL) brown/olive, stiff, moist, trace angular gravel

Very stiff at 23 feet

SILTY CLAY (CL) brown, soft, moist, trace gravel

CLAYEY GRAVEL (GC) brown, loose, saturated

SILTY CLAY (CL) brown, stiff, moist

Total Depth of Boring = 32 feet

Notes:
Borehole was initiated with hand auger to 4 feet bgs.
Static water level at 28 feet. Grab groundwater sample taken at 15:10 p.m.
Borehole abandoned with neat cement grout.

08-04-2003 s:\ee\boring logs\03365\OB-5.BOR

Clayton
GROUP SERVICES

LOG OF BORING OB-4

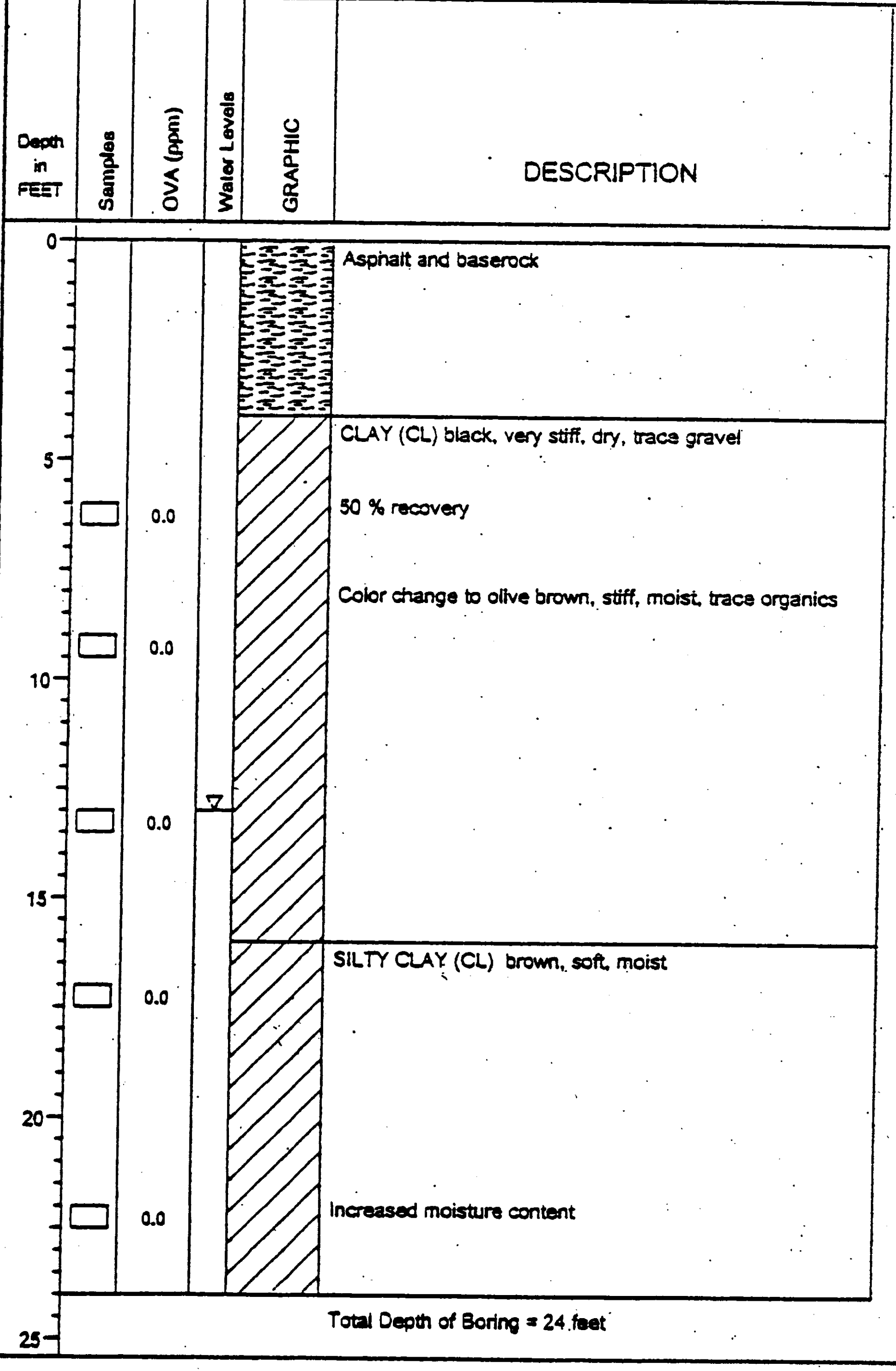
(Page 1 of 1)

Green City Lofts LLC
Subsurface Investigation
1007 41st Street
Emeryville, California

Clayton Project No.: 70-03365.03

Date Started : 06/27/03
Date Completed : 06/27/03
Hole Diameter : 2-inch
Drilling Method : Geoprobe
Sampling Method : Macrocore

Driller : Gregg
Logged by : Matt Reimer



Asphalt and baserock

CLAY (CL) black, very stiff, dry, trace gravel

50 % recovery

Color change to olive brown, stiff, moist, trace organics

SILTY CLAY (CL) brown, soft, moist

Increased moisture content

Total Depth of Boring = 24 feet

Notes:
Borehole was initiated with hand auger to 4 feet bgs.
Grab groundwater sample taken at 10:50.
Borehole abandoned with neat cement grout.

08-04-2003 s:\ee\boring logs\03365\OB-4.BOR

Clayton GROUP SERVICES

LOG OF BORING OB-3

(Page 1 of 1)

Green City Lofts LLC
Subsurface Investigation
1007 41st Street
Emeryville, California

Clayton Project No.: 70-03365.03

Date Started : 06/27/03
Date Completed : 06/27/03
Hole Diameter : 2-inch
Drilling Method : Geoprobe
Sampling Method : Macrocore

Driller : Gregg
Logged by : Matt Reimer

Depth in FEET	Samples	OVA (ppm)	Water Levels	GRAPHIC	DESCRIPTION
0				▤	Asphalt and baseock
				▨	CLAY (CL) brown, stiff, dry
5				▨	
	☐	0.0		▨	
				▨	Color change to yellowish orange, moist, trace gravels, trace organics
10	☐	0.0		▨	
				▨	SILTY CLAY (CL) brownish olive, stiff, moist, trace organics
15	☐	0.0		▨	
			▽	▨	CLAY (CL) brown, medium stiff, moist, trace organics
	☐	0.0		░	SILTY GRAVELLY SAND (SM) brownish orange, loose, saturated
20				▨	SILTY CLAY (CL) brown, moist, trace gravel
	☐	0.0		▥	CLAYEY SILT (ML) brown, large angular gravel, moist
25					Total Depth of Boring = 24 feet

Notes:
Borehole was initiated with hand auger to 4 feet bgs.
Static water level at 16.7 feet. Grab groundwater sample taken at 8:50 a.m.
Borehole abandoned with neat cement grout.

Clayton GROUP SERVICES

LOG OF BORING CW-2

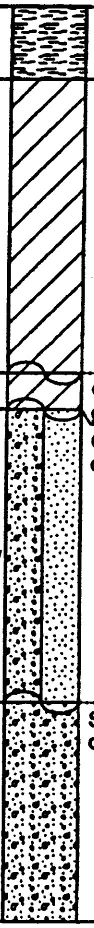
(Page 1 of 1)

Former Dunne Paint Facility
1007 41st Street
Oakland, California

Clayton Project No.: 70-03365.05

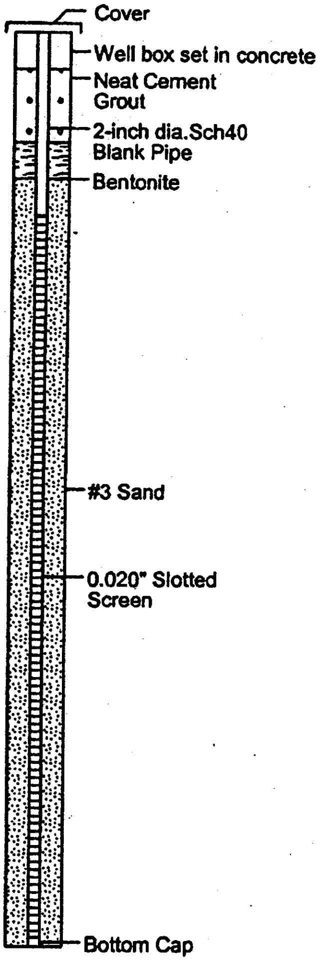
Date Started	: 10/30/03	Driller	: Clear Heart Drilling
Date Completed	: 10/30/03	Logged by	: Mike Krzeminski
Hole Diameter	: 8-inch	Surveyor	: V. Chavez
Drilling Method	: Hollow Stem Auger	Top of Casing	: ft, msl
Sampling Method	: Cal Modified Split Spoon		

Depth in FEET	Samples	Blow Count	OVM (mg/kg)	USCS	GRAPHIC	DESCRIPTION
0						Asphalt and Baserock
				CL		Silty Clay trace gravel (CL) (5,0,40,55), dark brown, very stiff, fine subangular gravel, dry, rootlets.
5	☒	7 10 15	0.3			
	☒	6 9 13	0.3			
	☒	6 19 20	445			
10	☒	7 13 17	762	CL		Gravelly Clay trace sand (CL) (30,10,10,50), greenish gray, stiff, coarse gravel, moist, hydrocarbon odor present.
	☐	8 10 15		GW/SW		Gravelly Sand (GW/SW) (50,50,0,0), light brown, medium dense, coarse gravel, medium sands, saturated, no odor.
	☒	9 16 19	25.1			
15	☐	8 15 17	0.9			
20	☐	13 17 20	0.3	GW		Sandy Gravel (GW) (60,40,0,0) light brown, medium dense, coarse gravel, medium sands, saturated.
25						
30						



Total Depth of Boring = 25 feet

Well: CW-2
Elev.:



Notes:

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Clayton GROUP SERVICES

LOG OF BORING CW-3

(Page 1 of 1)

Former Dunne Paint Facility
1007 41st Street
Oakland, California

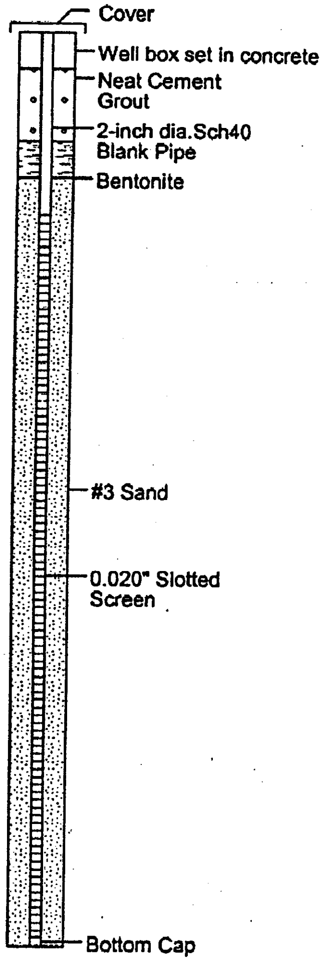
Clayton Project No.: 70-03365.05

Date Started	: 10/30/03	Driller	: Clear Heart Drilling
Date Completed	: 10/30/03	Logged by	: Mike Krzeminski
Hole Diameter	: 8-inch	Surveyor	: V. Chavez
Drilling Method	: Hollow Stem Auger	Top of Casing	: ft, msl
Sampling Method	: Cal Modified Split Spoon		

Depth in FEET	Samples	Blow Count	OVM (mg/kg)	USCS	GRAPHIC	DESCRIPTION
0						Asphalt and Baserock
				CL		Silty Clay (CL) (0,0,30,70), dark brown, stiff, dry, rootlets.
5	☒	11 18 22	0.3			
				CL		Gravelly Clay with trace sand (CL) (30,10,0,60), light brown, medium stiff, fine angular gravel, moist.
10	☒	10 15 17	0.3			
				GW/SW		Silty Clay trace gravel (CL) (10,0,30,60), light brown, medium stiff, fine angular gravel, saturated.
15	☒	9 12 18	0.3			
20	☒	9 14 18	0.3			
25						
30						

Total Depth of Boring = 25 feet

Well: CW-3
Elev.:



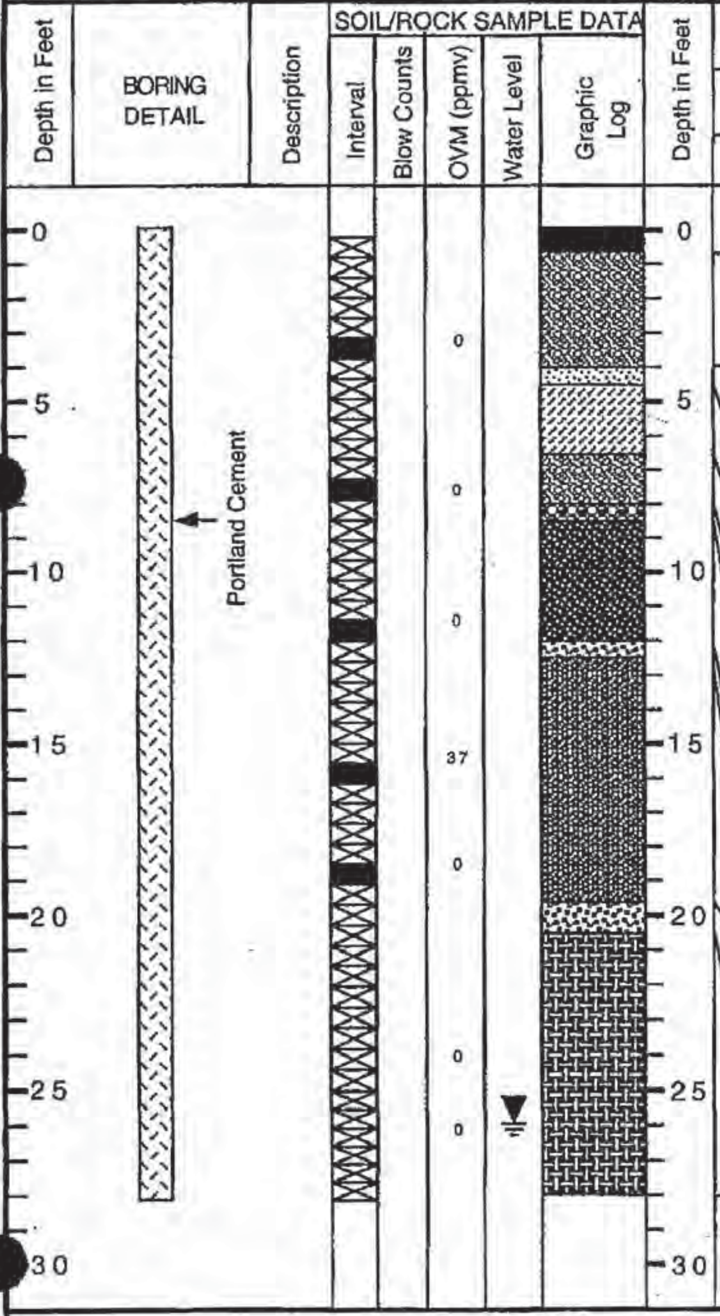
Notes:

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-A

Project Name: Kozel Property	Project Location: 1001 42nd St. Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Damian Hriciga	Date Drilled: October 18, 2004	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	Total Depth of Well Completed: NA
Depth of Water First Encountered: 26'	Well Screen Type and Diameter: NA
Static Depth of Water in Well: NA	Well Screen Slot Size: NA
Total Depth of Boring: 28'	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Clayey SILT (ML); dark brown; stiff; moist; 90% silt; 10% clay; non-plastic; low estimated K; no odor

Silty SAND (SM); light brown; loose; wet; 80% sand; 20% silt; non-plastic; high estimated K; no odor

Sandy SILT (ML); brown; medium stiff; moist; 60% silt; 30% sand; 10% gravel; medium estimated K; no odor

Clayey SILT (ML); dark brown; stiff; moist; 90% silt; 10% clay; non-plastic; low estimated K; no odor

Clayey GRAVEL (GC); brown; dense; damp; 60% gravel; 40% clay; non-plastic; medium estimated K; no odor

CLAY (CH); dark brown; very stiff; damp; 100% clay; trace gravel; high plasticity; very low estimated K; no odor

Clayey SAND (SC); brown; loose; moist; 70% sand; 30% clay; non-plastic;. medium estimated K, no odor

Silty CLAY (CL); light olive; very stiff; moist; 90% clay 10% silt; moderate plasticity; low estimated K; no odor
slight hydrocarbon odor @ 16 feet
olive mottled yellow brown @ 18.5 feet

Clayey SAND (SC); yellow brown; very dense; damp; 60% sand; 20% clay; 20% gravel; non-plastic; medium estimated K; no odor

Gravelly CLAY (CL); dark brown; stiff; moist; 50% clay; 30% gravel 10% sand; 10% silt; non-plastic; medium estimated K; no odor
brown mottled black between 24 and 26 feet

End of boring

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-B

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 18, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 14.5'

Static Depth of Water in Well: NA

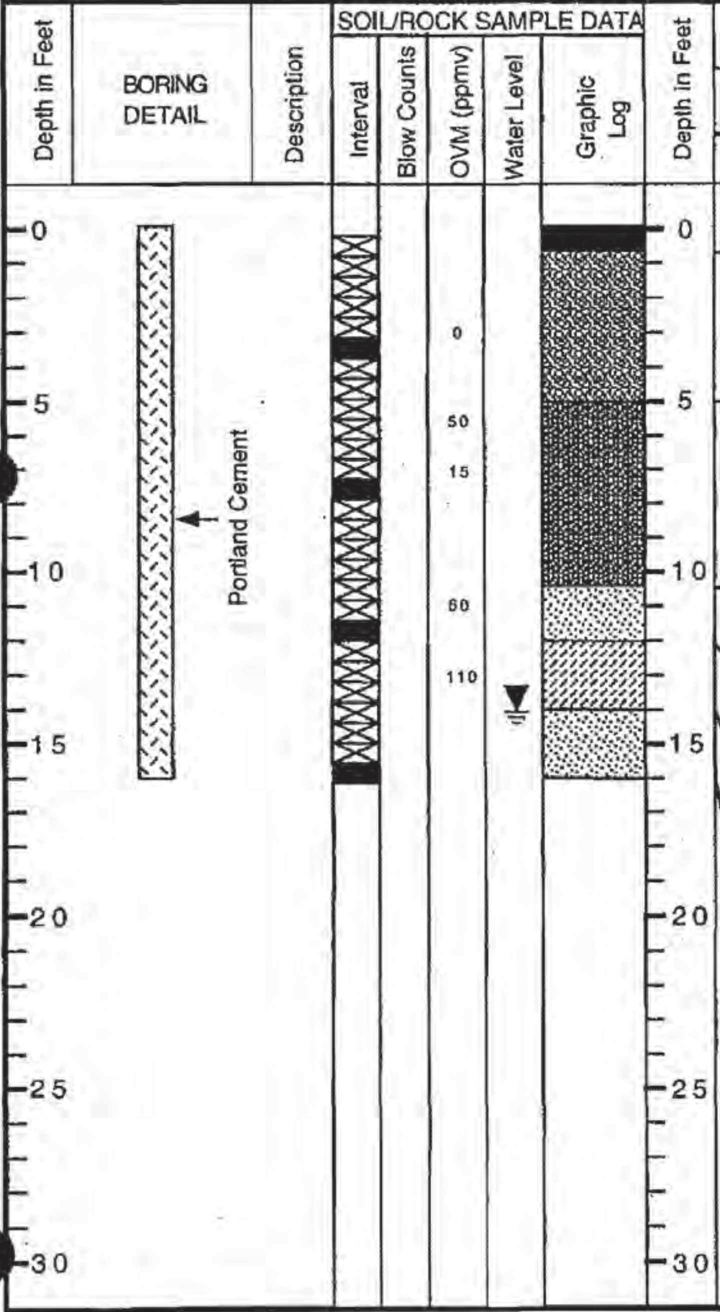
Total Depth of Boring: 16'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Clayey SILT (ML); brown mottled red; stiff; moist; 90% silt; 10% clay; non-plastic; low estimated K; no odor

Silty CLAY (CL); black; stiff; moist; 80% clay; 20% silt; moderate plasticity; very low estimated K; slight hydrocarbon odor

black mottled olive; 90% clay; 10% silt; trace gravel

Silty SAND (SM); olive; medium dense; moist; 60% sand; 20% silt; 10% gravel; 10% clay; non-plastic; high estimated K; moderate hydrocarbon odor

Sandy SILT (ML); olive; soft; moist; 60% silt; 30% sand; 10% clay; trace gravel; non-plastic; medium estimated K; moderate hydrocarbon odor

Silty SAND (SM); olive; medium dense; wet; 60% sand; 20% silt; 10% gravel; 10% clay; non-plastic; high estimated K; moderate hydrocarbon odor
yellow brown below 15.5 feet

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-C

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 18, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 13.5'

Static Depth of Water in Well: NA

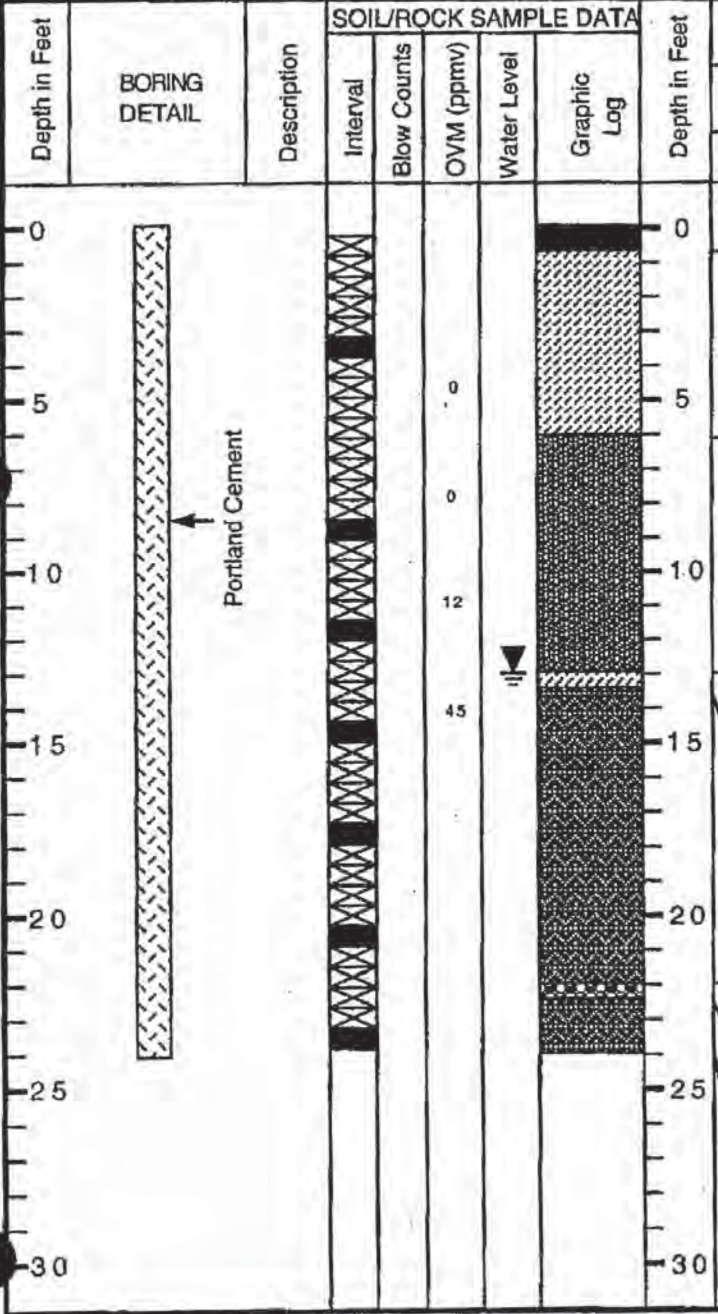
Total Depth of Boring: 24'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Depth in Feet	Description
0	Concrete/Base
	Sandy SILT (ML); brown; stiff; moist; 90% silt; 10% sand; non-plastic; low estimated K; no odor
5	
	Silty CLAY (CL); black; stiff; moist; 80% clay; 20% silt; moderate plasticity; very low estimated K; slight hydrocarbon odor
10	60% clay; 25% silt; 15% gravel
	Sandy SILT (ML); brown; soft; wet; 80% silt; 20% sand; trace gravel; non-plastic; medium estimated K; moderate hydrocarbon odor
15	Sandy CLAY (CL); olive; stiff; damp; 60% clay; 20% sand; 20% silt; trace gravel; low plasticity; low estimated K; moderate hydrocarbon odor single layer of gravel @16 feet
20	wet from 21 to 21.5 feet
	Clayey GRAVEL (GC); olive; dense; damp; 60% gravel; 40% clay; non-plastic; medium estimated K; no odor
25	Sandy CLAY (CL); olive; stiff; damp; 60% clay; 20% sand; 20% silt; trace gravel; low plasticity; low estimated K; moderate hydrocarbon odor
	End of boring
30	

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-D

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 18, 2004

Checked By: Robert E. Kitay, R.G. *ek*

WATER AND WELL DATA

Depth of Water First Encountered: Dry

Static Depth of Water in Well: Dry

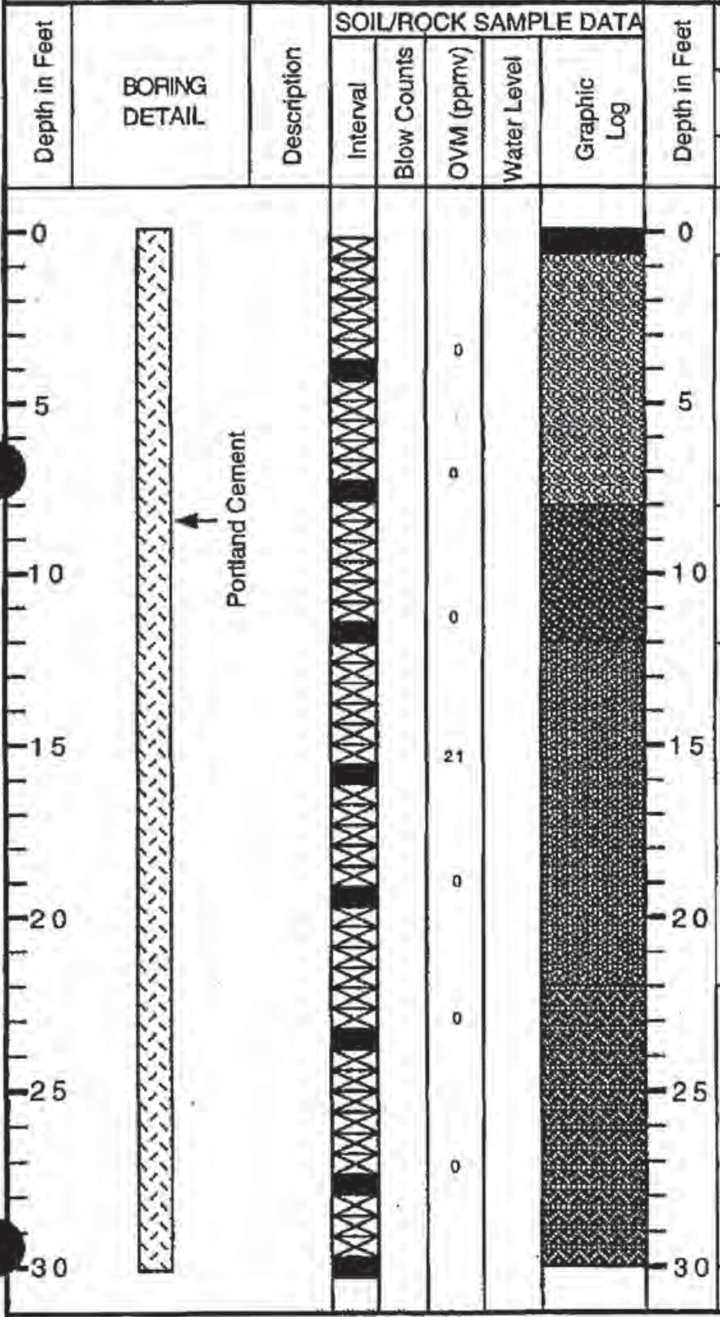
Total Depth of Boring: 30'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Clayey SILT (ML); brown; stiff; moist; 90% silt; 10% clay; non-plastic; low estimated K; no odor

CLAY (CH); dark brown; very stiff; damp; 100% clay; trace gravel; high plasticity; very low estimated K; slight hydrocarbon odor

Silty CLAY (CH); light olive; very stiff; damp; 90% clay; 10% silt; high plasticity; very low estimated K; moderate hydrocarbon odor

Sandy CLAY (CL); yellow brown; very stiff; damp; 70% clay; 20% sand; 10% gravel; low plasticity; low estimated K; no odor

medium stiff; moist between 25.5 and 26 feet

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-E

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 19, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 18'

Static Depth of Water in Well: NA

Total Depth of Boring: 20'

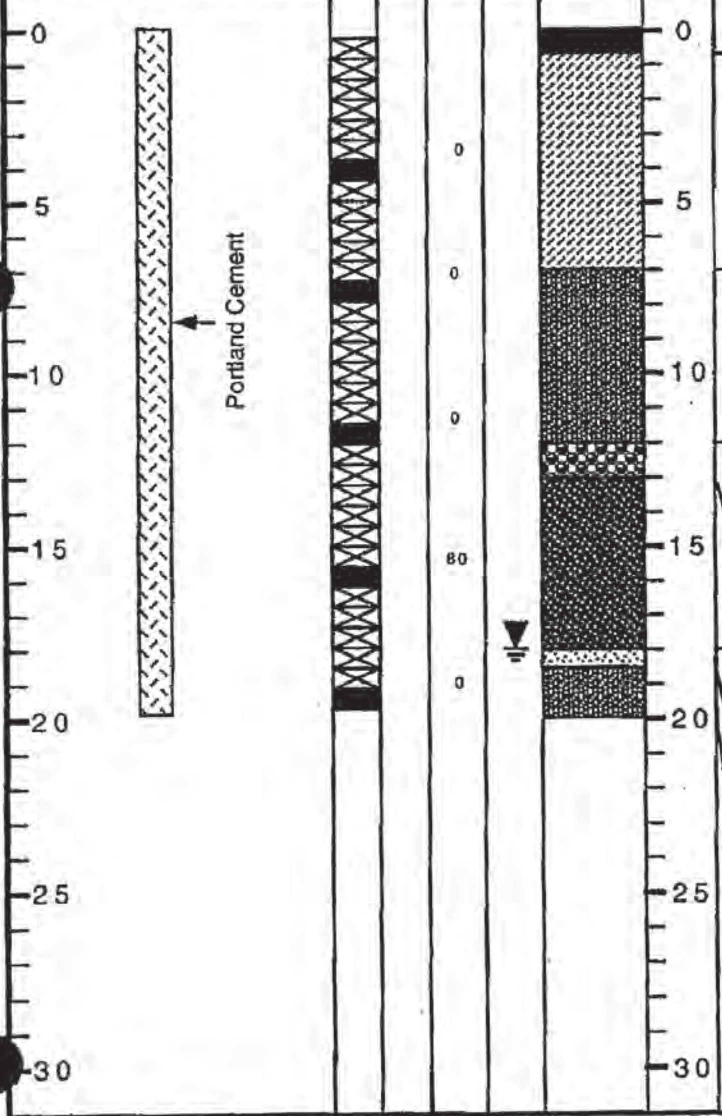
Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA					Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.



Concrete/Base

Sandy SILT (ML); brown; medium stiff; damp; 95% silt; 5% sand; non-plastic; low estimated K; no odor

Silty CLAY (CH); black; very stiff; moist; 80% clay; 20% silt; high plasticity; low estimated K; no odor

Clayey GRAVEL (GC); yellow brown; loose; damp; 60% gravel; 30% clay; 10% sand; non-plastic; high estimated K; no odor

CLAY (CH); olive; very stiff; damp; 100% clay; high plasticity; very low estimated K; slight hydrocarbon odor

Silty SAND (SM); olive; medium dense; damp; 70% sand; 25% silt; 5% clay; non-plastic; high estimated K; moderate hydrocarbon odor

Silty CLAY (CL); yellow brown; very stiff; damp; 80% clay; 15% silt; 5% sand; trace gravel; moderate plasticity; low estimated K; no odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-F

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 2

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 19, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: Dry

Static Depth of Water in Well: Dry

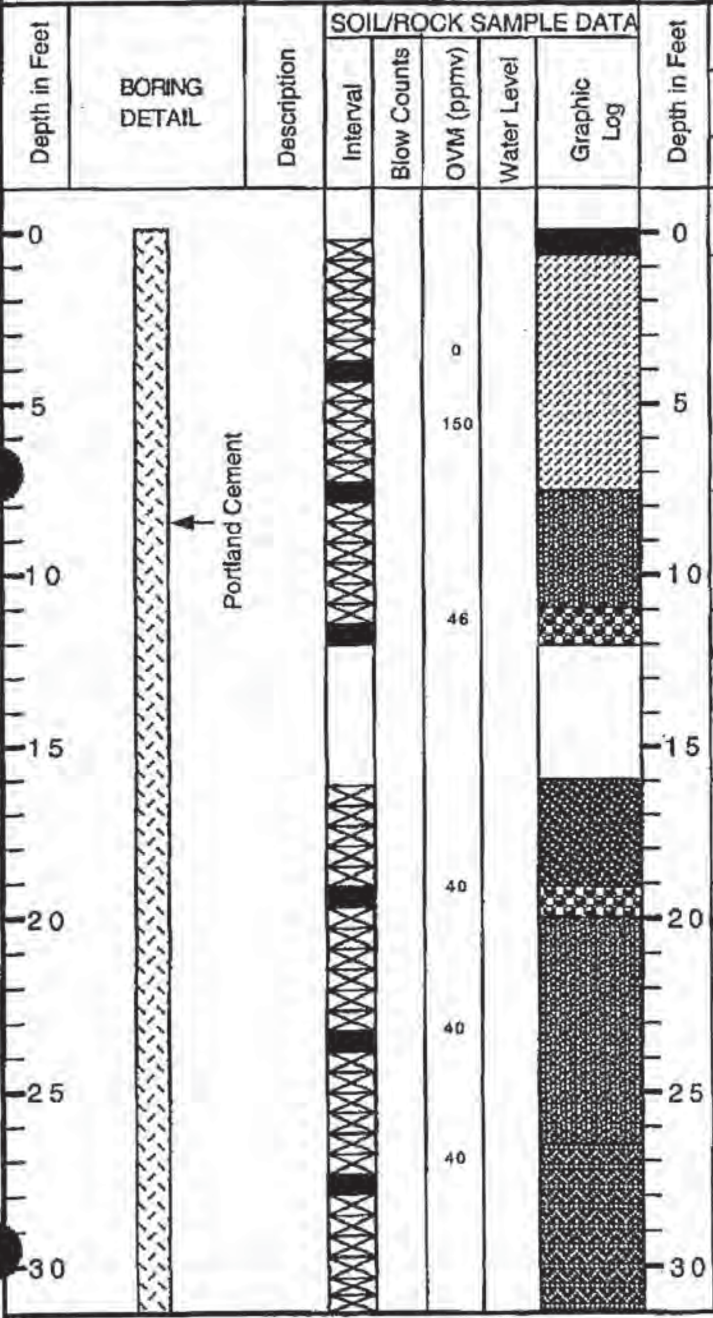
Total Depth of Boring: 32'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Sandy SILT (ML); brown; medium stiff; damp; 95% silt; 5% sand; non-plastic; low estimated K; no odor

soft; wet

dark olive; strong hydrocarbon odor

Silty CLAY (CL); black; medium stiff; moist; 80% clay; 20% silt; moderate plasticity; low estimated K; no odor

stiff; damp below 8 feet

Clayey GRAVEL (GC); olive; medium dense; damp; 55% gravel; 45% clay; low plasticity; low estimated K; no odor

No recovery

CLAY (CH); olive; very stiff; damp; 100% clay, high plasticity; very low estimated K; slight hydrocarbon odor

Clayey GRAVEL (GC); yellow brown; medium dense; damp; 55% gravel; 45% clay; low plasticity; low estimated K; slight hydrocarbon odor

Silty CLAY (CL); yellow brown; very stiff; damp; 80% clay; 20% silt; moderate plasticity; low estimated K; no odor

Sandy CLAY (CL); yellow brown; very stiff; damp; 80% clay; 20% sand; moderate plasticity; low estimated K; no odor

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

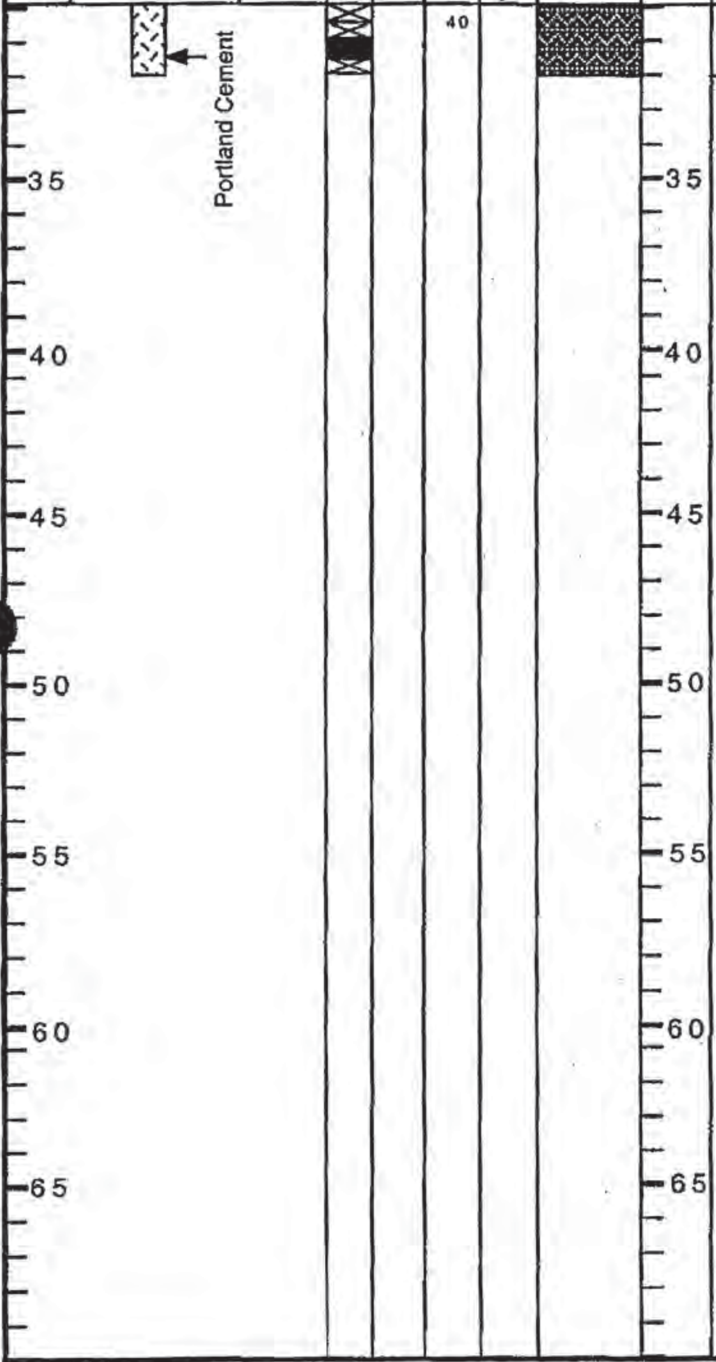
BORING: BH-F

Project Name: Kozel Property

Project Location: 1001 42nd St., Oakland, CA

Page 2 of 2

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA: Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log	Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
	Portland Cement				40				Coninuation from above
									End of boring



SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-G

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 19, 2004

Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: 21'

Static Depth of Water in Well: NA

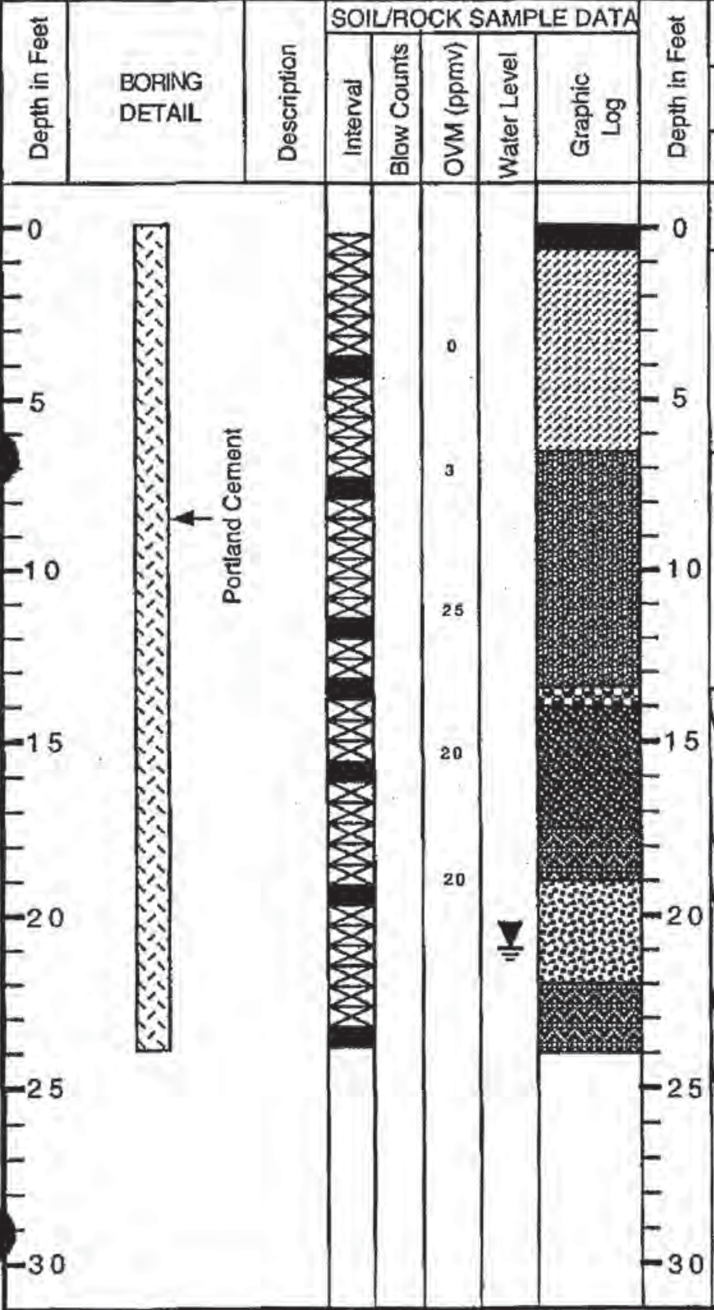
Total Depth of Boring: 24'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Depth in Feet	
0	Concrete/Base
	Sandy SILT (ML); brown; medium stiff; damp; 75% silt; 25% sand; non-plastic; low estimated K; no odor
5	moist, soft
	Silty CLAY (CL); dark brown; medium stiff; moist; 70% clay; 30% silt; trace gravel; moderate plasticity; low estimated K; no odor
10	black; stiff; damp; 95% clay; 5% silt
15	Clayey GRAVEL (GC); olive; medium dense; damp; 55% gravel; 45% clay; low plasticity; low estimated K; slight hydrocarbon odor
	CLAY (CH); olive; stiff; moist; 100% clay; trace gravel; high plasticity; very low estimated K; slight hydrocarbon odor
20	Sandy CLAY (CL); olive; stiff; damp; 75% clay; 25% sand; moderate plasticity; low estimated K; slight hydrocarbon odor
	Clayey SAND (SC); olive; dense; damp; 60% sand; 25% clay; 15% gravel; non-plastic; medium estimated K; no odor
25	wet between 21 and 22 feet
	Sandy CLAY (CL); yellow brown; very stiff; damp; 65% clay; 20% sand; 15% gravel; moderate plasticity; low estimated K; no odor
	End of boring
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-H

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 20, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 9'

Static Depth of Water in Well: NA

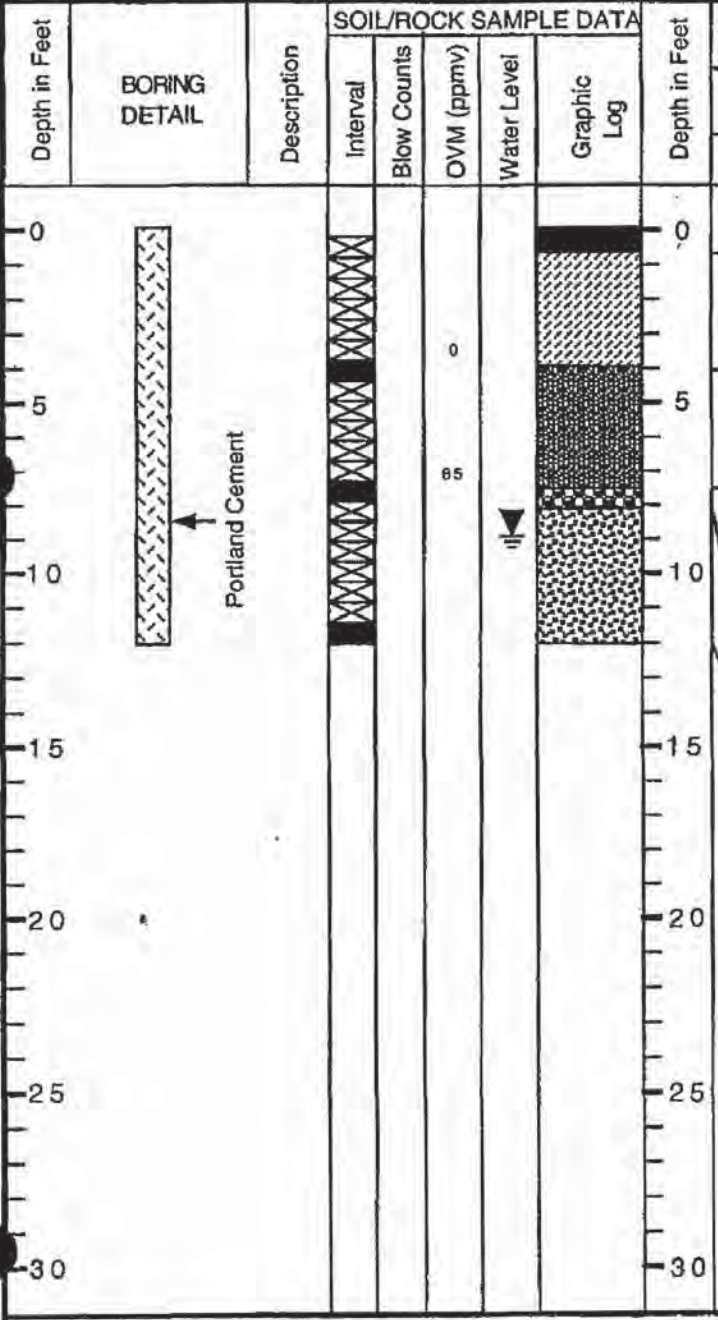
Total Depth of Boring: 12'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Sandy SILT (ML); brown mottled orange; soft; moist; 90% silt; 10% sand; non-plastic; low estimated K; no odor

Silty CLAY (CL); dark brown; stiff; damp; 90% clay; 10% silt; moderate plasticity; very low estimated K; slight hydrocarbon odor

Clayey GRAVEL (GC); olive; medium dense; damp; 55% gravel; 45% clay; low plasticity; low estimated K; slight hydrocarbon odor

Clayey SAND (SC); olive; loose; wet; 70% sand; 25% gravel; 5% clay; non-plastic; high estimated K; strong hydrocarbon odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-I

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 20, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: ~6'

Static Depth of Water in Well: NA

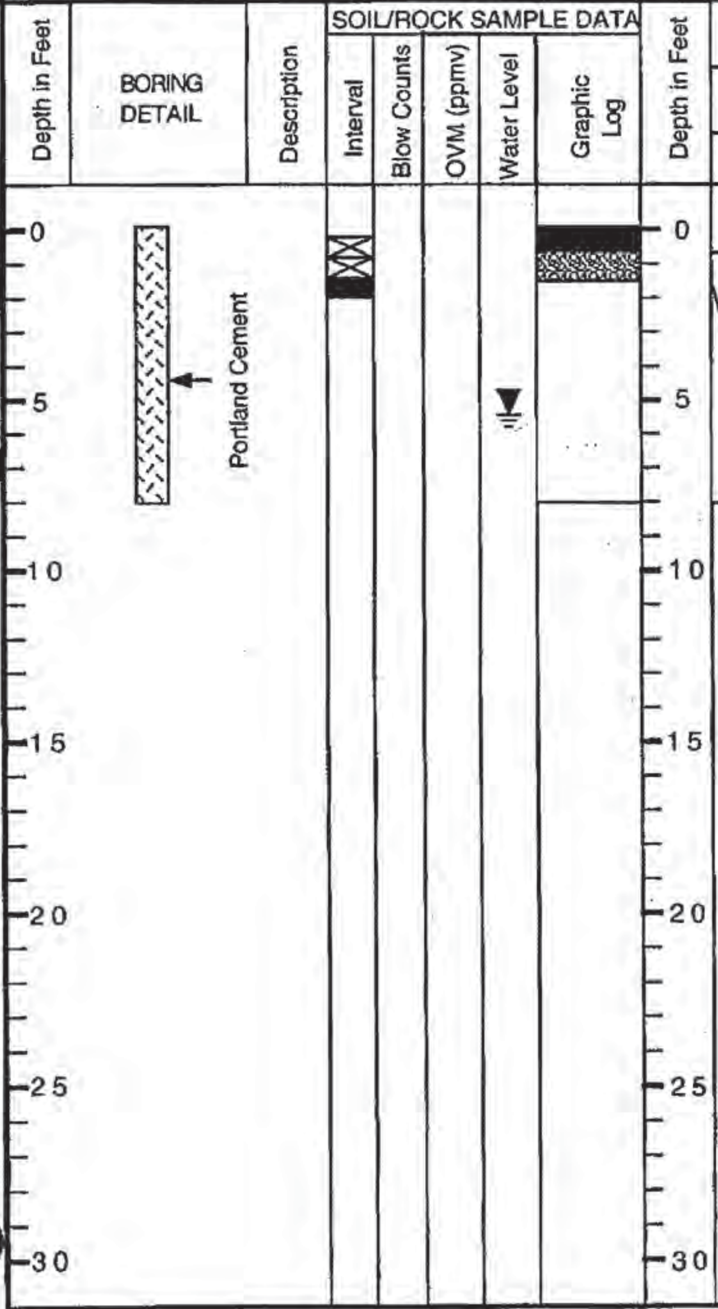
Total Depth of Boring: 8'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Clayey SILT (ML); olive; soft; wet; 90% silt; 10% sand; non-plastic; low estimated K; strong hydrocarbon odor

no recovery

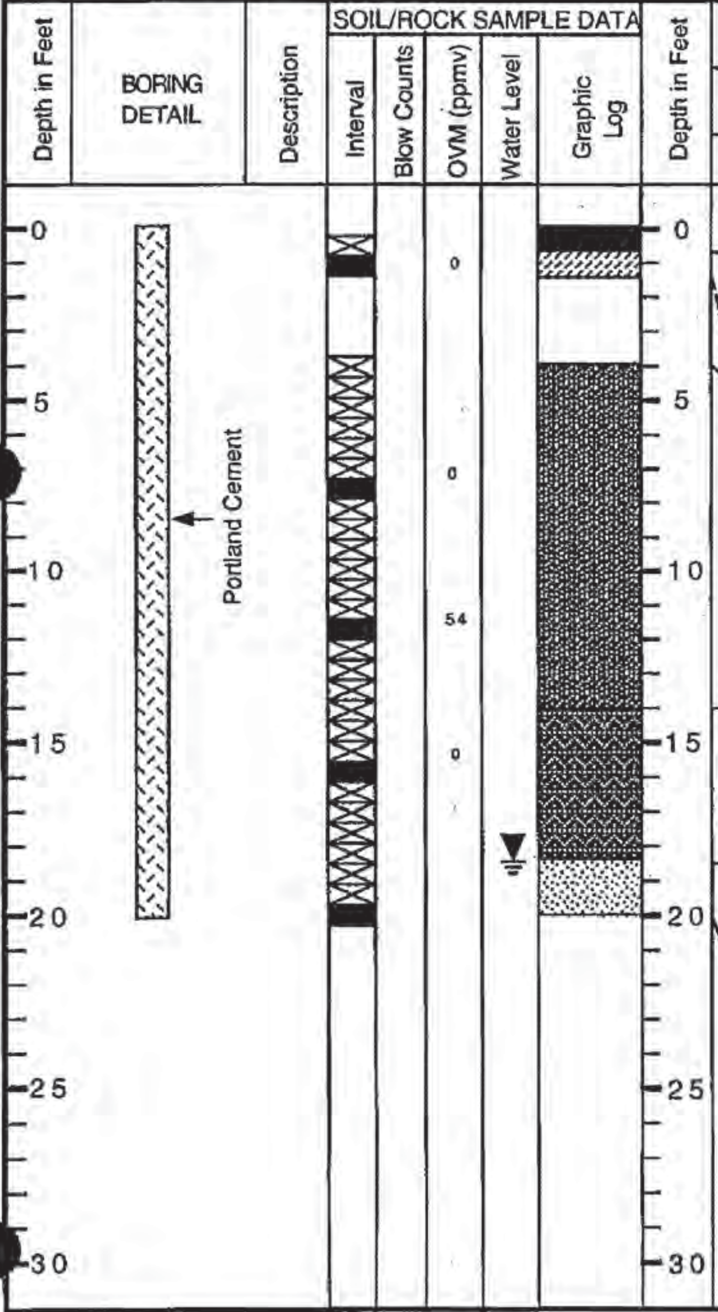
End of boring

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-J

Project Name: Kozel Property	Project Location: 1001 42nd St. Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Damian Hriciga	Date Drilled: October 20, 2004	Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA	Total Depth of Well Completed: NA
Depth of Water First Encountered: 19'	Well Screen Type and Diameter: NA
Static Depth of Water in Well: NA	Well Screen Slot Size: NA
Total Depth of Boring: 20'	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0	Concrete/Base
	Clayey SILT (ML); brown mottled orange; soft; moist; 90% silt; 10% sand; non-plastic; low estimated K; no odor
	no recovery
5	Silty CLAY (CH); dark brown; stiff; damp; 90% clay; 10% silt; high plasticity; very low estimated K; slight hydrocarbon odor
10	olive; trace gravel and sand; slight odor
15	Sandy CLAY (CH); olive mottled yellow brown; very stiff; wet; 85% clay; 15% sand; high plasticity; low estimated K; slight hydrocarbon odor
20	Silty SAND (SM); olive; medium dense; wet; 70% sand; 25% silt; 5% clay; non-plastic; high estimated K; strong hydrocarbon odor
	End of boring

AQUA SCIENCE ENGINEERS, INC.

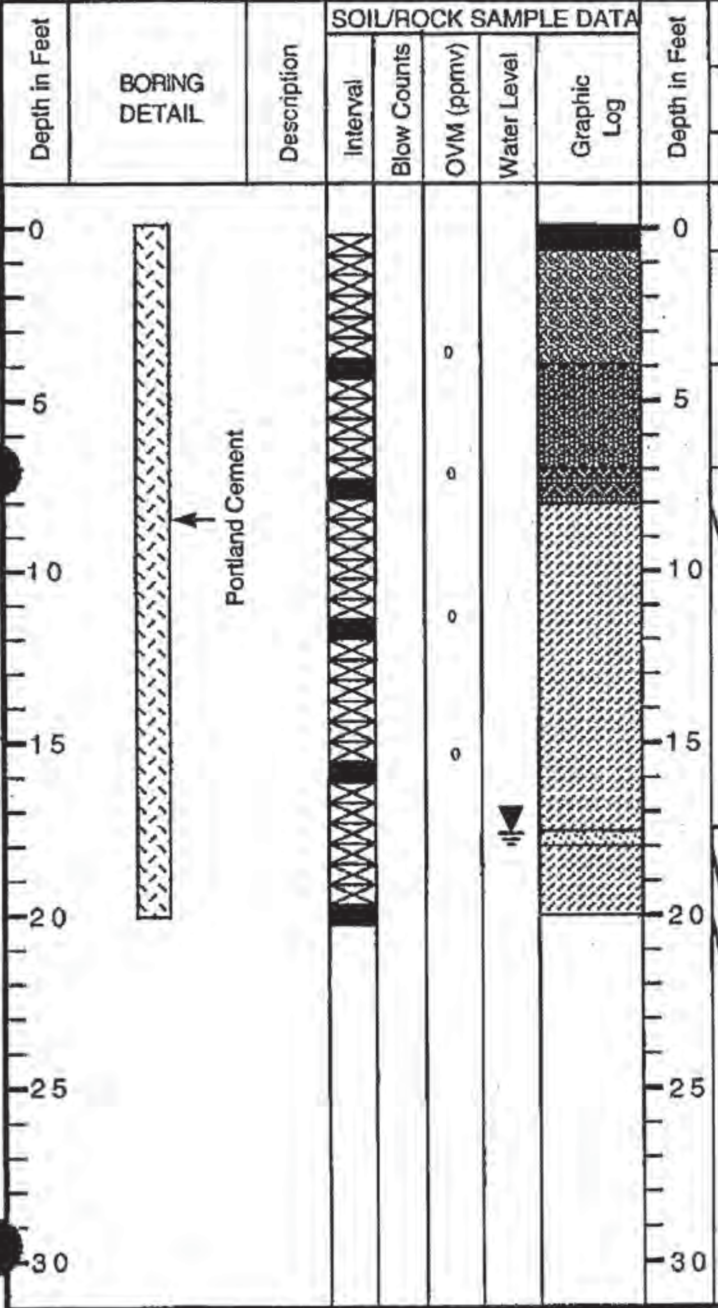
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-K

Project Name: Kozel Property
Project Location: 1001 42nd St. Oakland, CA
Page 1 of 1
Driller: Vironex
Type of Rig: Geoprobe
Size of Drill: 2.0" Diameter
Logged By: Damian Hriciga
Date Drilled: October 20, 2004
Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: 18.5'
Static Depth of Water in Well: NA
Total Depth of Boring: 20'
Total Depth of Well Completed: NA
Well Screen Type and Diameter: NA
Well Screen Slot Size: NA
Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 Asphalt/Base

Clayey SILT (ML); dark brown; stiff; damp; 70% silt; 20% clay; 10% sand; low plasticity; low estimated K; no odor

5 Silty CLAY (CL); dark brown; very stiff; damp; 70% clay; 20% silt; 10% sand; high plasticity; very low estimated K; no odor

Sandy CLAY (CL); brown; very stiff; damp; 50% clay; 40% sand; 10% silt; low plasticity; low estimated K; no odor

10 Sandy SILT (ML); yellow brown; stiff; dry; 60% silt; 30% sand; 10% clay; medium estimated K; non-plastic; no odor

15 80% silt; 10% sand; 10% clay

Silty SAND (SM); yellow brown; loose; wet; 85% sand; 10% silt; 5% clay; non-plastic; high estimated K; slight hydrocarbon odor

20 Sandy SILT (ML); yellow brown; stiff; moist; 80% silt; 10% sand; 10% clay; medium estimated K; non-plastic; no odor

End of boring

25

30

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-L

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 20, 2004

Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: 22'

Static Depth of Water in Well: NA

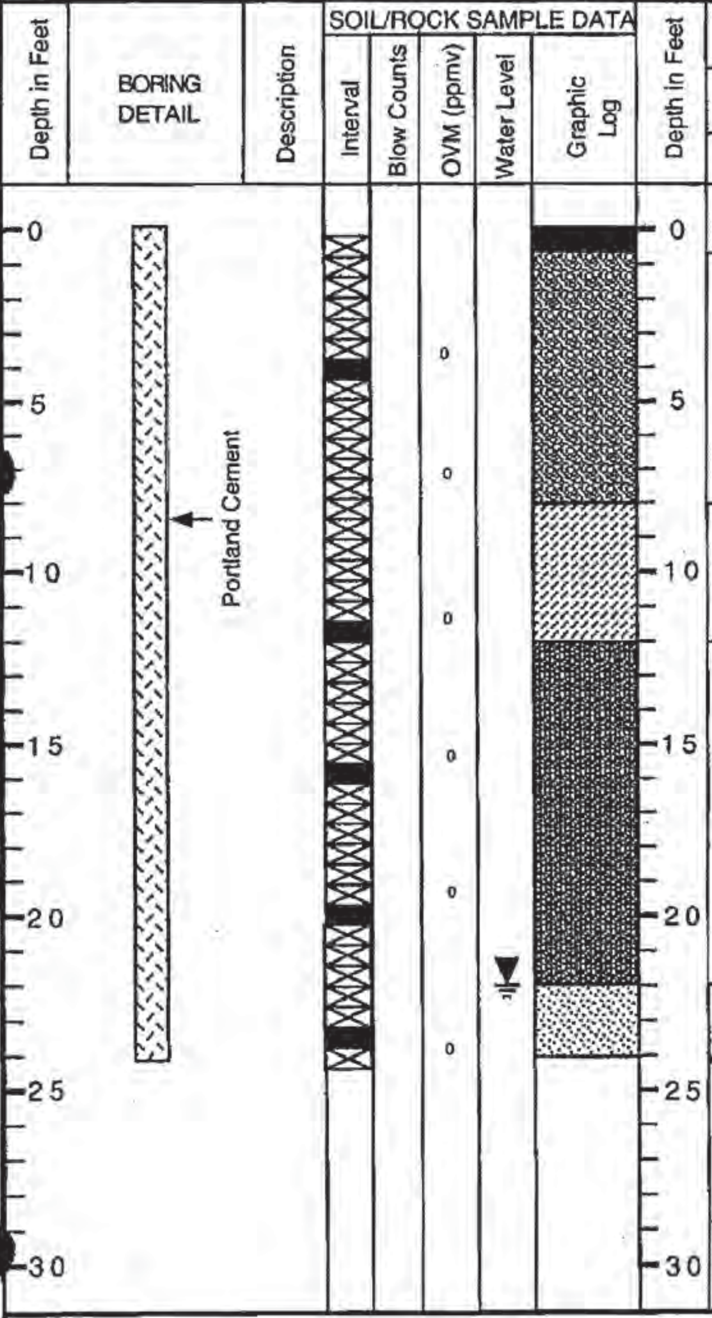
Total Depth of Boring: 24'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Asphalt/Base

Clayey SILT (ML); dark brown; stiff; damp; 75% silt; 20% clay; 5% sand; low plasticity; low estimated K; no odor

Sandy SILT (ML); yellow brown; stiff; moist; 60% silt; 40% sand; non-plastic; medium estimated K; no odor

Silty CLAY (CL); yellow brown; stiff; moist; 60% clay; 30% silt; 10% sand; moderate plasticity; low estimated K; no odor

Silty SAND (SM); brown; dense; wet; 60% sand; 20% silt; 10% gravel; 10% clay; non-plastic; high estimated K; no odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-M

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 20, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 15'

Static Depth of Water in Well: NA

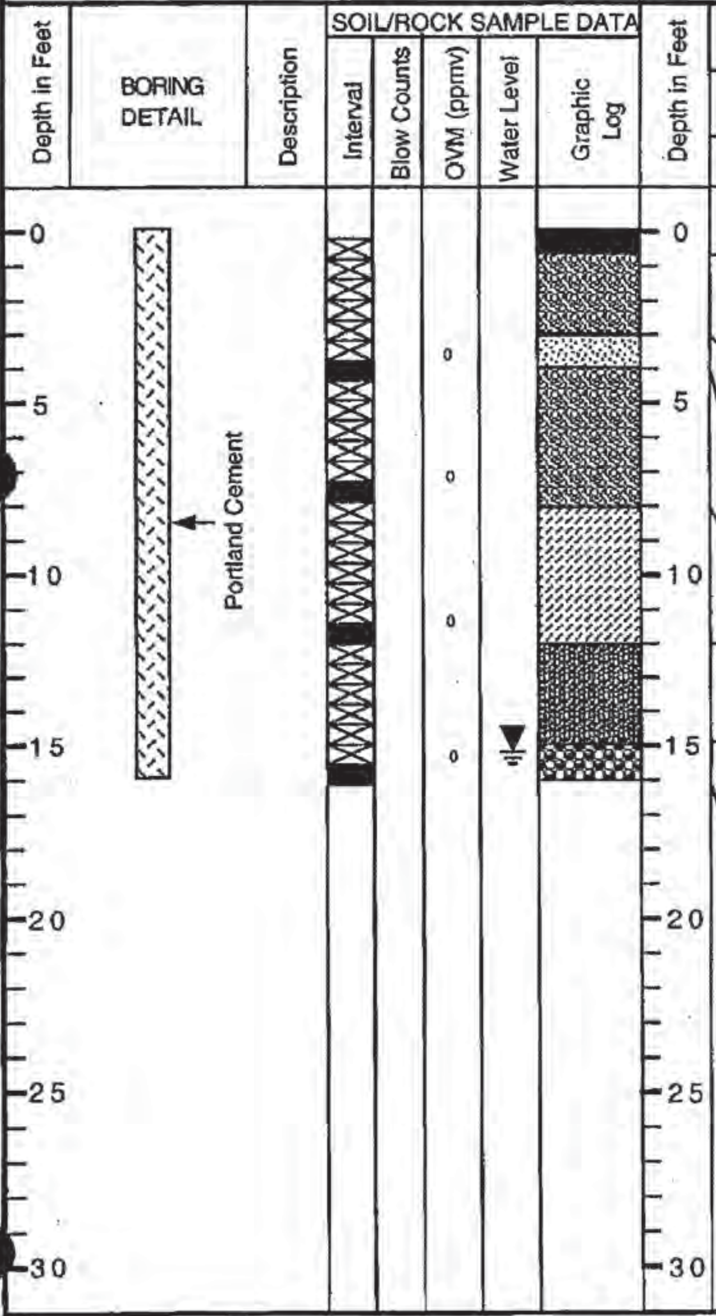
Total Depth of Boring: 16'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Asphalt/Base
Clayey SILT (ML); dark brown; stiff; damp; 75% silt; 20% clay; 5% sand; low plasticity; low estimated K; no odor
Silty SAND (SM); brown; medium dense; wet; 70% sand; 20% silt; 10% clay; non-plastic; high estimated K; no odor
Clayey SILT (ML); dark brown; stiff; damp; 75% silt; 20% clay; 5% sand; low plasticity; low estimated K; no odor
Sandy SILT (ML); yellow brown; stiff; moist; 60% silt; 40% sand; medium estimated K; non-plastic; no odor
Silty CLAY (CL); yellow brown; stiff; moist; 60% clay; 30% silt; 10% sand; moderate plasticity; low estimated K; no odor
Clayey GRAVEL (GC); brown; dense; wet; 60% gravel; 20% clay; 20% sand; non-plastic; high estimated K; no odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-N

Project Name: Kozel Property
Project Location: 1001 42nd St. Oakland, CA
Page 1 of 1

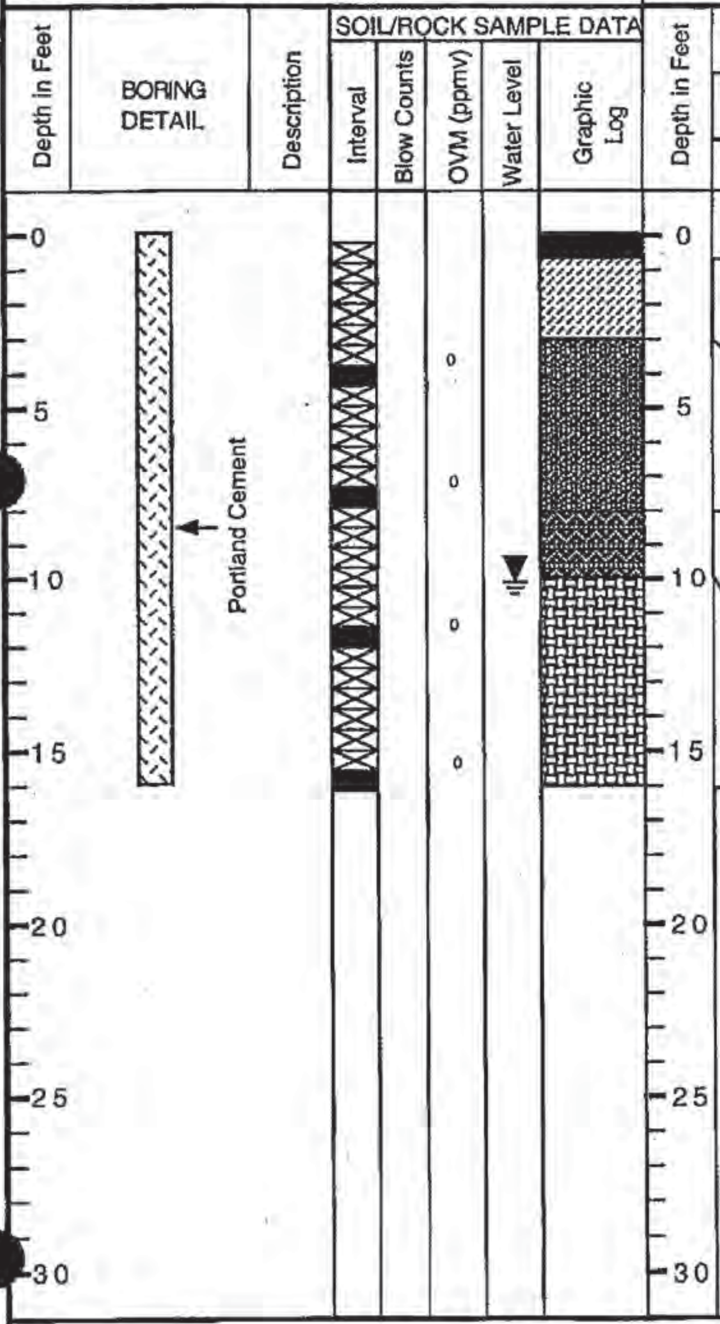
Driller: Vironex
Type of Rig: Geoprobe
Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga
Date Drilled: October 21, 2004
Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 10'
Static Depth of Water in Well: NA
Total Depth of Boring: 16'

Total Depth of Well Completed: NA
Well Screen Type and Diameter: NA
Well Screen Slot Size: NA
Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Asphalt/Base

Sandy SILT (ML); brown; stiff; dry; 90% silt; 10% sand; non-plastic; low estimated K; no odor

Silty CLAY (CH); brown; stiff; damp; 80% clay; 20%; silt; high plasticity; very low estimated K; no odor

Sandy CLAY (CL); olive; soft; damp; 60% clay; 30% sand; 10% gravel; low plasticity; medium estimated K; moderate hydrocarbon odor

Gravelly SAND (SW); brown; wet; loose; 60% sand; 30% gravel; 10% clay; non-plastic; high estimated K; no odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-O

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 21, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 22'

Static Depth of Water in Well: NA

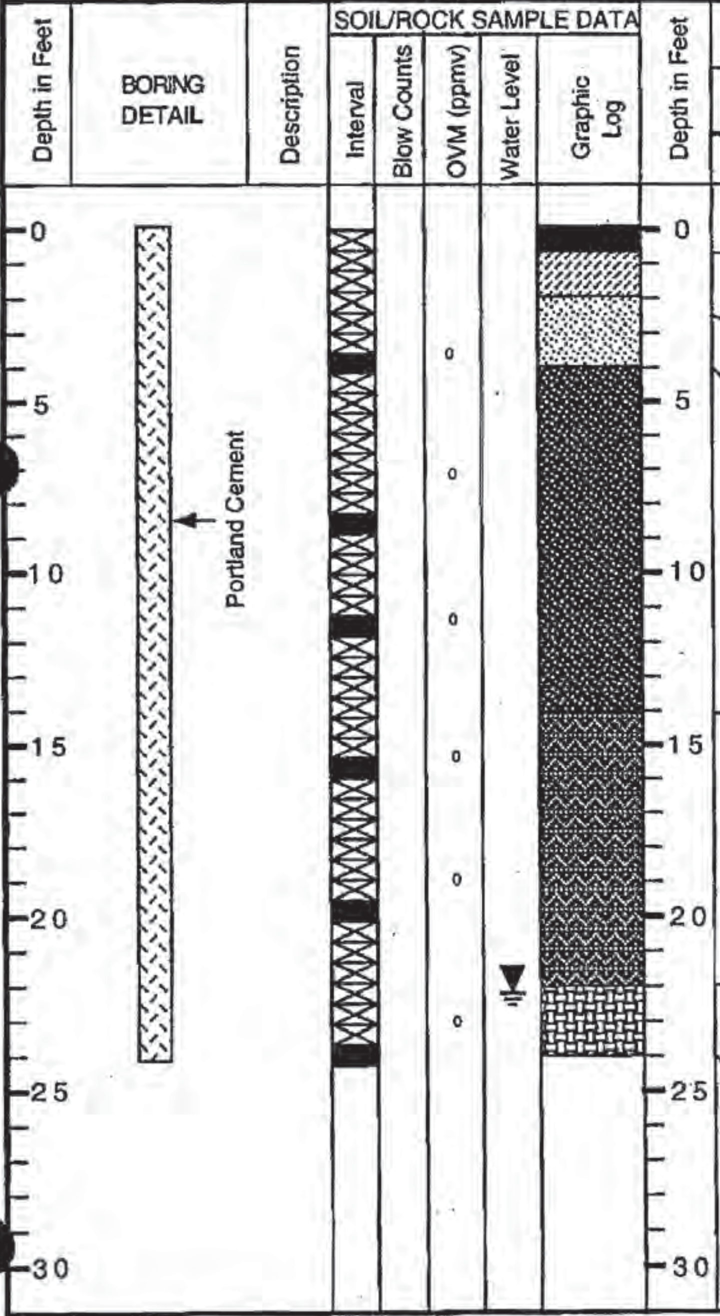
Total Depth of Boring: 24'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Sandy SILT (ML); brown; medium stiff; moist; 90% silt; 10% sand; non-plastic; low estimated K; no odor

Silty SAND (SM); brown; wet; loose; 85% sand; 15% silt; non-plastic; high estimated K; no odor

CLAY (CH); dark brown; stiff; moist; 100% clay; high plasticity; very low estimated K; no odor

olive

Sandy CLAY (CL); olive; stiff; moist; 80% clay; 20% sand; trace gravel; moderate plasticity; low estimated K; no odor

Gravelly SAND (SW); yellow brown; wet; medium dense; 60% sand; 30% gravel; 10% clay; non-plastic; medium estimated K; no odor

End of boring

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-P

Project Name: Kozel Property
Project Location: 1001 42nd St. Oakland, CA
Page 1 of 1

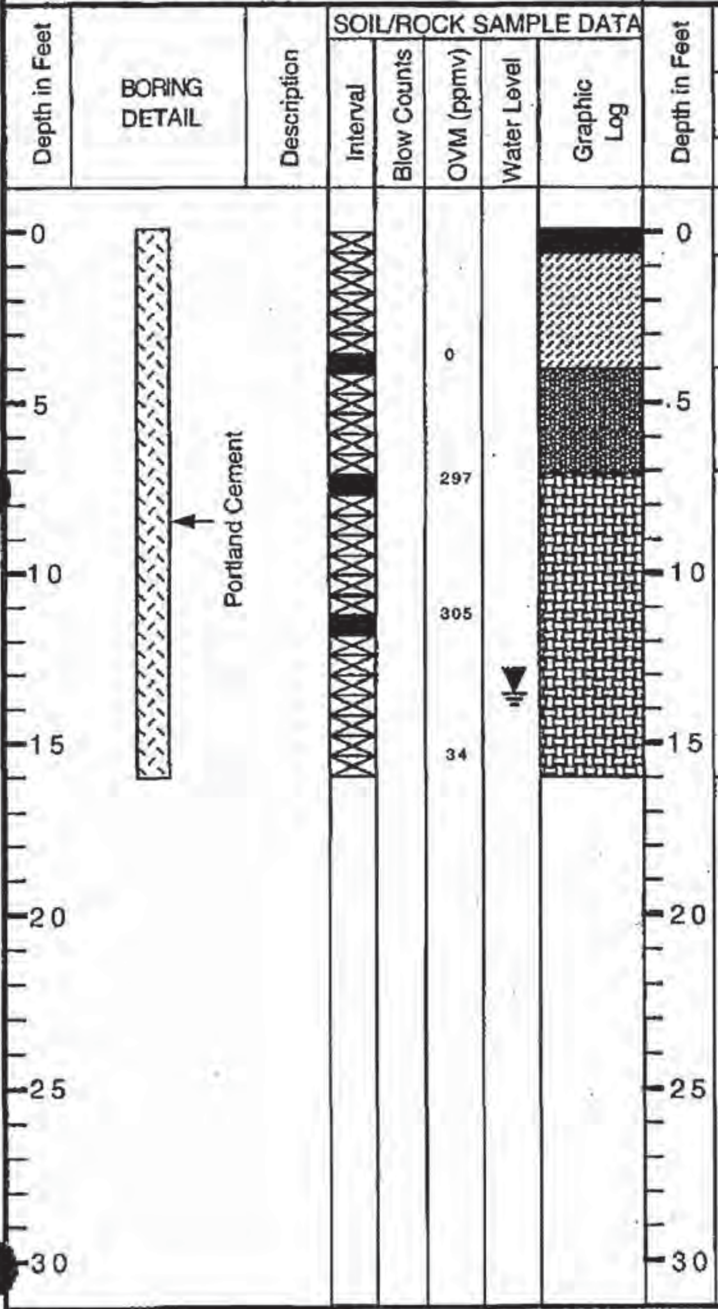
Driller: Vironex
Type of Rig: Geoprobe
Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga
Date Drilled: October 21, 2004
Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 13.5'
Static Depth of Water in Well: NA
Total Depth of Boring: 16'

Total Depth of Well Completed: NA
Well Screen Type and Diameter: NA
Well Screen Slot Size: NA
Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Asphalt/Base

Sandy SILT (ML); dark brown; stiff; damp; 95% silt; 5% sand; non-plastic; low estimated K; no odor

Silty CLAY (CL); dark brown; stiff; damp; 80% clay; 20% silt; moderate plasticity; low estimated K; slight hydrocarbon odor

Gravelly SAND (SW); olive; moist; loose; 60% sand; 30% gravel; 10% clay; non-plastic; medium estimated K; strong hydrocarbon odor

yellow brown; wet; no odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-Q

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 21, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 13.5'

Static Depth of Water in Well: NA

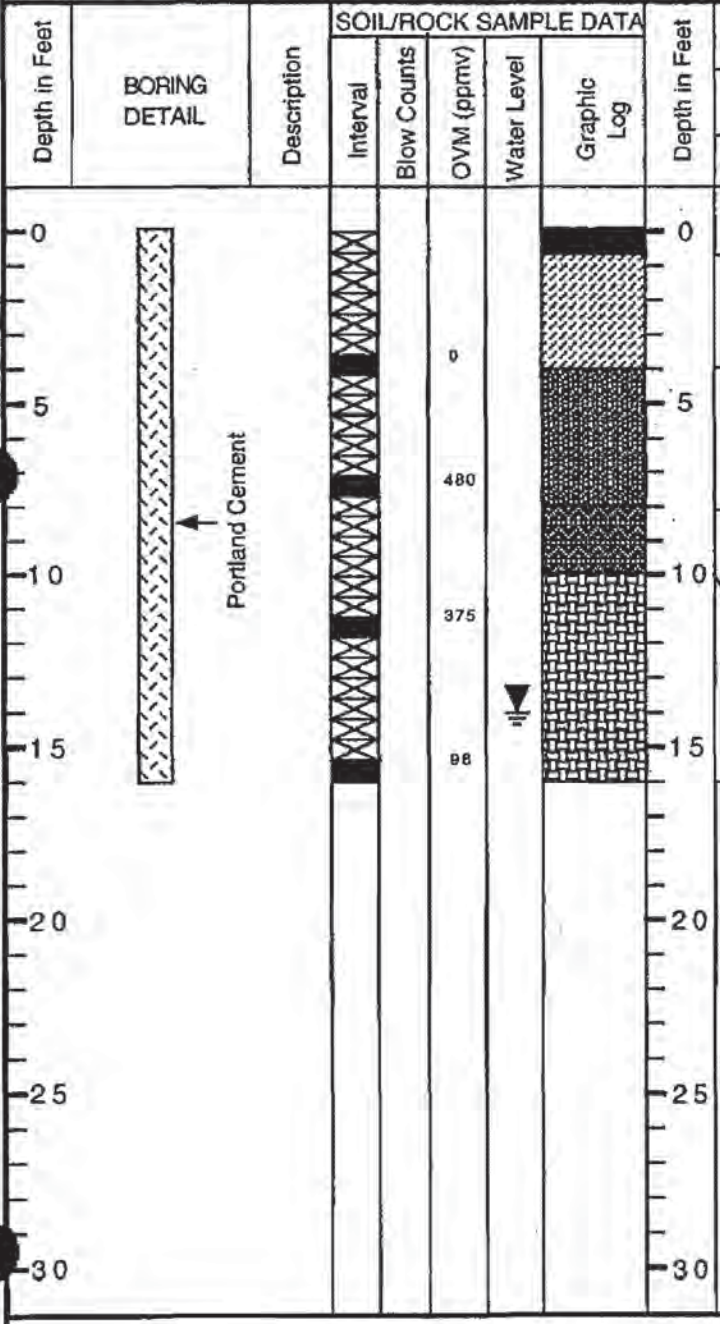
Total Depth of Boring: 16'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Asphalt/Base

Sandy SILT (ML); brown mottled orange; stiff; damp; 90% silt; 10% sand; non-plastic; low estimated K; no odor

Silty CLAY (CL); dark brown; stiff; damp; 80% clay; 20% silt; moderate plasticity; low estimated K; slight hydrocarbon odor

Sandy CLAY (CL); olive; stiff; damp; 80% clay; 20% sand; moderate plasticity; low estimated K; slight hydrocarbon odor

Gravelly SAND (SW); olive; moist; loose; 60% sand; 30% gravel; 10% clay; non-plastic; high estimated K; moderate hydrocarbon odor

yellow brown; wet; slight hydrocarbon odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-R

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 21, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 13.5'

Static Depth of Water in Well: NA

Total Depth of Boring: 16'

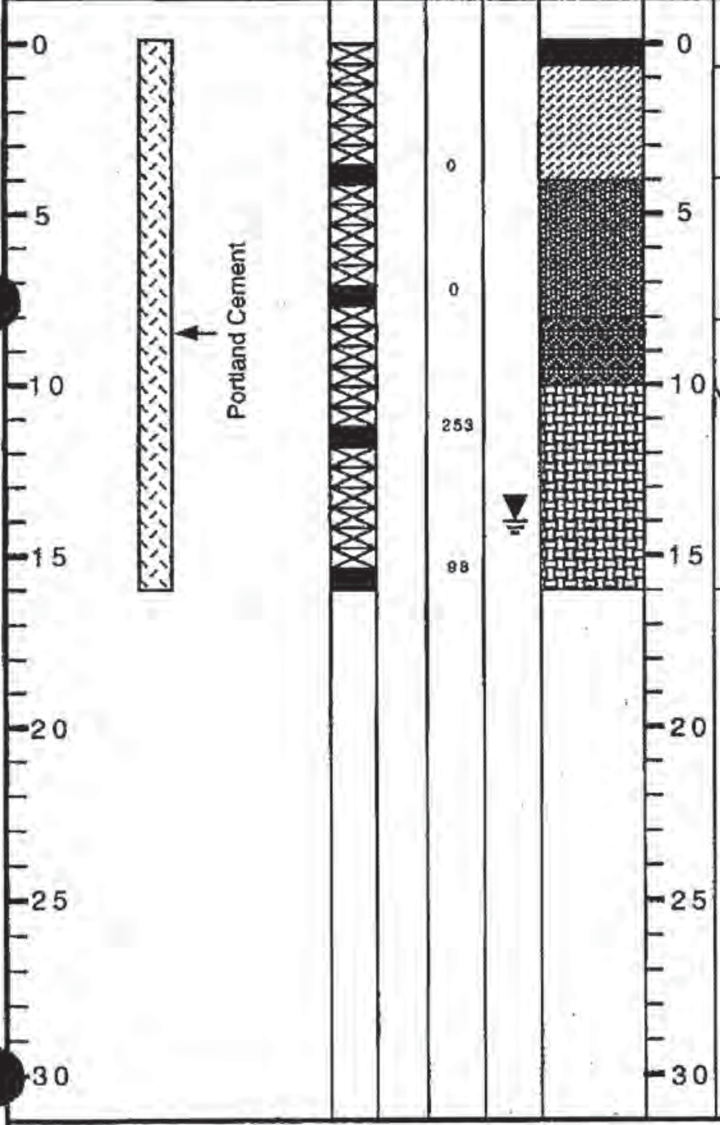
Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA					Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.



Concrete/Base

Sandy SILT (ML); brown mottled orange; stiff; damp; 90% silt; 10% sand; non-plastic; low estimated K; no odor

Silty CLAY (CL); dark brown; stiff; damp; 80% clay; 20% silt; moderate plasticity; low estimated K; no odor

Sandy CLAY (CL); olive; stiff; damp; 80% clay; 20% silt; moderate plasticity; low estimated K; slight hydrocarbon odor

Gravelly SAND (SW); olive; moist; loose; 60% sand; 30% gravel; 10% clay; non-plastic; high estimated K; moderate hydrocarbon oder

yellow brown; wet; slight hydrocarbon odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

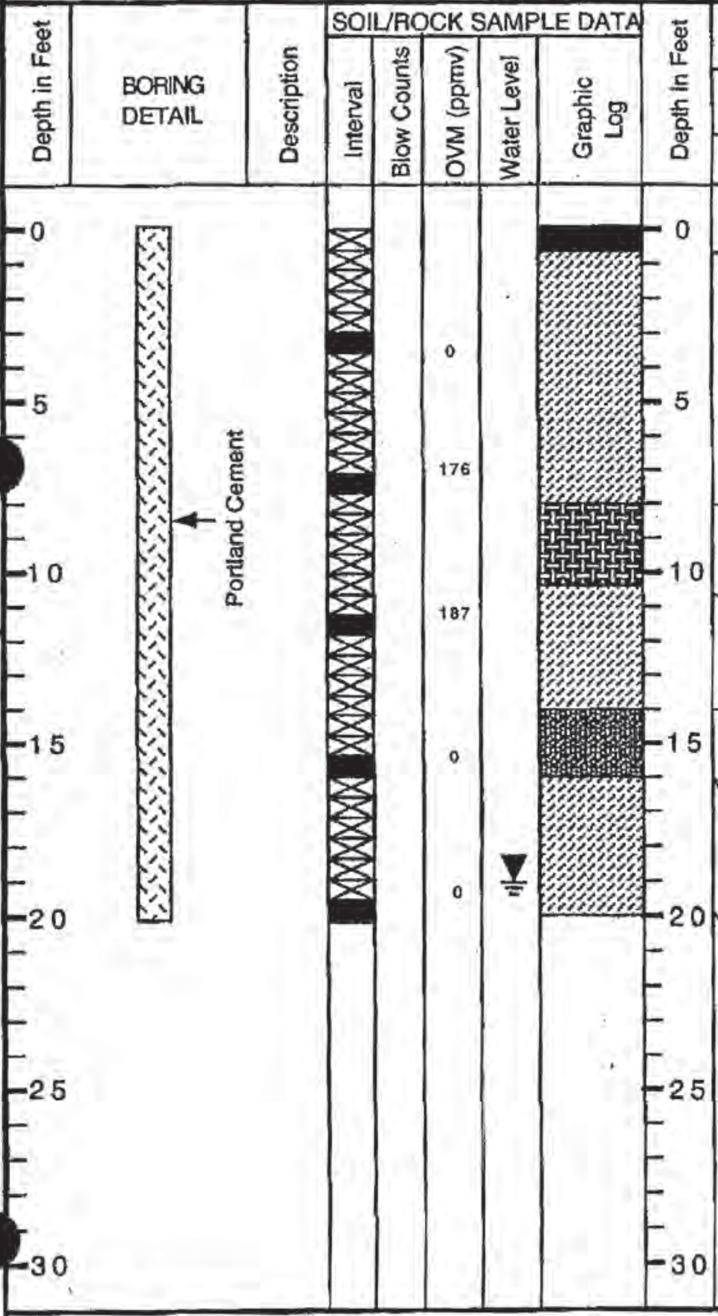
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-S

Project Name: Kozel Property	Project Location: 1001 42nd St. Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Damian Hriciga	Date Drilled: October 21, 2004	Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: 19'	Total Depth of Well Completed: NA
	Well Screen Type and Diameter: NA
Static Depth of Water in Well: NA	Well Screen Slot Size: NA
Total Depth of Boring: 20'	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Depth in Feet	Description
0	Asphalt/Base
	Sandy SILT (ML); brown mottled orange; stiff; damp; 90% silt; 10% sand; non-plastic; low estimated K; no odor moderate hydrocarbon odor
	Gravelly CLAY (CL); olive; stiff; damp; 60% clay; 30% gravel; 10% sand; moderate plasticity; medium estimated K; strong hydrocarbon odor
10	Sandy SILT (ML); olive; medium stiff; moist; 60% silt; 40% sand; non-plastic; medium estimated K; strong hydrocarbon odor
15	Silty CLAY (CL); yellow brown; very stiff; damp; 80% clay; 20% silt; moderate plasticity; low estimated K; no odor
	Sandy SILT (ML); yellow brown; soft; moist; 60% silt; 40% sand; trace gravel; non-plastic; medium estimated K; no odor wet @19 feet
20	End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-T

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian HricIga

Date Drilled: October 21, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 12'

Static Depth of Water in Well: NA

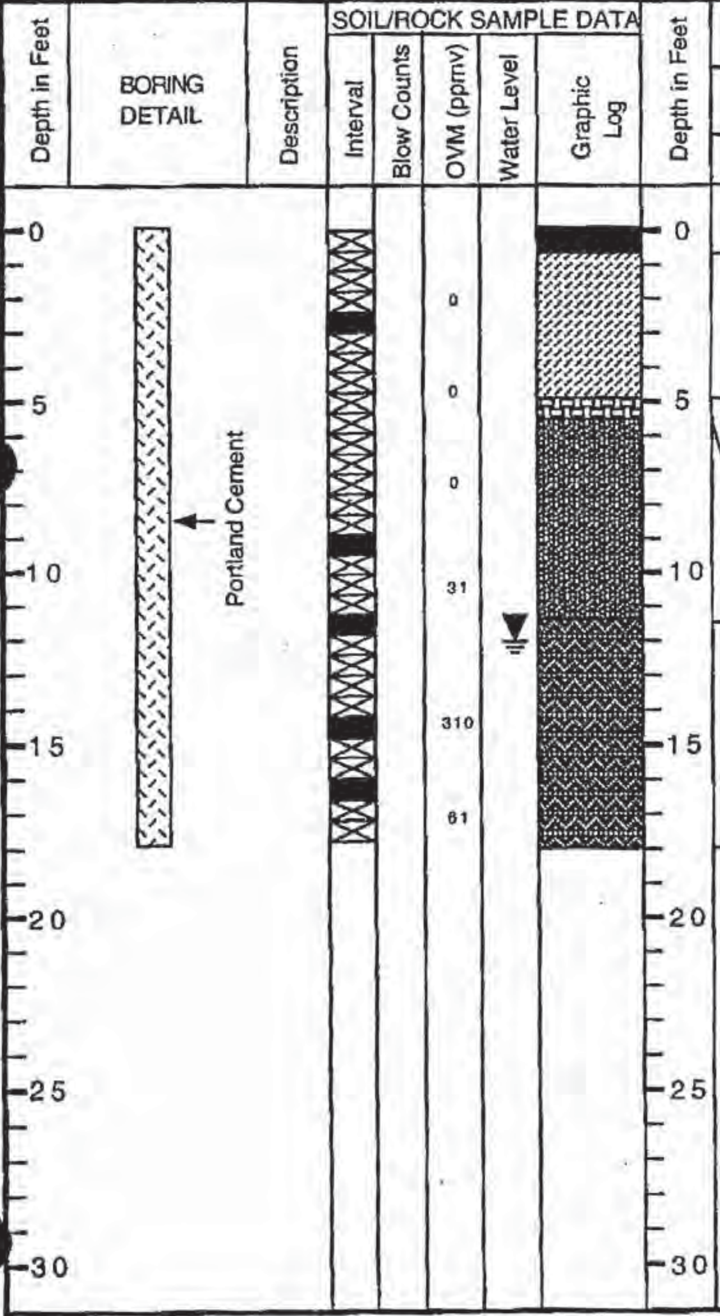
Total Depth of Boring: 18'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Depth in Feet	Description of Lithology
0	Concrete/Base
	Sandy SILT (ML); dark brown; medium stiff; moist; 85% silt; 15% sand; non-plastic; low estimated K; no odor olive mottled brown below 3 feet
5	Gravelly SAND (SW); olive mottled brown; moist; loose; 60% sand; 40% gravel; non-plastic; high estimated K; no odor
	Silty CLAY (CL); dark brown; stiff; moist; 80% clay; 20% silt; moderate plasticity; low estimated K; no odor
10	
	Sandy CLAY (CL); olive; medium stiff; moist; 70% clay; 15% sand; 15% gravel; non-plastic; medium estimated K; no odor wet between 12 and 13 feet 75% clay; 25% sand below 13 feet wet between 16 and 16.5 feet
15	
	End of boring
20	
25	
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-U

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 21, 2004

Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: 9.5'

Static Depth of Water in Well: NA

Total Depth of Boring: 12'

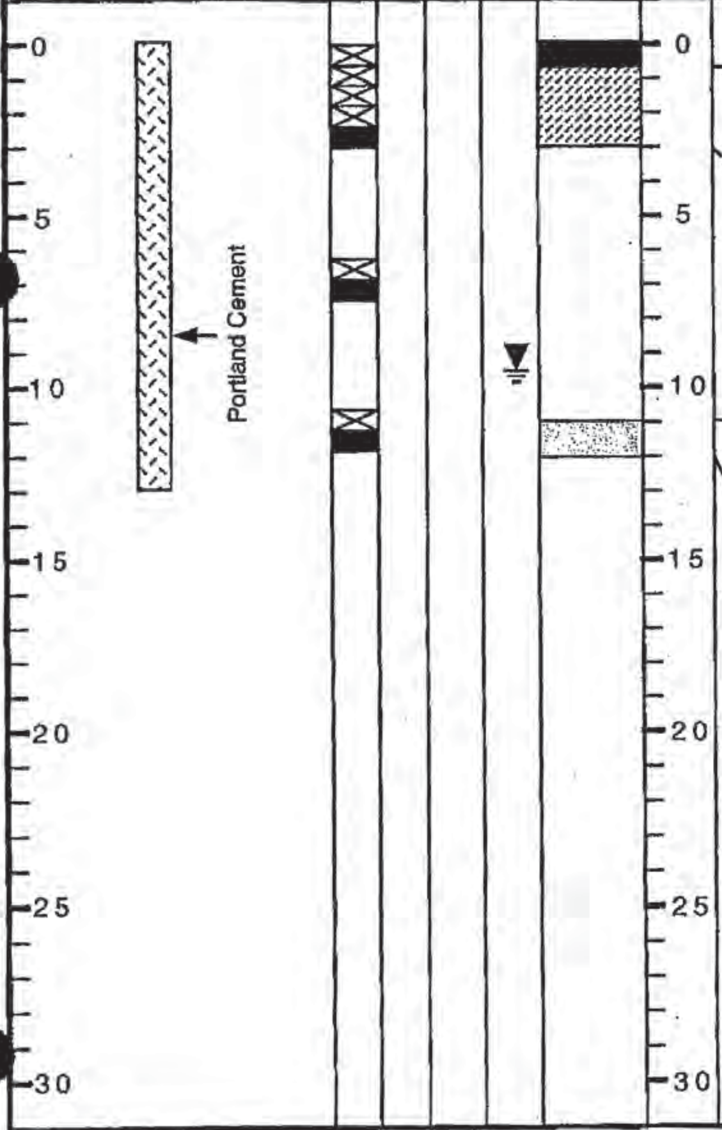
Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA					Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.



Concrete/Base

Sandy SILT (ML); yellow brown; medium stiff; moist; 70% silt; 20% sand; 10% gravel; non-plastic; medium estimated K; no odor

No recovery - Pea Gravel

SAND (SP); olive; loose; wet; 100% sand; non-plastic; high estimated K; strong hydrocarbon odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS	BORING: BH-V

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: October 21 and 22, 2004

Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: Dry

Static Depth of Water in Well: Dry

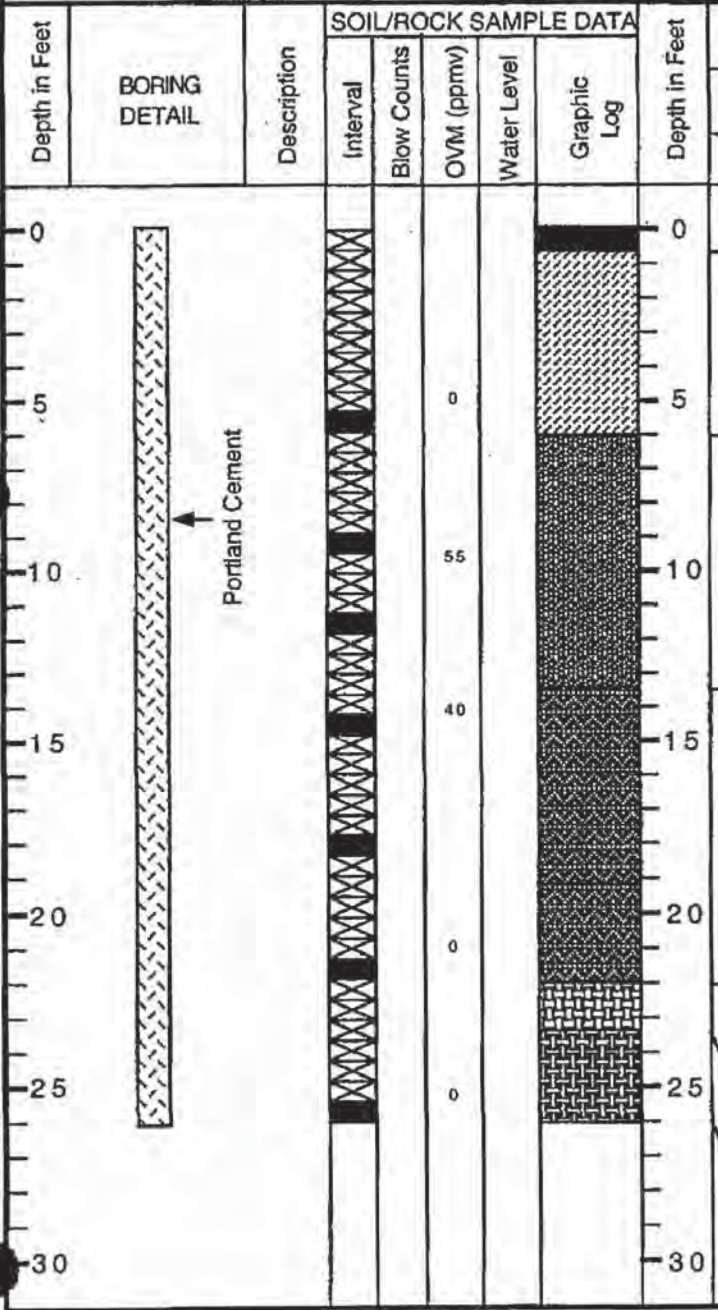
Total Depth of Boring: 26'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Sandy SILT (ML); brown; medium stiff; moist; 85% silt; 15% sand; non-plastic; low estimated K; no odor

Silty CLAY (CL); dark brown; stiff; moist; 70% clay; 30% silt; low plasticity; low estimated K; no odor

Sandy CLAY (CL); olive; stiff; moist; 60% clay; 40% sand; low plasticity; low estimated K; no odor
90% clay; 10% sand below 13.5 feet

Gravelly SAND (SW); brown; medium dense; moist; 70% sand; 20% gravel; 10% clay; non-plastic; high estimated K; no odor

Gravelly CLAY (CL); olive; stiff; moist; 80% clay; 15% gravel; 5% sand; low plasticity; low estimated K; no odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

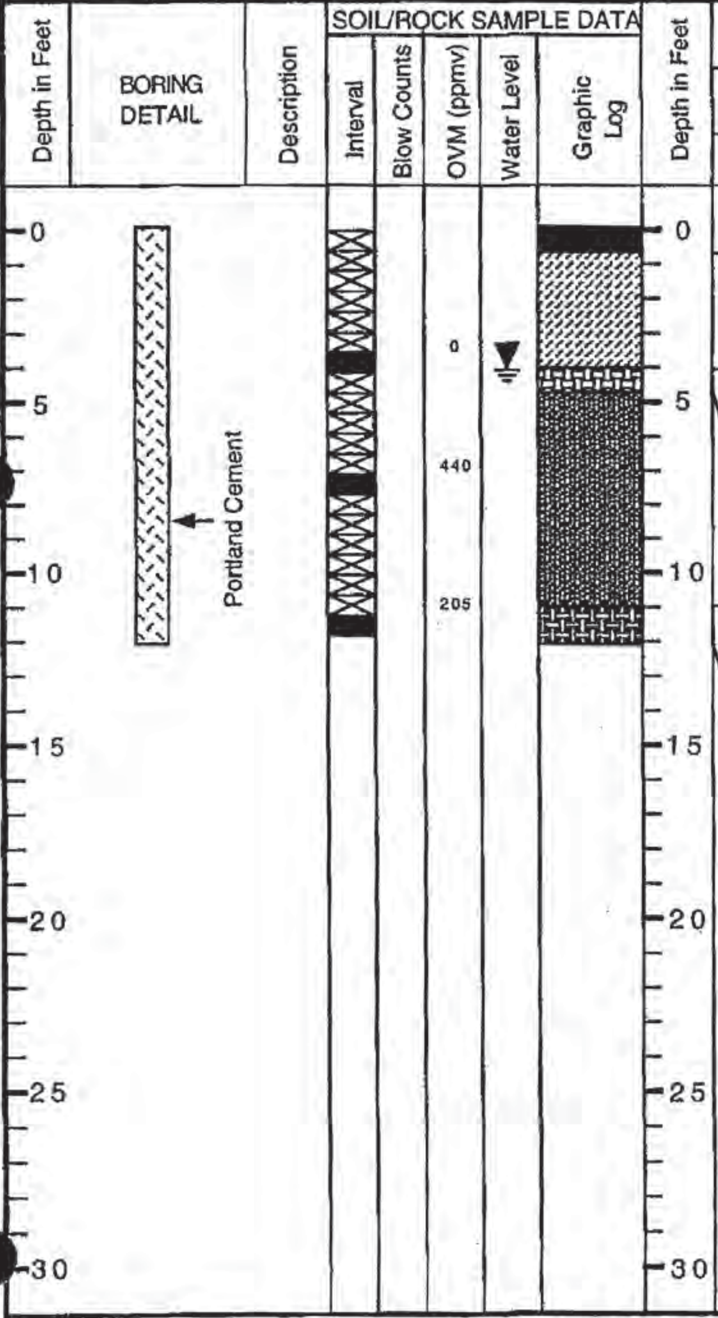
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-W

Project Name: Kozel Property	Project Location: 1001 42nd St. Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Damian Hriciga	Date Drilled: October 22, 2004	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 4'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 12'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Sandy SILT (ML); brown; medium stiff; moist; 90% silt; 10% sand; non-plastic; low estimated K; no odor

Gravelly SAND (SW); brown; loose; wet; 50% sand; 40% gravel; 10% clay; non-plastic; high estimated K; no odor

Silty CLAY (CL); dark brown; stiff; damp; 80% clay; 20% silt; low plasticity; low estimated K; slight hydrocarbon odor

Gravelly CLAY (CL); olive; stiff; damp; 80% clay; 20% gravel; low plasticity; low estimated K; slight hydrocarbon odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

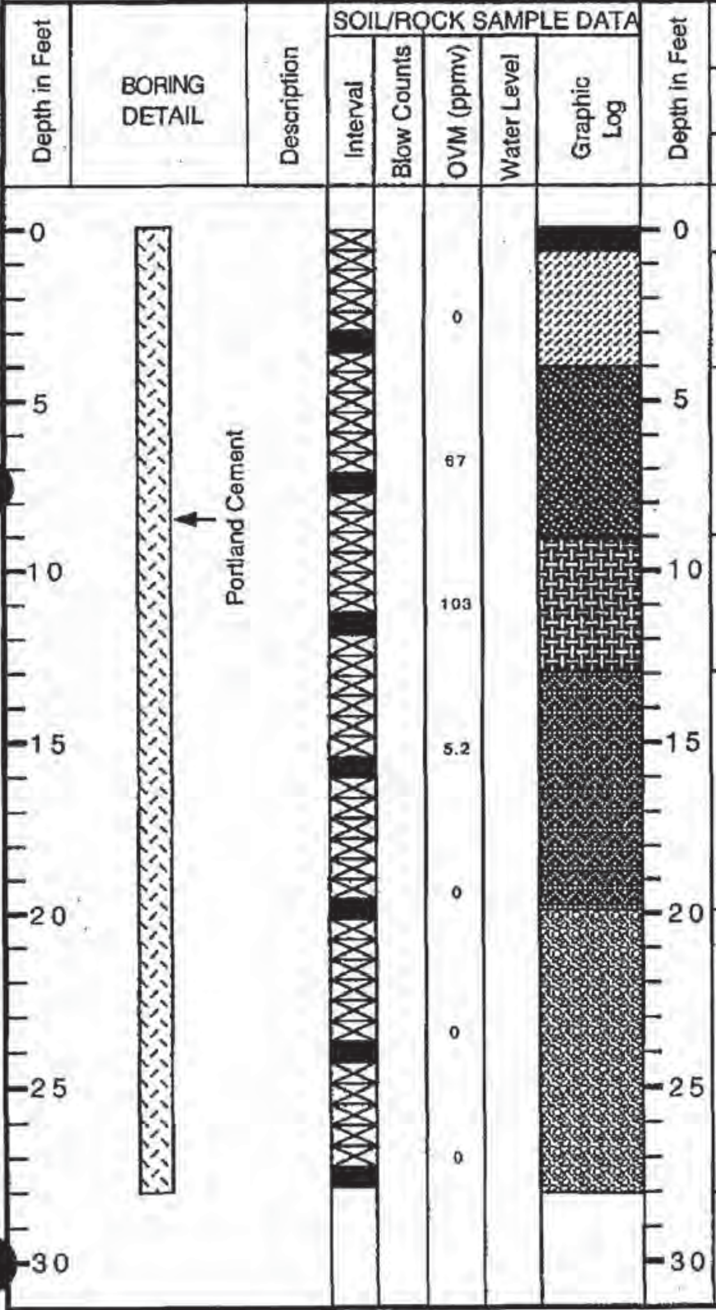
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-X

Project Name: Kozel Property
Project Location: 1001 42nd St. Oakland, CA
Page 1 of 1
Driller: Vironex
Type of Rig: Geoprobe
Size of Drill: 2.0" Diameter
Logged By: Damian Hriciga
Date Drilled: November 9, 2004
Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: NA
Static Depth of Water in Well: NA
Total Depth of Boring: 28'
Total Depth of Well Completed: NA
Well Screen Type and Diameter: NA
Well Screen Slot Size: NA
Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Sandy SILT (ML); brown; soft; moist; 80% silt; 20% sand; non-plastic; low estimated K; no odor

CLAY (CH); black; stiff; damp; 100% clay; high plasticity; very low estimated K; no odor moderate hydrocarbon odor below 6 feet

Gravelly CLAY (CL); olive; stiff; moist; 50% clay; 35% gravel; 15% sand; non-plastic; medium estimated K; moderate hydrocarbon odor

Sandy CLAY (CH); olive; medium stiff; moist; 95% clay; 5% sand; trace gravel; high plasticity; very low estimated K; no odor

yellow brown; 60% clay; 20% sand; 20% gravel

Clayey SILT (ML); yellow brown; soft; moist; 60% silt; 20% clay; 20% gravel; moderate plasticity; low estimated K; no odor

End of boring

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-Y

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: November 9, 2004

Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: 13.5'

Static Depth of Water in Well: NA

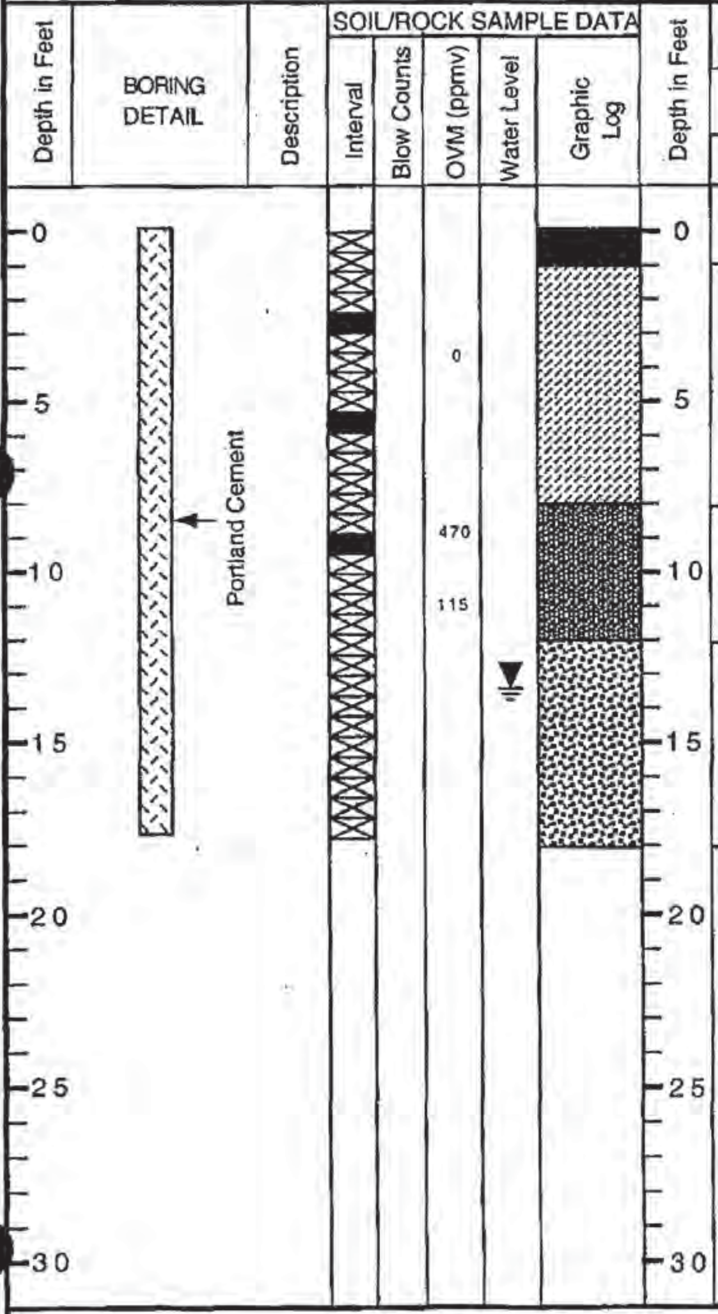
Total Depth of Boring: 18'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete/Base
	Sandy SILT (ML); brown; medium stiff; moist; 80% silt; 20% sand; non-plastic; low estimated K; no odor soft
	Sandy CLAY (CL); black; stiff; damp; 80% clay; 15% silt; 5% sand; moderate plasticity; low estimated K; moderate hydrocarbon odor
	Clayey SAND (SC); olive; medium dense; wet; 60% sand; 30% clay; 10% gravel; non-plastic; medium estimated K; moderate hydrocarbon odor
	End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-Z

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: November 9, 2004

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 13.5'

Static Depth of Water in Well: NA

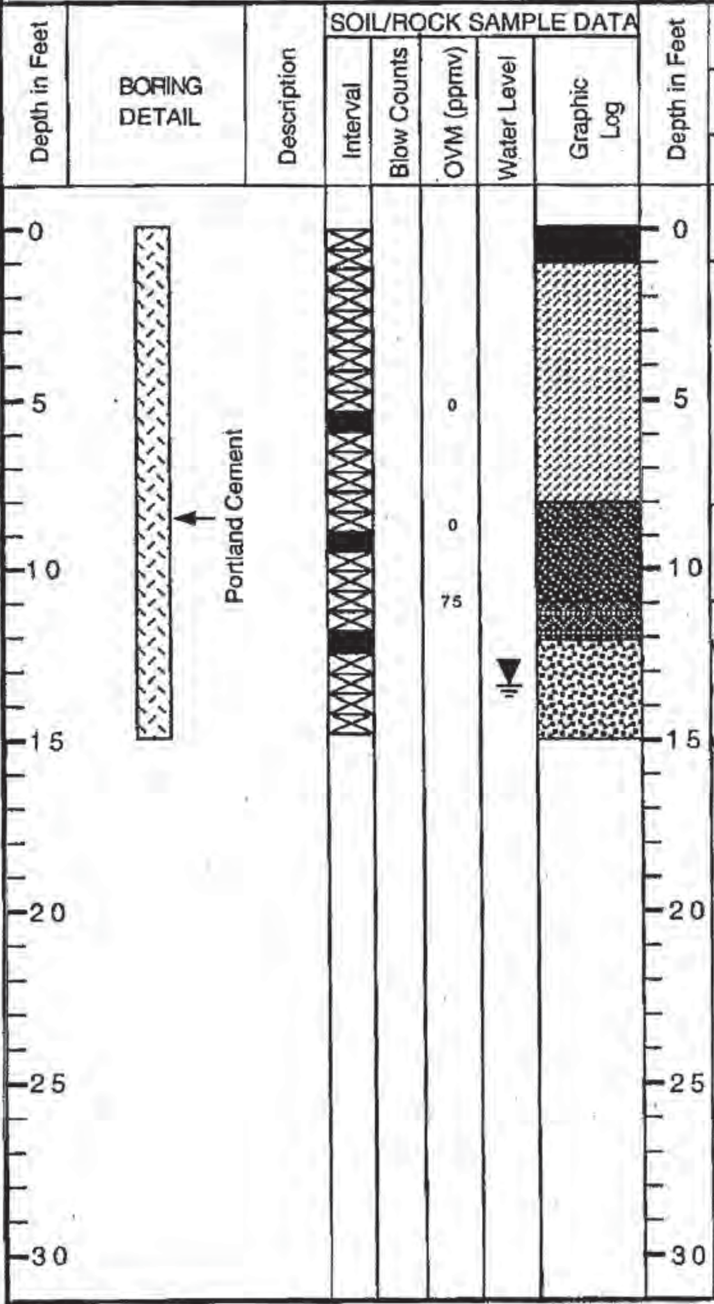
Total Depth of Boring: 15'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Depth in Feet	
0	Concrete/Base
	Sandy SILT (ML); brown; medium stiff; moist; 90% silt; 10% sand; non-plastic; low estimated K; no odor
5	70% silt; 25% sand; 5% gravel 95% silt; 5% sand
	CLAY (CH); black; stiff; moist; 100% clay; high plasticity; very low estimated K; no odor moderate hydrocarbon odor below 10 feet
10	Sandy CLAY (CL); black; stiff; moist; 80% clay; 20% sand; trace gravel; moderate plasticity; low estimated K; strong hydrocarbon odor
15	Clayey SAND (SC); olive; medium dense; wet; 60% sand; 30% clay; 10% gravel; non-plastic; medium estimated K; moderate hydrocarbon odor
	End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-AA

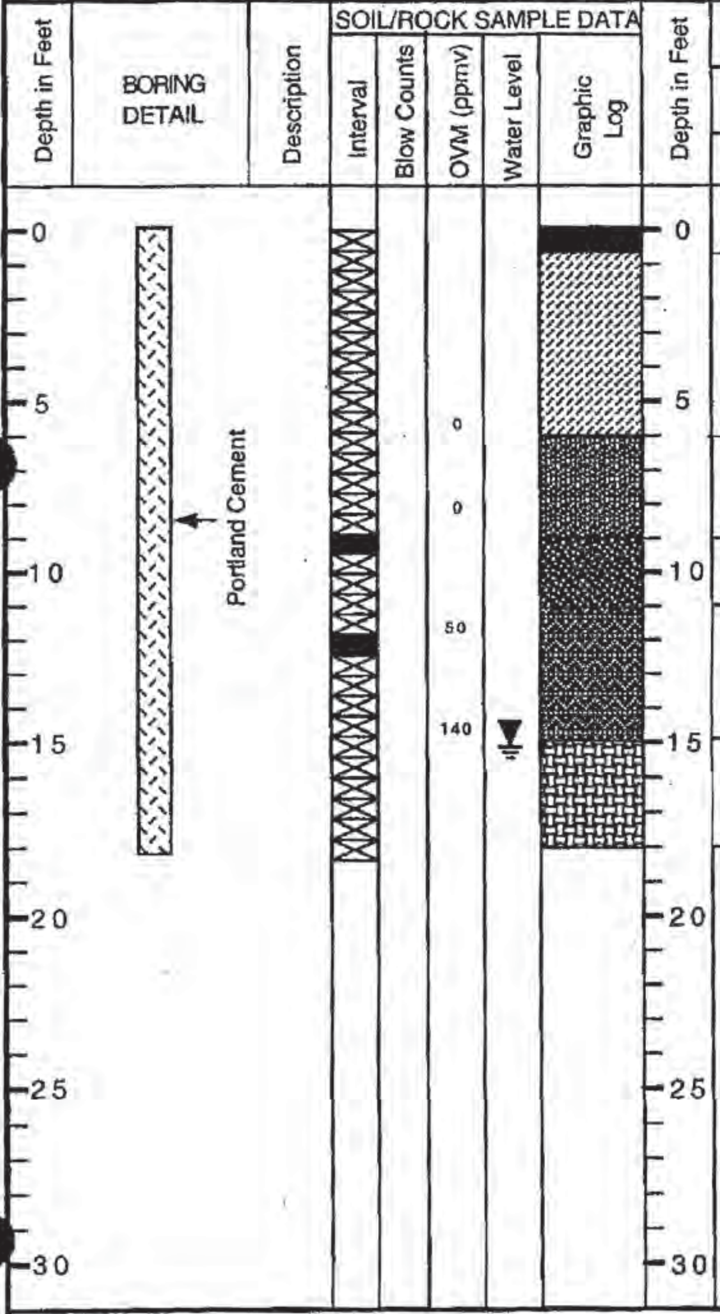
Project Name: Kozel Property
Project Location: 1001 42nd St. Oakland, CA
Page 1 of 1

Driller: Vironex
Type of Rig: Geoprobe
Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga
Date Drilled: December 14, 2004
Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 15'
Total Depth of Well Completed: NA
Well Screen Type and Diameter: NA
Static Depth of Water in Well: NA
Well Screen Slot Size: NA
Total Depth of Boring: 18'
Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Sandy SILT (ML); brown; soft; dry; 80% silt; 20% sand; non-plastic; low estimated K; no odor

Silty CLAY (CL); dark brown; medium stiff; moist; 80% clay; 15% silt; 5% sand; moderate plasticity; low estimated K; no odor

CLAY (CH); olive; stiff; moist; 95% clay; 5% gravel; high plasticity; low estimated K; strong hydrocabon odor

Sandy CLAY (CH); olive; stiff; moist; 50% clay; 35% sand; 15% gravel; non-plastic; medium estimated K; strong hydrocarbon odor

Gravelly SAND (SW); yellow brown; medium dense; wet; 50% sand; 30% gravel; 20% clay; non-plastic; high estimated K; strong hydrocarbon odor

End of boring

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-BB

Project Name: Kozel Property

Project Location: 1001 42nd St. Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga

Date Drilled: December 14, 2004

Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: 15'

Static Depth of Water in Well: NA

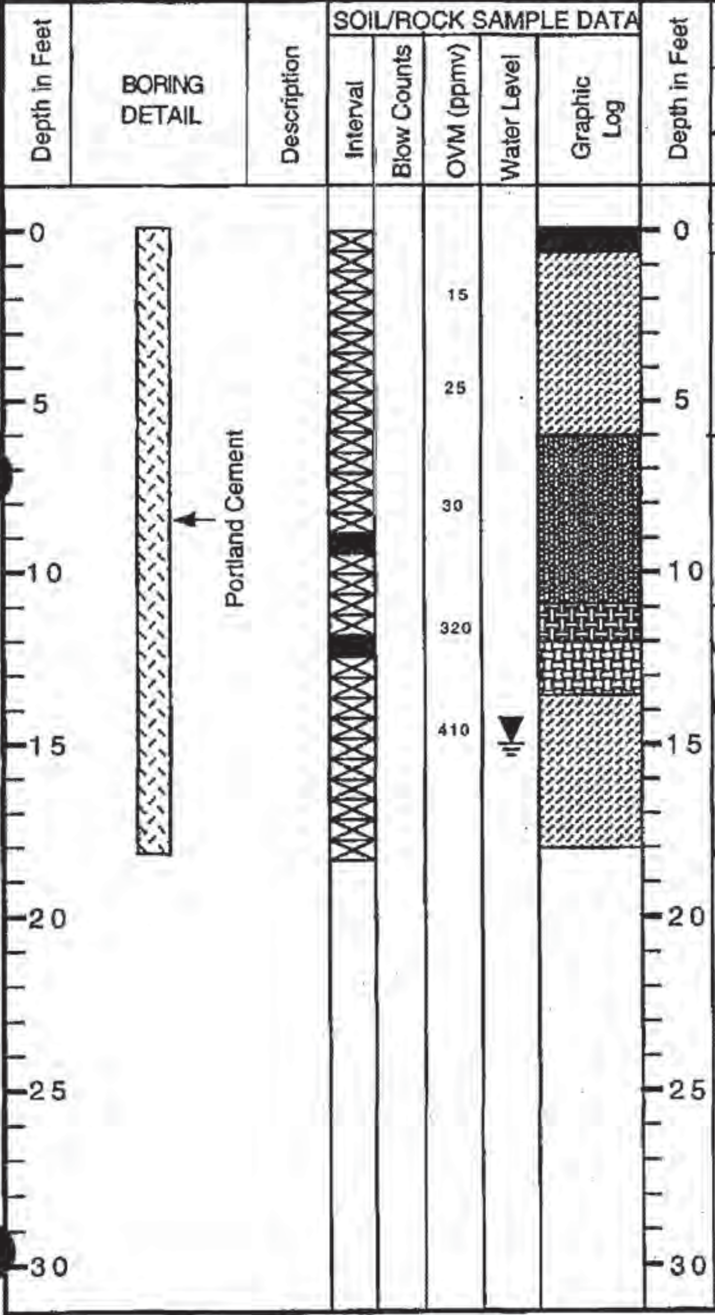
Total Depth of Boring: 18'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Well Screen Slot Size: NA

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Sandy SILT (ML); brown; medium stiff; moist; 80% silt; 20% sand; non-plastic; low estimated K; no odor

Silty CLAY (CL); black; stiff; moist; 90% clay; 10% silt; moderate plasticity; low estimated K; no odor

Gravelly CLAY (CL); olive; stiff; moist; 70% clay; 30% gravel; moderate plasticity; low estimated K; strong hydrocabon odor

Gravelly SAND (SW); olive; medium dense; damp; 50% sand; 30% gravel; 20% clay; non-plastic; high estimated K; strong hydrocarbon odor

Sandy SILT (ML); olive; soft; wet; 70% silt; 30% sand; non-plastic; medium estimated K; strong hydrocarbon odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

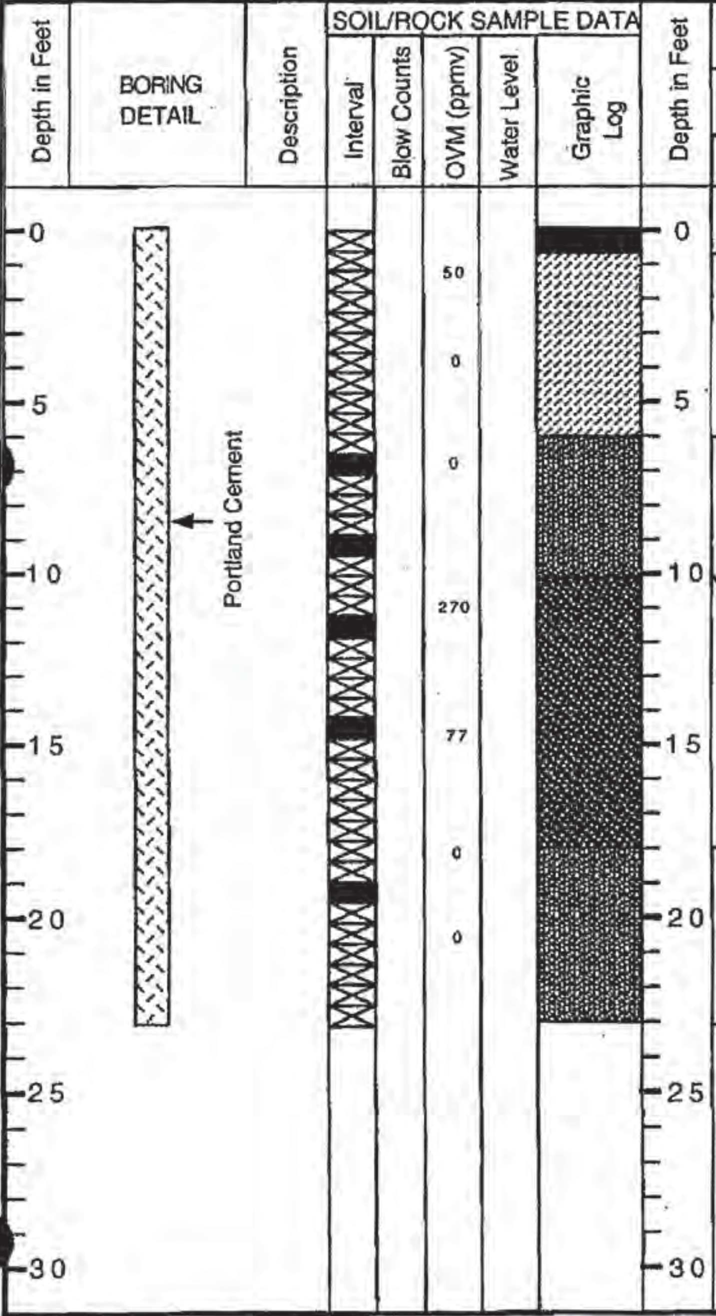
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: BH-CC

Project Name: Kozel Property
Project Location: 1001 42nd St. Oakland, CA
Page 1 of 1
Driller: Vironex
Type of Rig: Geoprobe
Size of Drill: 2.0" Diameter
Logged By: Damian Hriciga
Date Drilled: November 14, 2004
Checked By: Robert E. Kitay, R.G. RK

WATER AND WELL DATA

Depth of Water First Encountered: NA
Static Depth of Water in Well: NA
Total Depth of Boring: 23'
Total Depth of Well Completed: NA
Well Screen Type and Diameter: NA
Well Screen Slot Size: NA
Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete/Base

Sandy SILT (ML); brown; medium stiff; moist; 80% silt; 20% sand; non-plastic; low estimated K; no odor

yellow brown; damp

Silty CLAY (CH); dark brown mottled red; stiff; moist; 70% clay; 30% silt; low plasticity; low estimated K; no odor

90% clay; 10% silt; high plasticity; very low estimated K

CLAY (CH); dark brown; stiff; moist; 100% clay; trace sand and gravel; high plasticity; very low estimated K; strong hydrocarbon odor
olive below 13 feet

Silty CLAY (CL); olive; stiff; damp; 50% clay; 25% silt; 15% sand; 10% gravel; non-plastic; low estimated K; no odor

End of boring

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS | BORING: BH-DD

Project Name: Kozel Property | Project Location: 1001 42nd St. Oakland, CA | Page 1 of 1

Driller: Vironex | Type of Rig: Geoprobe | Size of Drill: 2.0" Diameter

Logged By: Damian Hriciga | Date Drilled: December 14, 2004 | Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Total Depth of Well Completed: NA

Depth of Water First Encountered: 13'

Well Screen Type and Diameter: NA

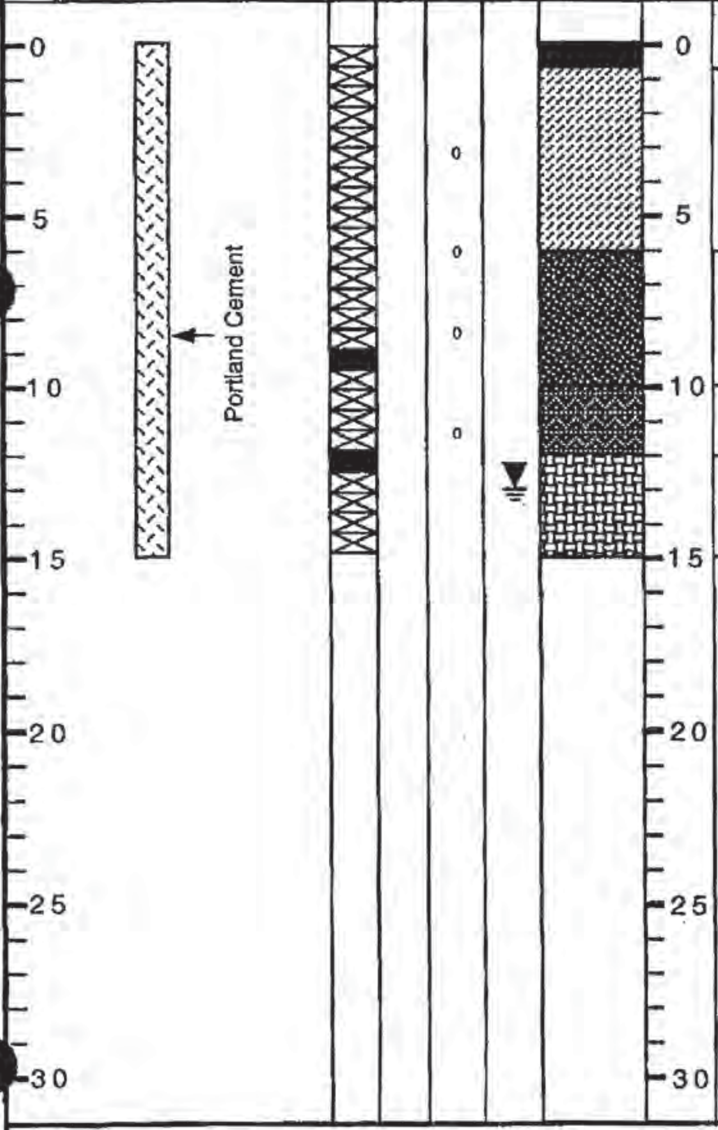
Static Depth of Water in Well: NA

Well Screen Slot Size: NA

Total Depth of Boring: 15'

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA					Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.



Concrete/Base

Sandy SILT (ML); brown; soft; dry; 80% silt; 20% sand; non-plastic; low estimated K; no odor

CLAY (CH); dark brown; medium stiff; moist; 100% clay; high plasticity; very low estimated K; no odor

Sandy CLAY (CL); olive; stiff; moist; 60% clay; 40% sand; low plasticity; low estimated K; no odor

Gravelly SAND (SW); yellow brown; medium dense; wet; 50% sand; 30% gravel; 20% clay; non-plastic; high estimated K; no odor

End of boring

ERM

Drilling Log

Project Aegis
Owner Aegis
Location 1001 42nd St.
Project Number 0041534
Boring Number B-1
Total Depth of Auger 17.5
Auger Diameter 3"
Surface Elevation ____
Water Level: Initial ____
24-hrs ____
Total Depth of Soil Sampler 17.5
Total Depth of Ground Water Sampler ____
Ground Water Sample Interval(s) N/A
Drilling Company Vironex
Drilling Method Direct Push
Driller Sayphone
Log By RLS
Date Drilled 5/30/06

Sketch Map

Notes

Badger

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
0					
					SANDY-SILT, dark brown. loose to moderately cohesive, root material in top 6", dry
1	ML				
2					
3					CLAYey-SILT, dark brown, moderately soft, high plasticity, dry. No odor or staining
4					AS above, mottled dark brown/olive brown.
5			0		
6			0		
				X	CLAY, dark brown, moderately stiff, moderate plasticity, dry. No odor or staining B-1-7 (1205)
7			0		
			0		
8			0		
	CL				
9			0		
					CLAY, dark gray, stiff, moderate plasticity, dry, no odor or staining.
10			0		
11			351		
			165	X	B-1-11.5'(1213) Color change to green-gray, hydrocarbon-like odor. No staining, dry.
12			0		

ERM

Drilling Log

Project ______ Owner ______

Location ______ Project Number ______

Boring Number B-1 Total Depth of Auger ______ Auger Diameter ______

Surface Elevation ______ Water Level: Initial ______ 24-hrs ______

Total Depth of Soil Sampler ______ Total Depth of Ground Water Sampler ______

Ground Water Sample Interval(s) ______

Drilling Company ______ Drilling Method ______

Driller ______ Log By ______ Date Drilled ______

Sketch Map

Notes

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
			271		As above, dry, hydrocarbon-like odor
14			507	X	B-1-14(1222) @14' trace fine to med. sands
			240		
15	CL		25		last 6" color change to dark brown.
16					
17					
18					
					Hit refusal at 17.5' bgs
19					set temp.casing, 10' screen.
20					

Page 2 of ______

ERM

Drilling Log

Project Aegis
Owner Aegis
Location Oakland
Project Number 0041534.00
Boring Number B-8
Total Depth of Auger 15
Auger Diameter 3'
Surface Elevation
Water Level: Initial 13.75'
24-hrs
Total Depth of Soil Sampler 15
Total Depth of Ground Water Sampler 15'
Ground Water Sample Interval(s) 15'
Drilling Company Vironex
Drilling Method Direct Push
Driller Sayphone
Log By RLS
Date Drilled 5/30/06

Sketch Map

Notes
Badger

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
0				HAND AUGER	SANDY-SILT, dark brown, loose to moderately cohesive, root material in top 6". dry.
1	ML				
2					As above with increasing fines.
3					CLAYEY-SILT, dark brown. Moderately soft, high~~ly~~ plasticity, dry
4					
5			0		As above, olive-brown
6					CLAY, dark gray, moderately stiff, high plasticity, dry, slight hydrocarbon-like odor. sample B-8-7' (1010)
7			101	X	
8	CL		83		
			0		
9			0		CLAY, as above, no odor or staining B-2-10' (1020)
10			0	X	
11			0		CLAY, green-gray, stiff, moderate plasticity. trace, fine to med. sands, moist (liner wet) no odor or staining.
12			0		
			165		CLAY, light green grey. with trace fine to med. sands, stiff, moderate plasticity.

Page 1 of

ERM

Drilling Log

Project ____________ Owner ____________

Location ____________ Project Number ____________

Boring Number B-2 Total Depth of Auger ______ Auger Diameter ______

Surface Elevation ______ Water Level: Initial ______ 24-hrs ______

Total Depth of Soil Sampler ______ Total Depth of Ground Water Sampler ______

Ground Water Sample Interval(s) ____________

Drilling Company ____________ Drilling Method ____________

Driller ____________ Log By ____________ Date Drilled ______

Sketch Map

Notes

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
	∇				moist, liner saturated. Organic odor, no staining.
14	≀		19		
	CL				
15			13.5		
					Tag 4" water in boring @ 12', push another run to 15', set temp casing collect gw sample B-2-15' (1050)
16					
17					Water level @ 13.75
18					
19					
20					

Page 2 of ______

ERM

Drilling Log

Project Aegis Owner Aegis

Location 1001 42nd St. Project Number 5041534

Boring Number B-3 Total Depth of Auger 17.5 Auger Diameter 8"

Surface Elevation ___ Water Level: Initial ___ 24-hrs ___

Total Depth of Soil Sampler 17.5 Total Depth of Ground Water Sampler ___

Ground Water Sample Interval(s) ___

Drilling Company Vironex Drilling Method Direct Push

Driller Saypho ne Log By RLS Date Drilled 5/30/06

Sketch Map

Notes

Badger

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
0					SANDY-SILT, dark brown, soft, moderately cohesive, dry
1					
2	ML			HAND AUGER	As above, more fines becoming increasingly stiff
3					
4					
5			0		SILTY-CLAY, dark brown, moderately soft, high plastricity. dry, no odor or staining.
6	CL		0		
7			0	X	As above, stiff, moderately plastic, dry. (B-3-7') 1433
8			0		
9			0		SILTY-CLAY. dark brown. stiff, moderate plastiaity, dry. No odor or staining.
10			0	X	B-3-10(1440)
11	CL		0		
12			0		SILTY-CLAY, as above. olive-brown, dry

Page 1 of ___

ERM

Drilling Log

Project ______ Owner ______

Location ______ Project Number ______

Boring Number B-3 Total Depth of Auger ______ Auger Diameter ______

Surface Elevation ______ Water Level: Initial ______ 24-hrs ______

Total Depth of Soil Sampler ______ Total Depth of Ground Water Sampler ______

Ground Water Sample Interval(s) ______

Drilling Company ______ Drilling Method ______

Driller ______ Log By ______ Date Drilled ______

Sketch Map

Notes

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
14		0			
15	CL	0			CLAY. olive brown. very stiff, moderate plasticity. dry. No odor or staining.
16		0			
17		0			
18					Refusal at 17.5' - very hard drilling due to stiff clays. Set temp. casing
19					
20					

ERM

Drilling Log

Project Aegis
Owner Aegis
Location 1001 42nd St.
Project Number 0041534
Boring Number B-4
Total Depth of Auger 18
Auger Diameter 3"
Surface Elevation
Water Level: Initial
24-hrs
Total Depth of Soil Sampler 18
Total Depth of Ground Water Sampler
Ground Water Sample Interval(s)
Drilling Company Vironex
Drilling Method Direct Push
Driller Sayphone
Log By RLS
Date Drilled 5/30/06

Sketch Map

Notes
Badger

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
0				HAND AUGER	SANDY-SILT, dark brown. soft, moderately cohesive, dry
1					
2	ML				As above, trace coarse sands
3					
4					SILTY-CLAY. dark brown. moderatly stiff moderate plastcity, dry.
5	CL		0		As abore.
6			0	X	CLAY. Dark brown, moderatly stiff, moderate plasticity. dry. No odor or staining B-4-7(1535)
7			0		
8			0		
9			0	X	As above B-4-10 (1541)
10	CL		0		
11			0		
12			0		CLAY, as above. Dark brown top 6" into olive-gray. Trace fine sands at color contact.

ERM

Drilling Log

Project ______ Owner ______

Location ______ Project Number ______

Boring Number B-4 Total Depth of Auger ______ Auger Diameter ______

Surface Elevation ______ Water Level: Initial ______ 24-hrs ______

Total Depth of Soil Sampler ______ Total Depth of Ground Water Sampler ______

Ground Water Sample Interval(s) ______

Drilling Company ______ Drilling Method ______

Driller ______ Log By ______ Date Drilled ______

Sketch Map

Notes

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
					CLAY, as above. olive-gray.
14			0		
15	CL		0		CLAY, olive-gray. stiff, moderate plasticity. dry. no odors or staining. Becoming increasingly stiff.
16			0		
17			0		
18			0		Very hard drilling. Set temp. casing to 18'
19					
20					

Page 2 of ______

ERM

Drilling Log

Project Aegis Owner Aegis

Location 1001 42nd St. Project Number 0041834.00

Boring Number B-5 Total Depth of Auger 18 Auger Diameter 8"

Surface Elevation ______ Water Level: Initial ______ 24-hrs ______

Total Depth of Soil Sampler 18 Total Depth of Ground Water Sampler ______

Ground Water Sample Interval(s) ______

Drilling Company Vironex Drilling Method Direct Push

Driller Sayphone Log By RLS Date Drilled 5/30/06

Sketch Map

Notes

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
0	ML			HAND AUGER	SANDY-SILT, olive-brown. Moderately cohesive, soft, dry
1					
2					
3					SILTY-CLAY, dark brown. Moderately stiff. High plastricity, dry.
4					
5	CL		0		As above
6			0		As above, no odors or staining B-5-7'(1626)
7			0	X	
8			0		
9			0		CLAY, Dark brown, moderately stiff, moderate plastiuty. dry, no odor or staining. B-5-10'(1635)
10			0	X	
11	CL		0		
12			0		As above

Page 1 of ______

ERM

Drilling Log

Project ______ Owner ______

Location ______ Project Number ______

Boring Number B-5 Total Depth of Auger ______ Auger Diameter ______

Surface Elevation ______ Water Level: Initial ______ 24-hrs ______

Total Depth of Soil Sampler ______ Total Depth of Ground Water Sampler ______

Ground Water Sample Interval(s) ______

Drilling Company ______ Drilling Method ______

Driller ______ Log By ______ Date Drilled ______

Sketch Map

Notes

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
14			0		CLAY, olive-gray, stiff, moderately plastic. dry. No odor or staining.
15			0		As above.
	CL				
16			0		
17			0		
18			0		set temp. casing to 18' bgs w/10' screen
19					
20					

Page 2 of ______

1333 Broadway, Suite 800
Oakland, California 94612

MONITORING WELL LOG

Well ID: URS-MW-1
Total Depth: 20 feet

PROJECT INFORMATION

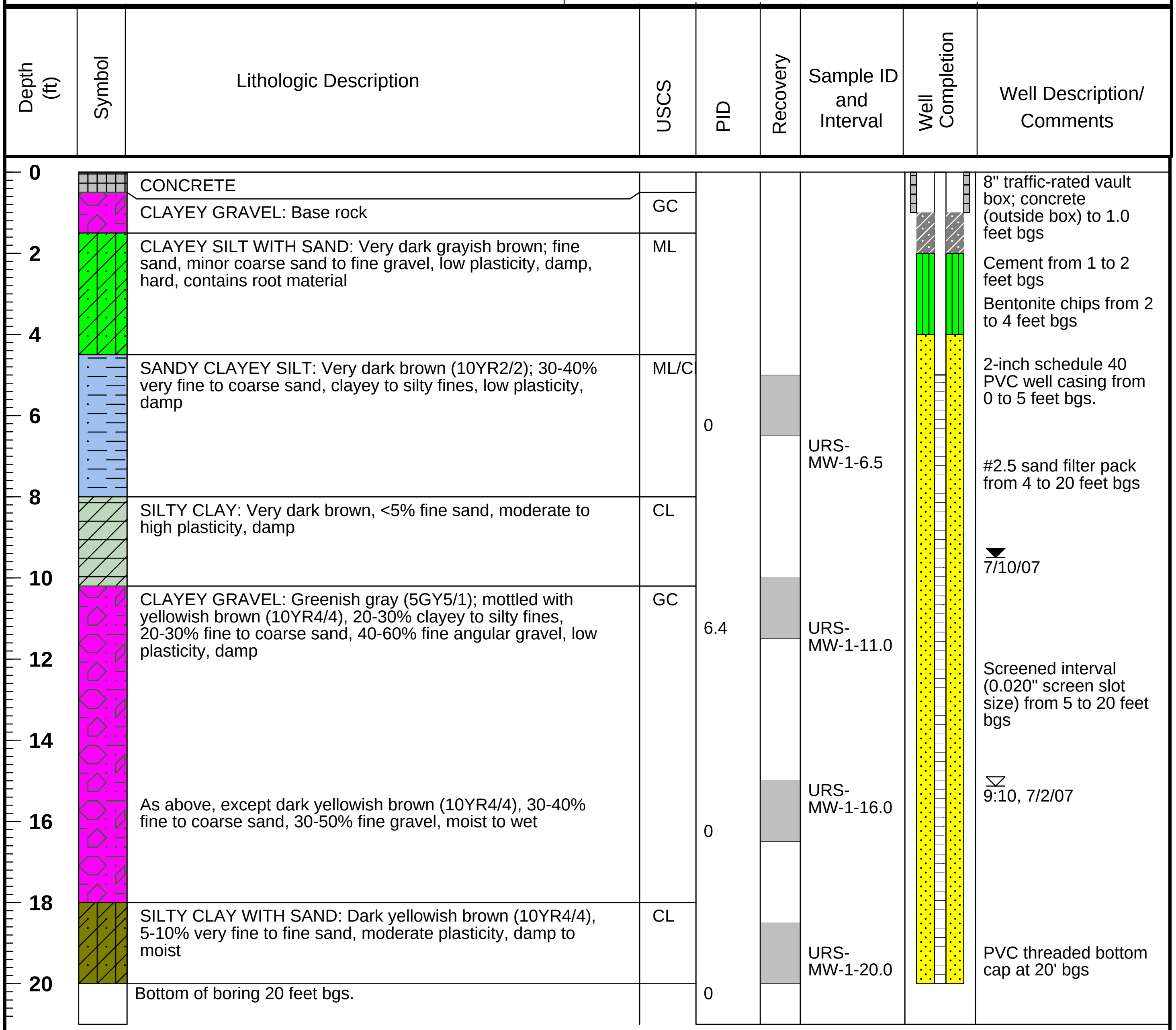
Project: Celis - Emeryville
Site Location: 4000 San Pablo Avenue, Emeryville, CA
Site Name: Former Celis Alliance Service Station
Project Manager: George Muehleck
Geologist: Leonard Niles
Job/Cost Code Number: 26814847.06000
PG: Leonard Niles

DRILLING INFORMATION

Drilling Company: Gregg Drilling
Driller: Jesse
Type of Drilling Rig: Marl M5T (Rhino)
Drilling Method: Hollow Stem Auger, 8.25" OD
Sampling Method: 1.5" standard penetrometer
Hand Auger Depth: 5 feet bgs
Date(s) Drilled: 6/28, 7/2/07

WELL INFORMATION

Groundwater Depth (ft bgs): 15.13' (initial); 9.09' (7/10/07)
Top of Casing Elevation (ft msl): 42.21' msl
Coordinates: Latitude 37.83131172 **Longitude** 122.2801338
Well Location: 4051 West San Pablo Ave., sidewalk
Well Diameter: 2 inches
Screened Interval: 5-20 feet bgs



Depth (ft)	Symbol	Lithologic Description	USCS	PID	Recovery	Sample ID and Interval	Well Completion	Well Description/ Comments
0		CONCRETE						8" traffic-rated vault box; concrete (outside box) to 1.0 feet bgs
		CLAYEY GRAVEL: Base rock	GC					
2		CLAYEY SILT WITH SAND: Very dark grayish brown; fine sand, minor coarse sand to fine gravel, low plasticity, damp, hard, contains root material	ML					Cement from 1 to 2 feet bgs Bentonite chips from 2 to 4 feet bgs
4		SANDY CLAYEY SILT: Very dark brown (10YR2/2); 30-40% very fine to coarse sand, clayey to silty fines, low plasticity, damp	ML/C					2-inch schedule 40 PVC well casing from 0 to 5 feet bgs.
6				0		URS-MW-1-6.5		#2.5 sand filter pack from 4 to 20 feet bgs
8		SILTY CLAY: Very dark brown, <5% fine sand, moderate to high plasticity, damp	CL					▼ 7/10/07
10		CLAYEY GRAVEL: Greenish gray (5GY5/1); mottled with yellowish brown (10YR4/4), 20-30% clayey to silty fines, 20-30% fine to coarse sand, 40-60% fine angular gravel, low plasticity, damp	GC	6.4		URS-MW-1-11.0		Screened interval (0.020" screen slot size) from 5 to 20 feet bgs
14								▽ 9:10, 7/2/07
16		As above, except dark yellowish brown (10YR4/4), 30-40% fine to coarse sand, 30-50% fine gravel, moist to wet		0		URS-MW-1-16.0		
18		SILTY CLAY WITH SAND: Dark yellowish brown (10YR4/4), 5-10% very fine to fine sand, moderate plasticity, damp to moist	CL			URS-MW-1-20.0		PVC threaded bottom cap at 20' bgs
20		Bottom of boring 20 feet bgs.		0				

URS
1333 Broadway, Suite 800
Oakland, California 94612

MONITORING WELL LOG

Well ID: URS-MW-2
Total Depth: 20 feet

PROJECT INFORMATION

Project: Celis - Emeryville
Site Location: 4000 San Pablo Ave, Emeryville, CA
Site Number: Former Celis Alliance Service Station
Project Manager: George Muehleck
Geologist: Leonard Niles
Job/Cost Code Number: 26814847.06000
PG: Leonard Niles

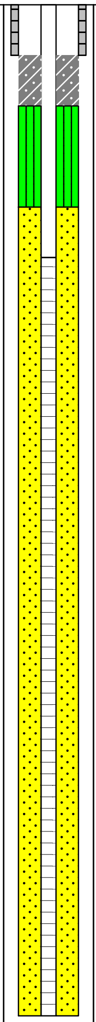
DRILLING INFORMATION

Drilling Company: Gregg Drilling
Driller: Jesse
Type of Drilling Rig: Marl M5T (Rhino)
Drilling Method: Hollow Stem Auger, 8.25" OD
Sampling Method: 1.5" standard penetrometer
Hand Auger / Airknife Depth: 5 feet bgs
Date(s) Drilled: 6/28, 7/2/07

WELL INFORMATION

Groundwater Depth (ft bgs): 20' (1st), 8.24' (7/10/07)
Top of Casing Elevation (ft msl): 40.83' msl
Coordinates: Latitude 37.83090567 **Longitude** 122.2800391
Well Location: SW corner of 40th Street and San Pablo Ave, in crosswalk
Well Diameter: 2 inches
Screened Interval: 5-20 feet bgs

Depth (ft)	Lithologic Description	USCS	PID	Sample ID and Interval
0	ASPHALT			
	CONCRETE			
2	SANDY GRAVEL: Very dark grayish brown (10YR2/2); <10% fines, 30-40% fine to coarse sand, fine to coarse subangular gravel, dry (fill)	GW		
4			0	
6	SANDY CLAYEY SILT: Very dark brown (10YR2/2); 10-15% fine sand (borderline clay/silt), low plasticity, damp	ML/CL		URS-MW-2-5.5
8				
10	As above, except color change to olive brown (5Y4/3) mottled with yellowish brown (10YR4/3)			
12			0.2	URS-MW-2-11.0
14				
16	As above, except 20-25% fine sand, 5% coarse sand to fine gravel, damp to moist		0.9	URS-MW-2-16.0
	Grades to SANDY CLAY			
18	SANDY CLAY: Olive brown (5Y4/3) mottled with yellowish brown (10YR4/3); 10% fine sand, moderate plasticity, damp to moist	CL	0.7	URS-MW-2-19.5
20	Bottom of boring 20 feet bgs.			



Well Description/ Comments

8" traffic-rated vault box; concrete (outside box) to 1.0 feet bgs

Cement from 1 to 2 feet bgs

Bentonite chips from 2 to 4 feet bgs

2-inch schedule 40 PVC well casing from 0 to 5 feet bgs.

#2.5 sand filter pack from 4 to 20 feet bgs

▼ 7/10/07

Screened interval (0.020" screen slot size) from 5 to 20 feet bgs

11:20, 7/2/07 ▽

PVC threaded bottom cap at 20' bgs

URS
1333 Broadway, Suite 800
Oakland, California 94612

MONITORING WELL LOG

Well ID: URS-MW-3
Total Depth: 20 feet

PROJECT INFORMATION

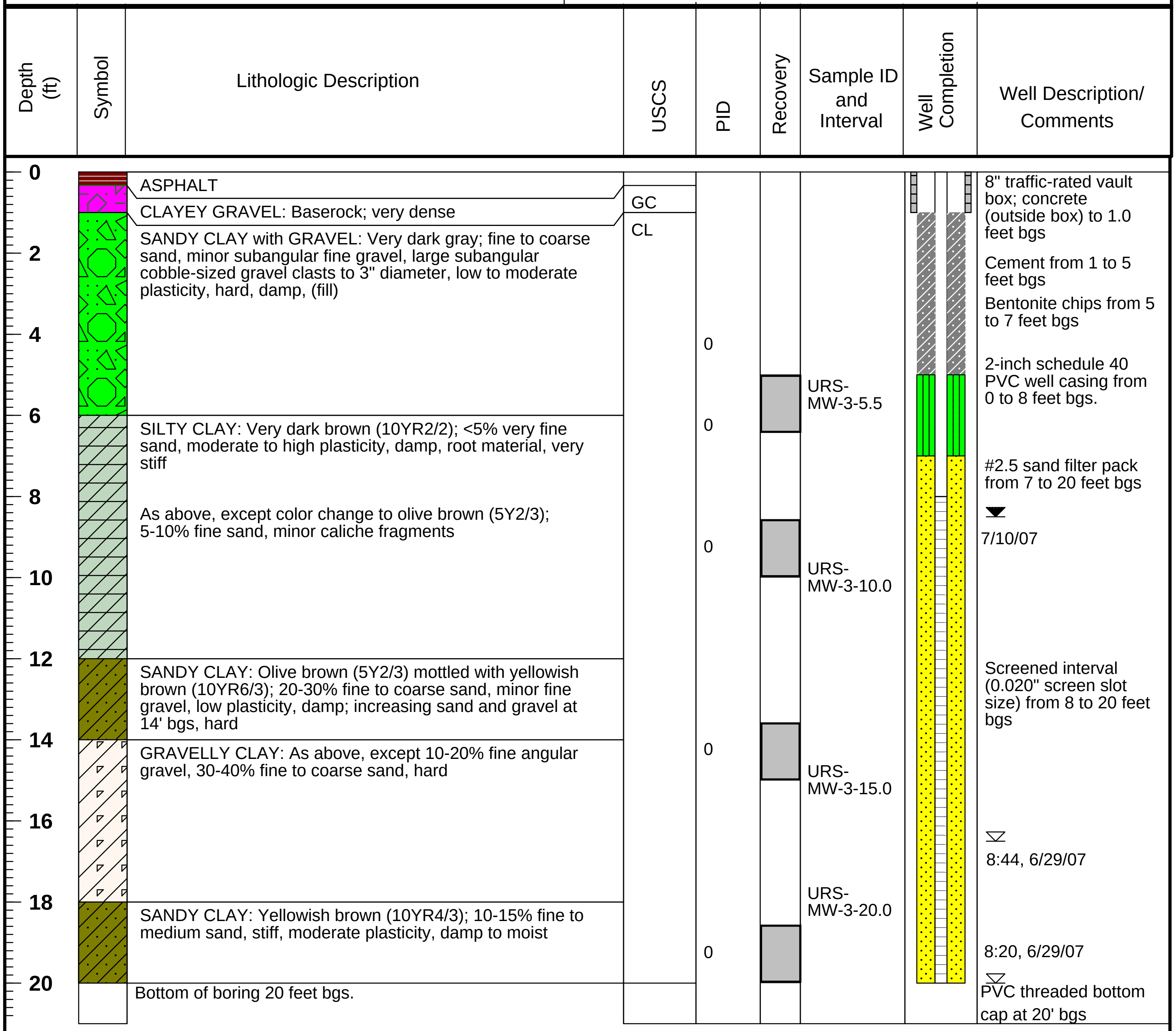
Project: Celis - Emeryville
Site Location: 4000 San Pablo Ave, Emeryville, CA
Site Number: Former Celis Alliance Service Station
Project Manager: George Muehleck
Geologist: Leonard Niles
Job/Cost Code Number: 26814847.06000
PG: Leonard Niles

DRILLING INFORMATION

Drilling Company: Gregg Drilling
Driller: Jeremy Neff
Type of Drilling Rig: Mobil B-61
Drilling Method: Hollow Stem Auger, 8.25" OD
Sampling Method: 2" ID Split Spoon
Hand Auger / Airknife Depth: 5 feet bgs
Date(s) Drilled: 6/28, 6/29/07

WELL INFORMATION

Groundwater Depth (ft bgs): 20' (1st), 8.48' (7/10/07)
Top of Casing Elevation (ft msl): 40.54' msl
Coordinates: **Latitude** 37.83036066 **Longitude** 122.2800307
Well Location: 3999 San Pablo Ave., parking lot at 40th St. & San Pablo
Well Diameter: 2 inches
Screened Interval: 8-20 feet bgs



Lithologic Description	USCS	PID	Sample ID and Interval	Well Description/ Comments
ASPHALT				8" traffic-rated vault box; concrete (outside box) to 1.0 feet bgs
CLAYEY GRAVEL: Baserock; very dense	GC			
SANDY CLAY with GRAVEL: Very dark gray; fine to coarse sand, minor subangular fine gravel, large subangular cobble-sized gravel clasts to 3" diameter, low to moderate plasticity, hard, damp, (fill)	CL	0	URS-MW-3-5.5	Cement from 1 to 5 feet bgs Bentonite chips from 5 to 7 feet bgs 2-inch schedule 40 PVC well casing from 0 to 8 feet bgs.
SILTY CLAY: Very dark brown (10YR2/2); <5% very fine sand, moderate to high plasticity, damp, root material, very stiff As above, except color change to olive brown (5Y2/3); 5-10% fine sand, minor caliche fragments		0 0	URS-MW-3-10.0	#2.5 sand filter pack from 7 to 20 feet bgs ▼ 7/10/07
SANDY CLAY: Olive brown (5Y2/3) mottled with yellowish brown (10YR6/3); 20-30% fine to coarse sand, minor fine gravel, low plasticity, damp; increasing sand and gravel at 14' bgs, hard				Screened interval (0.020" screen slot size) from 8 to 20 feet bgs
GRAVELLY CLAY: As above, except 10-20% fine angular gravel, 30-40% fine to coarse sand, hard		0	URS-MW-3-15.0	▽ 8:44, 6/29/07
SANDY CLAY: Yellowish brown (10YR4/3); 10-15% fine to medium sand, stiff, moderate plasticity, damp to moist		0	URS-MW-3-20.0	8:20, 6/29/07 ▽ PVC threaded bottom cap at 20' bgs
Bottom of boring 20 feet bgs.				

URS

1333 Broadway, Suite 800
Oakland, California 94612

MONITORING WELL LOG

Well ID: URS-MW-4

Total Depth: 20 feet

PROJECT INFORMATION

Project: Celis - Emeryville

Site Location: 4000 San Pablo Ave, Emeryville, CA

Site Number: Former Celis Alliance Service Station

Project Manager: George Muehleck

Geologist: Leonard Niles

Job/Cost Code Number: 26814847.06000

PG: Leonard Niles

DRILLING INFORMATION

Drilling Company: Gregg Drilling

Driller: Jeremy Neff

Type of Drilling Rig: Mobil B-61

Drilling Method: Hollow Stem Auger, 8.25" OD

Sampling Method: 2" Split Spoon

Hand Auger / Airknife Depth: 5 feet bgs

Date(s) Drilled: 6/28, 6/29/07

WELL INFORMATION

Groundwater Depth (ft bgs): 19.2' (1st), 8.89' (7/10/07)

Well Location: 1111 40th St., parking lot at 40th St. and San Pablo Ave.

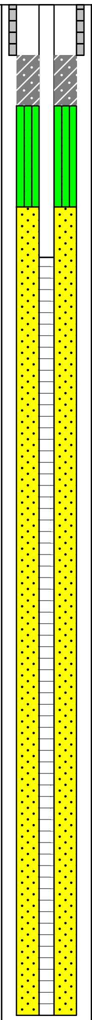
Top of Casing Elevation (ft msl): 41.41' msl

Well Diameter: 2 inches

Coordinates: **Latitude** 37.83065511 **Longitude** 122.2802217

Screened Interval: 5-20 feet bgs

Depth (ft)	Symbol	Lithologic Description	USCS	PID	Recovery	Sample ID and Interval	Well Completion	Well Description/ Comments
0		ASPHALT						8" traffic-rated vault box; concrete (outside box) to 1.0 feet bgs
2 4		GRAVELLY CLAY: Fill; asphalt chunks at 1.8' bgs	CL					Cement from 1 to 2 feet bgs Bentonite chips from 2 to 4 feet bgs
6		SANDY CLAY with GRAVEL: Black (N2.5/); 20-30% fine to coarse sand, 5% fine angular gravel, moderate plasticity, very stiff, damp		0		URS-MW-4-5.5		2-inch schedule 40 PVC well casing from 0 to 5 feet bgs. #2.5 sand filter pack from 4 to 20 feet bgs
8		CLAYEY GRAVEL: Very dark brown (10YR2/2); 20-30% clayey to silty fines, fine to coarse sand, fine subangular gravel, loose, low plasticity, moist to wet	GC	0.6				▼ 7/10/07
10		SANDY CLAY: Black (N2.5/); 20-30% fine to coarse sand, moderate plasticity, stiff, moist	CL			URS-MW-4-9.0		
12 14 16		GRAVELLY CLAY: Greenish gray (5GY5/1); 20-30% fine to coarse sand, 10-20% fine angular gravel, stiff, low plasticity, damp		7.8		URS-MW-4-14.5		Screened interval (0.020" screen slot size) from 5 to 20 feet bgs
18		SANDY CLAY WITH GRAVEL: Yellow brown (10YR6/8); 20-30% fine to coarse sand, 10% subangular fine gravel, Fe/Mn staining, hard, moist		0.8				▽ 12:34, 6/29/07
20		Bottom of boring 20 feet bgs.				URS-MW-2-20.0		PVC threaded bottom cap at 20' bgs



1333 Broadway, Suite 800
Oakland, California 94612

MONITORING WELL LOG

Well ID: URS-MW-5

Total Depth: 20 feet

PROJECT INFORMATION

Project: Celis - Emeryville

Site Location: 4000 San Pablo Ave, Emeryville, CA

Site Number: Former Celis Alliance Service Station

Project Manager: George Muehleck

Geologist: Leonard Niles

Job/Cost Code Number: 26814847.06000

PG: Leonard Niles

DRILLING INFORMATION

Drilling Company: Gregg Drilling

Driller: Jeremy Neff

Type of Drilling Rig: Mobil B-61

Drilling Method: Hollow Stem Auger

Sampling Method: 2" Split Spoon

Hand Auger / Airknife Depth: 5 feet bgs

Date(s) Drilled: 6/28, 6/29/07

WELL INFORMATION

Groundwater Depth (ft bgs): 18.5' (1st), 6.37 (7/10/07)

Well Location: South side of 40th St., 206' East of San Pablo Ave.

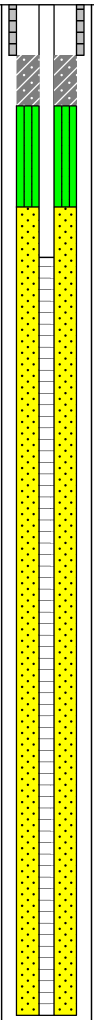
Top of Casing Elevation (ft msl): 43.93' msl

Well Diameter: 2 inches

Coordinates: **Latitude** 37.83109836 **Longitude** 122.2790285

Screened Interval: 5-20 feet bgs

Depth (ft)	Symbol	Lithologic Description	USCS	PID	Recovery	Sample ID and Interval	Well Completion	Well Description/ Comments
0	▦	CONCRETE						12" traffic-rated vault box; concrete (outside box) to 1.0 feet bgs
		CLAYEY GRAVEL: Dark gray; base rock	GC					
2	▨	SANDY CLAY: Dark grayish brown; fine to coarse sand, fine gravel, moderate plasticity, moist (fill)	CL					Cement from 1 to 2 feet bgs Bentonite chips from 2 to 4 feet bgs
4								
6	▨	SILTY CLAY: Very dark brown (10YR2/2); 5-10% fine sand, minor (<5%) coarse sand to fine gravel, black asphalt-like fragments, moderate plasticity, damp, faint HC odor, very stiff (fill?)		9.1 1.5	▨	URS-MW-5-6.5		2-inch schedule 40 PVC well casing from 0 to 5 feet bgs. ▼ 7/10/07 #2.5 sand filter pack from 4 to 20 feet bgs
8	▨	SANDY CLAY: Greenish gray (5G5/1); 10-20% fine to coarse sand, minor angular fine gravel, moderate plasticity, very stiff, damp, faint HC odor		62.5	▨	URS-MW-5-10.0		▽ 11:38, 6/29/07
10								
12	▨	SANDY TO GRAVELLY CLAY: Olive brown (5Y2/3) mottled with yellowish brown (10YR6/8); 20-30% fine to coarse sand, 10-20% fine angular gravel, hard, low plasticity		3.5	▨	URS-MW-5-15.0		Screened interval (0.020" screen slot size) from 5 to 20 feet bgs
14								
16								
18	▨	GRAVELLY CLAY: As above, except yellowish brown (10YR4/3), moderate plasticity, moist to wet		1.3	▨	URS-MW-5-20.0		▽ 10:25, 6/29/07
20		Bottom of boring 20 feet bgs.						PVC threaded bottom cap at 20' bgs



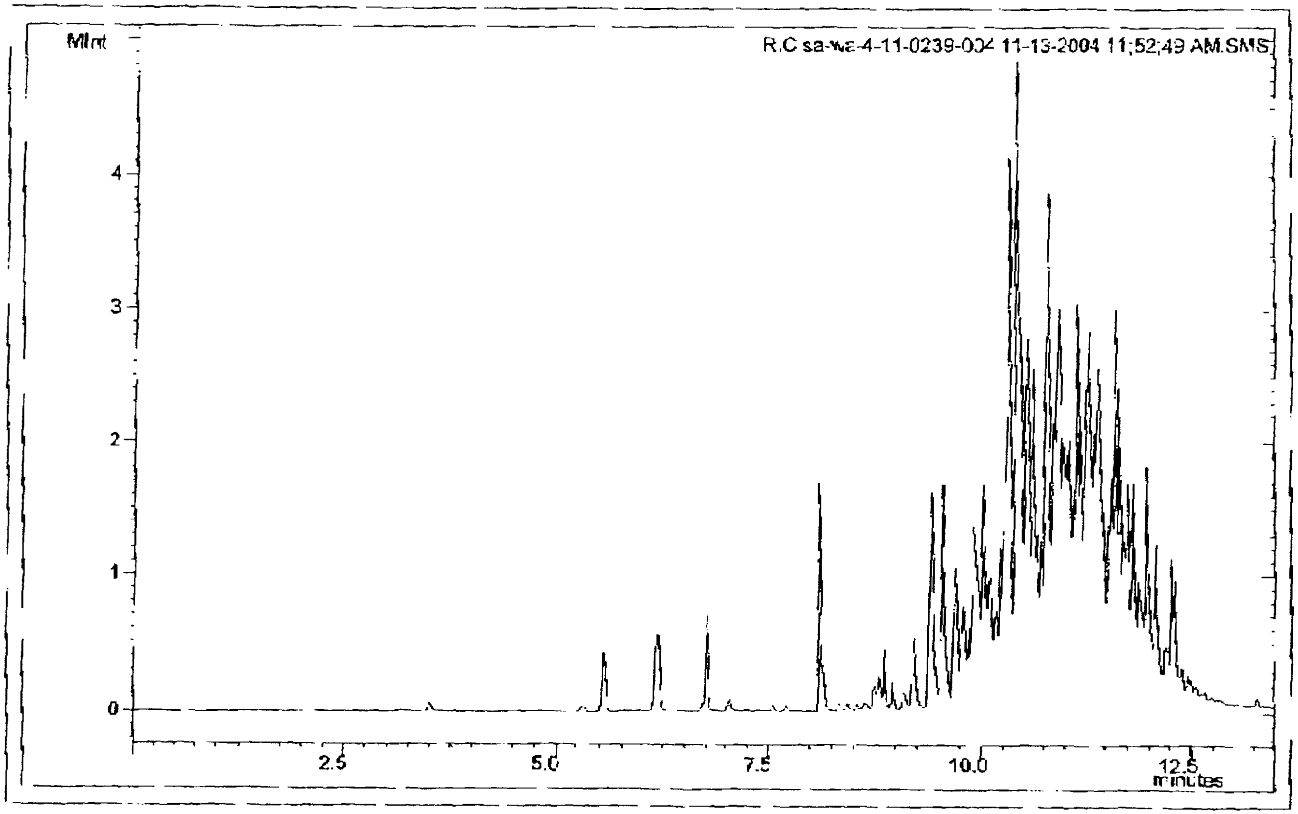
APPENDIX B

Chromatograms

CHROMATOGRAM REPORT

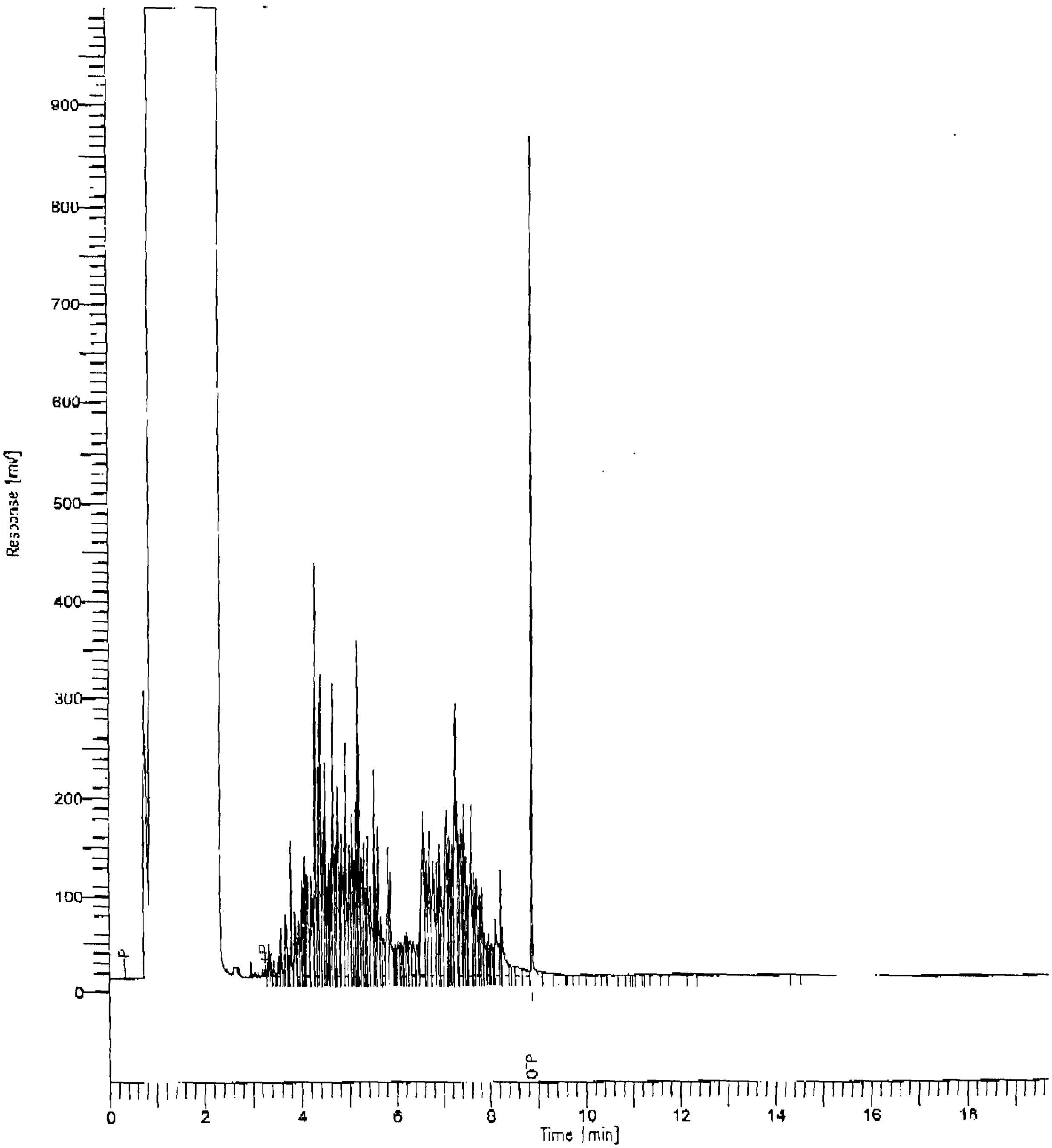
EPA Method 8260b froxy

Lab File ID:	c:\saturnws\data\200411\111304\sa-wa-4-11-0239-004 11-13-2004 11	Calibration File:	C:\SaturnWS\DATA\200405\051104\mb-wa-4-051101.64 5-11-20
Acquisition Date:	11/13/2004 11:52	Calibration Date Range:	7/1/2004 18:40 7/2/2004 0:33
EPA Sample No:	sa-wa-4-11	Operator:	
Lab Sample ID:	sa-wa-4-11-0239-004	Dilution:	1

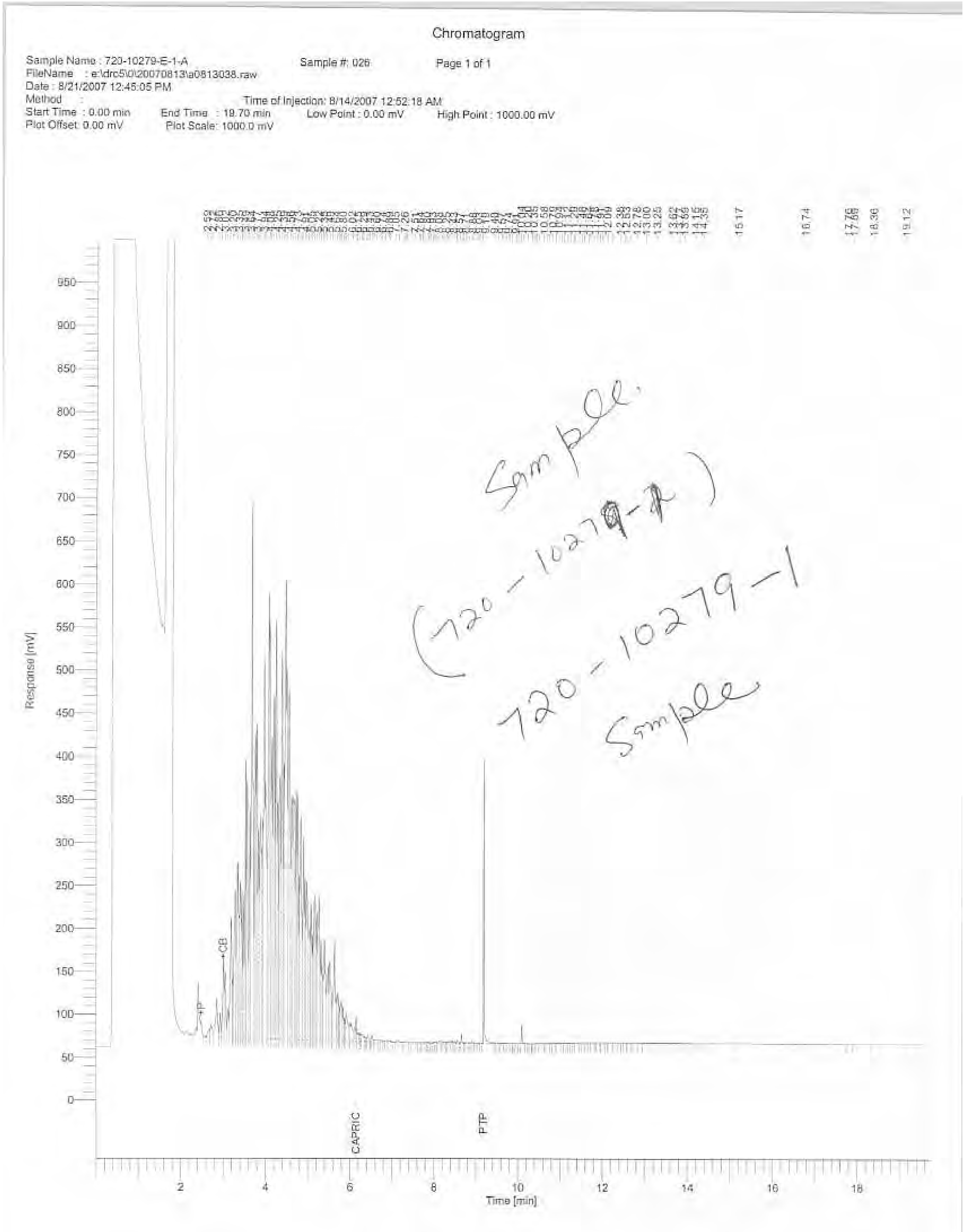


Approved________________________ Date________________

Gasoline-range Chromatogram from Groundwater Sample MWT-14



TEPH Chromatogram from Groundwater Sample MWT-14

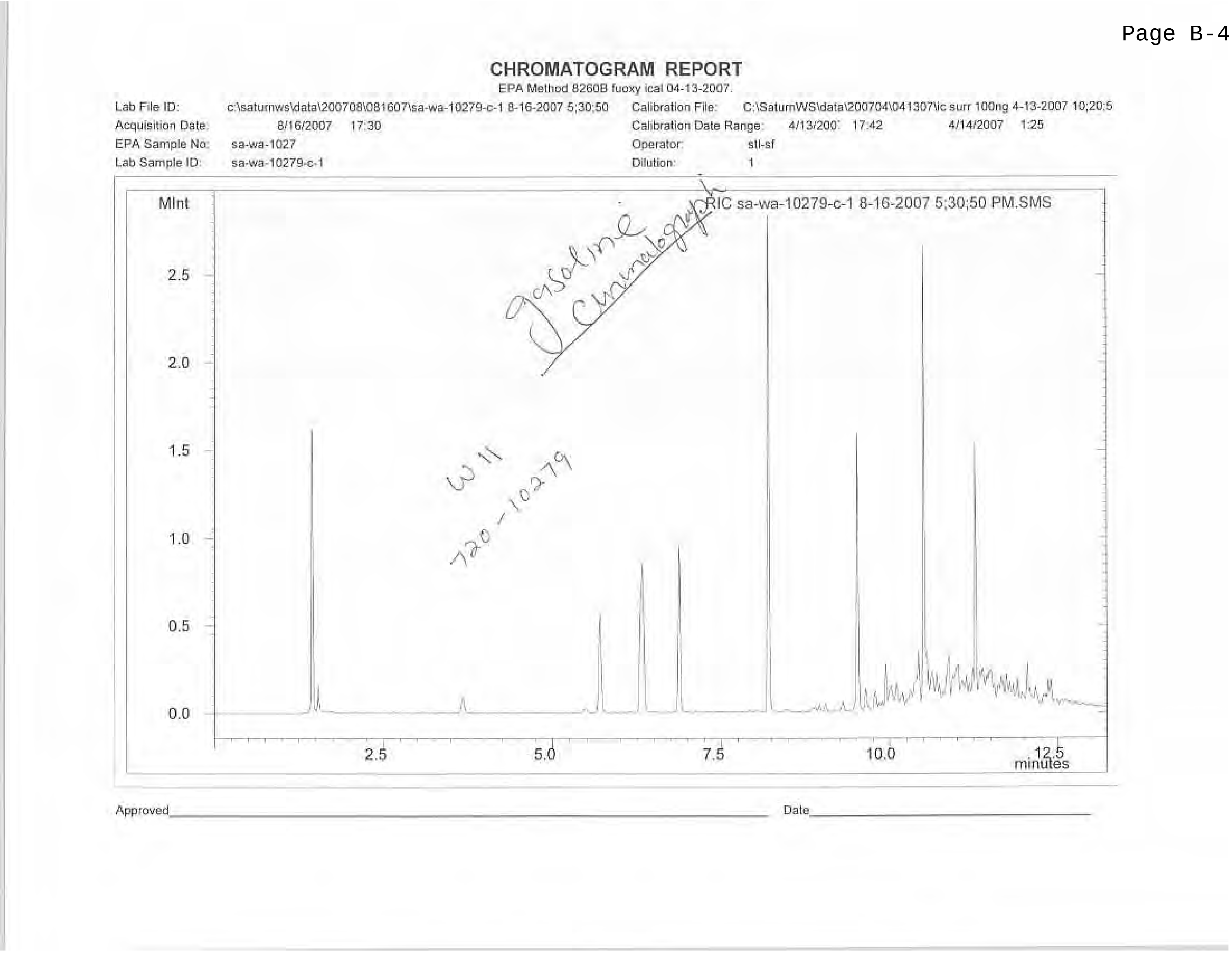


Chromatogram

Sample Name : 720-10279-E-1-A
Sample #: 026
Page 1 of 1
FileName : e:\drc5\0\20070813\a0813038.raw
Date : 8/21/2007 12:45:05 PM
Method :
Time of Injection: 8/14/2007 12:52:18 AM
Start Time : 0.00 min
End Time : 19.70 min
Low Point : 0.00 mV
High Point : 1000.00 mV
Plot Offset: 0.00 mV
Plot Scale: 1000.0 mV

Sample.
(720-10279-R)
720-10279-1
720 Sample

Diesel-range Chromatogram from Groundwater Sample W11



CHROMATOGRAM REPORT

EPA Method 8260B fuoxy ical 04-13-2007.

Lab File ID: c:\saturnws\data\200708\081607\sa-wa-10279-c-1 8-16-2007 5;30;50

Acquisition Date: 8/16/2007 17:30

EPA Sample No: sa-wa-1027

Lab Sample ID: sa-wa-10279-c-1

Calibration File: C:\SaturnWS\data\200704\041307\ic surr 100ng 4-13-2007 10;20;5

Calibration Date Range: 4/13/200 17:42 4/14/2007 1:25

Operator: stl-sf

Dilution: 1

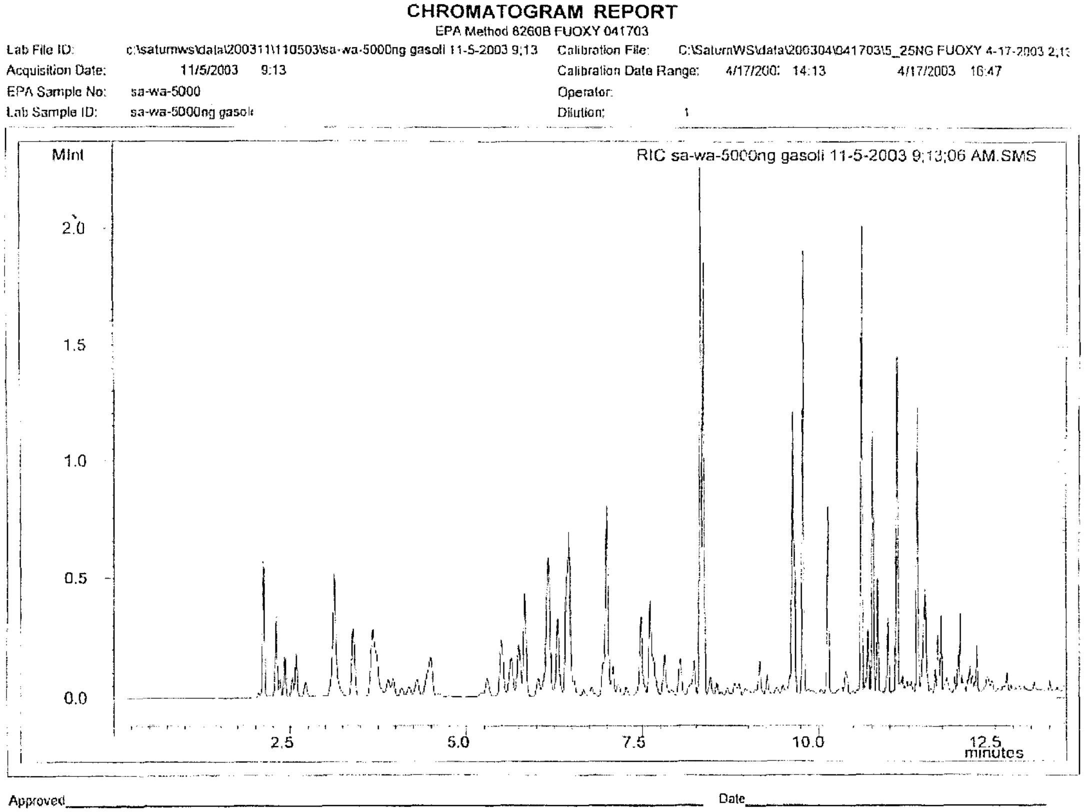
Gasoline Chromatograph

W11

720-10279

Approved____________________ Date____________________

Gasoline-range Chromatogram for Groundwater Sample W11



CHROMATOGRAM REPORT

EPA Method 8260B FUOXY 041703

Lab File ID: c:\saturnws\data\200311\110503\sa-wa-5000ng gasoli 11-5-2003 9;13

Calibration File: C:\SaturnWS\data\200304\041703\5_25NG FUOXY 4-17-2003 2,1

Acquisition Date: 11/5/2003 9:13

Calibration Date Range: 4/17/200: 14:13 4/17/2003 16:47

EPA Sample No: sa-wa-5000

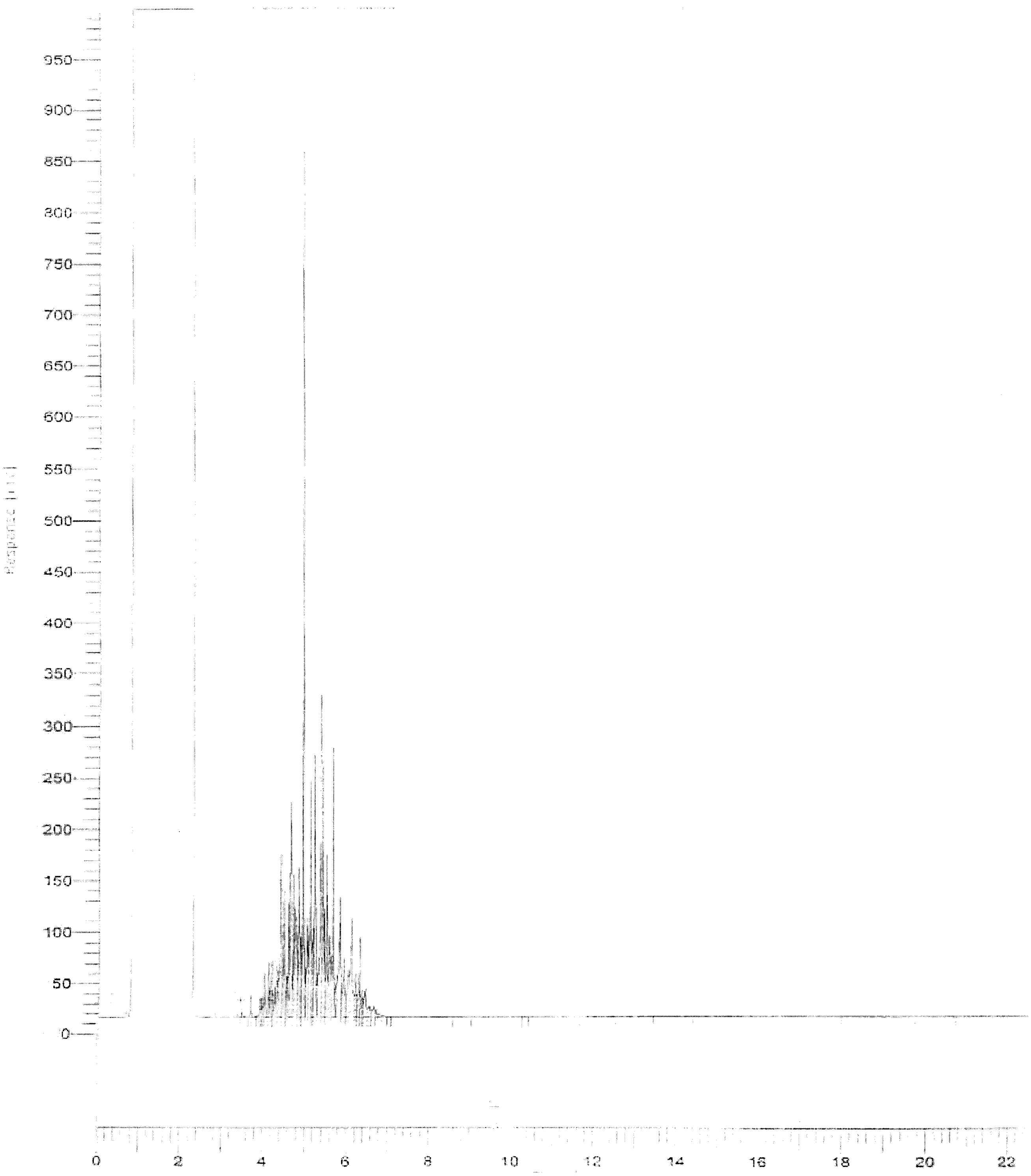
Operator:

Lab Sample ID: sa-wa-5000ng gaso

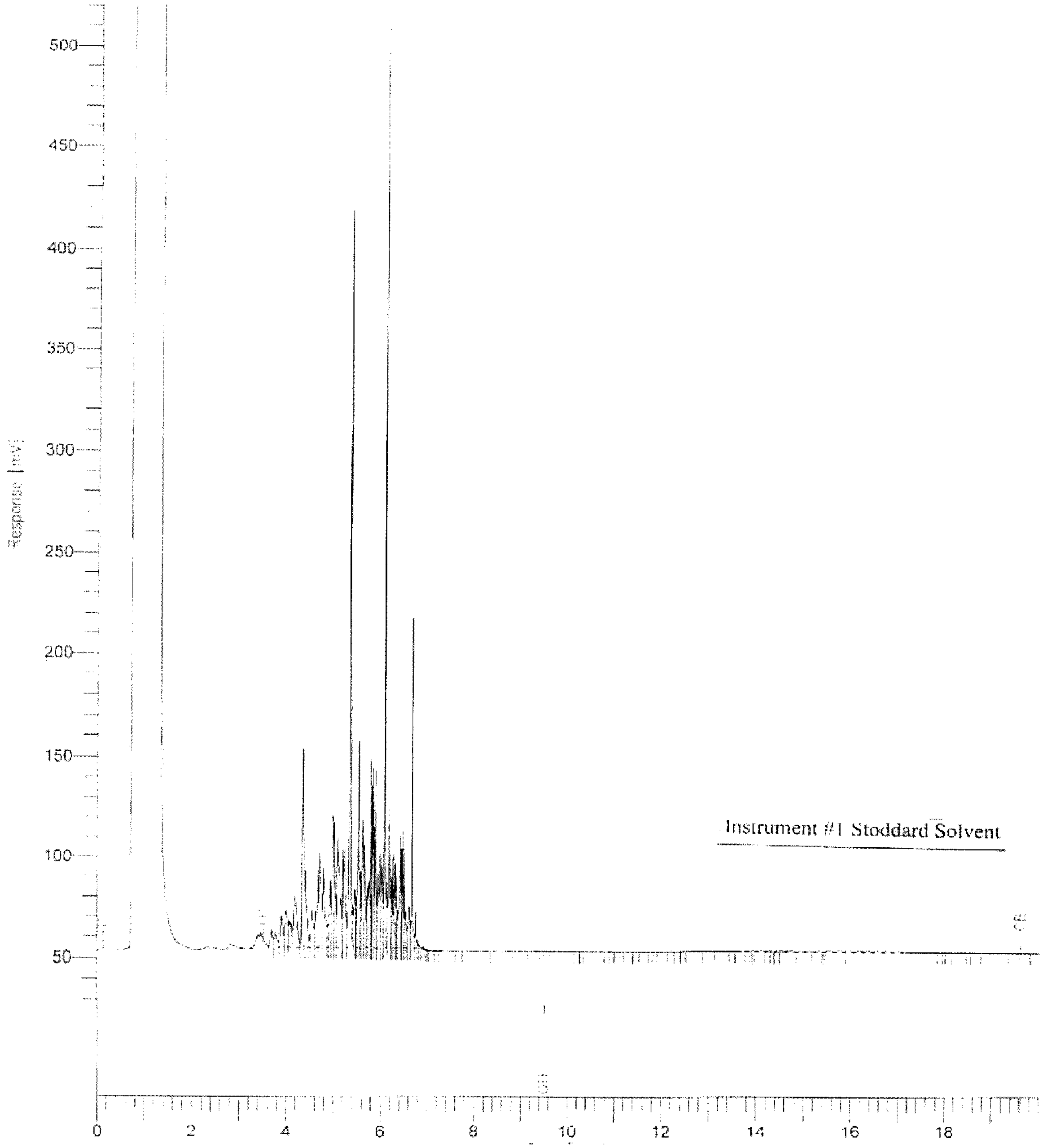
Dilution: 1

Approved____________________ Date____________________

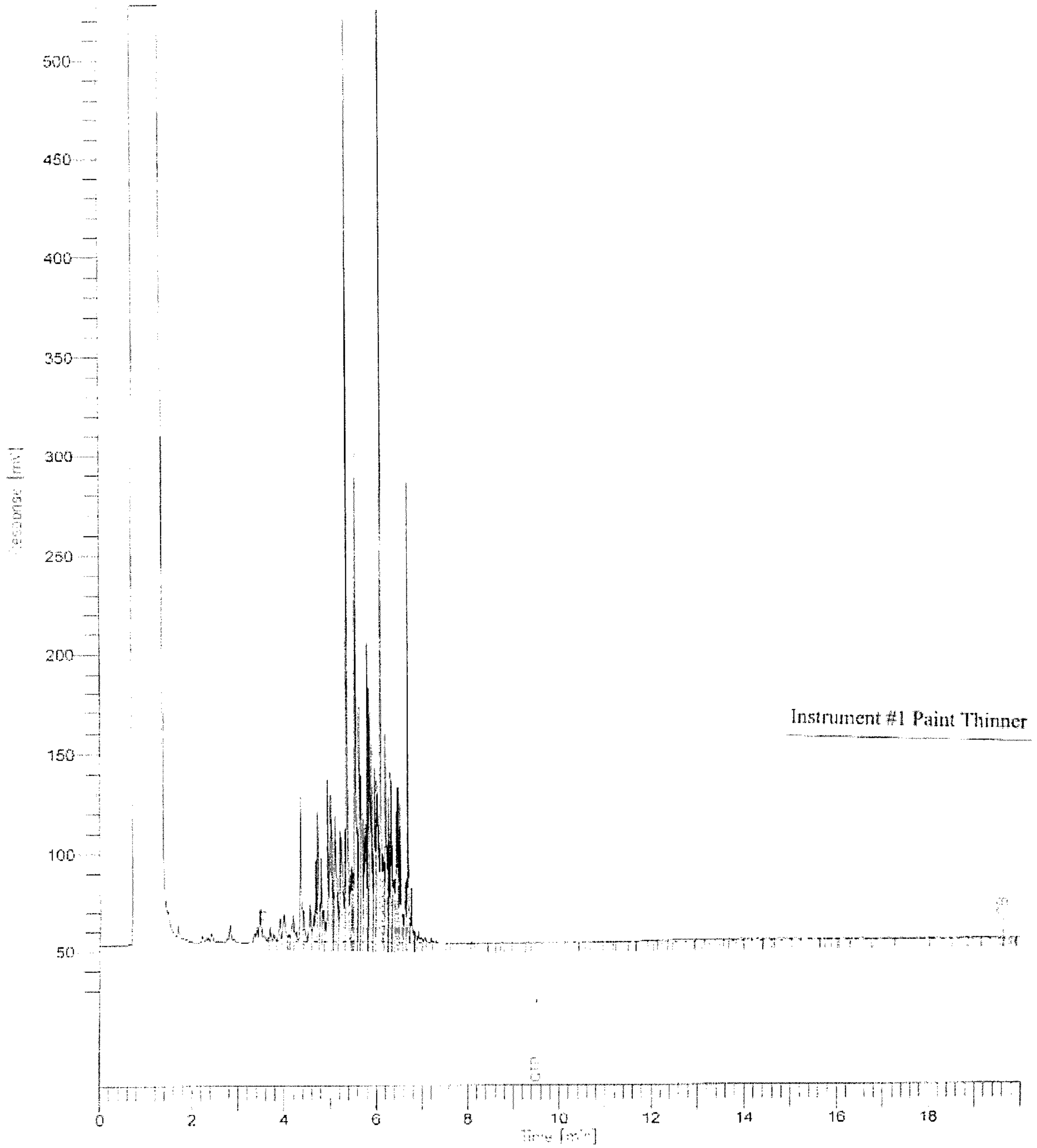
Laboratory Standard Chromatogram for Gasoline Fuel



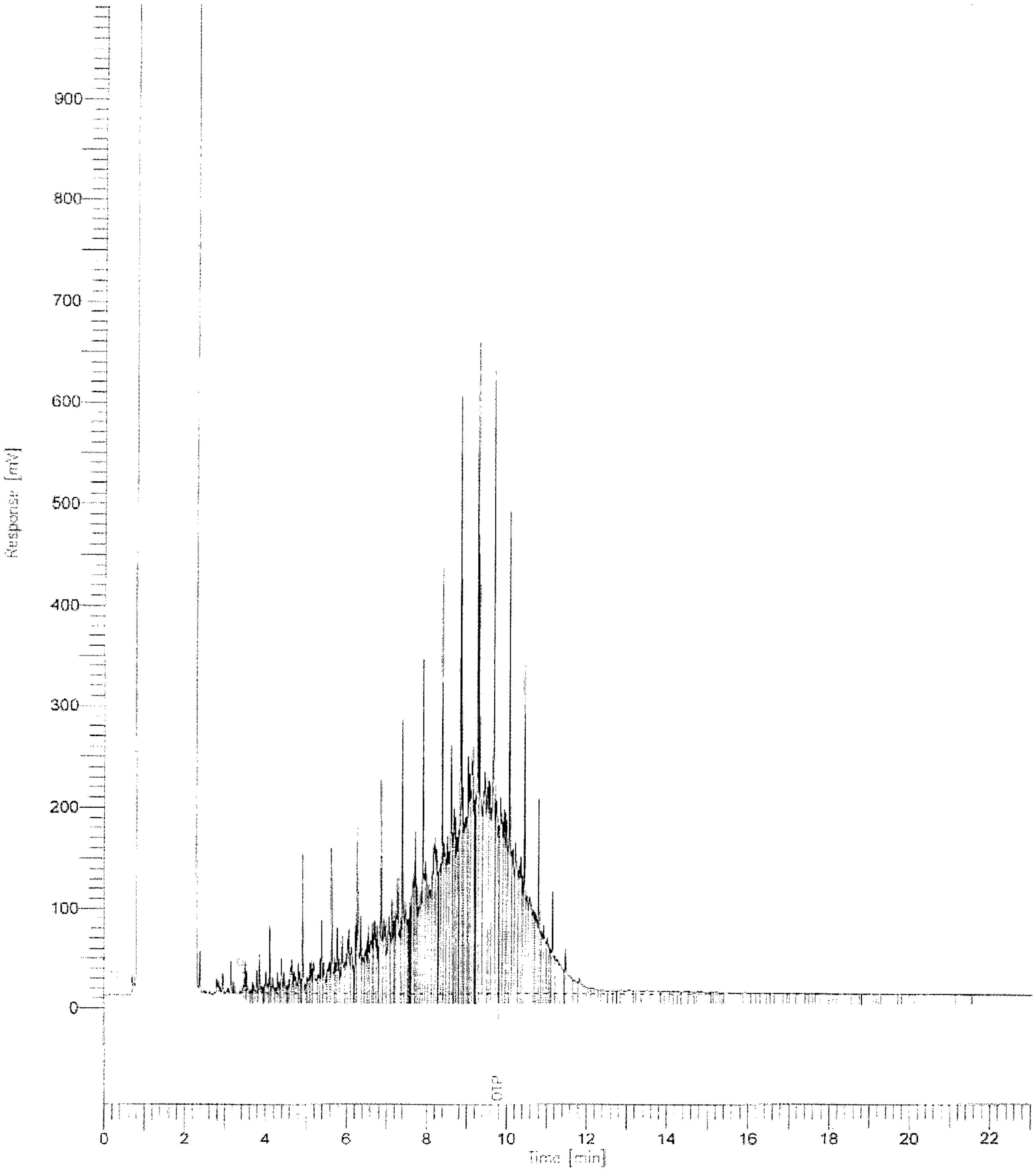
Laboratory Standard Chromatogram for Mineral Spirits



Laboratory Standard for Stoddard Solvent



Laboratory Standard for Paint Thinner



Laboratory Standard for Diesel Fuel

APPENDIX C

Liquid Boot® Membrane Test Results

THE SAN JOAQUIN COMPANY INC.
1120 HOLLYWOOD AVENUE, SUITE 3, OAKLAND, CALIFORNIA 94602

BayRock Oaks, LLC
1300 Clay Street
Suite 620
Oakland, CA 94612-1427

April 30, 2008

Attn.: Mr. Noe Valenzuela

Our Reference: 0004.084

Subject: Oak Walk Redevelopment Project, Emeryville, California: Impermeable Membrane Installation Inspection Certificates

Dear Mr. Valenzuela,

As the Engineer in Responsible Charge for implementation of the environmental Corrective Action Plan for the Oak Walk Redevelopment Project in Emeryville California, I inspected and approved the preparation of the areas of the site that required placement of an impermeable membrane beneath the floors of commercial and residential buildings. I also observed placement of the Liquid Boot® membrane at the structures listed below and subsequently measured the thickness of the cured membrane beneath each structure and observed the testing of the membranes' integrity by introduction of smoke between the membrane and the underlying ground surface. In each case, the cured membrane equaled or exceeded the specified thickness and all separate areas of the installed membrane passed the smoke test.

Inspection and testing was performed at each of the following structures:

Building 1
Building 2
Building 3 (Including Elevator Shaft Pits Nos. 1 and 2.)
1077 41st Street
1079 41st Street
1081 41st Street
1083 41st Street
1085 41st Street

Attached are stamped and signed inspection and testing reports for the membranes beneath each structure. All installations complied with the specifications contained in The San Joaquin Company's *Corrective Action Plan – Oak Walk Redevelopment Site, Emeryville, California* which was issued in July 2006 and approved by the Alameda County Health Care Services Agency.

Sincerely,

D. J. Watkins

D. J. Watkins, Ph. D., P. E.
Civil Engineer
The San Joaquin Company Inc.

D. J. WATKINS
No. 28602
Exp. 3/31/10
CIVIL

Attch: 8 Liquid Boot® Certifications

TELEPHONE: OAKLAND, CALIFORNIA (510) 336-9118 TRACY, CALIFORNIA (209) 832-2910

SURFACE PREPARATION

(INSPECTION REPORT)

JOB: Bay Rock Oak Walk Building 1

TIME: 17:00 **DATE:** 03/04/08

	YES	NO	N/A
Does site require inspection by a Government Authority or other inspection? If yes, who? ENGEER OF RECORD	✓		
Is there standing water? Has all ponding water been removed from the membrane?		✓	
Is ventilation required? If yes what type?		✓	
Are precautions necessary for unprotected areas?	✓		
Is surface free of all dust?	✓		
Is surface free of all dirt?	✓		
Is surface free of all grease?	✓		
Is surface free of all curing compounds or releasing agents?			✓
Are all voids prepared according to page 10 of training manual?			✓
Are all inside corners of 120 deg. or less sealed with 3/4" cant of Trowel Grade?	✓		
Is Geotextile rolled out with heat rolled side up?	✓		
Is Geotextile free of wrinkles?	✓		
Is Geotextile held tight inside of corners?	✓		
Does Geotextile have a minimum of 6" overlap?	✓		

REMARKS:

APPLICATOR SIGNATURE:	Arturo Alva
INSPECTOR SIGNATURE:	D.J. Watkins

REGISTERED PROFESSIONAL ENGINEER
D. J. WATKINS
No. 28602
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

LIQUID BOOT® MEMBRANE FIELD REPORT

JOB: Bay Rock Oaks Bld 1	TEMP: 67°
TIME: 07:45	DATE MEMBRANE SPRAYED: 03/04/08
AREA REVIEWED: Build. [illegible]	DATE MEMBRANE REVIEWED: 03/05/08

	ACCEPTABLE	NOT ACCEPTABLE
Check condition of spray equipment (running smoothly).	✓	
Check to make sure Applicator is properly stirring drums.	✓	
Check for proper spray technique -No arching, proper distance from surface and proper	✓	
Check for proper masking of rebar	✓	
Check that concrete is clean, dry and bug holes filled.	✓	
Check that form tie holes a fully grouted and taped with Hardcast 1602	N/A.	
Check overall thickness of membrane. 80 MILS DRY MINIMUM 60 mil spec.	✓	
Check membrane for shadows & holes.	✓	
Check the blisters for proper thickness.	N/A	
Check stippled membrane for shrinkage and proper thickness.	N/A.	
Check around all penetrations for proper detailing	✓	
Check for spraying too thick	✓	
Check vertical to horizontal transitions for proper cant strips.	✓	
Check overall appearance of membrane.	✓	
Check for proper installation of geotextile-heat set side up, laid smoothly, minimum wrinkles	✓	
Check for proper installation of drainage with fabric towards the earth.	N/A.	
TAKE PICTURES FOR MARKETING AND TO SHOW PROBLEM AREAS	DONE: [✓ YES]	/ NO

MATERIAL USAGE CHECK	TOTAL Square Footage Sprayed	4260	SQ. FT.
* Should be between 440 & 450 sq. feet per	Divided by Number of Drums Used	$9\frac{5}{2}$	DRUMS
"A" drum, for an 80 mil dry membrane	*Equals Square Feet Per Drum	448.4	

REMARKS:

Geotextile is 18 mils thick.

SIGNATURE:

Fax Copies To: ✓ Owner ________ Applicator ________ Arch/Eng

NOTE: THE ABOVE REPORT IS GIVEN AS A COURTESY TO ASSIST THE APPLICATOR, JOB INSPECTOR AND GENERAL CONTRACTOR. DUE TO NUMEROUS REASONS FOR POTENTIAL LEAKS THIS REPORT DOES NOT GUARANTEE THERE WILL BE NO LEAKS AND CETCO DOES NOT TAKE RESPONSIBILITY FOR IMPROPER APPLICATION. PROPER APPLICATION CONTINUES TO BE THE RESPONSIBILITY OF THE APPLICATOR.

COUPON TESTS	
TEST AREA	SAMPLE THICKNESS
1	125 mil
2	132 mil
3	69 mil

SMOKE TESTING		
TEST AREA	RESULT (ie. pass/fail)	COMMENTS
1	Passed	
2	Passed	
3	Passed.	

No. 28602
Exp. 3/31/10

LIQUID BOOT® MEMBRANE FIELD REPORT

JOB: OAKWALK Emeryville Bldg 2	TEMP: 72 °F
TIME: 11:00	DATE MEMBRANE SPRAYED: 4/14/08
AREA REVIEWED:	DATE MEMBRANE REVIEWED: 4/15/08

	ACCEPTABLE	NOT ACCEPTABLE
Check condition of spray equipment (running smoothly).	✓	
Check to make sure Applicator is properly stirring drums.	✓	
Check for proper spray technique -No arching, proper distance from surface and proper	✓	
Check for proper masking of rebar		
Check that concrete is clean, dry and bug holes filled.	✓	
Check that form tie holes a fully grouted and taped with Hardcast 1602		N/A.
Check overall thickness of membrane. ~~80 MILS~~ DRY MINIMUM 60 mil Spec.		
Check membrane for shadows & holes.	✓	
Check the blisters for proper thickness.		N/A.
Check stippled membrane for shrinkage and proper thickness.		N/A
Check around all penetrations for proper detailing	✓	
Check for spraying too thick	✓	
Check vertical to horizontal transitions for proper cant strips.	✓	
Check overall appearance of membrane.	✓	
Check for proper installation of geotextile-heat set side up, laid smoothly, minimum wrinkles	✓	
Check for proper installation of drainage with fabric towards the earth.		N/A.
TAKE PICTURES FOR MARKETING AND TO SHOW PROBLEM AREAS	DONE: YES	/ NO

MATERIAL USAGE CHECK	TOTAL Square Footage Sprayed	6900	SQ. FT.
* Should be between 440 & 450 sq. feet per	Divided by Number of Drums Used	11 1/2	DRUMS
"A" drum, for an 80 mil dry membrane	*Equals Square Feet Per Drum	600	60 mil spec.

REMARKS: Sect #3 used 7 1/2 drums "A"
Applicator advised that geotextile was (is ~~[illegible]~~ thick
I measured it at 18mil. All measurements are within specs.

SIGNATURE: D. J. Watkins

Fax Copies To: ________Owner ________Applicator ________Arch/Eng

NOTE: THE ABOVE REPORT IS GIVEN AS A COURTESY TO ASSIST THE APPLICATOR, JOB INSPECTOR AND GENERAL CONTRACTOR. DUE TO NUMEROUS REASONS FOR POTENTIAL LEAKS THIS REPORT DOES NOT GUARANTEE THERE WILL BE NO LEAKS AND CETCO DOES NOT TAKE RESPONSIBILITY FOR IMPROPER APPLICATION. PROPER APPLICATION CONTINUES TO BE THE RESPONSIBILITY OF THE APPLICATOR.

COUPON TESTS	
TEST AREA	**SAMPLE THICKNESS**
4 ①	135
②	138
2 ③	96
④	122
8 ⑤	96
⑥	107
⑦	142

SMOKE TESTING		
TEST AREA	**RESULT (ie pass/fail)**	**COMMENTS**
4 ①	Pass	✓
②	Pass	✓
2 ③	Pass	✓
④	Pass	✓
8 ⑤	Pass	
⑥	Pass	✓
⑦	Pass	✓

D. J. WATKINS
No. 28602
Exp. 3/31/10
CIVIL

SURFACE PREPARATION
(INSPECTION REPORT)

JOB: OAK WALK EMERYVILLE - BLD. 2,

TIME: 17:00

DATE: 04/14/08

	YES	NO	N/A
Does site require inspection by a Government Authority or other inspection? If yes, who? ENGINEER OF RECORD	✓		
Is there standing water? Has all ponding water been removed from the membrane?			
Is ventilation required? If yes what type?		✓	
Are precautions necessary for unprotected areas?		✓	
Is surface free of all dust?	✓		
Is surface free of all dirt?	✓		
Is surface free of all grease?			
Is surface free of all curing compounds or releasing agents?	✓		
Are all voids prepared according to page 10 of training manual?			✓
Are all inside corners of 120 deg. or less sealed with 3/4" cant of Trowel Grade?	✓		
Is Geotextile rolled out with heat rolled side up?	✓		
Is Geotextile free of wrinkles?	✓		
Is Geotextile held tight inside of corners?	✓		
Does Geotextile have a minimum of 6" overlap?	✓		

REMARKS:

REGISTERED PROFESSIONAL ENGINEER
D. J. WATKINS
No. 28602
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

APPLICATOR SIGNATURE:

INSPECTOR SIGNATURE: D. J. Watkins

LIQUID BOOT® MEMBRANE FIELD REPORT

JOB: OAK WALK BLD 3	TEMP: 60°F
TIME: 07:00	DATE MEMBRANE SPRAYED: 03/20/08.
AREA REVIEWED: BLD 3	DATE MEMBRANE REVIEWED: 03/21/08

	ACCEPTABLE	NOT ACCEPTABLE
Check condition of spray equipment (running smoothly).	✓	
Check to make sure Applicator is properly stirring drums.	✓	
Check for proper spray technique -No arching, proper distance from surface and proper	✓	
Check for proper masking of rebar	✓	
Check that concrete is clean, dry and bug holes filled.	✓	
Check that form tie holes a fully grouted and taped with Hardcast 1602	N/A	
Check overall thickness of membrane. 80 MILS DRY MINIMUM 60 MIL SPEC.	✓	
Check membrane for shadows & holes.	✓	
Check the blisters for proper thickness.	N/A	
Check stippled membrane for shrinkage and proper thickness.	N/A	
Check around all penetrations for proper detailing	✓	
Check for spraying too thick	✓	
Check vertical to horizontal transitions for proper cant strips.	✓	
Check overall appearance of membrane.	✓	
Check for proper installation of geotextile-heat set side up, laid smoothly, minimum wrinkles	✓	
Check for proper installation of drainage with fabric towards the earth.	N/A	
TAKE PICTURES FOR MARKETING AND TO SHOW PROBLEM AREAS	**DONE:** [✓ **YES**] /	**NO**

MATERIAL USAGE CHECK	TOTAL Square Footage Sprayed	8,750.00	SQ. FT.
* Should be between 440 & 450 sq. feet per	Divided by Number of Drums Used	18	DRUMS
"A" drum, for an 80 mil dry membrane	*Equals Square Feet Per Drum	486	

REMARKS: GEOTEXTILE 18 MIL THICK. FOLLOWING TEST RESULTS ARE AFTER SUBTRACTION OF GEOTEXTILE THICKNESS

1.64 572 9.132 13.114 17.82
2.57 * 6.84 10.82 14.82 18.112
3.64 7.84 11.114 15.112
4.82 8.102 12.92 16.82

* NOT INITIAL THICKNESS LESS THAN 60 MIL. RETESTED AFTER RESPRAYING THICKNESS = 220

SIGNATURE: D. J. Watkins.

D. J. WATKINS
No. 882
Exp. 3/31/10

Fax Copies To: ✓ Owner ________ Applicator ________ Arch/Eng

NOTE: THE ABOVE REPORT IS GIVEN AS A COURTESY TO ASSIST THE APPLICATOR, JOB INSPECTOR AND GENERAL CONTRACTOR. DUE TO NUMEROUS REASONS FOR POTENTIAL LEAKS THIS REPORT DOES NOT GUARANTEE THERE WILL BE NO LEAKS AND CETCO DOES NOT TAKE RESPONSIBILITY FOR IMPROPER APPLICATION. PROPER APPLICATION CONTINUES TO BE THE RESPONSIBILITY OF THE APPLICATOR.

COUPON TESTS	
TEST AREA	SAMPLE THICKNESS
1	SEE
2	REMARKS
3	ABOVE

SMOKE TESTING		
TEST AREA	RESULT (ie. pass/fail)	COMMENTS
1	PASS	ALL SMOKE TESTS
2		AT 18 LOCATIONS
3		PASSED.

SURFACE PREPARATION
(INSPECTION REPORT)

JOB: OAK WALK

TIME: BLD. 3 **DATE:** 03/20/08

	YES	NO	N/A
Does site require inspection by a Government Authority or other inspection? If yes, who? Engineer of Record	✓		
Is there standing water? Has all ponding water been removed from the membrane?		✓	
Is ventilation required? If yes what type?		✓	
Are precautions necessary for unprotected areas?		✓	
Is surface free of all dust?	✓		
Is surface free of all dirt?	✓		
Is surface free of all grease?	✓		
Is surface free of all curing compounds or releasing agents?	✓		
Are all voids prepared according to page 10 of training manual?	✓		
Are all inside corners of 120 deg. or less sealed with 3/4" cant of Trowel Grade?	✓		
Is Geotextile rolled out with heat rolled side up?	✓		
Is Geotextile free of wrinkles?	✓		
Is Geotextile held tight inside of corners?	✓		
Does Geotextile have a minimum of 6" overlap?	✓		

REMARKS:

APPLICATOR SIGNATURE: Armando Montenegro

INSPECTOR SIGNATURE: D. J. Watkins

REGISTERED PROFESSIONAL ENGINEER
D. J. WATKINS
No. 882
Exp. 3/31/10
GEOTECHNICAL
STATE OF CALIFORNIA

SURFACE PREPARATION

(INSPECTION REPORT)

JOB: Bay Rock Oakwalk 1077 41st Street.

TIME: 15:34

DATE: 03/03/08

	YES	NO	N/A
Does site require inspection by a Government Authority or other inspection? If yes, who? Engineer of Record	✓		
Is there standing water? Has all ponding water been removed from the membrane?			✓
Is ventilation required? If yes what type?		✓	
Are precautions necessary for unprotected areas?		✓	
Is surface free of all dust?	✓		
Is surface free of all dirt?	✓		
Is surface free of all grease?	✓		
Is surface free of all curing compounds or releasing agents?	✓		
Are all voids prepared according to page 10 of training manual?			✓
Are all inside corners of 120 deg. or less sealed with 3/4" cant of Trowel Grade?	✓		
Is Geotextile rolled out with heat rolled side up?	✓		
Is Geotextile free of wrinkles?	✓		
Is Geotextile held tight inside of corners?	✓		
Does Geotextile have a minimum of 6" overlap?	✓		

REMARKS:

APPLICATOR SIGNATURE:

INSPECTOR SIGNATURE: D. J. Watkins

REGISTERED PROFESSIONAL ENGINEER
D. J. WATKINS
No. 28602
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

LIQUID BOOT® MEMBRANE FIELD REPORT

JOB: Bay Rock Oak Walk	TEMP: 70° F
TIME: 08:00	DATE MEMBRANE SPRAYED: 03/03/08
AREA REVIEWED: 1077 41st Street.	DATE MEMBRANE REVIEWED: 03/04/08

	ACCEPTABLE	NOT ACCEPTABLE
Check condition of spray equipment (running smoothly).	✓	
Check to make sure Applicator is properly stirring drums.	✓	
Check for proper spray technique -No arching, proper distance from surface and proper	✓	
Check for proper masking of rebar	N/A	
Check that concrete is clean, dry and bug holes filled.	N/A	
Check that form tie holes a fully grouted and taped with Hardcast 1602	N/A	
Check overall thickness of membrane. ~~80~~ MILS DRY MINIMUM 60 MILS SPEC.	✓	
Check membrane for shadows & holes.	✓	
Check the blisters for proper thickness.	N/A	
Check stippled membrane for shrinkage and proper thickness.	N/A	
Check around all penetrations for proper detailing	✓	
Check for spraying too thick	✓	
Check vertical to horizontal transitions for proper cant strips.	✓	
Check overall appearance of membrane.	✓	
Check for proper installation of geotextile-heat set side up, laid smoothly, minimum wrinkles	✓	
Check for proper installation of drainage with fabric towards the earth.	N/A	
TAKE PICTURES FOR MARKETING AND TO SHOW PROBLEM AREAS	**DONE: YES / [✓ NO]**	

MATERIAL USAGE CHECK	TOTAL Square Footage Sprayed	4,900	SQ. FT.
* Should be between 440 & 450 sq. feet per	Divided by Number of Drums Used	10½	DRUMS
"A" drum, for an 80 mil dry membrane	*Equals Square Feet Per Drum	466.7	

REMARKS: GEOTEXTILE 18 MILS THICK.
Based on 5 units 1077 to 1085 41st Street.

SIGNATURE: D. J. Watkins.

Fax Copies To: ✓ Owner ________Applicator ________Arch/Eng

NOTE: THE ABOVE REPORT IS GIVEN AS A COURTESY TO ASSIST THE APPLICATOR, JOB INSPECTOR AND GENERAL CONTRACTOR. DUE TO NUMEROUS REASONS FOR POTENTIAL LEAKS THIS REPORT DOES NOT GUARANTEE THERE WILL BE NO LEAKS AND CETCO DOES NOT TAKE RESPONSIBILITY FOR IMPROPER APPLICATION. PROPER APPLICATION CONTINUES TO BE THE RESPONSIBILITY OF THE APPLICATOR.

COUPON TESTS	
TEST AREA	**SAMPLE THICKNESS**
1	61.5 mils
2	
3	

SMOKE TESTING		
TEST AREA	**RESULT (ie. pass/fail)**	**COMMENTS**
1	PASSED	
2		
3		

REGISTERED PROFESSIONAL ENGINEER
D. J. WATKINS
No. 28602
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

SURFACE PREPARATION

(INSPECTION REPORT)

JOB: Bay ROCK OAK WALK 1079 41ST STREET	
TIME: 16:05	DATE: 03/03/08

	YES	NO	N/A
Does site require inspection by a Government Authority or other inspection? If yes, who? ENGINEER OF RECORD	✓		
Is there standing water? Has all ponding water been removed from the membrane?			✓
Is ventilation required? If yes what type?		✓	
Are precautions necessary for unprotected areas?		✓	
Is surface free of all dust?	✓		
Is surface free of all dirt?	✓		
Is surface free of all grease?	✓		
Is surface free of all curing compounds or releasing agents?	✓		
Are all voids prepared according to page 10 of training manual?			✓
Are all inside corners of 120 deg. or less sealed with 3/4" cant of Trowel Grade?	✓		
Is Geotextile rolled out with heat rolled side up?	✓		
Is Geotextile free of wrinkles?	✓		
Is Geotextile held tight inside of corners?	✓		
Does Geotextile have a minimum of 6" overlap?	✓		

REMARKS:

APPLICATOR SIGNATURE:	
INSPECTOR SIGNATURE:	D. J. Watkins

D. J. WATKINS
No. 28602
Exp. 3/31/10

LIQUID BOOT® MEMBRANE FIELD REPORT

JOB: Bay Rock Oak Walk	TEMP: 70°
TIME: 08:00	DATE MEMBRANE SPRAYED: 03/03/08
AREA REVIEWED: 1079. 41st St.	DATE MEMBRANE REVIEWED: 03/04/08

	ACCEPTABLE	NOT ACCEPTABLE
Check condition of spray equipment (running smoothly).	✓	
Check to make sure Applicator is properly stirring drums.	✓	
Check for proper spray technique -No arching, proper distance from surface and proper	✓	
Check for proper masking of rebar	N/A	
Check that concrete is clean, dry and bug holes filled.	N/A	
Check that form tie holes a fully grouted and taped with Hardcast 1602	N/A	
Check overall thickness of membrane, ~~80~~ MILS DRY MINIMUM 60 MIL SPEC	✓	
Check membrane for shadows & holes.	✓	
Check the blisters for proper thickness.	N/A	
Check stippled membrane for shrinkage and proper thickness.	N/A	
Check around all penetrations for proper detailing	✓	
Check for spraying too thick	✓	
Check vertical to horizontal transitions for proper cant strips.	✓	
Check overall appearance of membrane.	✓	
Check for proper installation of geotextile-heat set side up, laid smoothly, minimum wrinkles	✓	
Check for proper installation of drainage with fabric towards the earth.		
TAKE PICTURES FOR MARKETING AND TO SHOW PROBLEM AREAS	DONE: YES / [✓ NO]	

MATERIAL USAGE CHECK	TOTAL Square Footage Sprayed	4,900*	SQ. FT.
* Should be between 440 & 450 sq. feet per	Divided by Number of Drums Used	10 1/2	DRUMS
"A" drum, for an 80 mil dry membrane	*Equals Square Feet Per Drum	466.7	

REMARKS:

GEOTEXTILE 18 MIL THICK.

* BASED ON 5 UNITS 1077 TO 1085 41st STREET

SIGNATURE: D. Dalley

Fax Copies To: ✓ Owner ______ Applicator ______ Arch/Eng

NOTE: THE ABOVE REPORT IS GIVEN AS A COURTESY TO ASSIST THE APPLICATOR, JOB INSPECTOR AND GENERAL CONTRACTOR. DUE TO NUMEROUS REASONS FOR POTENTIAL LEAKS THIS REPORT DOES NOT GUARANTEE THERE WILL BE NO LEAKS AND CETCO DOES NOT TAKE RESPONSIBILITY FOR IMPROPER APPLICATION. PROPER APPLICATION CONTINUES TO BE THE RESPONSIBILITY OF THE APPLICATOR.

COUPON TESTS	
TEST AREA	SAMPLE THICKNESS
1	100 MIL
2	
3	

SMOKE TESTING		
TEST AREA	RESULT (ie. pass/fail)	COMMENTS
1	PASSED	
2		
3		

D. J. WATKINS
No. 28602
Exp. 3/31/10

SURFACE PREPARATION

(INSPECTION REPORT)

JOB: Bay Rock Oak Walk 1081 41st Street.

TIME: 16:00

DATE: 03/03/08

	YES	NO	N/A
Does site require inspection by a Government Authority or other inspection? If yes, who? Engineer of Record	✓		
Is there standing water? Has all ponding water been removed from the membrane?			✓
Is ventilation required? If yes what type?		✓	
Are precautions necessary for unprotected areas?		✓	
Is surface free of all dust?	✓		
Is surface free of all dirt?	✓		
Is surface free of all grease?	✓		
Is surface free of all curing compounds or releasing agents?	✓		
Are all voids prepared according to page 10 of training manual?	✓		
Are all inside corners of 120 deg. or less sealed with 3/4" cant of Trowel Grade?			✓
Is Geotextile rolled out with heat rolled side up?	✓		
Is Geotextile free of wrinkles?	✓		
Is Geotextile held tight inside of corners?	✓		
Does Geotextile have a minimum of 6" overlap?	✓		

REMARKS:

APPLICATOR SIGNATURE:	
INSPECTOR SIGNATURE:	D.J. Watkins

D. J. WATKINS
No. 28602
Exp. 3/31/10

LIQUID BOOT® MEMBRANE FIELD REPORT

JOB: Bay Rock Oak Walk	TEMP: 70°F
TIME: 08:15	DATE MEMBRANE SPRAYED: 03/03/08
AREA REVIEWED: 1081 41st Street.	DATE MEMBRANE REVIEWED: 03/04/08

	ACCEPTABLE	NOT ACCEPTABLE
Check condition of spray equipment (running smoothly).	✓	
Check to make sure Applicator is properly stirring drums.	✓	
Check for proper spray technique -No arching, proper distance from surface and proper	✓	
Check for proper masking of rebar	N/A	
Check that concrete is clean, dry and bug holes filled.	✓	
Check that form tie holes a fully grouted and taped with Hardcast 1602	N/A	
Check overall thickness of membrane. ~~80~~ MILS DRY MINIMUM 60 MIL SPEC	✓	
Check membrane for shadows & holes.	✓	
Check the blisters for proper thickness.	N/A	
Check stippled membrane for shrinkage and proper thickness.	✓	
Check around all penetrations for proper detailing	✓	
Check for spraying too thick	✓	
Check vertical to horizontal transitions for proper cant strips.	✓	
Check overall appearance of membrane.	✓	
Check for proper installation of geotextile-heat set side up, laid smoothly, minimum wrinkles	✓	
Check for proper installation of drainage with fabric towards the earth.	N/A	
TAKE PICTURES FOR MARKETING AND TO SHOW PROBLEM AREAS	**DONE: YES** /	[✓ **NO**]

MATERIAL USAGE CHECK	TOTAL Square Footage Sprayed	4900	SQ. FT.
* Should be between 440 & 450 sq. feet per	Divided by Number of Drums Used	10 1/2	DRUMS
"A" drum, for an 80 mil dry membrane	*Equals Square Feet Per Drum	466.7	

REMARKS:
GEOTEXTILE 18 MILS THICK
BASED ON 5 UNITS 1077 TO 1085 41st ST.

SIGNATURE: D.J. Watkins

Fax Copies To: ✓ Owner ______ Applicator ______ Arch/Eng

NOTE: THE ABOVE REPORT IS GIVEN AS A COURTESY TO ASSIST THE APPLICATOR, JOB INSPECTOR AND GENERAL CONTRACTOR. DUE TO NUMEROUS REASONS FOR POTENTIAL LEAKS THIS REPORT DOES NOT GUARANTEE THERE WILL BE NO LEAKS AND CETCO DOES NOT TAKE RESPONSIBILITY FOR IMPROPER APPLICATION. PROPER APPLICATION CONTINUES TO BE THE RESPONSIBILITY OF THE APPLICATOR.

COUPON TESTS	
TEST AREA	**SAMPLE THICKNESS**
1	87 mils
2	
3	

SMOKE TESTING		
TEST AREA	**RESULT (ie. pass/fail)**	**COMMENTS**
1	PASSED	D. J. WATKINS No. 28602 Exp. 3/31/10
2		
3		

SURFACE PREPARATION
(INSPECTION REPORT)

JOB: BAY ROCK OAK WALK - 1083 41ST STREET

TIME: 16:20.

DATE: 03/03/07

	YES	NO	N/A
Does site require inspection by a Government Authority or other inspection? If yes, who? ENGINEER OF RECORD	✓		
Is there standing water? Has all ponding water been removed from the membrane?		✓	
Is ventilation required? If yes what type?		✓	
Are precautions necessary for unprotected areas?			✓
Is surface free of all dust?	✓		
Is surface free of all dirt?	✓		
Is surface free of all grease?	✓		
Is surface free of all curing compounds or releasing agents?	✓		
Are all voids prepared according to page 10 of training manual?			✓
Are all inside corners of 120 deg. or less sealed with 3/4" cant of Trowel Grade?	✓		
Is Geotextile rolled out with heat rolled side up?	✓		
Is Geotextile free of wrinkles?	✓		
Is Geotextile held tight inside of corners?	✓		
Does Geotextile have a minimum of 6" overlap?	✓		

REMARKS:

APPLICATOR SIGNATURE:

INSPECTOR SIGNATURE:

REGISTERED PROFESSIONAL ENGINEER
D. J. WATKINS
No. 28602
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

LIQUID BOOT® MEMBRANE FIELD REPORT

JOB: BAY ROCK OAKS	TEMP: 70°
TIME: 08:30	DATE MEMBRANE SPRAYED: 03/03/08
AREA REVIEWED: 1083 41st STREET.	DATE MEMBRANE REVIEWED: 03/04/08

	ACCEPTABLE	NOT ACCEPTABLE
Check condition of spray equipment (running smoothly).	✓	
Check to make sure Applicator is properly stirring drums.	✓	
Check for proper spray technique -No arching, proper distance from surface and proper	✓	
Check for proper masking of rebar	N/A	
Check that concrete is clean, dry and bug holes filled.	✓	
Check that form tie holes a fully grouted and taped with Hardcast 1602	N/A	
Check overall thickness of membrane. ~~80~~ 60 MILS DRY MINIMUM 60 MIL SPEC	✓	
Check membrane for shadows & holes.	✓	
Check the blisters for proper thickness.	N/A	
Check stippled membrane for shrinkage and proper thickness.	✓	
Check around all penetrations for proper detailing	✓	
Check for spraying too thick	✓	
Check vertical to horizontal transitions for proper cant strips.	✓	
Check overall appearance of membrane.	✓	
Check for proper installation of geotextile-heat set side up, laid smoothly, minimum wrinkles	✓	
Check for proper installation of drainage with fabric towards the earth.	N/A.	
TAKE PICTURES FOR MARKETING AND TO SHOW PROBLEM AREAS	DONE: YES	[✓ NO]

MATERIAL USAGE CHECK	TOTAL Square Footage Sprayed	4,900*	SQ. FT.
* Should be between 440 & 450 sq. feet per	Divided by Number of Drums Used	10 1/2	DRUMS
"A" drum, for an 80 mil dry membrane	*Equals Square Feet Per Drum	466.7	

REMARKS:

GEOTEXTILE 18 MIL THICK.

* BASED ON 5 UNITS 1077 TO 1085 41st ST.

SIGNATURE: D.J. Watkins

Fax Copies To: ✓ Owner ________ Applicator ________ Arch/Eng

NOTE: THE ABOVE REPORT IS GIVEN AS A COURTESY TO ASSIST THE APPLICATOR, JOB INSPECTOR AND GENERAL CONTRACTOR. DUE TO NUMEROUS REASONS FOR POTENTIAL LEAKS THIS REPORT DOES NOT GUARANTEE THERE WILL BE NO LEAKS AND CETCO DOES NOT TAKE RESPONSIBILITY FOR IMPROPER APPLICATION. PROPER APPLICATION CONTINUES TO BE THE RESPONSIBILITY OF THE APPLICATOR.

COUPON TESTS

TEST AREA	SAMPLE THICKNESS
1	102 MIL
2	
3	

SMOKE TESTING

TEST AREA	RESULT (ie. pass/fail)	COMMENTS
1	PASSED	
2		
3		

REGISTERED PROFESSIONAL ENGINEER
D. J. WATKINS
No. 28602
Exp. 3/31/10
CIVIL
STATE OF CALIFORNIA

SURFACE PREPARATION
(INSPECTION REPORT)

JOB: BAY ROCK – OAK WALK 1085 41st STREET.

TIME: 10:12 DATE: 03/03/03

	YES	NO	N/A
Does site require inspection by a Government Authority or other inspection? If yes, who? ENGINEER OF RECORD	✓		
Is there standing water? Has all ponding water been removed from the membrane?			✓
Is ventilation required? If yes what type?		✓	
Are precautions necessary for unprotected areas?		✓	
Is surface free of all dust?	✓		
Is surface free of all dirt?	✓		
Is surface free of all grease?	✓		
Is surface free of all curing compounds or releasing agents?	✓		
Are all voids prepared according to page 10 of training manual?			✓
Are all inside corners of 120 deg. or less sealed with 3/4" cant of Trowel Grade?	✓		
Is Geotextile rolled out with heat rolled side up?	✓		
Is Geotextile free of wrinkles?	✓		
Is Geotextile held tight inside of corners?	✓		
Does Geotextile have a minimum of 6" overlap?	✓		

REMARKS:

APPLICATOR SIGNATURE:	
INSPECTOR SIGNATURE:	D. J. Watkins

D. J. WATKINS
No. 28602
Exp. 3/31/10

LIQUID BOOT® MEMBRANE FIELD REPORT

JOB: Bay Rock Oaks	TEMP: 70°
TIME: 08:40	DATE MEMBRANE SPRAYED: 03/03/08
AREA REVIEWED: 1085 41st Street	DATE MEMBRANE REVIEWED: 03/04/08

	ACCEPTABLE	NOT ACCEPTABLE
Check condition of spray equipment (running smoothly).	✓	
Check to make sure Applicator is properly stirring drums.	✓	
Check for proper spray technique -No arching, proper distance from surface and proper	✓	
Check for proper masking of rebar	N/A	
Check that concrete is clean, dry and bug holes filled.	✓	
Check that form tie holes a fully grouted and taped with Hardcast 1602	N/A	
Check overall thickness of membrane. ~~80~~ MILS DRY MINIMUM 60 mil spec	✓	
Check membrane for shadows & holes.	✓	
Check the blisters for proper thickness.	✓	
Check stippled membrane for shrinkage and proper thickness.	✓	
Check around all penetrations for proper detailing	✓	
Check for spraying too thick	✓	
Check vertical to horizontal transitions for proper cant strips.	✓	
Check overall appearance of membrane.	✓	
Check for proper installation of geotextile-heat set side up, laid smoothly, minimum wrinkles	✓	
Check for proper installation of drainage with fabric towards the earth.	N/A.	
TAKE PICTURES FOR MARKETING AND TO SHOW PROBLEM AREAS	DONE: YES / [✓ NO]	

MATERIAL USAGE CHECK	TOTAL Square Footage Sprayed	4900*	SQ. FT.
* Should be between 440 & 450 sq. feet per	Divided by Number of Drums Used	10½	DRUMS
"A" drum, for an 80 mil dry membrane	*Equals Square Feet Per Drum	466.7	

REMARKS:
Geotextile 18 mil thick.
Based on 5 units 1077 to 1085 41st. St.

SIGNATURE: D. J. Watkins

Fax Copies To: ✓ Owner ______ Applicator ______ Arch/Eng

NOTE: THE ABOVE REPORT IS GIVEN AS A COURTESY TO ASSIST THE APPLICATOR, JOB INSPECTOR AND GENERAL CONTRACTOR. DUE TO NUMEROUS REASONS FOR POTENTIAL LEAKS THIS REPORT DOES NOT GUARANTEE THERE WILL BE NO LEAKS AND CETCO DOES NOT TAKE RESPONSIBILITY FOR IMPROPER APPLICATION. PROPER APPLICATION CONTINUES TO BE THE RESPONSIBILITY OF THE APPLICATOR.

COUPON TESTS	
TEST AREA	SAMPLE THICKNESS
1	102 mil.
2	
3	

SMOKE TESTING		
TEST AREA	RESULT (ie, pass/fail)	COMMENTS
1	Passed.	
2		
3		

D. J. WATKINS
No. 28602
Exp. 3/31/10

APPENDIX D

Soil Gas ESL Calculations for Benzene

Calculation of ESL for Benzene in Soil Gas

SJC

SG-ADV
Version 1.0; 03/01

SOIL VOC EMISSIONS TO INDOOR AIR
RESIDENTIAL EXPOSURE SCENARIO
HIGH-PERMEABILITY (SANDY) SOILS
SOIL GAS:INDOOR AIR ATTENUATION FACTOR = 0.001

Soil Gas Concentration Data

ENTER Chemical CAS No., (numbers only, no dashes)	ENTER Soil gas conc., C_g (μg/m^3)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
71432	8.40E+01			Benzene

Enter soil gas concentration in only one set of units.

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (^{o}C)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of Ls (cell C24)					
15	15	10	15			S		

MORE ↓

ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
1.5	0.43	0.15						

MORE ↓

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP (g/cm-s^2)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)
15	40	1000	1000	244	0.1	1

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

Diffusivity in air, Da (cm2/s)	Diffusivity in water, Dw (cm2/s)	Henry's law constant at reference temperature, H (atm-m3/mol)	Henry's law constant reference temperature, TR (oC)	Enthalpy of vaporization at the normal boiling point, ΔHϖ,β (cal/mol)	Normal boiling point, TB (oK)	Critical temperature, TC (oK)	Molecular weight, MW (g/mol)	Unit risk factor, URF (mg/m3)-1	Reference conc., RfC (mg/m3)
8.80E-02	9.80E-06	5.56E-03	25	7,342	353.24	562.16	78.11	2.9E-05	6.0E-03

END

Stratum A **air-filled** porosity, qaA (cm3/cm3)	Stratum B soil air-filled porosity, qaB (cm3/cm3)	Stratum C air-filled porosity, qaC (cm3/cm3)	Stratum A effective total fluid saturation, Ste (cm3/cm3)	Stratum A soil intrinsic permeability, ki (cm2)	Stratum A soil relative air permeability, krg (cm2)	Stratum A soil effective vapor permeability, kv (cm2)	Floor-wall seam perimeter, Xcrack (cm)	Soil gas conc. (mg/m3)	Bldg. ventilation rate, Qbuilding (cm3/s)
0.28	ERROR	ERROR	0.25729443	9.92425E-08	0.703228129	6.97901E-08	4000	84	67777.77778

Crack **depth** below grade, Zcrack (cm)	Enthalpy of **vaporization at** ave. soil temperature, DHv,TS (cal/mol)	Henry's law **constant at** ave. soil temperature, HTS (atm-m3/mol)	Henry's law **constant at** ave. soil temperature, H'TS (unitless)	Vapor **viscosity at** ave. soil temperature, mTS (g/cm-s)	Stratum A **effective** diffusion coefficient, DeffA (cm2/s)	Stratum B effective diffusion coefficient, DeffB (cm2/s)	Stratum C **effective** diffusion coefficient, DeffC (cm2/s)	Total overall effective diffusion coefficient, DeffT (cm2/s)	Diffusion path length, Ld (cm)
15	8121.965377	2.69E-03	0.115754996	0.000175414	6.86E-03	0	0	0.006864901	1

Crack **radius,** rcrack (cm)	Average vapor flow rate **into bldg.,** Qsoil (cm3/s)	Crack effective diffusion **coefficient,** Dcrack (cm2/s)	Area of **crack,** Acrack (cm2)	Exponent of equivalent foundation Peclet **number,** exp(Pef) (unitless)	Infinite source C attenuation **coefficient,** a (unitless)	Infinite source bldg. **conc.,** Cbuilding (ug/m3)	Unit risk **factor,** URF (mg/m3)-1	Reference **conc.,** RfC (mg/m3)
0.1	70.12409103	0.006864901	400	2.2901E+166	0.001024156	0.086029113	0.000029	0.00595

Qsoil (L/min)
4.2

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.0E-06	1.4E-02

MESSAGE AND ERROR SUMMARY BELOW:
(DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL DOWN TO "END"

END

Soil Properties Lookup Table

SCS Soil Type	K_s (cm/h)	α (1/cm)	N (unitless)	M (unitless)	θ_s (cm^3/cm^3)	θ_r (cm^3/cm^3)	Mean Grain Diameter (cm)
C	0.61	0.0150	1.253	0.2019	0.459	0.098	0.0092
CL	0.34	0.0158	1.416	0.2938	0.442	0.079	0.016
L	0.50	0.0111	1.472	0.3207	0.399	0.061	0.02
LS	4.38	0.0348	1.746	0.4273	0.39	0.049	0.04
S	26.78	0.0352	3.177	0.6852	0.375	0.053	0.044
SC	0.47	0.0334	1.208	0.1722	0.385	0.117	0.025
SCL	0.55	0.0211	1.33	0.2481	0.384	0.063	0.029
SI	1.82	0.0066	1.679	0.4044	0.489	0.05	0.0046
SIC	0.40	0.0162	1.321	0.243	0.481	0.111	0.0039
SICL	0.46	0.0084	1.521	0.3425	0.482	0.09	0.0056
SIL	0.76	0.0051	1.663	0.3987	0.439	0.065	0.011
SL	1.60	0.0267	1.449	0.3099	0.387	0.039	0.03

Chemical Properties Lookup Table

CAS No.	Chemical	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Pure component water solubility, S (mg/L)	Henry's law constant H' (unitless)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (^oC)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)	URF extrapolated (X)	RfC extrapolated (X)	
56235	Carbon tetrachloride	1.74E+02	7.80E-02	8.80E-06	7.93E+02	1.25E+00	3.04E-02	25	349.90	556.60	7,127	4.2E-05	2.5E-03	153.82		+	Cal EPA URF
67641	Acetone	5.75E-01	1.24E-01	1.14E-05	1.00E+06	1.59E-03	3.88E-05	25	329.20	508.10	6,955	0.0E+00	3.5E-01	58.08		X	
67663	Chloroform	3.98E+01	1.04E-01	1.00E-05	7.92E+03	1.50E-01	3.67E-03	25	334.32	536.40	6,988	5.3E-06	3.0E-03	119.38		+	Cal EPA URF
71432	Benzene	5.90E+01	8.80E-02	9.80E-06	1.75E+03	2.28E-01	5.56E-03	25	353.24	562.16	7,342	2.9E-05	6.0E-03	78.11		+	Cal EPA URF
71556	1,1,1-Trichloroethane	1.10E+02	7.80E-02	8.80E-06	1.33E+03	7.05E-01	1.72E-02	25	347.24	545.00	7,136	0.0E+00	2.2E+00	133.41			No Cal EPA URF
74839	Methyl bromide (bromomethane)	9.00E+00	7.28E-02	1.21E-05	1.52E+04	2.56E-01	6.24E-03	25	276.71	467.00	5,714	0.0E+00	4.9E-03	94.94			
74873	Chloromethane	3.50E+01	1.10E-01	6.50E-06	8.20E+03	9.84E-01	2.40E-02	25	248.94	416.80	5,147	1.8E-06	3.0E-01	51.00		X	No Cal EPA URF
75003	Chloroethane	1.47E+01	1.04E-01	1.15E-05	5.70E+03	4.51E-01	1.10E-02	25	285.00	460.00	5,892	8.3E-07	1.0E+01	65.00		X	No Cal EPA URF
75014	Vinyl chloride (chloroethene)	1.86E+01	1.06E-01	1.23E-06	2.76E+03	1.11E+00	2.70E-02	25	259.25	432.00	5,250	7.8E-05	0.0E+00	62.50			Cal EPA URF
75092	Methylene chloride	1.11E+01	1.01E-01	1.17E-05	1.32E+04	8.98E-02	2.19E-03	25	313.00	510.00	6,706	1.0E-06	3.0E+00	84.93			Cal EPA URF
75274	Bromodichloromethane	5.50E+01	2.98E-02	1.06E-05	6.74E+03	6.56E-02	1.60E-03	25	363.15	585.85	7,000	3.7E-05	7.0E-02	163.83	X	+	Cal EPA URF
75343	1,1-Dichloroethane	3.16E+01	7.42E-02	1.05E-05	5.06E+03	2.30E-01	5.62E-03	25	330.55	523.00	6,895	1.6E-06	5.0E-01	98.96			Cal EPA URF
75354	1,1-Dichloroethylene	5.89E+01	9.00E-02	1.04E-05	2.25E+03	1.07E+00	2.61E-02	25	304.75	576.05	6,247	0.0E+00	2.0E-01	96.94			No Cal EPA URF
78875	1,2-Dichloropropane	4.37E+01	7.82E-02	8.73E-06	2.80E+03	1.15E-01	2.80E-03	25	369.52	572.00	7,590	1.0E-05	4.0E-03	112.99			Cal EPA URF
78933	Methyl Ethyl Ketone	4.50E+00	8.95E-02	9.80E-06	2.68E+05	1.12E-03	2.74E-05	25	353.00	535.00	34,920	0.0E+00	1.0E+00	71.00			
79005	1,1,2-Trichloroethane	5.01E+01	7.80E-02	8.80E-06	4.42E+03	3.74E-02	9.13E-04	25	386.15	602.00	8,322	1.6E-05	1.4E-02	133.41			No Cal EPA URF
79016	Trichloroethylene	1.66E+02	7.90E-02	9.10E-06	1.10E+03	4.22E-01	1.03E-02	25	360.36	544.20	7,505	2.0E-06	3.5E-02	131.39			Cal EPA URF
79345	1,1,2,2-Tetrachloroethane	9.37E+01	7.10E-02	7.90E-06	2.97E+03	1.41E-02	3.45E-04	25	419.60	661.15	8,996	5.8E-05	2.1E-01	167.85		+	Cal EPA URF = USEPA
83329	Acenaphthene	4.90E+03	4.21E-02	7.69E-06	4.24E+00	6.36E-03	1.55E-04	25	550.54	803.15	12,155	0.0E+00	2.1E-01	154.21		X	
86737	Fluorene	1.38E+04	6.08E-02	7.88E-06	1.90E+00	3.16E-03	7.70E-05	25	570.44	870.00	12,666	0.0E+00	1.4E-01	166.22		X	
90120	1-(2-) Methylnaphthalene	7.20E+02	5.90E-02	7.50E-06	2.60E+01	1.19E-02	2.90E-04	25	514.70	772.00	11,190	0.0E+00	1.4E-01	142.00			
91203	Naphthalene	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	4.82E-04	25	491.14	748.40	10,373	**3.4E-05**	3.0E-03	1.28E+02			Cal EPA URF
95501	1,2-Dichlorobenzene	6.17E+02	6.90E-02	7.90E-06	1.56E+02	7.79E-02	1.90E-03	25	453.57	705.00	9,700	0.0E+00	2.0E-01	147.00			No Cal EPA URF
95578	2-Chlorophenol	3.98E+02	5.01E-01	9.46E-06	2.20E+04	1.60E-02	3.91E-04	25	447.53	675.00	9,572	0.0E+00	1.8E-02	128.56		X	
95954	2,4,5-Trichlorophenol	8.90E+01	2.91E-02	7.03E-06	1.19E+03	8.94E-03	2.18E-04	25	526.15	759.13	13,000	0.0E+00	3.5E-01	197.45		X	
100414	Ethylbenzene	3.63E+02	7.50E-02	7.80E-06	1.69E+02	3.23E-01	7.88E-03	25	409.34	617.20	8,501	1.1E-06	1.0E+00	106.17			USEPA IX PRGs
100425		7.76E+02	7.10E-02	8.00E-06	3.10E+02	1.13E-01	2.75E-03	25	418.31	636.00	8,737	0.0E+00	1.0E+00	104.15			
105679	2,4-Dimethylphenol	4.00E+01	5.84E-02	8.69E-06	7.87E+03	6.97E-04	1.70E-05	25	484.13	707.60	11,329	0.0E+00	7.0E-02	122.17		X	
106467	1,4-Dichlorobenzene	6.17E+02	6.90E-02	7.90E-06	7.38E+01	9.96E-02	2.43E-03	25	447.21	684.75	9,271	1.1E-05	8.0E-01	147.00			Cal EPA URF
106934	1,2-dibromoethane	2.81E+01	7.33E-02	8.06E-06	3.40E+03	1.31E-02	3.20E-04	25	404.00	582.80	9,986	7.1E-05	2.0E-04	188.00			Cal EPA URF
107062	1,2-Dichloroethane	1.74E+01	1.04E-01	9.90E-06	8.52E+03	4.01E-02	9.79E-04	25	356.65	561.00	7,643	2.1E-05	4.9E-03	98.96			Cal EPA URF
108101	Methyl Isobutyl Ketone	1.34E+02	7.50E-02	7.80E-06	1.90E+04	5.74E-03	1.40E-04	25	389.00	575.00	40,610	0.0E+00	8.1E-02	100.00			
108383	Xylene (m)	4.07E+02	7.00E-02	7.80E-06	1.61E+02	3.01E-01	7.34E-03	25	412.27	617.05	8,523	0.0E+00	1.0E-01	106.17		X	USEPA Region IX
108883	Toluene	1.82E+02	8.70E-02	8.60E-06	5.26E+02	2.72E-01	6.64E-03	25	383.78	591.79	7,930	0.0E+00	4.0E-01	92.14			
108907	Chlorobenzene	2.19E+02	7.30E-02	8.70E-06	4.72E+02	1.52E-01	3.70E-03	25	404.87	632.40	8,410	0.0E+00	6.0E-02	112.56			USEPA Region IX
111444	Bis(2-chloroethyl)ether	7.60E+01	6.92E-02	7.53E-06	1.72E+04	7.38E-04	1.80E-05	25	451.15	659.79	9,000	7.1E-04	0.0E+00	143.11			CAEPA URF
120127	Anthracene	2.35E+04	3.24E-02	7.74E-06	4.34E-02	2.67E-03	6.50E-05	25	615.18	873.00	13,121	0.0E+00	1.1E+00	178.24		X	
120821	1,2,4-Trichlorobenzene	1.78E+03	3.00E-02	8.23E-06	3.00E+02	5.82E-02	1.42E-03	25	486.15	725.00	10,471	0.0E+00	2.0E-01	181.45			No Cal EPA URF
124481	Dibromochloromethane	4.68E+02	9.60E-02	1.00E-05	4.40E+03	3.49E-02	8.50E-04	25	416.14	678.20	8,000	2.7E-05	7.0E-02	208.28	X		Cal EPA URF
127184	Tetrachloroethylene	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.54E-01	1.84E-02	25	394.40	620.20	8,288	5.9E-06	6.0E-01	165.83			Cal EPA URF
129000	Pyrene	1.05E+05	2.72E-02	7.24E-06	1.35E-01	4.51E-04	1.10E-05	25	667.95	936.00	14,370	0.0E+00	1.1E-01	202.26		X	
156592	cis-1,2-Dichloroethylene	3.55E+01	7.36E-02	1.13E-05	3.50E+03	1.67E-01	4.08E-03	25	333.65	544.00	7,192	0.0E+00	3.5E-02	96.94		X	No Cal EPA URF
156605	trans-1,2-Dichloroethylene	5.25E+01	7.07E-02	1.19E-05	6.30E+03	3.85E-01	9.38E-03	25	320.85	516.50	6,717	0.0E+00	7.0E-02	96.94		X	No Cal EPA URF
542756	1,3-Dichloropropene	4.57E+01	6.26E-02	1.00E-05	2.80E+03	7.26E-01	1.77E-02	25	381.15	587.38	7,000	1.6E-05	2.0E-02	110.97			Cal EPA URF
1634044	Methy tert Butyl Ether	6.00E+00	8.00E-02	1.00E-05	1.50E+05	2.41E-02	5.87E-04	25	328.00	497.10	6,678	2.6E-07	3.0E+00	98.00			Cal EPA URF

Notes:

URF from CalEPA if available: Criteria for Carcinogens: California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Standards and Criteria Work Group, January 2003 (CalEPA 2003).

"+" Additional RfC extrapolated from RfD-inhalation factor presented in USEPA Region IX Preliminary Remediation Goals document (USEPA 2002).

Default physio-Chemical constants included in spreadsheet replaced with constants from USEPA Region IX Preliminary Remediation Goals document (USEPA 2002) when available.

Additional physio-chemical constants from NIST 2001.

Calculation of Site-specific Screening Level for Benzene in Soil Gas

SJC

SG-ADV
Version 1.0; 03/01

SOIL VOC EMISSIONS TO INDOOR AIR
RESIDENTIAL EXPOSURE SCENARIO
LOW PERMEABILITY (SILTY CLAY) SOILS
SOIL GAS:INDOOR AIR ATTENUATION FACTOR = 0.001

Soil Gas Concentration Data

ENTER	ENTER		ENTER	
Chemical CAS No. (numbers only, no dashes)	Soil gas conc., C_g ($\mu g/m^3$)	OR	Soil gas conc., C_g (ppmv)	Chemical
71432	4.20E+03			Benzene

Enter soil gas concentration in only one set of units.

MORE ↓

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER		ENTER
			Totals must add up to value of Ls (cell C24)					
Depth below grade to bottom of enclosed space floor, L_F (cm)	Soil gas sampling depth below grade, L_s (cm)	Average soil temperature, T_S (^oC)	Thickness of soil stratum A, h_A (cm)	Thickness of soil stratum B, (Enter value or 0) h_B (cm)	Thickness of soil stratum C, (Enter value or 0) h_C (cm)	Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	User-defined stratum A soil vapor permeability, k_v (cm^2)
15	15	10	15			SIC		

MORE ↓

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	Stratum A soil total porosity, n^A (unitless)	Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	Stratum B soil total porosity, n^B (unitless)	Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	Stratum C soil total porosity, n^C (unitless)	Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
1.5	0.43	0.15						

MORE ↓

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Enclosed space floor thickness, L_{crack} (cm)	Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	Enclosed space floor length, L_B (cm)	Enclosed space floor width, W_B (cm)	Enclosed space height, H_B (cm)	Floor-wall seam crack width, w (cm)	Indoor air exchange rate, ER (1/h)
15	40	1000	1000	244	0.1	1

ENTER	ENTER	ENTER	ENTER
Averaging time for carcinogens, AT_C (yrs)	Averaging time for noncarcinogens, AT_{NC} (yrs)	Exposure duration, ED (yrs)	Exposure frequency, EF (days/yr)
70	30	30	350

END

Diffusivity in air, Da (cm2/s)	Diffusivity in water, Dw (cm2/s)	Henry's law constant at reference temperature, H (atm-m3/mol)	Henry's law constant reference temperature, TR (oC)	Enthalpy of vaporization at the normal boiling point, ΔHϖ,β (cal/mol)	Normal boiling point, TB (oK)	Critical temperature, TC (oK)	Molecular weight, MW (g/mol)	Unit risk factor, URF (mg/m3)-1	Reference conc., RfC (mg/m3)
8.80E-02	9.80E-06	5.56E-03	25	7,342	353.24	562.16	78.11	2.9E-05	6.0E-03

END

Stratum A **air-filled** porosity, qaA (cm3/cm3)	Stratum B soil air-filled porosity, qaB (cm3/cm3)	Stratum C air-filled porosity, qaC (cm3/cm3)	Stratum A effective total fluid saturation, Ste (cm3/cm3)	Stratum A soil intrinsic permeability, ki (cm2)	Stratum A soil relative air permeability, krg (cm2)	Stratum A soil effective vapor permeability, kv (cm2)	Floor-wall seam perimeter, Xcrack (cm)	Soil gas conc. (mg/m3)	Bldg. ventilation rate, Qbuilding (cm3/s)
0.28	ERROR	ERROR	0.122257053	1.48234E-09	0.936799518	1.38865E-09	4000	4200	67777.77778

Crack **depth** below grade, Zcrack (cm)	Enthalpy of **vaporization at** ave. soil temperature, DHv,TS (cal/mol)	Henry's law **constant at** ave. soil temperature, HTS (atm-m3/mol)	Henry's law **constant at** ave. soil temperature, H'TS (unitless)	Vapor **viscosity at** ave. soil temperature, mTS (g/cm-s)	Stratum A **effective** diffusion coefficient, DeffA (cm2/s)	Stratum B effective diffusion coefficient, DeffB (cm2/s)	Stratum C **effective** diffusion coefficient, DeffC (cm2/s)	Total overall effective diffusion coefficient, DeffT (cm2/s)	Diffusion path length, Ld (cm)
15	8121.965377	2.69E-03	0.115754996	0.000175414	6.86E-03	0	0	0.006864901	1

Crack **radius,** rcrack (cm)	Average vapor flow rate **into bldg.,** Qsoil (cm3/s)	Crack effective diffusion **coefficient,** Dcrack (cm2/s)	Area of **crack,** Acrack (cm2)	Exponent of equivalent foundation Peclet **number,** exp(Pef) (unitless)	Infinite source C attenuation **coefficient,** a (unitless)	Infinite source bldg. **conc.,** Cbuilding (ug/m3)	Unit risk **factor,** URF (mg/m3)-1	Reference **conc.,** RfC (mg/m3)
0.1	1.395298374	0.006864901	400	2042.468733	2.05923E-05	0.086487517	0.000029	0.00595

Qsoil (L/min)
0.1

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.0E-06	1.4E-02

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL DOWN TO "END"

END

Soil Properties Lookup Table

SCS Soil Type	K_s (cm/h)	α (1/cm)	N (unitless)	M (unitless)	θ_s (cm^3/cm^3)	θ_r (cm^3/cm^3)	Mean Grain Diameter (cm)
C	0.61	0.0150	1.253	0.2019	0.459	0.098	0.0092
CL	0.34	0.0158	1.416	0.2938	0.442	0.079	0.016
L	0.50	0.0111	1.472	0.3207	0.399	0.061	0.02
LS	4.38	0.0348	1.746	0.4273	0.39	0.049	0.04
S	26.78	0.0352	3.177	0.6852	0.375	0.053	0.044
SC	0.47	0.0334	1.208	0.1722	0.385	0.117	0.025
SCL	0.55	0.0211	1.33	0.2481	0.384	0.063	0.029
SI	1.82	0.0066	1.679	0.4044	0.489	0.05	0.0046
SIC	0.40	0.0162	1.321	0.243	0.481	0.111	0.0039
SICL	0.46	0.0084	1.521	0.3425	0.482	0.09	0.0056
SIL	0.76	0.0051	1.663	0.3987	0.439	0.065	0.011
SL	1.60	0.0267	1.449	0.3099	0.387	0.039	0.03

Chemical Properties Lookup Table

CAS No.	Chemical	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Pure component water solubility, S (mg/L)	Henry's law constant H' (unitless)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (^oC)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)	URF extrapolated (X)	RfC extrapolated (X)	
56235	Carbon tetrachloride	1.74E+02	7.80E-02	8.80E-06	7.93E+02	1.25E+00	3.04E-02	25	349.90	556.60	7,127	4.2E-05	2.5E-03	153.82		+	Cal EPA URF
67641	Acetone	5.75E-01	1.24E-01	1.14E-05	1.00E+06	1.59E-03	3.88E-05	25	329.20	508.10	6,955	0.0E+00	3.5E-01	58.08		X	
67663	Chloroform	3.98E+01	1.04E-01	1.00E-05	7.92E+03	1.50E-01	3.67E-03	25	334.32	536.40	6,988	5.3E-06	3.0E-03	119.38		+	Cal EPA URF
71432	Benzene	5.90E+01	8.80E-02	9.80E-06	1.75E+03	2.28E-01	5.56E-03	25	353.24	562.16	7,342	2.9E-05	6.0E-03	78.11		+	Cal EPA URF
71556	1,1,1-Trichloroethane	1.10E+02	7.80E-02	8.80E-06	1.33E+03	7.05E-01	1.72E-02	25	347.24	545.00	7,136	0.0E+00	2.2E+00	133.41			No Cal EPA URF
74839	Methyl bromide (bromomethane)	9.00E+00	7.28E-02	1.21E-05	1.52E+04	2.56E-01	6.24E-03	25	276.71	467.00	5,714	0.0E+00	4.9E-03	94.94			
74873	Chloromethane	3.50E+01	1.10E-01	6.50E-06	8.20E+03	9.84E-01	2.40E-02	25	248.94	416.80	5,147	1.8E-06	3.0E-01	51.00		X	No Cal EPA URF
75003	Chloroethane	1.47E+01	1.04E-01	1.15E-05	5.70E+03	4.51E-01	1.10E-02	25	285.00	460.00	5,892	8.3E-07	1.0E+01	65.00		X	No Cal EPA URF
75014	Vinyl chloride (chloroethene)	1.86E+01	1.06E-01	1.23E-06	2.76E+03	1.11E+00	2.70E-02	25	259.25	432.00	5,250	7.8E-05	0.0E+00	62.50			Cal EPA URF
75092	Methylene chloride	1.11E+01	1.01E-01	1.17E-05	1.32E+04	8.98E-02	2.19E-03	25	313.00	510.00	6,706	1.0E-06	3.0E+00	84.93			Cal EPA URF
75274	Bromodichloromethane	5.50E+01	2.98E-02	1.06E-05	6.74E+03	6.56E-02	1.60E-03	25	363.15	585.85	7,000	3.7E-05	7.0E-02	163.83	X	+	Cal EPA URF
75343	1,1-Dichloroethane	3.16E+01	7.42E-02	1.05E-05	5.06E+03	2.30E-01	5.62E-03	25	330.55	523.00	6,895	1.6E-06	5.0E-01	98.96			Cal EPA URF
75354	1,1-Dichloroethylene	5.89E+01	9.00E-02	1.04E-05	2.25E+03	1.07E+00	2.61E-02	25	304.75	576.05	6,247	0.0E+00	2.0E-01	96.94			No Cal EPA URF
78875	1,2-Dichloropropane	4.37E+01	7.82E-02	8.73E-06	2.80E+03	1.15E-01	2.80E-03	25	369.52	572.00	7,590	1.0E-05	4.0E-03	112.99			Cal EPA URF
78933	Methyl Ethyl Ketone	4.50E+00	8.95E-02	9.80E-06	2.68E+05	1.12E-03	2.74E-05	25	353.00	535.00	34,920	0.0E+00	1.0E+00	71.00			
79005	1,1,2-Trichloroethane	5.01E+01	7.80E-02	8.80E-06	4.42E+03	3.74E-02	9.13E-04	25	386.15	602.00	8,322	1.6E-05	1.4E-02	133.41			No Cal EPA URF
79016	Trichloroethylene	1.66E+02	7.90E-02	9.10E-06	1.10E+03	4.22E-01	1.03E-02	25	360.36	544.20	7,505	2.0E-06	3.5E-02	131.39			Cal EPA URF
79345	1,1,2,2-Tetrachloroethane	9.37E+01	7.10E-02	7.90E-06	2.97E+03	1.41E-02	3.45E-04	25	419.60	661.15	8,996	5.8E-05	2.1E-01	167.85		+	Cal EPA URF = USEPA
83329	Acenaphthene	4.90E+03	4.21E-02	7.69E-06	4.24E+00	6.36E-03	1.55E-04	25	550.54	803.15	12,155	0.0E+00	2.1E-01	154.21		X	
86737	Fluorene	1.38E+04	6.08E-02	7.88E-06	1.90E+00	3.16E-03	7.70E-05	25	570.44	870.00	12,666	0.0E+00	1.4E-01	166.22		X	
90120	1-(2-) Methylnaphthalene	7.20E+02	5.90E-02	7.50E-06	2.60E+01	1.19E-02	2.90E-04	25	514.70	772.00	11,190	0.0E+00	1.4E-01	142.00			
91203	Naphthalene	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	4.82E-04	25	491.14	748.40	10,373	**3.4E-05**	3.0E-03	1.28E+02			Cal EPA URF
95501	1,2-Dichlorobenzene	6.17E+02	6.90E-02	7.90E-06	1.56E+02	7.79E-02	1.90E-03	25	453.57	705.00	9,700	0.0E+00	2.0E-01	147.00			No Cal EPA URF
95578	2-Chlorophenol	3.98E+02	5.01E-01	9.46E-06	2.20E+04	1.60E-02	3.91E-04	25	447.53	675.00	9,572	0.0E+00	1.8E-02	128.56		X	
95954	2,4,5-Trichlorophenol	8.90E+01	2.91E-02	7.03E-06	1.19E+03	8.94E-03	2.18E-04	25	526.15	759.13	13,000	0.0E+00	3.5E-01	197.45		X	
100414	Ethylbenzene	3.63E+02	7.50E-02	7.80E-06	1.69E+02	3.23E-01	7.88E-03	25	409.34	617.20	8,501	1.1E-06	1.0E+00	106.17			USEPA IX PRGs
100425		7.76E+02	7.10E-02	8.00E-06	3.10E+02	1.13E-01	2.75E-03	25	418.31	636.00	8,737	0.0E+00	1.0E+00	104.15			
105679	2,4-Dimethylphenol	4.00E+01	5.84E-02	8.69E-06	7.87E+03	6.97E-04	1.70E-05	25	484.13	707.60	11,329	0.0E+00	7.0E-02	122.17		X	
106467	1,4-Dichlorobenzene	6.17E+02	6.90E-02	7.90E-06	7.38E+01	9.96E-02	2.43E-03	25	447.21	684.75	9,271	1.1E-05	8.0E-01	147.00			Cal EPA URF
106934	1,2-dibromoethane	2.81E+01	7.33E-02	8.06E-06	3.40E+03	1.31E-02	3.20E-04	25	404.00	582.80	9,986	7.1E-05	2.0E-04	188.00			Cal EPA URF
107062	1,2-Dichloroethane	1.74E+01	1.04E-01	9.90E-06	8.52E+03	4.01E-02	9.79E-04	25	356.65	561.00	7,643	2.1E-05	4.9E-03	98.96			Cal EPA URF
108101	Methyl Isobutyl Ketone	1.34E+02	7.50E-02	7.80E-06	1.90E+04	5.74E-03	1.40E-04	25	389.00	575.00	40,610	0.0E+00	8.1E-02	100.00			
108383	Xylene (m)	4.07E+02	7.00E-02	7.80E-06	1.61E+02	3.01E-01	7.34E-03	25	412.27	617.05	8,523	0.0E+00	1.0E-01	106.17		X	USEPA Region IX
108883	Toluene	1.82E+02	8.70E-02	8.60E-06	5.26E+02	2.72E-01	6.64E-03	25	383.78	591.79	7,930	0.0E+00	4.0E-01	92.14			
108907	Chlorobenzene	2.19E+02	7.30E-02	8.70E-06	4.72E+02	1.52E-01	3.70E-03	25	404.87	632.40	8,410	0.0E+00	6.0E-02	112.56			USEPA Region IX
111444	Bis(2-chloroethyl)ether	7.60E+01	6.92E-02	7.53E-06	1.72E+04	7.38E-04	1.80E-05	25	451.15	659.79	9,000	7.1E-04	0.0E+00	143.11			CAEPA URF
120127	Anthracene	2.35E+04	3.24E-02	7.74E-06	4.34E-02	2.67E-03	6.50E-05	25	615.18	873.00	13,121	0.0E+00	1.1E+00	178.24		X	
120821	1,2,4-Trichlorobenzene	1.78E+03	3.00E-02	8.23E-06	3.00E+02	5.82E-02	1.42E-03	25	486.15	725.00	10,471	0.0E+00	2.0E-01	181.45			No Cal EPA URF
124481	Dibromochloromethane	4.68E+02	9.60E-02	1.00E-05	4.40E+03	3.49E-02	8.50E-04	25	416.14	678.20	8,000	2.7E-05	7.0E-02	208.28	X		Cal EPA URF
127184	Tetrachloroethylene	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.54E-01	1.84E-02	25	394.40	620.20	8,288	5.9E-06	6.0E-01	165.83			Cal EPA URF
129000	Pyrene	1.05E+05	2.72E-02	7.24E-06	1.35E-01	4.51E-04	1.10E-05	25	667.95	936.00	14,370	0.0E+00	1.1E-01	202.26		X	
156592	cis-1,2-Dichloroethylene	3.55E+01	7.36E-02	1.13E-05	3.50E+03	1.67E-01	4.08E-03	25	333.65	544.00	7,192	0.0E+00	3.5E-02	96.94		X	No Cal EPA URF
156605	trans-1,2-Dichloroethylene	5.25E+01	7.07E-02	1.19E-05	6.30E+03	3.85E-01	9.38E-03	25	320.85	516.50	6,717	0.0E+00	7.0E-02	96.94		X	No Cal EPA URF
542756	1,3-Dichloropropene	4.57E+01	6.26E-02	1.00E-05	2.80E+03	7.26E-01	1.77E-02	25	381.15	587.38	7,000	1.6E-05	2.0E-02	110.97			Cal EPA URF
1634044	Methy tert Butyl Ether	6.00E+00	8.00E-02	1.00E-05	1.50E+05	2.41E-02	5.87E-04	25	328.00	497.10	6,678	2.6E-07	3.0E+00	98.00			Cal EPA URF

Notes:

URF from CalEPA if available: Criteria for Carcinogens: California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Standards and Criteria Work Group, January 2003 (CalEPA 2003).

"+" Additional RfC extrapolated from RfD-inhalation factor presented in USEPA Region IX Preliminary Remediation Goals document (USEPA 2002).

Default physio-Chemical constants included in spreadsheet replaced with constants from USEPA Region IX Preliminary Remediation Goals document (USEPA 2002) when available.

Additional physio-chemical constants from NIST 2001.