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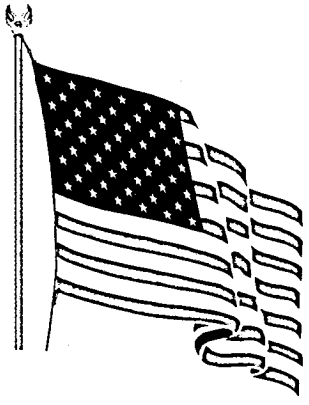

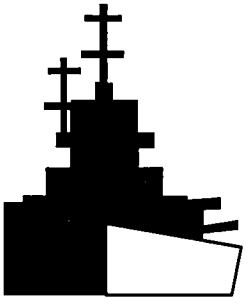

FINAL
REMEDIAL INVESTIGATION ADDENDUM
FOR IR SITE 30
ALAMEDA POINT
ALAMEDA, CALIFORNIA

July 2008

Contract No. N68711-95-D-7526
CTO-0080
BEI-7526-0080-0051.R1

Submitted to:

Department of the Navy
Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108-4310

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COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY

CLEAN 3

FINAL REMEDIAL INVESTIGATION ADDENDUM FOR IR SITE 30 ALAMEDA POINT ALAMEDA, CALIFORNIA

July 2008

Prepared by:

BECHTEL ENVIRONMENTAL, INC.
1230 Columbia Street, Suite 400
San Diego, California 92101-8502

Signature: M. Fattahipour Date: July 21, 2008
Mitra Fattahipour, PG 7519, CTO Leader

Signature: Linda Henry Date: July 21, 2008
Linda Henry, PhD, Brown and Caldwell

BECHTEL ENVIRONMENTAL, INC.

CLEAN 3 TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N-68711-95-D-7526 **Document Control No.** BEI-7526-0080-0051.R1

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TO: Contracting Officer
NAVFAC Southwest
Ms. Graciela R. Steinway, AQE.GS
1220 Pacific Highway
San Diego, CA 92132-5190

DATE: July 21, 2008
CTO #: 0080
LOCATION: Alameda, California

FROM: Janet L. Argyres
Janet L. Argyres, Project Manager

DESCRIPTION: **(Replacement Pages and CD)** Final Remedial Investigation Addendum for IR Site 30, Alameda Point – July 2008

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July 21, 2008

Contracting Officer
NAVFAC Southwest
Ms. Graciela R. Steinway, AQE.GS
1220 Pacific Highway
San Diego, CA 92132-5190

Subject: Final Remedial Investigation Addendum for IR Site 30
Alameda Point, Alameda, California
Dated July 2008

Dear Ms. Steinway:

Enclosed please find five copies of the replacement pages and CDs which constitute the Final Remedial Investigation Addendum for IR Site 30, Alameda Point, Alameda, California, dated July 2008. As directed by the Navy RPM, we are concurrently transmitting copies to Ms. Anna-Marie Cook and Ms. Sophia Serda of U.S. EPA, Ms. Dot Lofstrom, Ms. Michelle Dalrymple, Ms. Kamili Siglowide, and Mr. Jim Polisini of DTSC, and Mr. John West of the RWQCB. In addition, we are forwarding copies on behalf of the Navy to the parties listed on the attached transmittal sheet.

If you have any questions, please contact Mitra Fattahipour, CTOL, at (619) 744-3023 or me at (415) 768-9917.

Very truly yours,

Janet L. Argyres
Project Manager

JLA/MF/sp
Enclosure

AR_N00236_000992
ALAMEDA POINT
SSIC NO. 5090.3.A

FINAL
SOIL REMEDIAL INVESTIGATION REPORT
IR SITE 30

DATED 24 OCTOBER 2005

THIS RECORD IS ENTERED IN THE DATABASE AND FILED AS

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EXECUTIVE SUMMARY

In 2005, the Navy conducted a remedial investigation (RI) of soil at Installation Restoration (IR) Program Site 30 at Alameda Point (formerly Naval Air Station [NAS] Alameda) located in Alameda, California. The RI was conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act. This RI Addendum for IR Site 30 has been prepared to supplement the final soil RI Report's evaluation of ambient metals because new information (an updated methodology used to evaluate arsenic in soil at IR Site 30) affects the RI Report recommendation. The arsenic evaluation concluded that concentrations of arsenic at IR Site 30 represent ambient levels and do not represent a release from on-site activities. The human health and ecological risk assessments in the final soil RI Report for IR Site 30 remain valid, and this RI Addendum updates only the evaluation of arsenic in the final soil RI Report.

Statistical comparisons in the final soil RI Report for IR Site 30 found that 16 of 20 metals, including arsenic, were present at concentrations above the PRC Environmental Management, Inc., (PRC) pink background data set. Total residential cancer risk values were driven by arsenic in soil and thus the RI Report recommended that an FS be undertaken to address arsenic in soil. However, information obtained after the RI was complete indicated that the pink background data set is not applicable to IR Site 30. Therefore, the arsenic data were reevaluated.

The reevaluation of arsenic showed that the concentrations of arsenic in soil are ambient at IR Site 30. This conclusion is based on the fact that the concentrations of arsenic in soil at IR Site 30 meet the criteria for an ambient population as described in a 1997 California Environmental Protection Agency Department of Toxic Substances Control (DTSC) policy. The IR Site 30 data met the DTSC criteria as follows: 1) the data set fits a lognormal distribution, 2) the coefficient of variation is less than 1, 3) the range between minimum and maximum values is less than two orders of magnitude, 4) the cumulative probability plot is a straight line, and 5) there are no outliers.

The determination that arsenic is present at ambient concentrations is further supported by the presence of similar concentrations of arsenic at adjacent locations unaffected by Navy activities and by a comparison of fill history and lithology. Specifically, the evaluation found that IR Site 30 and nearby areas represent approximately 140 acres of land with similar concentrations of arsenic. Additionally, an updated lithologic comparison shows that IR Site 30 has a different fill history, a higher gravel content, and a distinctive yellow coloration when compared to the pink background area located west of Main Street.

The conclusions and recommendation of this RI Addendum supersede the recommendation presented in the final soil RI Report and the FS Report for IR Site 30. Based on the finding that arsenic in soil at IR Site 30 is present at ambient concentrations, no further action is required for soil at IR Site 30. Therefore, this RI Addendum recommends no further action for IR Site 30 soil. Groundwater beneath IR Site 30 is being addressed separately as part of the Operable Unit 5/ IR-02 remedial action.

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ACRONYMS/ABBREVIATIONS

B(a)P	benzo(a)pyrene
bgs	below ground surface
BRAC	Base Realignment and Closure
BSU	Bay Sediment Unit
Cal/EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPC	chemical of potential concern
DTSC	(Cal/EPA) Department of Toxic Substances Control
EBMUD	East Bay Municipal Utility District
EBS	environmental baseline survey
ERA	ecological risk assessment
FISCA	Fleet and Industrial Supply Center Oakland, Alameda Facility/Alameda Annex
FS	feasibility study
FWBZ	first water-bearing zone
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
IR	Installation Restoration (Program)
µg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
MSL	mean sea level
NAS	Naval Air Station
OEHHA	Office of Environmental Health Hazard Assessment
OU	operable unit
PAH	polycyclic aromatic hydrocarbon
PBC	public benefit conveyance
PCB	polychlorinated biphenyl
PG	Professional Geologist
PRC	PRC Environmental Management, Inc.
PRG	preliminary remediation goal

RI	remedial investigation
SFBA	San Francisco Bay Airdrome
SVOC	semivolatile organic compound
SWBZ	second water-bearing zone
TCRA	time-critical removal action
UCL	upper confidence limit
U.S. EPA	United States Environmental Protection Agency
VOC	volatile organic compound

Section 1
INTRODUCTION

In 2005, the Navy conducted a remedial investigation (RI) of soil at Installation Restoration (IR) Program Site 30 at Alameda Point (formerly Naval Air Station [NAS] Alameda) located in Alameda, California (Figure 1-1). The RI was conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Title 42 *United States Code*, Sections 9601–9675). This RI Addendum for IR Site 30 has been prepared to supplement the final soil RI Report's evaluation of ambient metals because new information (an updated methodology used to evaluate arsenic in soil at IR Site 30) affects the RI Report recommendation. The recent arsenic evaluation concluded that concentrations of arsenic at IR Sites 30 and 31 represent ambient levels and do not represent a release from on-site activities (CDM 2007). The human health and ecological risk assessments in the final soil RI Report for IR Site 30 remain valid, and this RI Addendum updates only the evaluation of arsenic in the final soil RI Report.

Bechtel Environmental, Inc., prepared this RI Addendum for the Base Realignment and Closure (BRAC) Program Management Office West under Contract Task Order 0080 of the Comprehensive Long-Term Environmental Action Navy 3 Program, Contract No. N68711-95-D-7526.

1.1 PURPOSE AND SCOPE

The purpose of this RI Addendum for IR Site 30 is to update the evaluation for ambient arsenic at the site and revise the recommendation of the final soil RI Report (BEI 2005b) for IR Site 30 based on new information from an arsenic evaluation conducted in late 2006 and 2007 (CDM 2007). This RI Addendum presents the 2006/2007 arsenic evaluation that was provided by CDM (2007). For ease of reference, the *Final Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31*, issued in August 2007 and included in the Final Soil RI Report for IR Site 31, is provided in Appendix A of this RI Addendum. To provide background information, this addendum also briefly summarizes the final soil RI Report for IR Site 30.

1.2 CHRONOLOGY

The final soil RI Report for IR Site 30 was issued in October 2005 and recommended that a feasibility study (FS) be undertaken to evaluate options to address arsenic in soil at IR Site 30 (BEI 2005b). Since the final RI Report for IR Site 30 recommended an FS to address arsenic concentrations in soil, a draft FS to evaluate remedial alternatives for arsenic in the soil was developed. The draft soil FS Report for IR Site 30 was completed and issued in April 2006 (BEI 2006). After the final soil RI Report and draft soil FS Report for IR Site 30 had been completed, an arsenic evaluation was conducted in late 2006 and 2007 as part of the RI Report for IR Site 31 (CDM 2007). This evaluation concluded that concentrations of arsenic in soil were present at IR Sites 30 and 31 at ambient levels.

The conclusions and recommendation of this RI Addendum supersede the recommendation presented in the final soil RI Report and supersede the soil FS Report for IR Site 30. Groundwater at IR Site 30 is being addressed separately as part of the Operable Unit 5 (OU-5)/IR-02 remedial action (DON 2007).

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Section 2
SUMMARY OF RI REPORT FOR IR SITE 30

The following sections present a synopsis of the final soil RI Report for IR Site 30 (BEI 2005b), including the site description, a summary of previous investigations and removal actions, the physical setting, the RI sampling, the nature and extent of contamination, conclusions from the human health and ecological risk assessments, and the recommendation of the RI Report.

2.1 SITE DESCRIPTION AND OPERATIONS

NAS Alameda was an active naval facility from 1940 to 1997. Operations conducted by the Navy at Alameda Point included aircraft, engine, gun, and avionics maintenance; engine overhaul and repair; fueling activities; and plating, stripping, and painting activities. The Navy Public Works Center also operated two power plants, a transportation shop, and a pesticide shop at Alameda Point. Historical aviation and jet engine test activities at Alameda Point were supported by a network of fuel delivery pipelines that transported aviation and other fuels to various areas of Alameda Point (IT 2001). In addition, the base operated a deepwater port capable of berthing aircraft carriers. The port was used primarily for minor carrier maintenance and ship overhaul.

IR Site 30 is a 6.6-acre site located at the eastern end of Alameda Point (Figure 2-1). The site is abutted on the north and east by IR Site 25 and on the south and west by IR Site 31. Non-Navy property (the former Fleet Industrial Supply Center Oakland, Alameda Facility/Alameda Annex [FISCA]) surrounds IR Sites 25 and 31 to the north, east, and south of IR Site 30 (Figure 2-2). The Navy formerly used what is now IR Site 30 for military housing, storage, and parking, and for residential and educational purposes. IR Site 30 is currently leased to the Alameda Unified School District and is occupied by the Woodstock Child Development Center and Island High School (formerly the George P. Miller Elementary School). IR Site 30 comprises Environmental Baseline Survey (EBS) Parcels 179 and 180.

The land that constitutes IR Site 30 was created by filling tidelands, marshlands, and sloughs beginning in the early 1900s and continuing through the 1930s. In 1929, construction of the San Francisco Bay Airdrome (SFBA), an airfield consisting of two runways and a hangar, was initiated on a rectangular tract consisting of 458 acres of marshland bounded by Atlantic Avenue to the south, Main Street to the west, the Bethlehem Steel Shipbuilding Company yard to the north, and Webster Street to the east. The SFBA, which was used primarily by private airplanes and business air fleets, was closed in 1941. IR Site 30 is located in the northwestern portion of the former SFBA property (Figure 2-2).

Historical aerial photographs of IR Site 30 show that the land was predominantly undeveloped before the 1940s, even while the airfield was operational. By 1947, the site was being used for military housing; by 1959, the site was paved and being used for storage of equipment and undocumented materials. In 1975, construction on the school was initiated and the child development center was completed on the site in 1985.

Approximately 84 percent of the site is open space; however, most of this open space is paved. Some unpaved landscaped areas existed until recently in play areas surrounding

the Woodstock Child Development Center and in other play areas located to the east and west of Island High School (Figure 2-3). The unpaved areas in the southwestern portion of the yard of the child development center were covered with barrier materials as a result of a time-critical removal action (TCRA) in November 2004. The previously unpaved areas east of Island High School were also paved during the TCRA. After the TCRA, 74 percent of the land cover at the site was hardscape. The perimeters of both the Woodstock Child Development Center and Island High School are surrounded by a chain-link fence or cinderblock walls.

IR Site 30 is located near three sites at which many environmental investigations and remediation activities have been conducted: IR Site 25, IR Site 31, and FISCA IR Site 02. The OU-5/IR-02 groundwater plume consisting of dissolved-phase benzene and naphthalene exists in shallow groundwater beneath IR Site 30 and also extends beneath portions of IR Sites 25 and 31 and FISCA IR Site 02.

2.2 PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS

Since 1989, the Navy has conducted several environmental investigations at and in the vicinity of IR Site 30. These investigations, which included collection and analysis of soil, soil gas, and groundwater samples at IR Site 30, are described in detail in the RI Report for IR Site 30 (BEI 2005b). The investigations are listed below and sampling locations are shown on Figure 2-4:

- 1989 shallow soil gas investigation (TtEMI 1999)
- Phase 1 and Phase 2 EBS investigations (IT 2001)
- 2002 OU-5 RI (Neptune et al. 2002)
- 2004 OU-5 groundwater RI and FS (ERRG 2004)
- 2002 polycyclic aromatic hydrocarbon (PAH) assessment (BEI 2005a)
- 2003 PAH assessment (BEI 2004)
- storm drain investigation (TtEMI 2000)

In addition to the investigations listed above, the Navy conducted a TCRA (Shaw 2005) in November 2004 at the Woodstock Child Development Center and Island High School located at IR Site 30. The TCRA was based on results from the 2003 PAH assessment (BEI 2004) that indicated the presence of PAHs in soil at unpaved play areas of the site at concentrations above the Alameda Point screening criterion for residential use. Since children were present at the two facilities on site, the Navy took a proactive approach by implementing the TCRA.

The TCRA included installation of soil cover materials in four areas in the southwestern portion of the yard of the Woodstock Child Development Center and two areas east of Island High School (Figure 2-3). Various soil covers were installed to serve different purposes in the areas around the child development center. These covers included synthetic turf with a water-permeable barrier as well as planter boxes (around trees) lined

with filter fabric and filled with woodchips. Concrete was installed in areas east of the school.

The Navy identified an additional area of concern on the basis of preliminary RI data. Analytical results indicated elevated concentrations of a number of analytes (including bis[2-ethylhexyl]phthalate, Aroclor 1254, antimony, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, silver, and zinc) from a single soil sample. This sample was collected from a boring (C3S030B068) located in a play area at the southeastern corner of the Woodstock Child Development Center. A 5-by-5-foot area around the location of boring C3S030B068 (Figure 2-3) was removed to a depth of 2 feet below ground surface (bgs) at the same time as the TCRA removal of PAH-contaminated soils (Newton, pers. com. 2004). The Navy excavated to 2 feet bgs based on results of the analysis of another sample collected from the same boring at 2 to 4 feet bgs. That sample had low concentrations of organic compounds and concentrations of most metals that did not exceed regulatory screening criteria (preliminary remediation goals [PRGs]) as detailed in Section 2.4.

2.3 PHYSICAL SETTING

The following subsections describe the geology, hydrogeology, and ecological habitats present at IR Site 30.

2.3.1 Geology

Alameda Island sedimentary deposits consist of five stratigraphic units (Figure 2-5). From oldest to youngest, they are the Alameda Formation, the lower unit of the San Antonio Formation, the upper unit of the San Antonio Formation, the Merritt Sand Formation, and the Bay Sediment Unit (BSU) (upper bay sediment also referred to as the Young Bay Mud). These sediments overlie bedrock consisting of metamorphosed sandstone, siltstone, shale, graywacke, and igneous bedrock of Jurassic to Cretaceous age, all of which constitute the Franciscan Formation (Rogers and Figuers 1991, Norfleet Consultants 1998).

In the vicinity of IR Site 30, the native sedimentary deposits are overlain by fill material emplaced during multiple fill episodes prior to 1930. The fill material consisted primarily of dredge spoils from the surrounding San Francisco Bay and Oakland Inner Harbor. These dredge spoils were emplaced over tidal marshlands containing tidal channels (PRC and Versar 1993). The shallowest fill layer (0 to 2.5 feet bgs) consists of coarse-grained sand and gravel deposits possibly originating from an upland source.

2.3.2 Hydrogeology

Artificial fill materials constitute the shallowest hydrogeologic unit underlying IR Site 30. The first water-bearing zone (FWBZ) is unconfined and extends to depths of at least 20 feet bgs. The artificial fill material is underlain by the Young Bay Mud of the BSU, which forms a semipermeable aquitard between the FWBZ and the second water-bearing zone. Groundwater in the FWBZ at IR Site 30 was typically first encountered at 3.8 to 7 feet bgs in RI soil borings, a range which correlates to water table elevations between 3.3 feet above mean sea level (MSL) (western portion of the site) and 8.6 feet

above MSL (eastern portion of the site). In shallow IR Site 25 monitoring wells (generally screened at 10 to 20 feet bgs) located in the areas surrounding IR Site 30, water table elevations vary seasonally and range from less than 1 to more than 10 feet above MSL (ITSI 2005). At IR Site 30, the continuous clay layer separates the upper portion of the FWBZ (above 16 feet bgs) from the lower portion of the FWBZ (16 to 20 feet bgs).

2.3.3 Ecological Habitats

Barren habitat, urban habitat, annual grassland habitat, and estuarine habitat are present within 1 mile of IR Site 30, but only urban and barren habitats are present on-site. Neither of these habitats offers much value to wildlife except to serve as a corridor between other habitats.

2.4 REMEDIAL INVESTIGATION SAMPLING

Soil sampling for the IR Site 30 soil RI was conducted in August 2004. During the RI field program, soil samples were collected at IR Site 30 to characterize the nature and extent of soil contamination at the site and to provide sufficient data to conduct a human health risk assessment (HHRA) and screening-level ecological risk assessment (ERA). Discrete groundwater samples were also collected at the site to evaluate the nature of on-site groundwater contamination in order to assess whether there had been a release to groundwater that was unique to IR Site 30 and unrelated to the OU-5/IR-02 groundwater plume. Site groundwater data were also used to model indoor and outdoor air concentrations for the HHRA.

Thirty soil borings were advanced at IR Site 30 using direct-push technology (Figure 2-4). Boring locations were selected using a modified grid-spacing approach. Selection of sampling locations near the Woodstock Child Development Center was based on unpaved ground cover in this area because of the importance of assessing potential exposure to children. Soil samples were collected from three distinct depth intervals: 0 to 2 feet bgs, 2 to 4 feet bgs, and 4 to 10 feet bgs (or to groundwater, whichever was encountered first). These three intervals were chosen to represent exposure scenarios for both human and ecological receptors. VOC analysis was performed on approximately one-third of the samples from the 0-to-2-foot-bgs depth interval and on all samples from the two deeper intervals. Semivolatile organic compound (SVOC), pesticide/ polychlorinated biphenyl (PCB), and metals analyses were performed on all samples from the 0-to-2-foot-bgs depth interval and on approximately one-third of all samples from the two deeper intervals. In addition, nine soil samples were collected and analyzed for geotechnical parameters.

Eighteen discrete groundwater samples were collected from eight locations across the site using HydroPunch-equivalent technology (Figure 2-4). The discrete groundwater samples from the shallow interval (7 to 12 feet bgs) were analyzed for VOCs (including naphthalene), SVOCs, pesticides and PCBs, metals, and total organic carbon. The discrete groundwater samples from the deeper interval (16 to 20 feet bgs) were analyzed only for VOCs.

Comparison criteria were used in the following nature-and-extent discussion to assess the extent of contamination at IR Site 30. The following comparison criteria were used for soil samples:

- United States Environmental Protection Agency (U.S. EPA) Region 9 residential soil PRGs and California-modified residential soil PRGs (U.S. EPA 2004)
- background metals concentrations in soil from the Alameda Point pink background data set (PRC 1997a, TtEMI 2001)

2.5 NATURE AND EXTENT OF CONTAMINATION

Analytical results from samples collected during the IR Site 30 RI, the EBS, the 2002 and 2003 PAH assessments, and the 2002 OU-5 RI were used to characterize the nature and extent of contamination in soil at IR Site 30. This summary for soil focuses primarily on metals because arsenic was the only chemical of potential concern (COPC) in soil for which the final soil RI Report recommended that an FS Report be undertaken. Groundwater data collected during the IR Site 30 RI were used to confirm that VOC concentrations in groundwater at IR Site 30 were consistent with those of the OU-5/IR-02 plume.

2.5.1 Soil

Most VOCs, SVOCs other than PAHs, and pesticides were infrequently reported above detection limits and were present at concentrations lower than the residential PRGs. Of 59 samples, PCBs were only reported above detection limits in 1 sample, and that exceedance was above the residential PRG. The location of this sample was in the removal action area discussed in Section 2.2.

The final soil RI Report for IR Site 30 compared site metals to the Alameda Point pink background data set. However, Appendix H of the final soil RI Report states that "it is likely that the Alameda Point background population for the central portion of Alameda Point (pink area) is not representative of background concentrations in the fill material at IR Site 30." Results of the RI Report statistical comparisons showed 16 of 20 metals above background levels in both the 0 to 2 feet and 0 to 5 feet bgs depth intervals (aluminum, arsenic, barium, chromium, cobalt, copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, thallium, vanadium, and zinc).

Analytical results for metals indicated the presence of seven metals in soil at concentrations that exceed both the Alameda Point (pink area) background concentrations and regulatory comparison criteria (residential PRGs): arsenic, chromium, copper, iron, lead, manganese, and vanadium. Only arsenic, iron, and vanadium were reported at concentrations above regulatory criteria in more than 10 percent of samples. Based on evaluation of iron and manganese concentrations, fill history, and lithology, the Alameda Point pink background data set does not appear to be applicable to IR Site 30 (CDM 2007). The 2006/2007 ambient arsenic evaluation is discussed in Section 3 of this RI Addendum.

2.5.2 Groundwater

The groundwater beneath and around IR Site 30 is impacted by benzene and naphthalene (OU-5/IR-02 plume). The concentrations reported in soil at IR Site 30 and the concentrations of benzene and naphthalene reported in groundwater in the upper portion of the FWBZ indicate that a potential source unique to IR Site 30 is unlikely. The chemicals, the relative chemical concentrations, and the contaminant distributions reported in discrete groundwater samples collected at IR Site 30 were consistent with those in the OU-5/IR-02 plume.

As in the OU-5/IR-02 groundwater plume, the concentrations of COPCs in shallow groundwater beneath IR Site 30 are lower than the concentrations in deeper groundwater beneath the site.

2.6 HUMAN HEALTH RISK ASSESSMENT

IR Site 30 has been designated as a Public Benefit Conveyance (PBC) parcel as part of the Alameda Point property transfer under BRAC. The planned future reuse of IR Site 30, identified as public/institutional/school and medium-density residential use, is identical to the current use of the site. Future residential, occupational, and construction exposure scenarios were identified for evaluation in the HHRA. A modified residential exposure scenario was also included to assess the potential exposure for children who currently attend the Woodstock Child Development Center or the Island High School. Routes of potential exposure associated with residential, occupational, and construction scenarios at IR Site 30 that are considered complete include the following.

- **Residential.** Residential exposure routes include incidental soil ingestion, dermal contact with soil, inhalation of particulates from soil in outdoor air, inhalation of vapors from soil and groundwater in indoor air and outdoor air, and ingestion of produce grown in local soil.
- **Occupational.** Occupational exposure routes include incidental soil ingestion, dermal contact with soil, inhalation of particulates from soil in outdoor air, and inhalation of vapors from soil and groundwater in indoor and outdoor air.
- **Construction.** Construction exposure routes include incidental soil ingestion, dermal contact with soil, inhalation of particulates from soil, and inhalation of vapors from soil and groundwater in outdoor air.

The soil RI Report used risk values for the residential use of groundwater from the OU-5 groundwater RI/FS Report (ERRG 2004). The total cancer risk in the RI Report includes risk from metals and the one detection of PCBs in the removal action area. This summary does not discuss risks with potable groundwater use because the groundwater is not currently being used at the site and because water supplies for the school, child care center, and nearby residences is supplied by East Bay Municipal Utility District (EBMUD) from other sources. Furthermore, groundwater is being addressed in the OU-5/IR-02 groundwater remedial action.

The Final RI Report (BEI 2005b) presents the complete risk assessment for IR Site 30. These risks are based on the evaluation of RI and historical analytical data. For the

current use exposure scenario, the total cancer risk for the children and staff at the Woodstock Child Development Center and the Island High School are within the risk management range of 10^{-4} to 10^{-6}, assuming no domestic potable water use (BEI 2005b). These findings were also verified using the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) school site model (OEHHA 2004). For the occupational and construction scenarios, the total cancer risks also are within the risk management range.

For this addendum, post-removal exposure point concentrations (EPCs) and risks were calculated to evaluate the impact on the risk of the removal of soil in the 2004 TCRA conducted after the RI sampling (data from sample C072S068 from a depth of 0 to 0.5 foot bgs in boring C3S030B068 were removed). Table 2-1 presents the post-removal total risks (without sample C072S068 from a depth of 0 to 0.5 foot bgs from boring C3S030B068) and post-removal risks without this sample and without arsenic. No other metals or infrequently detected analytes were removed for this calculation. Vapor intrusion to indoor air was also revised to represent a one-story building. Post-removal EPCs are provided in Appendix B. The primary impact of the removal of soil sample C072S068 was on the EPC for lead, and there was little effect on the risks. For lead, although the pre-removal action EPC presented in the Final RI Report (BEI 2005b) is above the site-specific residential soil PRG, the post-removal EPC is below the site-specific residential soil PRG. However, nonlead risks were less affected. The pre-removal action residential risks (without arsenic and COPCs detected in less than 2 percent of the samples) are 4×10^{-5} and 7×10^{-5} using U.S. EPA and Cal/EPA toxicity factors, respectively, which are comparable to the post-removal risks without arsenic: 4×10^{-5} and 6×10^{-5} using U.S. EPA and Cal/EPA toxicity factors, respectively.

As specified in the Final RI Report, arsenic was the primary risk driver for all scenarios. Statistical evaluation conducted after issuance of the Final RI Report has shown that arsenic concentrations are ambient and not the result of a release associated with Navy activities (CDM 2007). Therefore, arsenic was removed from the risk calculation. Risks for residential, modified residential for children at the child development center, occupational, and construction scenarios are in the risk management range (Table 2-1). The residential risks are 4×10^{-5} and 6×10^{-5} using U.S. EPA and Cal/EPA toxicity factors, respectively (Table 2-1). The risks for children at the child development center are 8×10^{-6} and 2×10^{-5} using EPA and Cal/EPA toxicity factors, respectively (Table 2-1).

2.7 ECOLOGICAL RISK ASSESSMENT

A Tier 1 screening-level ERA was conducted to estimate the potential ecological impacts of chemicals reported at concentrations above detection limits in soil at IR Site 30. Based on results of soil investigations, exposure of ecological receptors through direct soil contact was the only completed exposure pathway identified. However, because most of IR Site 30 is paved or covered by buildings and it is unlikely that there will be future development of terrestrial habitat at the site, this is not currently a significant pathway.

2.8 CONCLUSIONS AND RECOMMENDATIONS OF RI REPORT

Data collected during the RI and previous Navy investigations were used to evaluate the nature and extent of chemicals in soil at IR Site 30. Based on these evaluations, the soil RI Report for IR Site 30 recommended that an FS be undertaken to evaluate options for addressing arsenic in soil (BEI 2005b). However, results of the subsequent arsenic evaluation (CDM 2007), summarized in the following section and presented in Appendix A, indicate that arsenic in soil is ambient, and therefore no FS report is required.

Section 3
SUMMARY OF ARSENIC EVALUATION

An evaluation of arsenic data was conducted in late 2006 and 2007 for soil at IR Sites 30 and 31 to determine whether the arsenic concentrations represented ambient conditions or were present as a result of Navy activities. The arsenic evaluation was presented as Appendix H2 in the final soil RI Report for IR Site 31 (CDM 2007). The following subsections summarize that arsenic evaluation for IR Site 30. The original arsenic evaluation that was included in the final soil RI Report for IR Site 31 is provided as Appendix A of this RI Addendum. For ease of reference, the *Final Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31,* issued in August 2007 and included in the Final Soil RI Report for IR Site 31, is provided in Appendix A of this RI Addendum.

Between 1997 and 2001, it was assumed that the Alameda Point pink background data set compiled by PRC Environmental Management, Inc. (PRC) (1997a,b), was applicable to IR Site 30; therefore, in the IR Site 30 RI Report, metals at IR Site 30 were initially compared to the pink background data set. Statistical evaluations conducted during the individual RIs at IR Sites 25, 30, and 31 showed that most metals at the sites, including common rock-forming metals such as iron, aluminum, and manganese, are present at higher concentrations than those in the pink background data set. A number of factors, such as the even horizontal and vertical distribution of several metals, indicated that further evaluation was warranted. The fill history and lithology indicate that the fill soil at IR Sites 30 and 31 originated from a different source than the fill material used in the pink background data set area west of Main Street. The 2002 final RI Report for OU-5 concluded that the pink background data set was not appropriate for adjacent IR Site 25 (Neptune et al. 2002).

Arsenic was selected for further evaluation at IR Site 30 because it is the primary risk driver and because it was the only COPC that the RI Report recommended for further evaluation in an FS report. The conclusion of the arsenic evaluation discussed in this RI Addendum is that arsenic concentrations represent ambient conditions at IR Site 30 rather than indicating a release from on-site activities. This finding is based on arsenic concentrations meeting the DTSC criteria for ambient conditions (DTSC 1997) and is supported by the presence of similar concentrations of arsenic at adjacent locations, as well as nearby East Housing, which was not affected by Navy activities. Therefore, an FS to address arsenic concentrations in soil at IR Site 30 is not warranted.

3.1 ARSENIC AT IR SITE 30

Analytical data from a site can be used to determine whether or not a release has occurred, without determining an off-site background level for comparison. The DTSC policy for selecting inorganic constituents as COPCs describes a methodology for using site data to determine whether chemical concentrations represent ambient conditions (a single population) or possibly represent contamination (multiple populations) (DTSC 1997). The following results of the evaluation of IR Site 30, using the methodology outlined in the DTSC policy, demonstrate that arsenic concentrations at IR Site 30 meet the DTSC criteria for ambient conditions.

- The data set fits a lognormal distribution. DTSC guidance states that trace metals such as arsenic typically fit a lognormal distribution. The Shapiro-Wilk test confirmed that the arsenic data from IR Site 30 are lognormally distributed.

- The coefficient of variation is less than 1. The coefficient of variation for arsenic at IR Site 30 is 0.81. This value shows that the data are not highly variable.
- The range between minimum and maximum values is less than two orders of magnitude. Arsenic data at IR Site 30 range from 0.8 to 56.3 milligrams per kilogram (mg/kg), a factor of 70. This range shows lower variability than the DTSC criterion of a factor of 100.
- The cumulative probability plot is a straight line. The data set for IR Site 30 plotted in this manner forms a straight line without gaps or inflection points. As is common with these plots, the tails of the lines depart slightly from the line. However, none of the values in the tail with the higher concentrations are outliers.
- Additionally, there are no outliers. The Rosner's test for outliers (not required by the DTSC policy) also shows that the IR Site 30 arsenic data set does not include outliers, which could be associated with a release.

3.2 ARSENIC AT ADJACENT LOCATIONS

Arsenic concentrations in soil were evaluated for locations surrounding IR Site 30 to determine if similar concentrations of arsenic are present at areas that were not associated with Navy industrial activities. The East Housing Area has never been used by the Navy for industrial activities. Nevertheless, the East Housing Area has levels of arsenic similar to IR Site 30, despite the absence of industrial activities. Mean arsenic concentrations at IR Site 30 and the East Housing Area are 13.6 mg/kg and 13.1 mg/kg, respectively. The fact that the mean arsenic concentration in soil from the East Housing Area is similar to or higher than that of nearby sites used by the Navy for industrial purposes supports the conclusion that soil with arsenic concentrations higher than those in the pink background data set was used as fill material. Additional details are provided in Appendix A.

3.3 COMPARISON TO PINK BACKGROUND DATA SET

In the PRC 1997 background study, data from Alameda Point were assigned to one of three groups (referred to as pink, yellow, or blue) on the basis of similar fill history and iron and manganese concentrations (PRC 1997a,b) (Appendix A, Figure A-5). Iron and manganese were selected because these metals were thought unlikely to be associated with Navy activities. This study also selected data from locations that appeared to have been minimally impacted by industrial activities. PRC assigned the area east of Main Street, which includes IR Site 30, to the pink background data set. However, based on the criteria that PRC used, the pink background data set is not an appropriate background data set for comparison to IR Site 30 because of the following.

- The fill history shows that IR Site 30 was filled at a different time than most of the pink background area. No samples used for the three PRC background data sets were collected east of Main Street, an area which includes IR Site 30.
- Iron and manganese concentrations at IR Site 30 are statistically higher than those in the pink background data set. If these data had been available when

PRC defined the background areas at Alameda Point, IR Site 30 would probably not have been assigned to the pink background area because of the differences in iron and manganese concentrations in soil.

3.4 FILL HISTORY

The fill history indicates that a large area east of Main Street was filled at a different time than the majority of the area sampled for the pink background data set. The fill material was placed during the same period at IR Sites 30 and 31, the East Housing Area, a portion of the College of Alameda campus adjoining the East Housing Area, and the FISCA Warehouse Area (Appendix A, Figure A-6). IR Site 25, the remaining portion of the College of Alameda campus, and the remaining FISCA area received fill material during two other fill events. Differences in the fill history increase the likelihood that the fill came from different sources, although the specific source of fill is unknown.

3.5 LITHOLOGY

Physical characteristics of the soil at locations adjacent to IR Site 30 were evaluated in response to requests from the regulatory agencies in an August 2006 meeting. At that time, this evaluation was considered important to the selection of a background data set. However, based on the application of DTSC policy, this information is no longer essential because statistical evaluation in accordance with DTSC policy shows that the concentrations of arsenic at IR Site 30 represent ambient conditions. Nevertheless, the findings of the comparison support the conclusion that IR Site 30 has lithologic characteristics significantly different from those of the pink background area.

Lithology and fill history, gravel content, geotechnical data, and color differences were examined for IR Site 30 and adjacent locations (IR Sites 25 and 31, the East Housing Area, the College of Alameda campus, and the pink background data set area west of Main Street). Boring logs from IR Sites 25, 30, and 31, the East Housing Area, and the College of Alameda campus were evaluated. Based on a general correlation between the lithology in boring logs and the sequence of fill events, IR Sites 30 and 31, the FISCA Warehouse Area, and the East Housing Area would be grouped under the gravel-laden fill material in place by 1927. IR Site 25, FISCA (outside the FISCA Warehouse Area), and most of the College of Alameda campus would be grouped under the hydraulic fill material in place by 1919 and 1930. Additionally, the physical properties, grain-size distributions, and descriptions of soil color indicate that the soil at IR Sites 30 and 31 is different from the soil west of Main Street in the pink background data set area.

3.6 CONCLUSION OF THE ARSENIC EVALUATION FOR IR SITE 30

Arsenic in soil at IR Site 30 meets DTSC criteria for ambient populations and is not the result of a release from Navy activities. This finding also is supported by analysis of arsenic at adjacent locations as well as the fill history and lithology.

3.6.1 Data Evaluation of Arsenic at IR Site 30

Application of DTSC criteria to arsenic at IR Site 30 demonstrates that arsenic concentrations in soil at this site represent ambient conditions.

3.6.2 Arsenic Concentrations at Adjacent Locations

IR Site 30, along with IR Site 31, the East Housing Area, and portions of the FISCA, represent approximately 140 acres of land with similar concentrations of arsenic (Appendix A). The similar arsenic concentrations, which are higher than those in the pink background data set, appear to be related to the composition of the fill soil.

3.6.3 Comparison to Pink Background Data Set

Inclusion of IR Site 30 in the pink background area is not appropriate based on the original criteria for grouping background data of similar fill history and similar iron and manganese concentrations. Compared with that data set, soil at IR Site 30 has significantly higher concentrations of iron as well as significantly higher concentrations of manganese.

3.6.4 Fill History and Lithological Evaluation

An updated fill history shows that IR Site 30 has a fill history different from the portion of the pink background area located west of Main Street. Soil at IR Sites 30 and 31, the FISCA Warehouse Area, and the East Housing Area have higher gravel content than soil in other nearby areas. Additionally, the yellow color of the fill soil at IR Sites 30 and 31 distinguishes it from the fill soil at IR Site 25 and sites within the pink background area west of Main Street.

Section 4
CONCLUSIONS AND RECOMMENDATION

Evaluation of arsenic at IR Site 30 in late 2006 and 2007 determined that arsenic concentrations in soil at IR Site 30 are present at ambient concentrations. This conclusion is based on arsenic concentrations meeting the DTSC criteria for ambient conditions (DTSC 1997) and is also supported by multiple lines of evidence presented in Appendix A. Based on this conclusion, the soil FS report for arsenic (recommended in the final soil RI Report [BEI 2005b]) is not warranted; therefore the FS report will not be finalized. The final soil RI Report demonstrated that no other COPCs require additional evaluation in an FS report. Therefore, this RI Addendum recommends that no further action is required for soil at IR Site 30.

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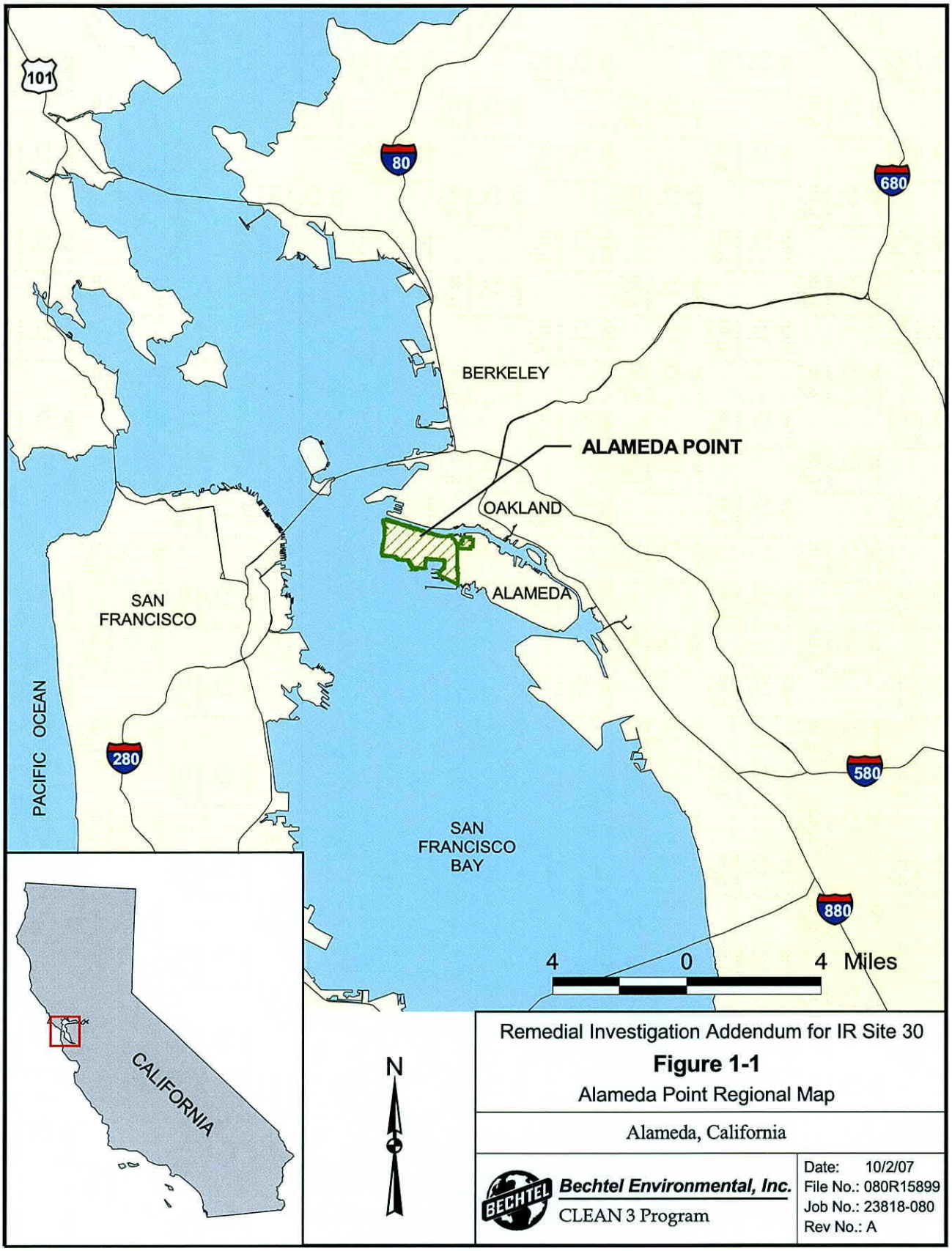
AR_N00236_000992
ALAMEDA POINT
SSIC NO. 5090.3.A

FIGURES



Remedial Investigation Addendum for IR Site 30

Figure 1-1

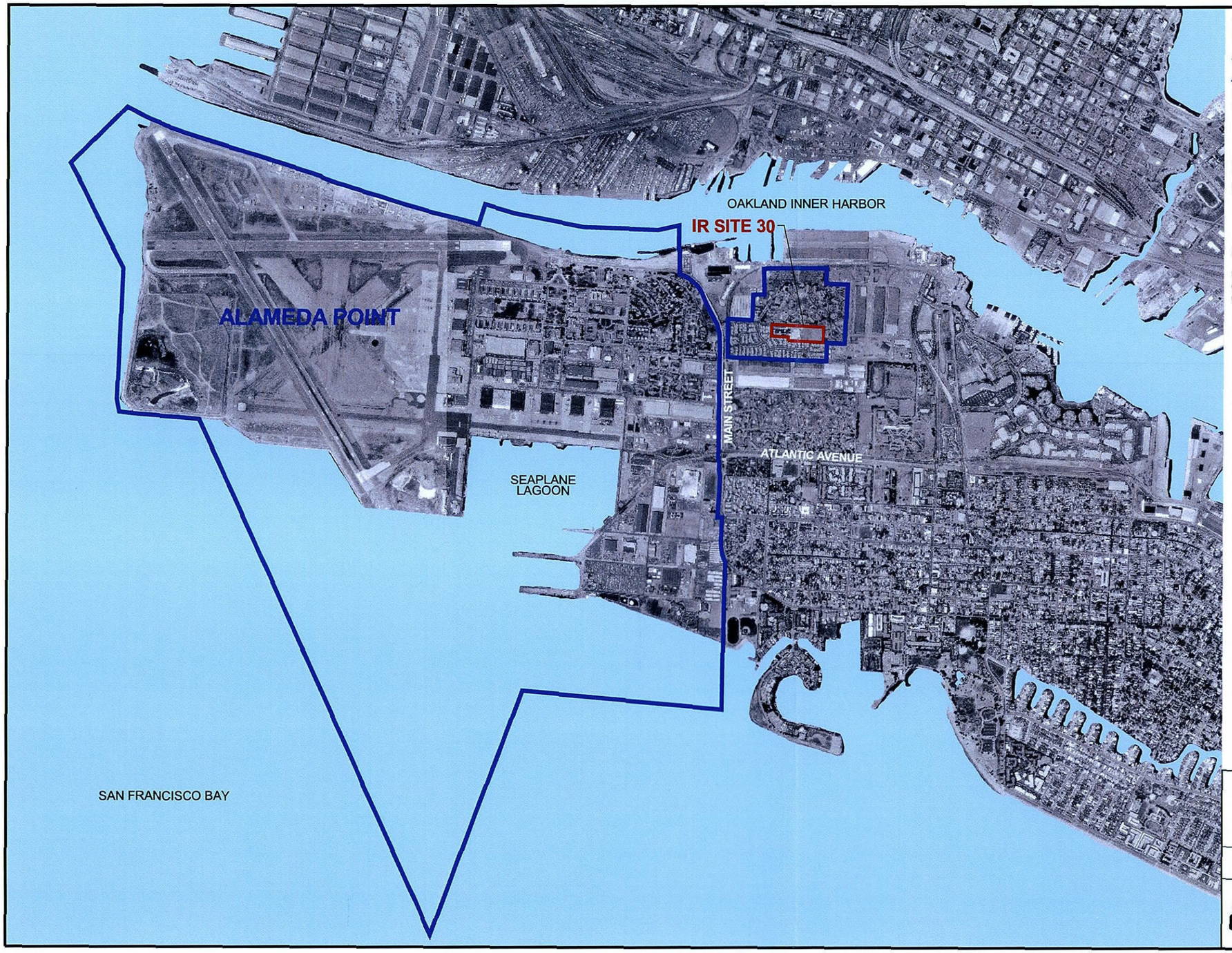
Alameda Point Regional Map

Alameda, California

Bechtel Environmental, Inc.

CLEAN 3 Program

Date: 10/2/07
File No.: 080R15899
Job No.: 23818-080
Rev No.: A



LEGEND

- IR SITE 30 BOUNDARY
- ALAMEDA POINT NAVY PROPERTY BOUNDARY
- WATER

NOTES:

IR – INSTALLATION RESTORATION (PROGRAM)

SOURCE:

UNITED STATES GEOLOGICAL SURVEY. 1993. DIGITAL ORTHOPHOTO QUADRANGLE. OAKLAND WEST 1:24,000 QUADRANGLE. JULY 10.

N

2000 0 2000 Feet

Remedial Investigation Addendum for IR Site 30

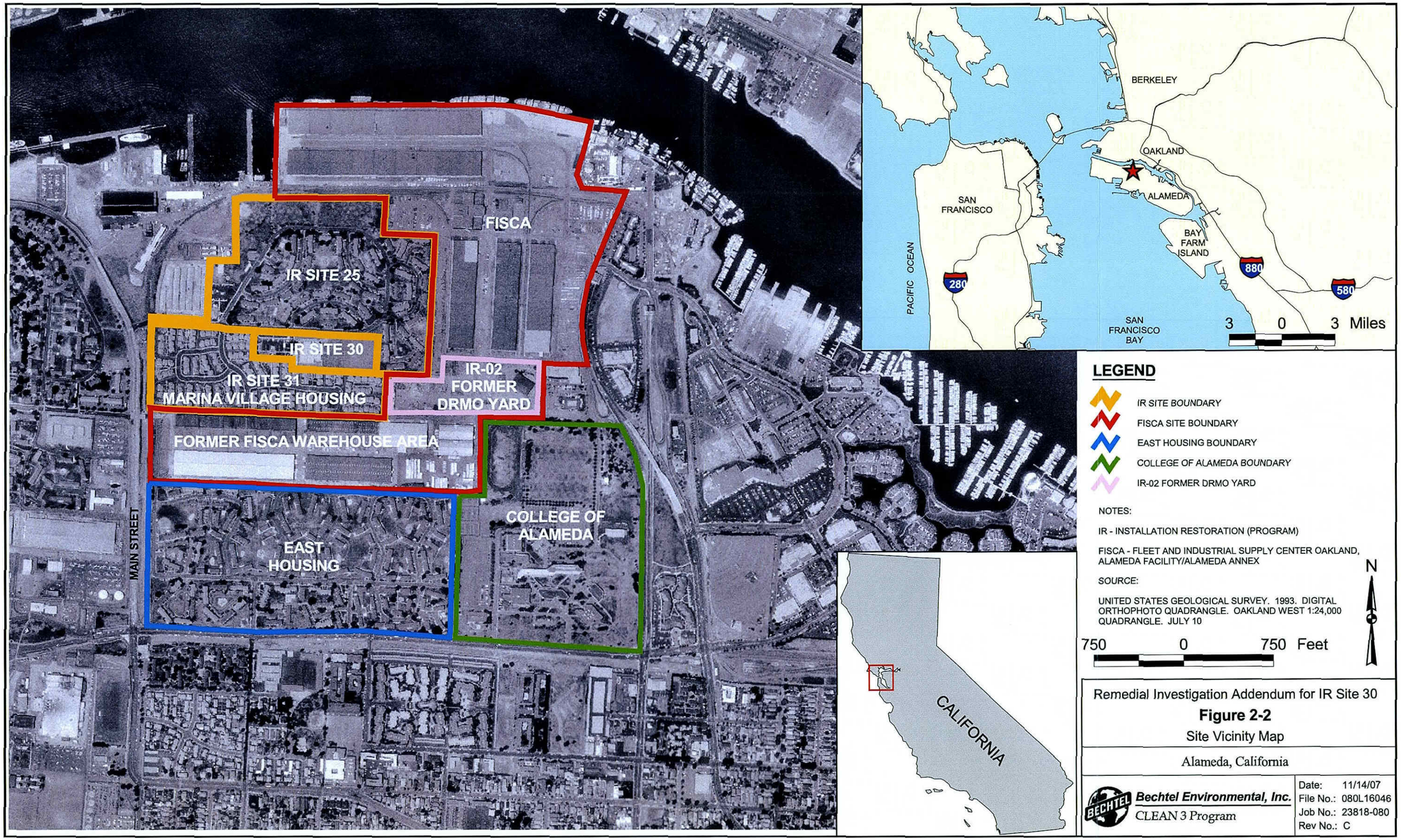
Figure 2-1

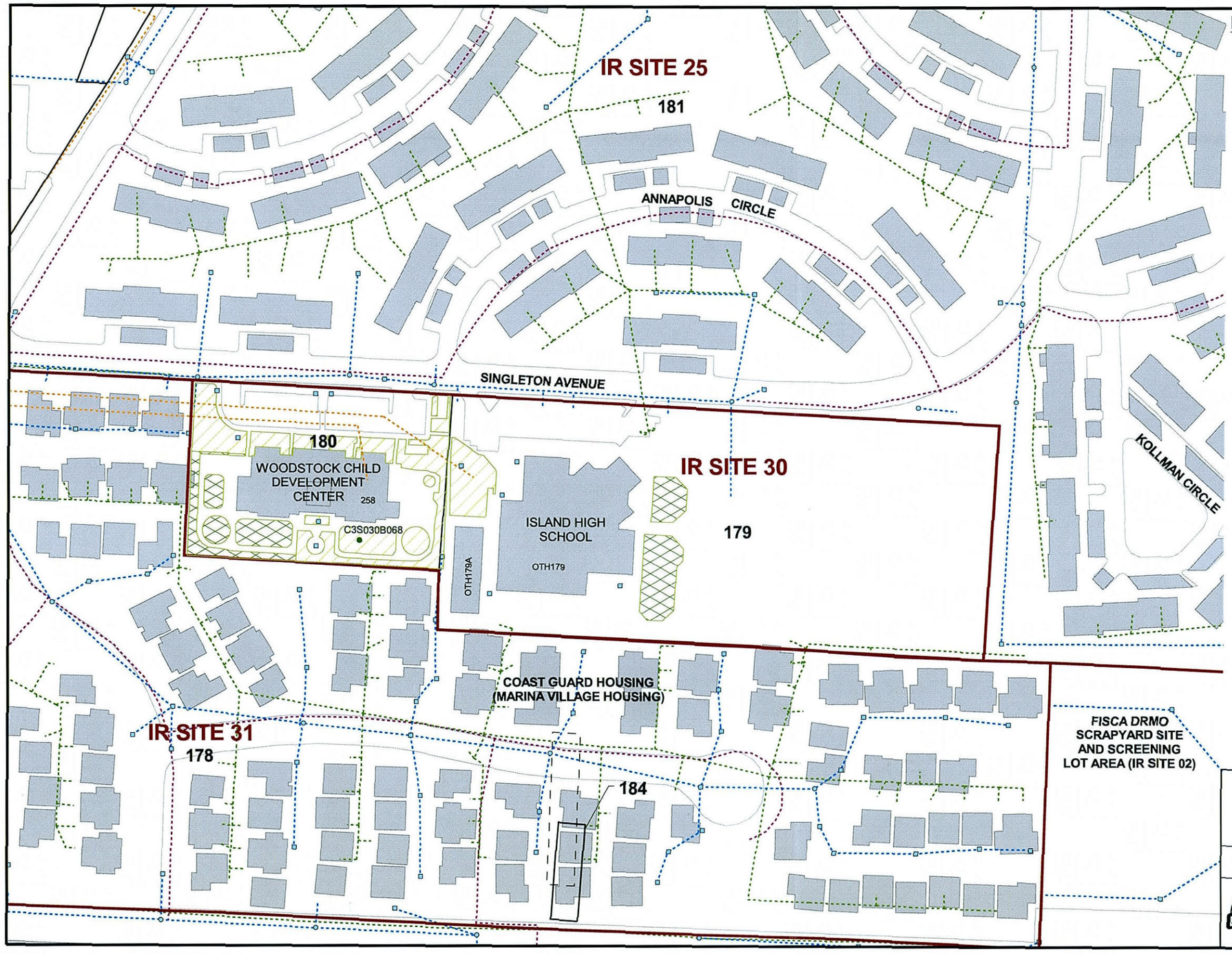
Location of IR Site 30

Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 10/2/07
File No.: 080L15900
Job No.: 23818-080
Rev No.: A


FISCA
IR SITE 25
IR SITE 30
IR SITE 31
MARINA VILLAGE HOUSING
IR-02
FORMER
DRMO YARD
FORMER FISCA WAREHOUSE AREA
EAST
HOUSING
COLLEGE OF
ALAMEDA
MAIN STREET
BERKELEY
OAKLAND
ALAMEDA
SAN
FRANCISCO
BAY
FARM
ISLAND
PACIFIC OCEAN
280
880
580
SAN
FRANCISCO
BAY
3 0 3 Miles
CALIFORNIA
LEGEND
IR SITE BOUNDARY
FISCA SITE BOUNDARY
EAST HOUSING BOUNDARY
COLLEGE OF ALAMEDA BOUNDARY
IR-02 FORMER DRMO YARD
NOTES:
IR - INSTALLATION RESTORATION (PROGRAM)
FISCA - FLEET AND INDUSTRIAL SUPPLY CENTER OAKLAND, ALAMEDA FACILITY/ALAMEDA ANNEX
SOURCE:
UNITED STATES GEOLOGICAL SURVEY. 1993. DIGITAL ORTHOPHOTO QUADRANGLE. OAKLAND WEST 1:24,000 QUADRANGLE. JULY 10
750 0 750 Feet
N
Remedial Investigation Addendum for IR Site 30
Figure 2-2
Site Vicinity Map
Alameda, California
Bechtel Environmental, Inc.
CLEAN 3 Program
Date: 11/14/07
File No.: 080L16046
Job No.: 23818-080
Rev No.: C



LEGEND

- IR SITE BOUNDARY
- 178 EBS PARCEL BOUNDARY WITH PARCEL NUMBER
- ROAD OR PAVED AREA
- BUILDING OR STRUCTURE
- BUILDING OR STRUCTURE (FORMER)
- UNPAVED LANDSCAPED OR PLAY AREA (CURRENT CONDITIONS)
- 2004 TCRA REMOVAL ACTION AREA (UNPAVED DURING RI SAMPLING)
- SOIL SAMPLING LOCATION C3S030B068
- CATCH BASIN
- MANHOLE
- STORM DRAIN
- SANITARY SEWER LINE
- COMMUNICATION LINE
- GAS LINE

N

NOTES:

DRMO – DEFENSE REUTILIZATION AND MARKETING OFFICE

EBS – ENVIRONMENTAL BASELINE SURVEY

FISCA – FORMER FLEET INDUSTRIAL SUPPLY CENTER, OAKLAND ALAMEDA ANNEX AND ALAMEDA FACILITY

IR – INSTALLATION RESTORATION (PROGRAM)

OTH179A – BUILDING NUMBER / IDENTIFIER

RI – REMEDIAL INVESTIGATION

TCRA – TIME-CRITICAL REMOVAL ACTION

130 0 130 Feet

Remedial Investigation Addendum for IR Site 30

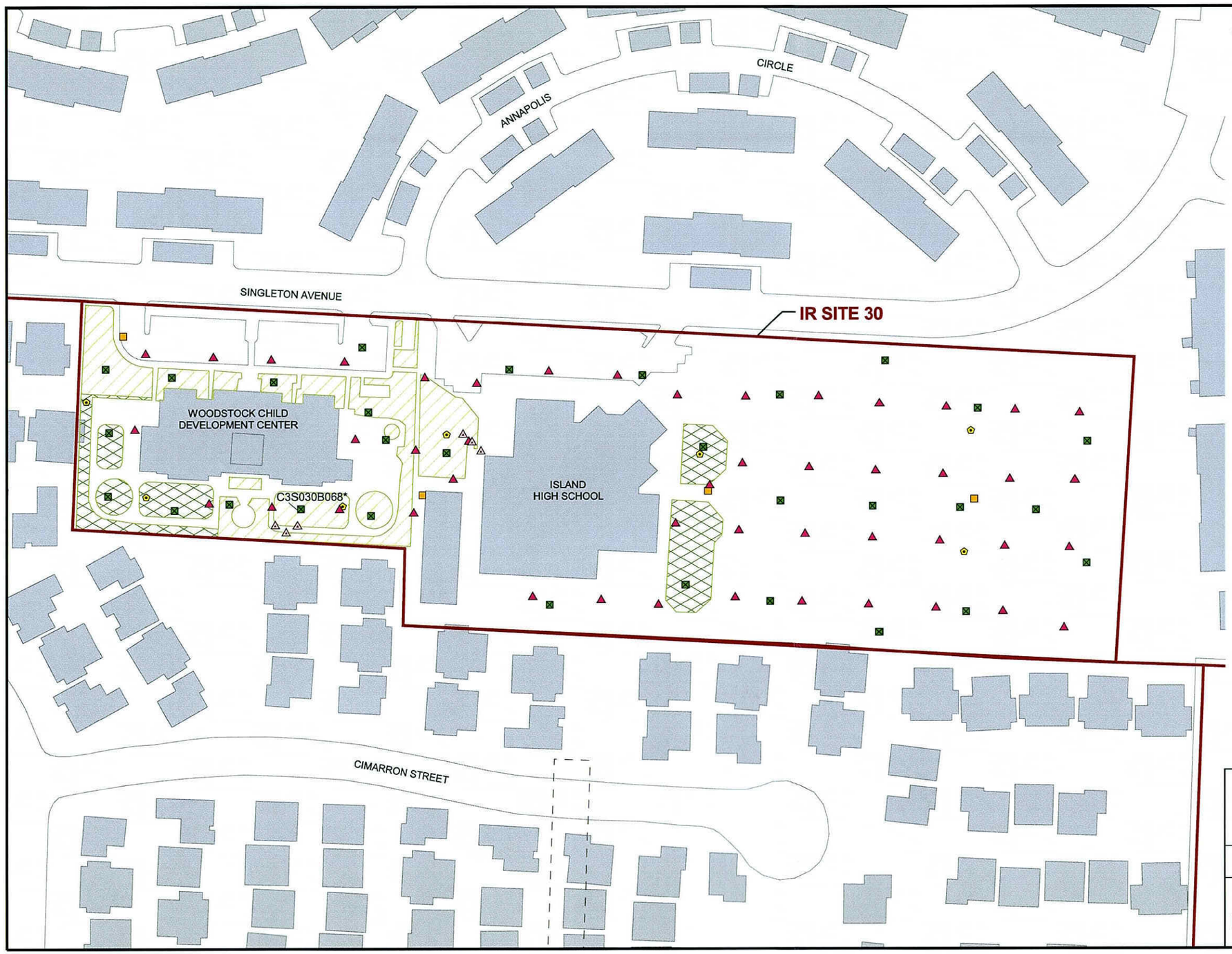
Figure 2-3

Site Features Map

Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 10/2/07
File No.: 080L15902
Job No.: 23818-080
Rev No.: A



LEGEND

- IR SITE BOUNDARY
- ROAD OR PAVED AREA
- BUILDING OR STRUCTURE
- BUILDING OR STRUCTURE (FORMER)
- UNPAVED LANDSCAPED OR PLAY AREA (CURRENT CONDITIONS)
- 2004 TCRA REMOVAL ACTION AREA (UNPAVED DURING RI SAMPLING)
- 2002 PAH ASSESSMENT SOIL SAMPLING LOCATION (BEI 2005a)
- 2003 PAH ASSESSMENT SOIL SAMPLING LOCATION (BEI 2004)
- RI SOIL SAMPLING LOCATION (BEI 2005b)
- EBS SOIL SAMPLING LOCATION (IT 2001)
- OU-5 RI SOIL SAMPLING LOCATION (NEPTUNE ET AL. 2002)

N

NOTES:

*TCRA 5-BY-5 FOOT AREA OF SOIL REMOVAL TO DEPTH OF 2 FEET BELOW GROUND SURFACE AROUND SAMPLING LOCATION C3S030B068

EBS – ENVIRONMENTAL BASELINE SURVEY
IR – INSTALLATION RESTORATION (PROGRAM)
PAH – POLYNUCLEAR AROMATIC HYDROCARBON
RI – REMEDIAL INVESTIGATION
TCRA – TIME-CRITICAL REMOVAL ACTION

100 0 100 Feet

Remedial Investigation Addendum for IR Site 30

Figure 2-4

Soil Sampling Locations

Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 5/5/08
File No.: 080L15903
Job No.: 23818-080
Rev No.: F

TOP OF UNIT (IN FEET BELOW GROUND SURFACE)	STRATIGRAPHIC UNITS			HYDROGEOLOGIC UNITS
0	FILL (UNDERLAIN BY MARSH CRUST AT SOME LOCATIONS)			WATER TABLE AQUIFER - NOT A PRIMARY AQUIFER (FWBZ)
10-35	BAY SEDIMENT UNIT (BSU)			AQUITARD
3-45	MERRITT SAND FORMATION			MERRITT SAND AQUIFER - A PRIMARY AQUIFER (SWBZ)
60-80	SAN ANTONIO FORMATION	UPPER UNIT	ALLUVIAL DEPOSITS	
80-110	SAN ANTONIO FORMATION	LOWER UNIT	YERBA BUENA MUD	AQUITARD
			OTHER ESTUARINE DEPOSITS	
100-200	ALAMEDA FORMATION	UPPER CLAY-RICH PORTION		
180-220	ALAMEDA FORMATION	ALLUVIAL DEPOSITS		ALAMEDA AQUIFER - PRINCIPAL REGIONAL AQUIFER
400-800	FRANCISCAN FORMATION			

NOTES:

FWBZ – FIRST WATER-BEARING ZONE

SWBZ – SECOND WATER-BEARING ZONE

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TETRA TECH EM, INC. 1999. OU-2 RI REPORT DRAFT, ALAMEDA POINT, ALAMEDA, CALIFORNIA. PREPARED FOR THE UNITED STATES DEPARTMENT OF THE NAVY, ENGINEERING FIELD ACTIVITY WEST, NAVAL FACILITIES ENGINEERING COMMAND, SAN BRUNO, CALIFORNIA. JUNE 29.

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Remedial Investigation Addendum for IR Site 30

Figure 2-5

Generalized Stratigraphic and Hydrologic Units at Alameda Point

Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 10/2/07
File No: 080C15904
Job No: 23818-080
Rev No: A

TABLE

Table 2-1
Post-Removal Human Health Risk Assessment for IR Site 30[a]

Exposure Scenario	TOTAL RME CANCER RISK		RME CANCER RISK WITHOUT ARSENIC[b]	
	U.S. EPA	Cal/EPA	U.S. EPA	Cal/EPA
RESIDENTIAL (adult and child)				
Direct contact with soil[c]	6E-05	3E-04	2E-05	3E-05
Indoor air (vapors from soil and groundwater)	3E-06	2E-05	3E-06	2E-05
Outdoor air[d]	4E-07	8E-07	4E-07	8E-07
Ingestion of homegrown produce	5E-05	1E-04	2E-05	1E-05
TOTAL (without residential use of groundwater)	**1E-04**	**5E-04**	**4E-05**	**6E-05**
CHILD AT CHILD DEVELOPMENT CENTER				
Direct contact with soil[b]	4E-05	1E-04	7E-06	1E-05
Indoor air (vapors from soil and groundwater)	7E-07	6E-06	7E-07	6E-06
Outdoor air[d]	7E-08	2E-07	7E-08	2E-07
TOTAL (without residential use of groundwater)	**4E-05**	**1E-04**	**8E-06**	**2E-05**
OCCUPATIONAL				
Direct contact with soil[c]	1E-05	6E-05	6E-06	9E-06
Indoor air (vapors from soil and groundwater)	9E-08	4E-07	9E-08	4E-07
Outdoor air[d]	6E-08	1E-07	5E-08	1E-07
TOTAL	**1E-05**	**6E-05**	**6E-06**	**9E-06**
CONSTRUCTION				
Direct contact with soil[c]	1E-06	5E-06	5E-07	7E-07
Outdoor air[d]	1E-06	1E-06	9E-07	1E-06
TOTAL	**2E-06**	**6E-06**	**1E-06**	**2E-06**

Notes:

[a] the risks have been revised to exclude Sample C072S068 from boring C3S030B068 that was removed during a post-RI removal action conducted by the Navy; vapor intrusion to indoor air has been revised to represent a one-story residence

[b] statistical analysis presented in Appendix A shows that arsenic concentrations are ambient

[c] direct contact with soil includes ingestion and dermal contact

[d] outdoor air includes inhalation of vapors from soil and groundwater and inhalation of particulates from soil

Acronyms/Abbreviations:

Cal/EPA – California Environmental Protection Agency
IR – Installation Restoration (Program)
RI – remedial investigation
RME – reasonable maximum exposure
U.S. EPA – United States Environmental Protection Agency

APPENDIX A

FINAL EVALUATION OF ARSENIC AND OTHER METALS IN SOIL AT IR SITES 30 AND 31

Department of the Navy
Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108-4310

Contract No. N68711-95-D-7526

COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY

CLEAN 3

FINAL
EVALUATION OF ARSENIC AND OTHER METALS IN SOIL AT IR SITES 30 AND 31 ALAMEDA POINT ALAMEDA, CALIFORNIA

CTO-0089/0032-1
August 2007

Prepared by:

BECHTEL ENVIRONMENTAL, INC.
1230 Columbia Street, Suite 400
San Diego, California 92101-8502

PROFESSIONAL GEOLOGIST
ERIC A. JOHANSEN
No 6643
Exp. 10/31/08
STATE OF CALIFORNIA

Signature: Eric Johansen
Eric Johansen, PG 6643, Bechtel Environmental, Inc.
Date: 8/14/07

Signature: Linda Henry
Linda Henry, PhD, Brown and Caldwell
Date: 8/14/07

EXECUTIVE SUMMARY

This report presents the results of an evaluation of arsenic in soil at Installation Restoration (IR) Program Sites 30 and 31 and five other metals (cadmium, chromium, iron, lead, and vanadium) in soil at IR Site 31, Alameda Point, Alameda, California. This evaluation was conducted to determine whether the concentrations of these metals represent ambient conditions or are the result of releases from Navy activities.

Background evaluations conducted between 1997 and 2001 indicated that the Alameda Point pink background data set compiled by PRC Environmental Management, Inc., (PRC) (1997a,b) was applicable to IR Site 31; therefore, metals at IR Site 31 were initially compared to the pink background data set. Separate statistical evaluations conducted during the remedial investigations (RIs) at IR Sites 30 and 31 showed that most metals at the sites, including common rock-forming metals such as iron, are present at higher concentrations than those in the pink background data set. A number of factors, such as the even horizontal and vertical distribution of several metals, indicated that further evaluation was warranted. Also, the 2002 Final RI Report for Operable Unit 5 concluded that the pink background data set was not appropriate for adjacent IR Site 25 (Neptune 2002).

Arsenic was selected for further evaluation because it is the primary risk driver at IR Sites 30 and 31. Cadmium, chromium, iron, lead, and vanadium in soil at IR Site 31 were included in the additional statistical evaluation because these metals exceeded risk-based screening levels for soil, were risk drivers, or were present in groundwater at concentrations above historical levels.

The Navy initially proposed to identify an alternative background data set for IR Site 31. However, it was determined that an alternative background data set was not needed because the concentrations of arsenic in soil at IR Sites 30 and 31 and cadmium, chromium, and vanadium in soil at IR Site 30 meet the criteria for ambient populations as described in a policy of the California Environmental Protection Agency Department of Toxic Substances Control (DTSC) (1997).

The conclusion of the evaluation discussed in this report is that arsenic concentrations represent ambient conditions at both IR Sites 30 and 31 rather than indicating a release from on-site activities. This finding is based on arsenic concentrations meeting the DTSC criteria for ambient conditions (DTSC 1997) and is supported by the presence of similar concentrations of arsenic at adjacent locations unaffected by Navy activities. Additional evaluation of other metals in soil at IR Site 31 does not indicate a release from on-site activities. Therefore, a feasibility study to address arsenic concentrations in soil at IR Sites 30 and 31 and other metals in soil at IR Site 31 is not warranted. In addition, the fill history and lithology indicate that the fill at IR Sites 30 and 31 originated from a different source than the fill used in the PRC pink background data set area west of Main Street.

ARSENIC AT IR SITES 30 AND 31

Analytical data from a site can be used to determine whether or not a release has occurred, without determining an off-site background level for comparison. The DTSC policy for selecting inorganic constituents as chemicals of potential concern describes a methodology for using site data to determine whether chemical concentrations represent ambient conditions (a single population) or possibly represent contamination (multiple

populations) (DTSC 1997). The following results of the evaluation of two separate data sets from IR Sites 30 and 31, using the methodology outlined in the DTSC policy, demonstrate that arsenic concentrations at each site meet the DTSC criteria for ambient conditions.

- Each data set fits a lognormal distribution. DTSC guidance states that trace metals such as arsenic typically fit a lognormal distribution. The Shapiro-Wilk test confirmed that the arsenic data from IR Sites 30 and 31 are lognormally distributed.
- The coefficient of variation is less than 1. The coefficients of variation for arsenic at IR Sites 30 and 31 are 0.81 and 0.69, respectively. These values show that the data are not highly variable.
- The range between minimum and maximum values is less than two orders of magnitude. Arsenic data at IR Site 30 range from 0.8 to 56.3 milligrams per kilogram (mg/kg), a factor of 70. Arsenic data at IR Site 31 range from 2.3 to 42.4 mg/kg, a factor of 18. Both ranges show lower variability than the DTSC criterion of a factor of 100.
- The cumulative probability plot is a straight line. The data sets for IR Sites 30 and 31 plotted (separately) in this manner form a straight line without gaps or inflection points. As is common with these plots, the tails of the lines depart slightly from the line. However, none of the values in the tail with the higher concentrations are outliers.
- Additionally, there are no outliers. The Rosner's test for outliers (not required by the DTSC policy) also shows that neither the IR Site 30 nor the IR Site 31 arsenic data set includes outliers that could be associated with a release.

OTHER METALS AT IR SITE 31

In addition to arsenic, five metals (cadmium, chromium, iron, lead, and vanadium) in soil at IR Site 31 were also evaluated using the methodology outlined in the DTSC policy to determine whether the concentrations meet the criteria for ambient populations. These metals were included because they were reported at concentrations above a risk-based screening level, were risk drivers, or were present in groundwater at concentrations above historical levels.

Cadmium, chromium, and vanadium meet all DTSC criteria for ambient populations (i.e., the range of detections is less than two orders of magnitude, the coefficient of variation is less than 1, and the data represent one population on a probability plot).

The probability plots for iron and lead indicate the presence of more than one population. However, this finding is not unexpected for iron, a common rock-forming metal. The PRC pink background data probability plot also indicates multiple populations. The finding for lead is consistent with the multiple sources of lead in the environment.

ARSENIC CONCENTRATIONS AT ADJACENT LOCATIONS

Arsenic concentrations in soil were evaluated for locations surrounding IR Sites 30 and 31 to determine if similar concentrations of arsenic are present at areas that were not associated with Navy industrial activities. Arsenic concentrations at IR Sites 30 and 31 and the surrounding locations were grouped into two general areas. The first is a 140-acre contiguous area adjacent to and encompassing IR Sites 30 and 31. Sites in this area, located east of Main Street, are the East Housing Area, portions of the Fleet and Industrial Supply Center Alameda (FISCA) Warehouse Area, and IR Sites 30 and 31, and have mean arsenic concentrations higher than the mean in the PRC pink background data set. Mean arsenic concentrations in this 140-acre area range from 10.6 mg/kg at IR Sites 30 and 31 to 13.1 mg/kg at the East Housing Area. The East Housing Area has never been used by the Navy for industrial activities. Nevertheless, the East Housing Area has levels of arsenic similar to the rest of the 140-acre area, despite the absence of industrial activities. The fact that the mean arsenic concentration in soil from the East Housing Area is similar to that of nearby sites used by the Navy for industrial purposes supports the conclusion that soil with arsenic concentrations higher than those in the PRC pink background data set was used as fill material.

In contrast, sites in the second general area, including the remaining FISCA area, IR Site 25, and College of Alameda campus, have lower concentrations of arsenic. The 95th percent upper confidence limit (UCL) of the mean arsenic concentration at IR Site 25 is 4.2 mg/kg. (The 95th percent UCL, by definition, will be higher than the mean.) The mean arsenic concentrations range from 1.7 mg/kg at FISCA Area of Concern 1 to 4.2 mg/kg at FISCA Solid Waste Management Unit 1 (Operable Unit 2). At the College of Alameda campus, the 95th percent UCL is 8.4 mg/kg. Neither IR Site 25 nor the College of Alameda campus has been used by the Navy for industrial activities.

COMPARISON TO PRC PINK BACKGROUND DATA SET

In the PRC 1997 background study, data from Alameda Point were assigned to one of three groups (pink, yellow, or blue) on the basis of similar fill history and iron and manganese concentrations (PRC 1997a,b). Iron and manganese were selected because these metals were thought unlikely to be associated with Navy activities. This study also selected data from locations that appeared to have been minimally impacted by industrial activities. PRC assigned the area east of Main Street, which includes IR Sites 30 and 31, to the pink background data set. However, based on the criteria that PRC used, the PRC pink background data set is not an appropriate background data set for comparison to IR Sites 30 and 31 because of the following.

- The fill history shows that IR Sites 30 and 31 were filled at a different time than most of the PRC pink background area. No samples used for the three PRC background data sets were collected east of Main Street, an area which includes IR Sites 30 and 31.
- Iron and manganese concentrations at IR Site 30 are statistically higher than those in the PRC pink background data set. The iron concentrations at IR Site 31 are statistically higher than those in the PRC pink background data

set. (Manganese data were not available for IR Site 31.) If these data had been available when PRC defined the background areas at Alameda Point, IR Sites 30 and 31 would probably not have been assigned to the pink background area based on the differences in iron and manganese concentrations in soil.

FILL HISTORY

The fill history indicates that a large area east of Main Street was filled at a different time than the majority of the area sampled for the PRC pink background data set. The fill material was placed during the same period at IR Sites 30 and 31, the East Housing Area, a portion of the College of Alameda campus adjoining the East Housing Area, and the FISCA Warehouse Area (an area of FISCA between IR Site 31 and the East Housing Area). IR Site 25, the remaining portion of the College of Alameda campus, and the remaining FISCA area received fill material during two other fill events.

Differences in the fill history increase the likelihood that the fill came from different sources, although the specific source of fill is unknown. Hydraulic fill came from Oakland Inner Harbor and San Francisco Bay. It is also reasonable to assume that construction fill was brought in prior to construction of warehouses and buildings at IR Sites 30 and 31, the East Housing Area, and other locations.

LITHOLOGY

Physical characteristics of the soil at locations adjacent to IR Sites 30 and 31 were evaluated in response to requests from the regulatory agencies in an August 2006 meeting. At that time, this evaluation was considered important to the selection of a background data set. However, based on the application of DTSC policy, this information is no longer essential because statistical evaluation in accordance with DTSC policy shows that the concentrations of arsenic at IR Sites 30 and 31 represent ambient conditions. Nevertheless, the findings of the comparison support the conclusion that IR Sites 30 and 31 have lithologic characteristics significantly different from those of the PRC pink background area.

Lithology and fill history, gravel content, geotechnical data, and color differences were examined for IR Sites 30 and 31 and adjacent locations (IR Site 25, the East Housing Area, the College of Alameda campus, and the PRC pink background data set area west of Main Street). Boring logs from IR Sites 25, 30, and 31, the East Housing Area, and the College of Alameda campus were evaluated. Based on a general correlation between the lithology in boring logs and the sequence of fill events, IR Sites 30 and 31, the FISCA Warehouse Area, and the East Housing Area would be grouped under the gravel-laden fill material in place by 1927. IR Site 25, FISCA (outside the FISCA Warehouse Area), and most of the College of Alameda campus would be grouped under the hydraulic fill material in place by 1919 and 1930. Additionally, the physical properties, grain-size distributions, and descriptions of soil color indicate that the soil at IR Sites 30 and 31 is different from the soil west of Main Street in the PRC pink background data set area (as represented by IR Site 35).

CONCLUSIONS

Arsenic in soil at IR Sites 30 and 31 and cadmium, chromium, and vanadium in soil at IR Site 31 meet DTSC criteria for ambient populations and are not the result of a release from Navy activities. This finding is supported by analysis of arsenic at adjacent locations as well as the fill history and lithology. The basis for this finding is summarized as follows.

- **Data evaluation of arsenic at IR Sites 30 and 31.** Application of DTSC criteria to arsenic at IR Sites 30 and 31, considered separately, demonstrates that arsenic concentrations in soil at these sites represent ambient conditions.
- **Other metals at IR Site 31.** Cadmium, chromium, and vanadium concentrations at IR Site 31 also meet the DTSC criteria for ambient populations. Iron meets the statistical criteria, but the probability plot indicates possible subpopulations. However, this characteristic of iron is also found in the PRC pink background data set and is not unexpected for a common rock-forming metal like iron. Lead concentrations do not meet the criteria for an ambient population, which is consistent with multiple environmental sources.
- **Arsenic concentrations at adjacent locations.** IR Sites 30 and 31, along with the East Housing Area and portions of the FISCA, represent approximately 140 acres of land with similar concentrations of arsenic. The similar arsenic concentrations, which are higher than those in the PRC pink background data set, appear to be related to the composition of the fill soil.
- **Comparison to PRC pink background data set.** Inclusion of IR Sites 30 and 31 in the PRC pink background area is not appropriate based on the original criteria for grouping background data of similar fill history and similar iron and manganese concentrations. Compared with that data set, soil at IR Sites 30 and 31 has significantly higher concentrations of iron, and soil at IR Site 30 also has significantly higher concentrations of manganese. (Manganese data were not available for IR Site 31.)
- **Fill history and lithological evaluation.** An updated fill history shows that IR Sites 30 and 31 have a fill history different from the portion of the PRC pink background area located west of Main Street. Soil at IR Sites 30 and 31, the FISCA Warehouse Area, and the East Housing Area have higher gravel content than soil in other nearby areas. Additionally, the yellow color of the fill soil at IR Sites 30 and 31 distinguishes it from the fill soil at IR Site 25 and sites within the pink background area west of Main Street.

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B STATISTICS TABLES (on compact disk)

C BORING LOGS (on compact disk)

C1 BORING LOGS FOR IR SITE 25

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C5 ADDITIONAL BORING LOGS FOR FISCA WAREHOUSE AREA

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ACRONYMS/ABBREVIATIONS

AOC	area of concern
ASTM	American Society for Testing and Materials
bgs	below ground surface
CLEAN	Comprehensive Long-Term Environmental Action Navy
CTO	contract task order
DTSC	(California Environmental Protection Agency) Department of Toxic Substances Control
EDC	economic development conveyance
FISCA	Fleet and Industrial Supply Center Alameda
FS	feasibility study
IR	Installation Restoration (Program)
mg/kg	milligrams per kilogram
PG	Professional Geologist
PRC	PRC Environmental Management, Inc.
RI	remedial investigation
SWMU	solid waste management unit
UCL	upper confidence limit

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EVALUATION OF ARSENIC AND OTHER METALS IN SOIL AT IR SITES 30 AND 31

This report presents the results of an evaluation of arsenic in soil at Installation Restoration (IR) Program Sites 30 and 31 and five other metals (cadmium, chromium, iron, lead, and vanadium) in soil at IR Site 31, Alameda Point, Alameda, California. This evaluation was conducted to determine whether the concentrations of these metals represent ambient conditions or are the result of releases from Navy activities.

Background evaluations conducted between 1997 and 2001 indicated that the Alameda Point pink background data set compiled by PRC Environmental Management, Inc., (PRC) (1997a,b) was applicable to IR Site 31; therefore, metals at IR Site 31 were initially compared to the pink background data set. Separate statistical evaluations conducted during the remedial investigations (RIs) at IR Sites 30 and 31 showed that most metals at the sites, including common rock-forming metals such as iron, are present at higher concentrations than those in the pink background data set. A number of factors, such as the even horizontal and vertical distribution of several metals, indicated that further evaluation was warranted. Also, the 2002 Final RI Report for Operable Unit 5 concluded that the pink background data set was not appropriate for adjacent IR Site 25 (Neptune 2002).

Arsenic was selected for further evaluation because it is the primary risk driver at IR Sites 30 and 31. Cadmium, chromium, iron, lead, and vanadium in soil at IR Site 31 were included in the additional statistical evaluation because these metals exceeded risk-based screening levels for soil, were risk drivers, or were present in groundwater at concentrations above historical levels.

The Navy initially proposed the background data set from the Bay Area called the Great Valley Group as an alternative background data set for arsenic in the draft RI Report in April 2006 (CDM 2006a). The use of this data set was not acceptable to the regulatory agencies. In a meeting with the agencies on August 24, 2006, the Navy proposed instead to evaluate data from surrounding areas; in particular, the recently acquired data from the East Housing Area were proposed for evaluation as a potential background data set. Subsequent to that meeting, the Navy determined that an alternative background data set for arsenic was not needed because the concentrations of arsenic in soil at IR Sites 30 and 31 meet the criteria for ambient conditions as described in a policy of the California Environmental Protection Agency Department of Toxic Substances Control (DTSC) (1997).

The conclusion of the evaluation discussed in this report is that arsenic concentrations represent ambient conditions at both IR Sites 30 and 31 rather than indicating a release from on-site activities. This finding is based on arsenic concentrations meeting the DTSC criteria for ambient conditions (DTSC 1997) and is supported by the presence of similar concentrations of arsenic at adjacent locations unaffected by Navy activities. In addition, the fill history and lithology indicate that the fill at IR Sites 30 and 31 originated from a different source than the fill used in the PRC pink background data set area west of Main Street. Additional evaluation of other metals in soil at IR Site 31 does not indicate a release from on-site activities. Therefore, a feasibility study (FS) to address arsenic concentrations in soil at IR Sites 30 and 31 and other metals in soil at IR Site 31 is not warranted.

This evaluation was conducted in the following steps.

1. Arsenic data from IR Sites 30 and 31, considered separately, were evaluated using the DTSC policy (DTSC 1997) to determine whether the data consisted of a single population, likely representative of ambient conditions, or of multiple populations, likely associated with a release.
2. Cadmium, chromium, iron, lead, and vanadium data from IR Site 31 were evaluated using the DTSC policy (DTSC 1997).
3. Arsenic concentrations at locations adjacent to IR Sites 30 and 31 were assessed.
4. The PRC pink background data set and its applicability to IR Sites 30 and 31 were evaluated.
5. The fill history for IR Sites 30 and 31 and adjacent locations (IR Site 25, the Fleet and Industrial Supply Center Alameda [FISCA], the College of Alameda, the East Housing Area, and the PRC pink background area west of Main Street) was reviewed.
6. The lithology and physical soil data for IR Sites 30 and 31 and adjacent areas were assessed.

The findings of this evaluation demonstrate that arsenic at IR Sites 30 and 31 and other metals at IR Site 31 are present at ambient levels and do not represent a release resulting from on-site Navy-related activities. Furthermore, the concentrations of arsenic at either site and other metals at IR Site 31 do not warrant remediation.

Figures and tables are located at the end of this report. The findings from the evaluation are summarized below. Note that the previous version of this report was entitled "Area-Specific Background Evaluation, IR Sites 30 and 31, Alameda Point, Alameda, California."

1 ARSENIC AT IR SITES 30 AND 31

Analytical data from a site can be used to determine whether or not a release has occurred without using an off-site background level for comparison. The DTSC policy for selecting inorganic chemicals of potential concern provides a methodology to evaluate data from a site, even a potentially contaminated site, and to determine whether the data represent a release or ambient conditions (DTSC 1997).

This evaluation followed the DTSC process and also included additional statistical tests for outliers (Attachment A).

The DTSC criteria for determining whether there are multiple populations represented by a data set (indicating a release) or a single population (indicating ambient levels) were used in this evaluation. The criteria and the results for IR Sites 30 and 31 are as follows.

- Test of Distributions. The ambient data set is normally or lognormally distributed. The distribution of the arsenic data for IR Sites 30 and 31 was tested using the Shapiro-Wilk test and found to fit lognormal distributions. DTSC policy states that trace metals tend to be lognormally distributed. The statistical fit between the data and a lognormal distribution indicates that there are no outliers. Rosner's outlier test (U.S. EPA 2006) also shows that the

maximum concentration at IR Site 30 and the two highest values at IR Site 31 are not outliers.

- Test of Maximum and Coefficient of Variation. The range of detected values in an ambient data set is no more than two orders of magnitude, and the coefficient of variation is not greater than 1. The range of detected values and coefficients of variation for arsenic data at IR Sites 30 and 31 meet these criteria as follows.
  - IR Site 30. The detected concentrations range from 0.8 to 56.3 milligrams per kilogram (mg/kg), and the coefficient of variation is 0.81.
  - IR Site 31. The detected concentrations range from 2.3 to 42.4 mg/kg, and the coefficient of variation is 0.69.
- Test of Probability Plots. Ambient data (single populations) fall in a straight line when plotted in a cumulative probability plot. As shown on Figure 2, arsenic data at IR Sites 30 and 31 meet this criterion. Data in the upper and lower tails of the distribution tend to fall farthest from the line. However, none of the points in the upper tail represent outliers as indicated by Rosner's outlier test (next bullet). Note that box and whisker plots of the arsenic data are also provided in Attachment A.
- Test of Outliers. While not required in the DTSC policy, a test of outliers was conducted to support the findings of the Shapiro-Wilk test that there is no evidence of high values that might represent a release. Rosner's outlier test (U.S. EPA 2006) also shows that the maximum concentration at IR Site 30 and the two highest values at IR Site 31 are not outliers.

Other published papers on the use of probability plots for identification of ambient populations include Cook (1998), Fleischhauer and Korte (1990), Sinclair (1976), and Singh et al. (1994).

2 OTHER METALS AT IR SITE 31

In addition to arsenic, five other metals (cadmium, chromium, iron, lead, and vanadium) in soil at IR Site 31 were evaluated using the methodology outlined in the DTSC policy (DTSC 1997) to determine whether the concentrations meet the criteria for ambient populations (Attachment A). These metals were reported at concentrations above risk-based screening levels, were risk drivers, or were present in groundwater at concentrations above historical levels.

Cadmium, chromium, and vanadium data meet all DTSC criteria for ambient populations (i.e., the range of detections is less than two orders of magnitude, the coefficient of variation is less than 1, and the data represent one population on a probability plot). Distributional analysis and outlier testing were conducted on cadmium, chromium, and vanadium to substantiate the above results. No outliers were identified at high concentrations. After removal of one chromium outlier at the lowest concentration, all three data sets were lognormally distributed at a significance level of 5 percent.

The probability plots for iron and lead indicate the presence of more than one population. However, this finding is not unexpected for iron, a common rock-forming metal.

The PRC pink background data probability plot also indicates multiple populations (Attachment A). The finding for lead is consistent with multiple sources of lead in the environment.

3 ARSENIC CONCENTRATIONS AT ADJACENT LOCATIONS

An evaluation of arsenic concentrations east of Main Street was conducted for IR Sites 25, 30, and 31, the East Housing Area, FISCA, and the College of Alameda campus to determine the extent of soil with concentrations of arsenic above those in the PRC pink background data set. Current and past uses of IR Site 25 and East Housing Area have only been for residences. The College of Alameda campus has a mixed history, with use as a commercial airport before 1940 and then as housing until the college was constructed.

The concentrations of arsenic in soil east of Main Street, shown on Figure 3, fall into two general groups. The first group covers a 140-acre contiguous area where mean arsenic concentrations range from 10.6 mg/kg at IR Site 31 to 13.1 mg/kg at the East Housing Area. This contiguous area includes IR Sites 30 and 31, the East Housing Area, and portions of the FISCA Warehouse Area between IR Site 31 and the East Housing Area. The median values for arsenic at IR Sites 30 and 31, the East Housing Area, and the FISCA Warehouse Area were compared to Bay Area data collected from background locations and the PRC pink background data set, as presented on Figure 4. Bay Area data are included on Figure 4 to indicate that potential sources of fill soil with higher arsenic concentrations exist in the Bay Area, not to suggest that these areas were the source of the fill at IR Sites 30 and 31. Mean and median concentrations are robust descriptors of populations.

In contrast, the second group, including the remaining FISCA area and IR Site 25, has lower concentrations of arsenic. The mean arsenic concentrations range from 1.7 mg/kg at FISCA Area of Concern (AOC) 1 to 4.2 mg/kg at FISCA Solid Waste Management Unit (SWMU) 1 (Operable Unit 2). The 95th percent upper confidence limit (UCL) of the mean concentration at IR Site 25 is 4.2 mg/kg. (The 95th percent UCL, by definition, will be higher than the mean.) The College of Alameda campus has intermediate concentrations of arsenic, and the 95th percent UCL is 8.4 mg/kg. In comparison, the 95th percent UCL and mean at the East Housing Area are 16.3 and 13.1 mg/kg, respectively.

East Housing Area data were compared statistically with the arsenic concentrations at IR Sites 30 and 31, which were considered separately. Three two-population statistical tests (Wilcoxon rank sum test, two-sample t-test, and Gehan test) were used to compare the arsenic data distributions at IR Sites 30 and 31 with those at the East Housing Area. All three comparisons show that the concentrations of arsenic in these data sets are not statistically different (Attachment A).

Summary statistics of the data for the above areas and others discussed in this evaluation are presented in tables in Attachment B. The tables listed below show sample size, detection frequency, maximum, minimum, mean, median, standard deviation, coefficient of variation, 95th quantile, and 95th percent UCL of the mean:

- PRC background: pink, yellow, and blue areas – Tables B-1, B-2, and B-3, respectively
- IR Sites 30 and 31 – Tables B-4 and B-5, respectively
- East Housing Area and FISCA Warehouse Area – Tables B-6 and B-7, respectively

A comparison of sample size, detection frequency, and maximum and minimum values between FISCA (SWMUs and AOCs) and the College of Alameda campus is shown in Table B-8 in Attachment B. Sample size, detection frequency, ranges of metals, means, and exposure point concentrations for IR Site 25 are shown in Table B-9. Discrete data for IR Site 25 were not compiled for this evaluation, and discrete data for FISCA and the College of Alameda were not available.

The arsenic concentrations in the PRC yellow background data set are similar to those at IR Site 31. The yellow background data set is from an area that borders San Francisco Bay along the western side of Alameda Point, a location farther from IR Site 31 than the sites discussed above (Figure 5). The 95th percent UCL for the yellow background data set of 12 mg/kg is approximately the same as the 95th percent UCL for IR Site 31 of 11.7 mg/kg, and both are above the 95th percent UCL for the pink background data set (4.2 mg/kg). This is further evidence that arsenic concentrations that are ambient and unrelated to Navy activities are present at Alameda Point.

In summary, there is a 140-acre area east of Main Street (i.e., IR Sites 30 and 31, the East Housing Area, and portions of the FISCA Warehouse Area) with concentrations of arsenic that are similar. Statistical evaluation of arsenic at IR Sites 30 and 31 in accordance with DTSC policy shows that the arsenic is ambient. Over 50 percent of this 140-acre area (the East Housing Area) was never used for industrial purposes. Therefore, the arsenic concentrations are considered ambient.

4 COMPARISON TO PRC PINK BACKGROUND DATA SET

In the PRC background study (PRC 1997a,b), data from Alameda Point were assigned to one of three groups (pink, yellow, or blue) on the basis of similar fill history and iron and manganese concentrations (Figure 5). The study collected data from locations that appeared to have been minimally impacted by industrial activities. Although IR Sites 30 and 31 were grouped by PRC into the pink background area, there is strong evidence that the PRC pink background data set is not an appropriate background data set for IR Sites 30 and 31. The finding that arsenic concentrations at IR Sites 30 and 31, considered separately, meet the DTSC criteria for an ambient population makes comparison to a background data set unnecessary. However, the following factors, which indicate that inclusion of IR Sites 30 and 31 into the pink background area may not be appropriate, should be considered.

- The fill history shows that IR Sites 30 and 31 were filled at a different time than most of the PRC pink background area. The fill history updated by Bechtel Environmental, Inc., (Figure 6) shows that the area where samples were collected for the PRC pink background data set was filled between 1927 and

1941, while the majority of the original Navy land east of Main Street was either dry land or filled before 1927. The differences in fill history increase the likelihood that fill soil at the sites and at most of the PRC pink background area originated from different sources.

- Iron and manganese concentrations at IR Site 30 and iron concentrations at IR Site 31 (manganese data were not available for IR Site 31) are statistically significantly higher than those in the PRC pink background data set. PRC reports (1997a,b) stated that iron and manganese would be good indicators of ambient conditions because these metals would not be related to Navy activities.
- No samples for the PRC background data sets were collected in the vicinity of IR Site 30 or 31 or even east of Main Street. The PRC pink background data set included samples from approximately 26 locations (the number of samples for each metal varies, as not all samples were analyzed for all metals). The sampling locations were all west of Main Street. The two closest sampling locations were approximately 800 and 1,900 feet west of IR Site 31; all other locations were between 0.5 and 1.8 miles from IR Site 31.

5 FILL HISTORY AND SOIL CHARACTERISTICS

This section presents an updated evaluation of the fill history, a discussion of lithology, and an evaluation of the physical soil characteristics of IR Sites 25, 30, 31, and 35, FISCA, the College of Alameda campus, and the East Housing Area. The regulatory agencies requested that the Navy evaluate lithology to support use of an alternative background data set at the meeting between the Navy and the agencies on August 24, 2006. Subsequently, the Navy determined that an alternative background data set was not needed because the arsenic concentrations, as well as those of several other metals, meet DTSC criteria for ambient conditions. Nevertheless, the Navy conducted an evaluation of the lithology. Boring logs are provided in Attachment C, and historical maps and an aerial photograph are provided in Attachment D.

5.1 Fill History

An updated fill history shows that IR Sites 30 and 31 were not filled during the same fill event as the PRC pink background area. The area of the PRC pink background data set was filled between 1927 and 1941, while the majority of the land used by the Navy east of Main Street was either originally dry land or filled before 1927. The differences in fill history increase the likelihood that the fill originated from a different area.

The history of artificial fill (1859–1973) is depicted on Figure 6, and a recent update explained in this section is shown in the inset. When the background areas were identified (Figure 5), PRC likely used a version of the fill history that showed that the land east and west of Main Street was filled between 1930 and 1939. However, a later, more detailed study of the fill events indicates that the area east of Main Street, which includes IR Site 31 and parts of IR Site 30, was in place by 1927 (BEI 2002). While the exact boundaries of the fill events are uncertain (due to early photographs having been taken at an oblique angle), there is information to suggest that the areas east and west of Main Street were filled at different times.

Figure 6 has been refined with an inset based on the most recent interpretation of fill history. Historical maps from 1903 to 1930 and a 1930 photograph were used to refine the fill history shown on this figure and have been reproduced and included in Attachment D. Historical maps (USCGS 1903, E.C. Sessions 1906) show levees aligned north-south along the existing Main and Webster Streets. These levees likely acted as physical barriers restricting the limits of fill events. Additionally, the boundaries of fill events shown in the inset have been refined by assessing lithologic characteristics described in boring logs. As shown in the inset on Figure 6, the northern boundary of the 1927 fill event is believed to be located at the northern boundary of IR Sites 30 and 31. This change to the figure was based on the gravel-laden soil noted in the boring logs from the northern edge of IR Sites 30 and 31. The eastern boundary of the 1927 fill event within the College of Alameda was also refined based on an evaluation of the lithologic data.

The fill history figure indicates that IR Sites 30 and 31, the FISCA Warehouse Area, and the East Housing Area were all filled prior to 1927. Information in the boring logs for these sites supports this interpretation (Section 5.3.1) indicating gravel-laden fill. In contrast, the fill placed by 1919 and 1930, which includes IR Site 25, the remaining FISCA area, and most of the College of Alameda campus, would be grouped under the areas having hydraulic fill material.

As shown on the fill history map, fill material at the College of Alameda campus was emplaced during two fill events. About 30 percent of the area in the northwestern portion of the campus was filled during the same period as IR Sites 30 and 31, the FISCA Warehouse Area, and the East Housing Area (i.e., in place by 1927). The majority of the campus, about 70 percent, appears to have been filled during the same period as IR Site 25 and FISCA (i.e., in place by 1919).

5.2 Lithology

A review of boring logs from IR Site 25, FISCA, the College of Alameda campus, and most Alameda Point transfer parcels west of Main Street indicates that these areas have a soil lithology (0 to 4 feet below ground surface [bgs]) that is very different from that of IR Sites 30 and 31. Over 400 boring logs from various investigations at IR sites and transfer parcels west of Main Street were reviewed to assess lithological characteristics (i.e., IR Site 26, IR Site 35, and Transfer Parcels Economic Development Conveyance [EDC]-3, EDC-5, Public Benefit Conveyance 1A, and Federal Agency Parcel 1A). These boring logs represent the majority of the PRC pink background area. It was concluded that the lithology of the PRC pink background area is that of hydraulic fill material composed primarily of poorly graded, fine-grained sand.

In contrast, the gravel-laden fill soil typical of the upper 4 feet of soil at IR Sites 30 and 31 is classified as well-graded sand (SW), well-graded gravel (GW), clayey gravel (GC), and silty gravel (GM). The wide range of particle sizes and abundant gravel in the fill soil at IR Sites 30 and 31 support the conclusion that this gravel-laden fill soil is from a different source. It is likely that gravel was imported at IR Sites 30 and 31 and the East Housing Area prior to construction.

The lithology of fill material at IR Site 25 and most of the sites and transfer parcels west of Main Street in the PRC pink background area is typically fine-grained sand and silt that overlies clay. The fill material was derived from hydraulic dredging of San Francisco Bay and Oakland Inner Harbor. Review of boring logs indicates that samples from most soil borings within the hydraulic fill material are classified as poorly graded sand (SP), silty sand (SM), silt (ML), and clay (CL and CH) (ASTM 1993). These hydraulic fill soils are characterized by a limited range in particle size, and they contain little or no gravel.

5.3 Physical Soil Characteristics

Physical characteristics of the soil at IR Sites 30 and 31 and at locations adjacent to IR Sites 30 and 31 were evaluated in response to a request from the regulatory agencies during the August 2006 meeting. At that time, this evaluation was considered important to the selection of a background data set. However, because the statistical evaluation based on DTSC policy was conducted, a background data set is no longer considered a necessary part of the evidence for the conclusion that the concentrations of arsenic at IR Sites 30 and 31 are representative of ambient conditions. However, the evaluation of physical soil characteristics does support that conclusion.

Physical soil characteristics were evaluated for IR Sites 30 and 31 and compared to adjacent areas (IR Site 25, the East Housing Area, the College of Alameda campus, and FISCA) and the PRC pink background area. Specifically, the following parameters were evaluated:

- gravel content
- soil type and grain-size distribution
- color differences in soil

The following subsections present more detail about the evaluations.

5.3.1 GRAVEL CONTENT

An evaluation of the gravel content of the fill material was performed for IR Sites 25, 30, and 31, the East Housing Area, and the College of Alameda campus. Boring logs from IR Sites 25, 30, and 31, the East Housing Area, and the College of Alameda campus were evaluated.

The fill soil at IR Sites 30 and 31 is composed of a coarse-grained sand and gravel mixture that is lithologically characteristic of an inland source. The evaluation demonstrates that soil at IR Sites 30 and 31 contains more gravel than soil at IR Site 25, which consists of more sand and clay. This difference in physical characteristics suggests that the fill material may be from different sources. The boring logs for the East Housing Area also repeatedly describe gravel in the soil in the majority of the borings.

IR Sites 25, 30, and 31

The percentage of gravel, sand, and fines (i.e., silt and clay) was evaluated for all available borings logs from IR Sites 25, 30, and 31. This evaluation included tabulating and reviewing the grain size from the boring logs and summarizing this information for comparative analysis (Table 1). The percentages of various grain sizes were recorded on most logs and were included in the evaluation. If the grain-size percentages were not recorded, then the percentage was estimated based on the percentages of gravel, sand, and fines for the assigned soil type (e.g., well-graded sand with gravel [SW]) presented in the American Society for Testing and Materials (ASTM) standard for visual classification (ASTM 1993).

In total, 488 boring logs from these three sites were evaluated to a depth of 8 feet bgs (Table 1). As shown in the table, there is significantly more gravel in the upper 4 feet of soil at IR Sites 30 and 31 than at IR Site 25. The average percentage of gravel by depth interval ranges up to 43 percent and 30 percent at IR Sites 30 and 31, respectively, yet is a maximum of only 7 percent at IR Site 25. Figure 7 shows the percentage of gravel at various depth intervals between 0 and 4 feet bgs for all three IR sites. Figure 8 consists of pie charts that graphically display the percentage of gravel, sand, and fines for the 0- to 2-foot-bgs intervals at IR Sites 25, 30, and 31.

While this statistical review focused on the upper 4 feet bgs, the composition of the soil at depths below 4 feet bgs at IR Sites 30 and 31 is also different from that at IR Site 25. IR Sites 30 and 31 have a large percentage of fines (especially clay) compared to IR Site 25, which has more silt and fine sand. Differences in the distribution of sand and fines can be seen in Table 1.

College of Alameda Campus and East Housing Area

Ten borings were drilled at the College of Alameda campus, and sampling results were used as background data for the FISCA RI Report (PRC and Versar 1996). A review of boring logs for the College of Alameda campus showed that the lithology in the northwestern portion of the campus includes gravel, while the lithology of the remainder of the campus includes of hydraulic fill material, primarily fine sand and clay. The fill history map (Figure 6) shows that a contact line between two fill events (fill in place by 1919 and fill in place by 1927) crosses the northwestern corner of the campus. A review of boring logs indicated that three of four borings in the northwestern corner (in the area with fill in place by 1927) contained gravel. One of these four borings from the 1927 fill event contained 60 percent gravel. Of the remaining six borings located in the area with fill in place by 1919, two borings contained gravel (up to 10 percent); all other borings contained no gravel and are characterized as sand and clay, typical of hydraulic fill soil. This evidence confirms the approximate location of the fill contact lines in this area and supports the conclusion that the College of Alameda campus is characterized by a mixture of fill materials from two sources, one a gravel-laden fill material and one a hydraulic fill material.

Boring logs for the East Housing Area were also reviewed. Although descriptions in these boring logs did not follow the Unified Soil Classification System or ASTM standards,

they did document the presence of gravel. Forty-six of 65 boring logs (71 percent) from the East Housing Area contained the notation that gravel was present. This suggests that the fill soils in the East Housing Area likely have a gravel content more similar to the fill soils at IR Sites 30 and 31 than to the hydraulic fill soil at IR Site 25. This information supports the premise of gravel-laden fill material being present in the area with fill soil in place by 1927, which includes IR Sites 30 and 31 (Figure 6).

5.3.2 SOIL TYPE AND GRAIN-SIZE DISTRIBUTION

Soil samples collected for geotechnical analyses at IR Sites 25, 30, 31, and 35 and FISCA (outside the FISCA Warehouse Area between IR Site 31 and the East Housing Area) provide information on soil type classification and grain-size distribution. Information from IR Site 35, located west of Main Street, is considered representative data for the PRC pink background area because the sample locations for this site are widespread and fairly well dispersed across the PRC pink background area. Geotechnical results from FISCA are included to show the similarity to IR Site 25, since they are part of the same hydraulic fill event, and to show contrast to IR Sites 30 and 31.

Results confirm a higher gravel content at IR Sites 30 and 31 and indicate that the fill soil is different from that of some other sites in the PRC pink background area. The evaluation was useful in distinguishing differences in soil types (lithologies) between sites built with hydraulic fill soil and those built with construction fill material. Using ASTM Standard D422 for particle-size analysis, geotechnical laboratories determine the percentage of gravel, sand, silt, and clay for a given sample and use these data to assign a soil type.

Soil type and grain-size distribution results are presented in Table 2. These data support the assessment of gravel content discussed below and show significant lithologic differences among these sites. As shown in the table, sites filled with hydraulic material (e.g., IR Sites 25 and 35 and FISCA) are typically characterized by poorly graded, fine-grained sand and silt (SP, SM, and ML). Sites with gravel-laden fill material (e.g., IR Sites 30 and 31) are typically characterized by well-graded, coarse-grained sand and gravel mixtures (SW and GC).

Example grain-size distribution curves for IR Sites 30, 31, and 35 were plotted on Figure 9. A typical sand representative of hydraulic fill material contains a very narrow range of particle sizes (i.e., poorly graded [well sorted]) represented by a steep or near-vertical line as shown on Figure 9, while a typical sand or gravel representative of gravel-laden fill has a wide range of particle sizes (i.e., well graded [poorly sorted]). As shown on Figure 9, the IR Site 35 soil sample has a narrow range of particles sizes (typically representative of poorly graded sand with little or no gravel) compared to the wide range of particle sizes present in the soil samples from IR Sites 30 and 31. These lithologic differences indicate separate fill events and different source materials. The fine-grained materials were derived from hydraulic dredging of marine sediment, while the coarse-grained materials were likely derived from an inland fill source(s).

The following subsections summarize geotechnical results for IR Site 30 and 31 and each adjacent site and compare them to other sites.

IR Site 25

Eighteen geotechnical samples were collected and analyzed from IR Site 25 during the RI (Neptune 2002). Although grain-size distribution data were not available, soil classification indicates that the soil type is consistent with FISCA, IR Site 35, and other areas that are part of the PRC pink background area. Ten samples were classified as poorly graded fine-grained sand or silty sand. Seven samples were classified as silt or clay. Only one sample (from boring CH-08 near the northern boundary of IR Site 30) was classified as gravel.

IR Site 30

Nine geotechnical samples were collected and analyzed from IR Site 30 during the RI (BEI 2005). These samples were taken primarily from the deeper clay layer (below the gravel) to support vapor migration modeling efforts. There was, however, one gravel sample collected from 1 to 2 feet bgs to characterize the gravelly fill material. This sample was analyzed by the laboratory and reported to contain 42 percent gravel. This result is very similar to the average percentage of gravel (41 percent) at this depth, as calculated from information noted in the boring logs (Table 1).

IR Site 31

Fifteen geotechnical samples were collected and analyzed from IR Site 31 during the RI (CDM 2006a,b). Thirteen of these samples were classified as sand (i.e., 12 as SW and 1 as SM), and each of these contained gravel. Review of the grain-size distribution curves indicates a wide range of particle sizes including gravel; coarse-, medium-, and fine-grained sand; and silt and clay. Gravel content in sand samples ranged from 2 to 24 percent, with an average of 16 percent.

IR Site 35

Fourteen geotechnical samples were collected from IR Site 35 and analyzed during the RI/FS (BEI 2006). Twelve of these samples were classified as sand (i.e., six as SP-SM, five as SM, and one as SC), and two were classified as clay (CL). The grain-size distribution curves for IR Site 35 soil samples indicated a narrow range of particle sizes compared to the wide range of sizes present at IR Sites 30 and 31. The sand at IR Site 35 is generally very poorly graded, containing primarily fine-grained sand and little or no gravel. Only 3 of the 12 soil samples contained gravel.

The fine-grained, poorly graded sand and silty sand at IR Site 35 are the representative lithology throughout the PRC pink background area west of Main Street and are similar to soil at IR Site 25 and FISCA. The comparison with IR Site 35 is made because field observations and boring log data from this site as well as other sites in the immediate area (e.g., from the polynuclear aromatic hydrocarbon investigation at Transfer Parcel EDC-5) include a similar and consistent lithology.

FISCA (Outside the Warehouse Area)

This subsection addresses the area of FISCA that is outside the FISCA Warehouse Area between IR Site 31 and the East Housing Area. Five geotechnical samples from FISCA were collected and analyzed (PRC and Versar 1996). Two of these samples were classified as sand (i.e., one as SP-SM and one as SM), and three were classified as clay (CH). The sand grain-size distribution curves indicate that they are poorly graded and similar to sand in the PRC pink background area. Sand samples contained very different particle sizes from those collected at IR Site 31. This sand is generally very poorly graded (well sorted), containing primarily fine-grained sand and no gravel. None of the five geotechnical samples from FISCA contained gravel.

Overall, the designated soil type, differences in particle-size distribution, and differences in percentage of gravel indicate that the soil at IR Sites 25 and 35 and the FISCA area is different from soil at IR Sites 30 and 31.

5.3.3 COLOR DIFFERENCES IN SOIL

Soil color is another physical property that distinguishes the soil at IR Sites 30 and 31 from the soil at IR Site 25 and sites within the PRC pink background area west of Main Street. A simple comparison was made between records of soil color in boring logs from three sites: IR Sites 25, 30, and 31. A total of 488 boring logs from these sites were evaluated using the color yellow as the distinguishing characteristic. Results of the color comparison indicate that the color yellow is used to describe soil samples in 11 percent of the IR Site 25 boring logs. In contrast, the color yellow is used to describe soil samples in 83 and 63 percent of the boring logs from IR Sites 30 and 31, respectively.

The color of fill soil at these sites is variable; however, soil composed of sand and gravel mixtures at IR Sites 30 and 31 is commonly recorded as yellowish brown (10YR 5/6) or brownish yellow (10YR 6/6) using standardized color plates from the Munsell Soil Color Charts (Soil Test, Inc. 1975). This distinct yellowish color is in contrast to other sands from the PRC pink background area. Most sands from the PRC pink background area are described as olive brown (2.5Y 4/4) or very dark grayish brown (2.5Y 3/2).

The color yellow, derived using Munsell Soil Color Charts, therefore corresponds with the gravel-laden soil type commonly found at IR Sites 30 and 31 yet rarely found at IR Site 25. Review of other Alameda Point boring logs from sites west of Main Street within the PRC pink background area indicates that the color yellow is rarely noted.

6 CONCLUSIONS

Arsenic in soil at IR Sites 30 and 31 and cadmium, chromium, and vanadium in soil at IR Site 31 meet DTSC criteria for ambient populations and are not the result of a release from Navy activities. This finding is supported by analysis of arsenic at adjacent locations as well as the fill history and a comparison of the lithology. The basis for this finding is summarized as follows.

- **Data evaluation of arsenic at IR Sites 30 and 31.** Application of DTSC criteria to arsenic at IR Sites 30 and 31, considered separately, demonstrates that

arsenic concentrations in soil at these sites represent an ambient population. Additional statistical analysis shows that there are no outliers in the arsenic data sets. Therefore, identification of an off-site background location is not necessary to show that arsenic concentrations are present at ambient levels.

- **Other metals at IR Site 31.** Cadmium, chromium, and vanadium concentrations at IR Site 31 also meet the DTSC criteria for ambient populations. Iron meets the statistical criteria, but the probability plot indicates possible subpopulations. However, this characteristic of iron is also found in the PRC pink background data set and is not unexpected for a common rock-forming metal like iron. Lead concentrations do not meet the criteria for an ambient population, which is consistent with multiple environmental sources of lead.

- **Arsenic concentrations at adjacent locations.** Arsenic concentrations at adjacent locations provides additional evidence that fill soil with concentrations of arsenic that are different from soil sampled as part of the PRC pink background data set was used. IR Sites 30 and 31, along with the East Housing Area and portions of the FISCA Warehouse Area between the East Housing Area and IR Site 31, represent approximately 140 acres of land with similar concentrations of arsenic. The similar arsenic concentrations, which are higher than those in the PRC pink background data set, appear to be related to the composition of the fill soil.

- **Comparison to PRC pink background data set.** Inclusion of IR Sites 30 and 31 in the PRC pink background area is not appropriate based on the original criteria for grouping background data of similar fill history and similar iron and manganese concentrations. None of the samples included in the pink background data set were collected east of Main Street where IR Sites 30 and 31 are located. Compared with that data set, soil at IR Sites 30 and 31 has significantly higher concentrations of iron, and soil at IR Site 30 also has significantly higher concentrations of manganese. (Manganese data were not available for IR Site 31.) Concentrations of iron and manganese were used to group the background data sets because these metals were not typically associated with Navy activities.

- **Fill history and lithological evaluation.** An updated fill history shows that IR Sites 30 and 31 have a fill history different from the portion of the PRC pink background area west of Main Street. The lithological evaluation for IR Sites 25, 30, 31, and 35, the College of Alameda, FISCA, and the East Housing Area reveals differences in soil composition between some of the sites, which could reflect differences in sources of fill. Soil at IR Sites 30 and 31, the FISCA Warehouse Area, and the East Housing Area have higher gravel content than soil in other nearby areas. Additionally, the yellow color of the fill soil at IR Sites 30 and 31 distinguishes it from the fill soil at IR Site 25 and sites within the PRC pink background area west of Main Street.

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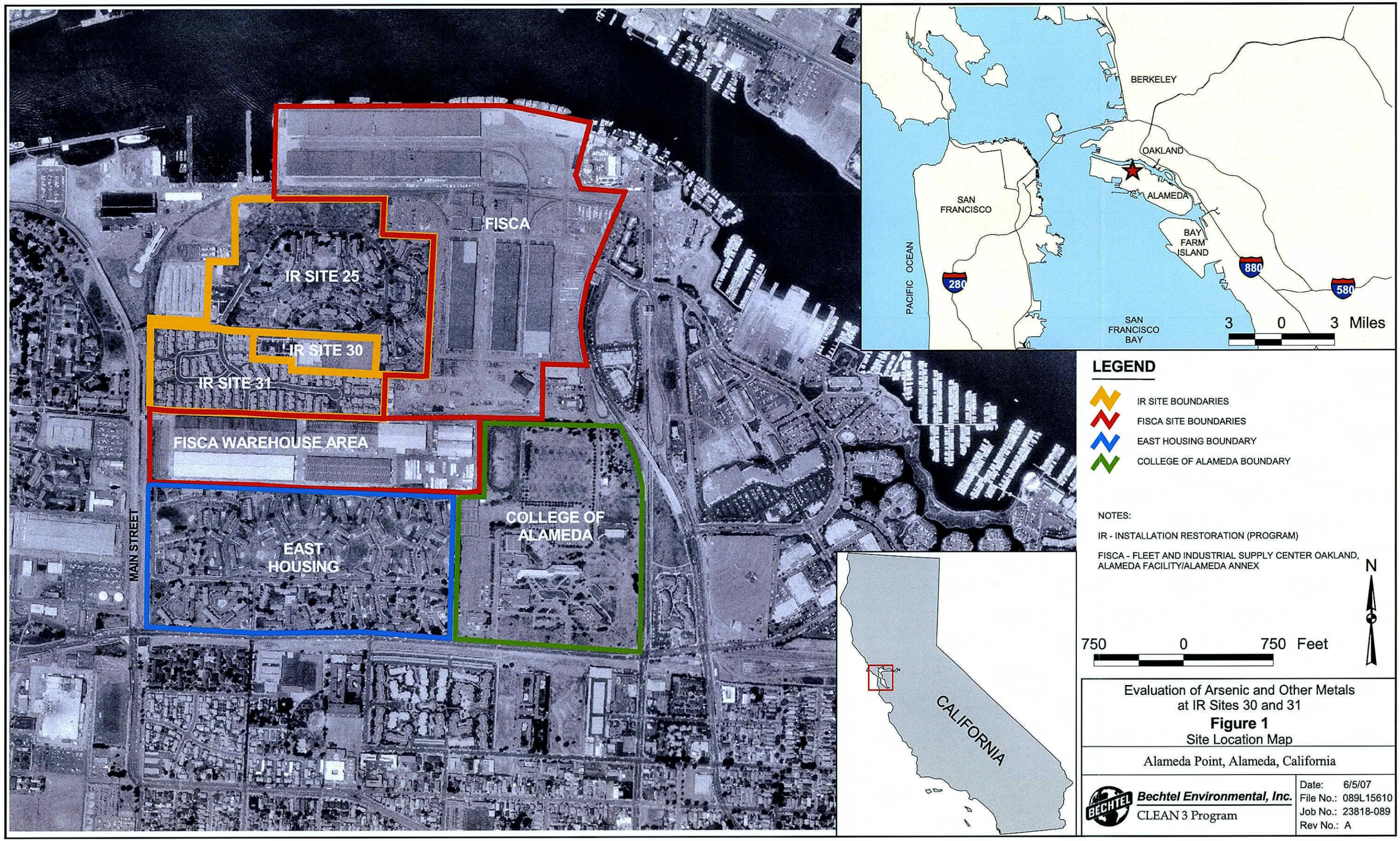
U.S. EPA. *See* United States Environmental Protection Agency.

USGS. *See* United States Geological Survey.

FIGURES



Evaluation of Arsenic and Other Metals at IR Sites 30 and 31

Figure 1

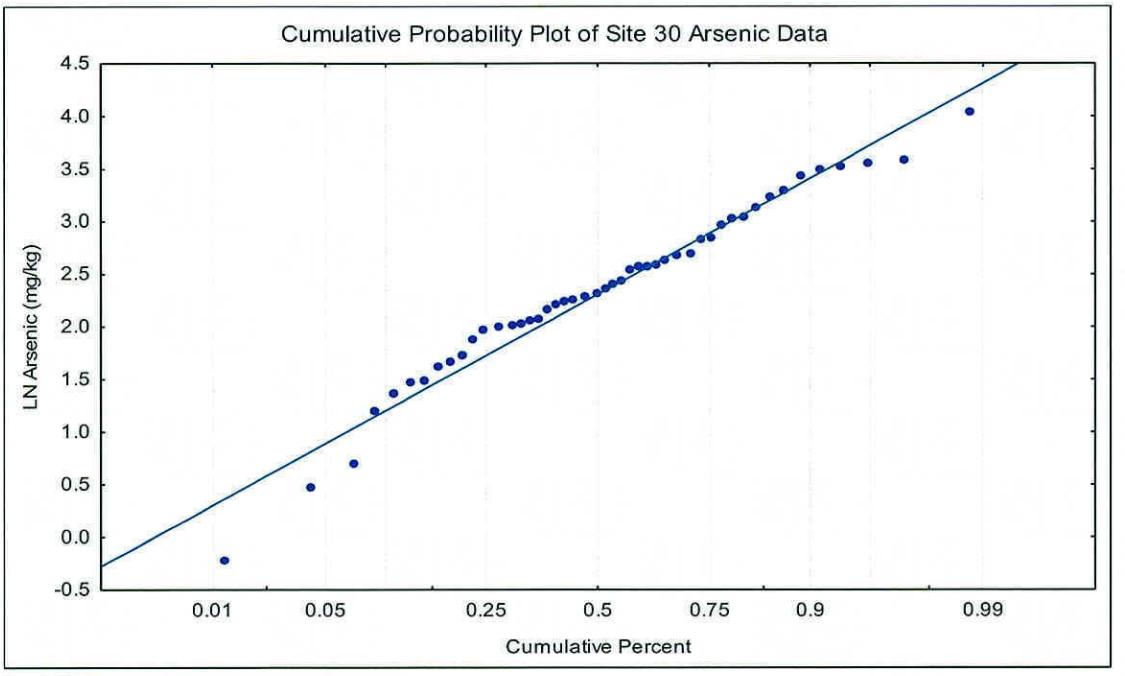
Site Location Map

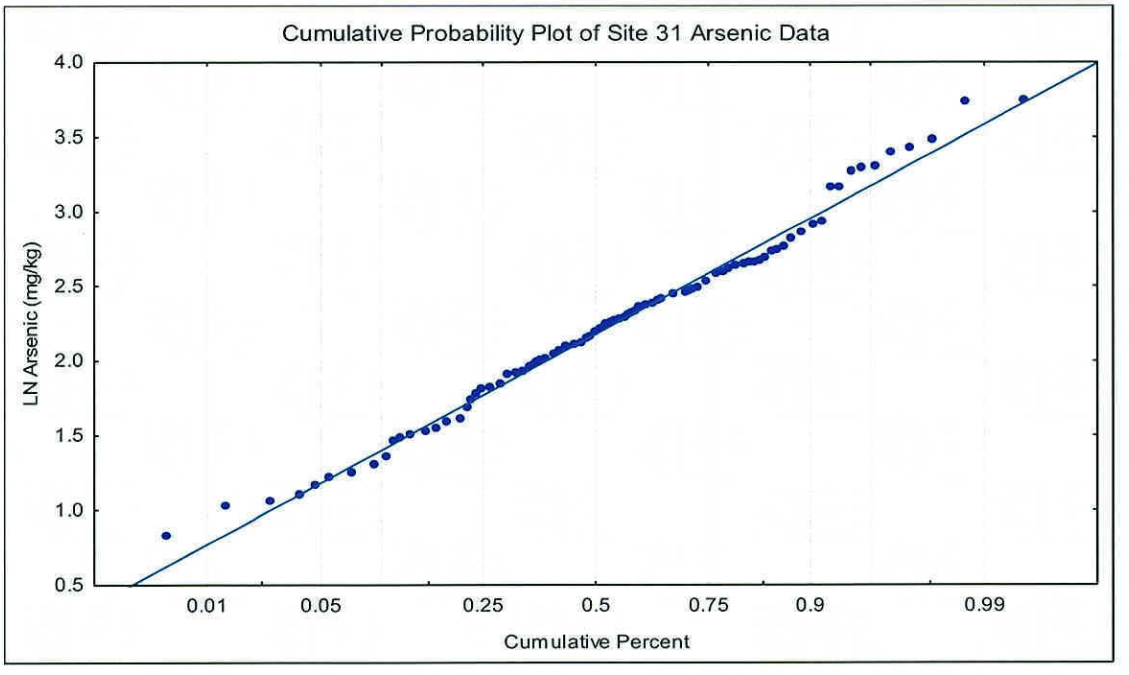
Alameda Point, Alameda, California

Bechtel Environmental, Inc.

CLEAN 3 Program

Date: 6/5/07
File No.: 089L15610
Job No.: 23818-089
Rev No.: A





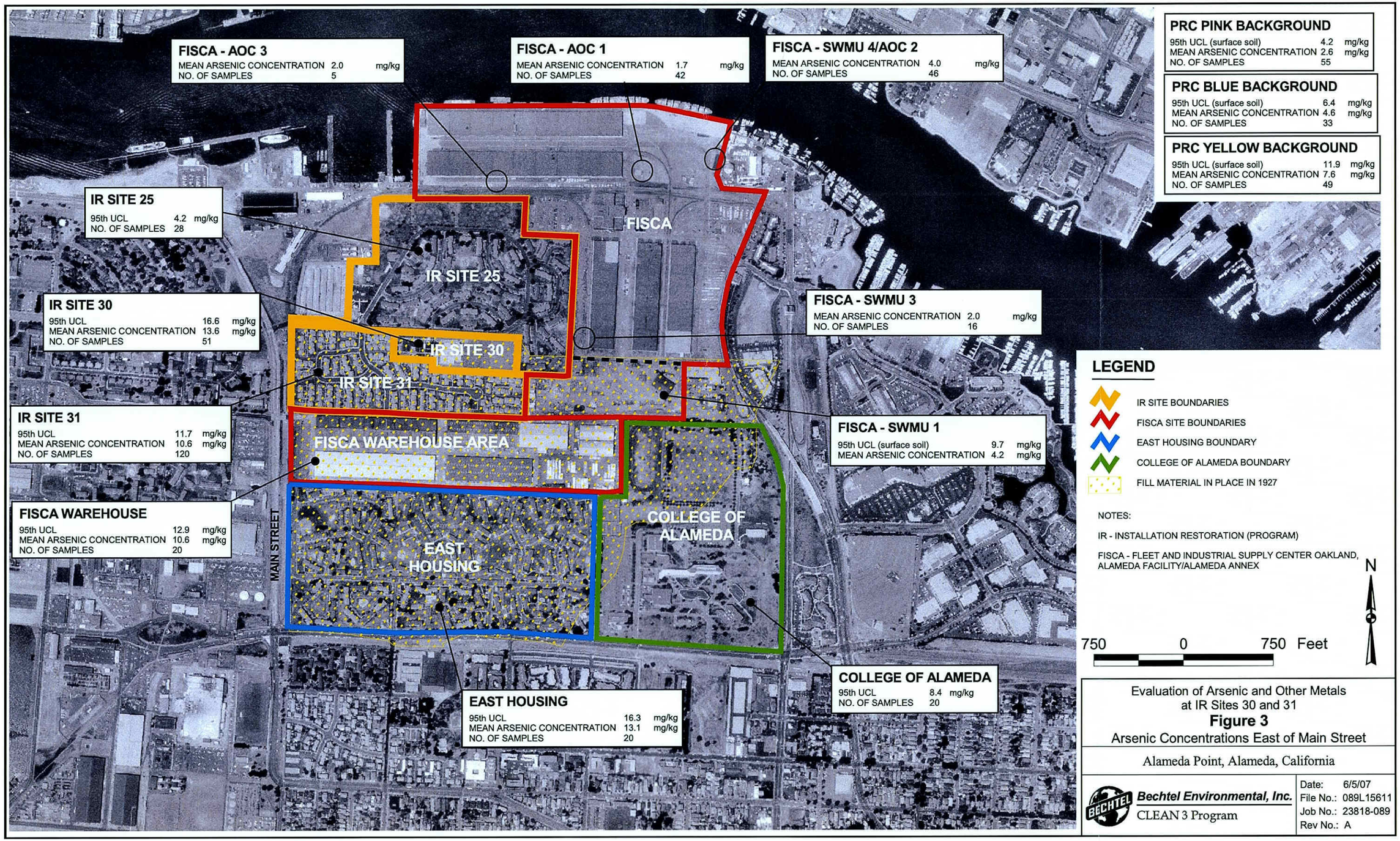
Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31

Figure 2
Cumulative Probability Plots for IR Sites 30 and 31

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/5/07
File No. 089002
Rev. D



Evaluation of Arsenic and Other Metals
at IR Sites 30 and 31

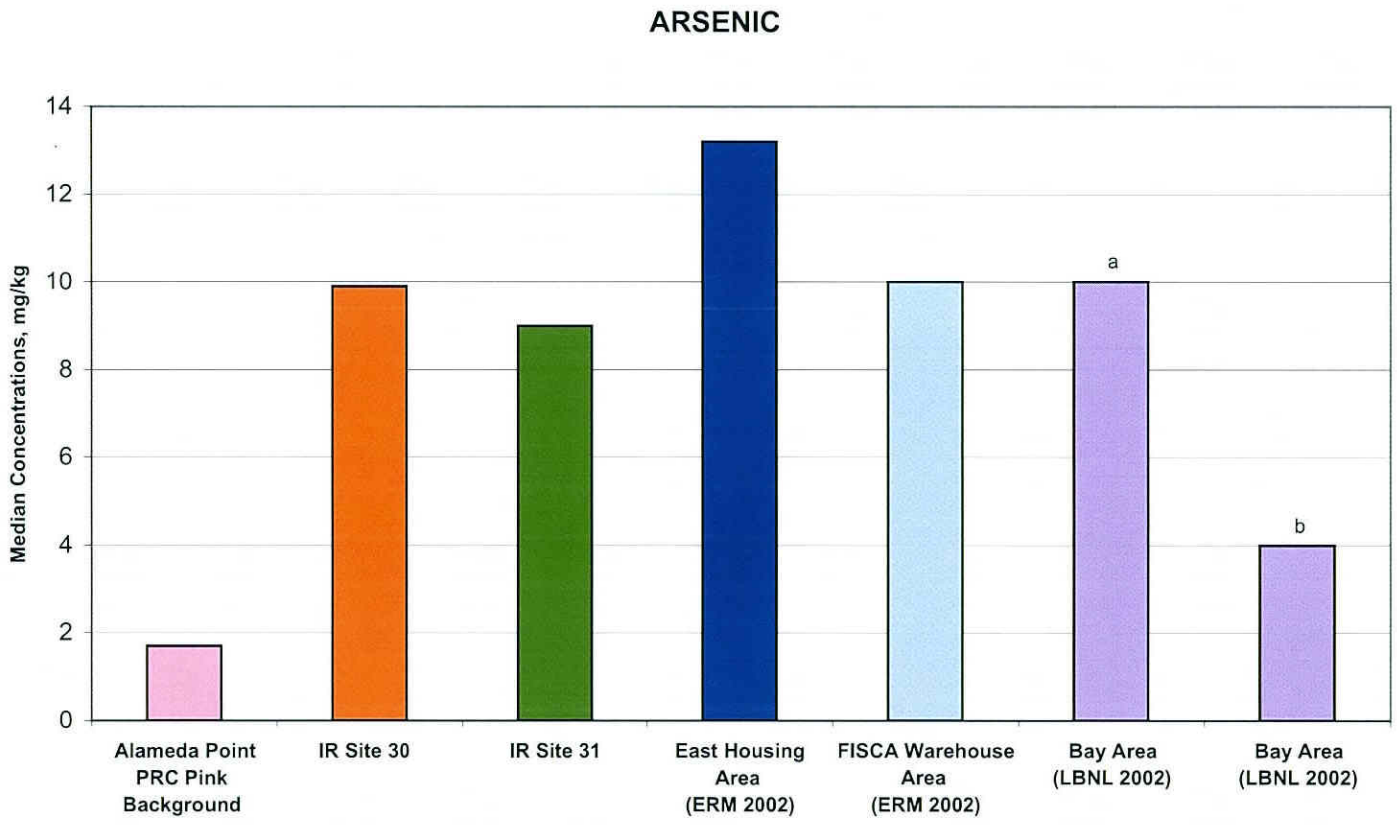
Figure 3

Arsenic Concentrations East of Main Street

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/5/07
File No.: 089L15611
Job No.: 23818-089
Rev No.: A



Notes:

[a] Great Valley Group

[b] all data

Source for PRC Pink Background: Table B-1 in Attachment B

Source for East Housing and FISCA Warehouse Area Data:

ERM. 2002. Updated Risk Analysis of Shallow Soil and Groundwater Conditions, Fleet and Industrial Supply Center, Oakland, Alameda Facility/Alameda Annex (FISCA) Warehouse Area and Alameda Point East Housing Area, Alameda, California.

Source for Bay Area Background Data:

LBNL. 2002. Lawrence Berkeley National Laboratory. *Analysis of Background Distributions of Metals in the Soil at the Lawrence Berkeley National Laboratory*. ERP-2805 June 27.

Note for FISCA Warehouse Area Data:

This data set includes only data for the area between IR Site 31 and East Housing Area reported in ERM 2002.

Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31

Figure 4

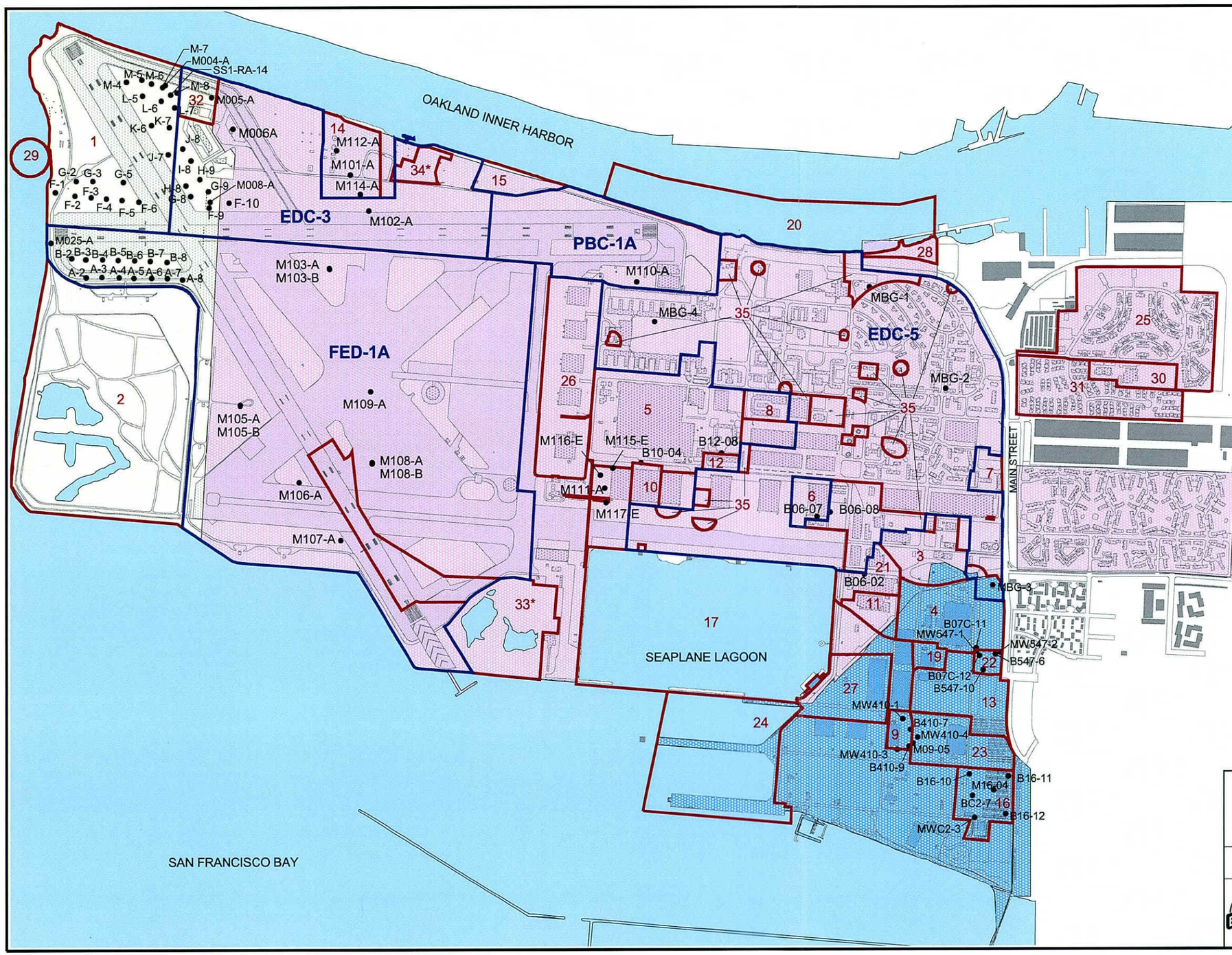
Comparison of Median Values for Arsenic

Alameda Point, Alameda, California

Bechtel Environmental, Inc.

CLEAN 3 Program

Date: 06/07/07
File No. 089009
Rev. c



LEGEND

- MBG-4 — BACKGROUND SOIL SAMPLE LOCATION
- BUILDING OR STRUCTURE
- ROAD OR RUNWAY
- FILL AREA 1
- FILL AREA 2
- FILL AREA 3
- WATER
- IR SITE BOUNDARY
- TRANSFER PARCEL BOUNDARY

NOTES:

*SITE BOUNDARIES FOR IR SITES 33 AND 34 ARE ESTIMATED AND THEREFORE SUBJECT TO CHANGE

IR – INSTALLATION RESTORATION (PROGRAM)

RI/FS – REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SOURCE:

PRC ENVIRONMENTAL MANAGEMENT, INC. 1997. SAMPLES FOR USE AS BACKGROUND, LETTER REPORT, NAVAL AIR STATION (NAS) ALAMEDA, ALAMEDA, CALIFORNIA. PREPARED FOR U.S. DEPARTMENT OF THE NAVY, ENGINEERING FIELD ACTIVITY WEST, NAVAL FACILITIES ENGINEERING COMMAND, SAN BRUNO, CALIFORNIA. FEBRUARY 6.

N

1200 0 1200 Feet

Evaluation of Arsenic and Other Metals at IR Sites 30 and 31

Figure 5

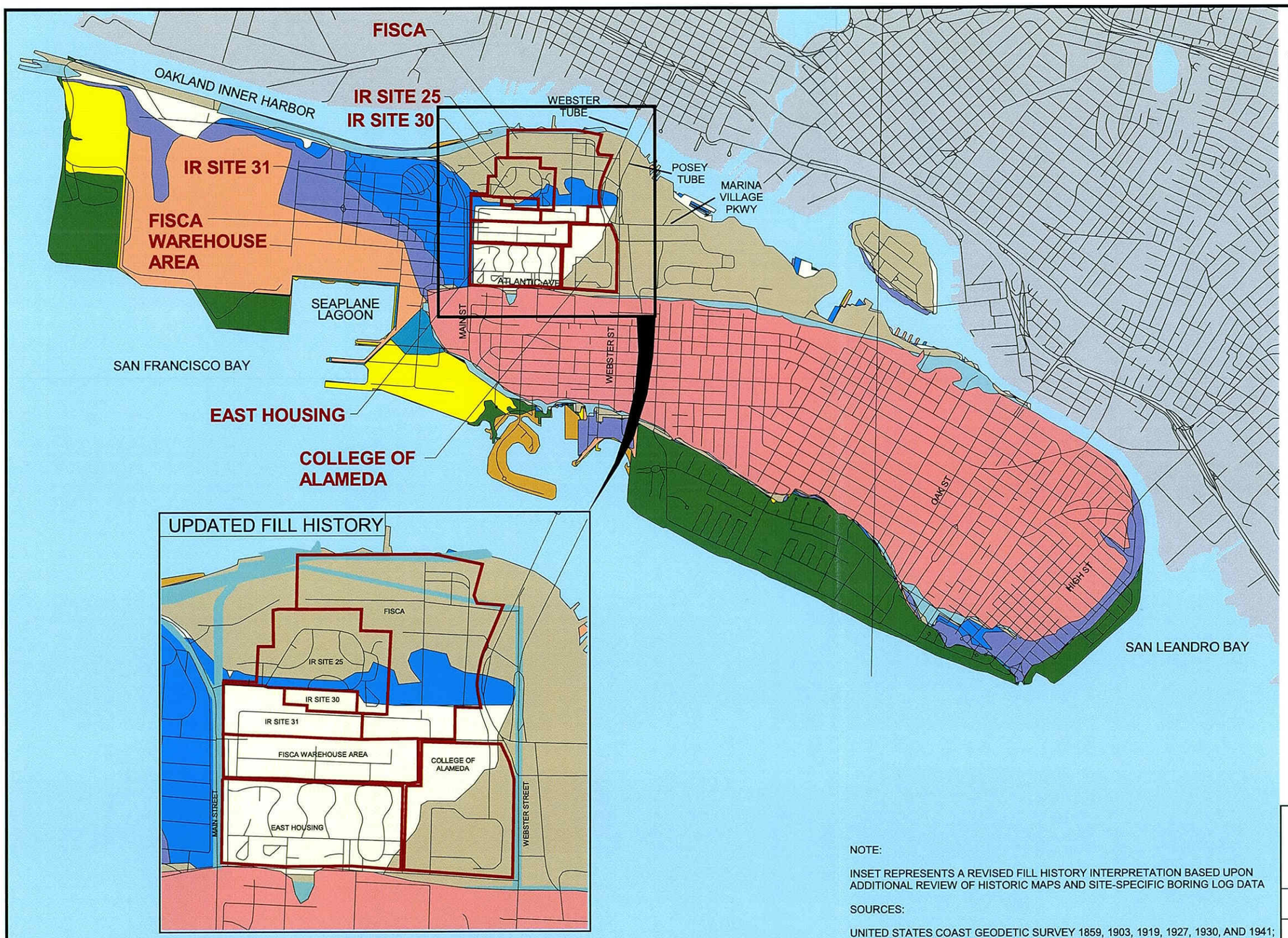
PRC Soil Background Areas

Alameda Point, Alameda, California

Bechtel Environmental, Inc.

CLEAN 3 Program

Date: 6/6/07
File No.: 089L15612
Job No.: 23818-089
Rev No.: B



LEGEND

- SITE BOUNDARIES
- DRY LAND 1859
- FILL MATERIAL IN PLACE IN 1903
- FILL MATERIAL IN PLACE IN 1919
- FILL MATERIAL IN PLACE IN 1927
- FILL MATERIAL IN PLACE IN 1930
- FILL MATERIAL IN PLACE IN 1936
- FILL MATERIAL IN PLACE IN 1941
- FILL MATERIAL IN PLACE IN 1945
- FILL MATERIAL IN PLACE IN 1949
- FILL MATERIAL IN PLACE IN 1959
- FILL MATERIAL IN PLACE IN 1973
- WATER

NOTES:

IR - INSTALLATION RESTORATION (PROGRAM)

FISCA - FLEET AND INDUSTRIAL SUPPLY CENTER OAKLAND, ALAMEDA FACILITY/ALAMEDA ANNEX

N

3000 0 3000 Feet

NOTE:

INSET REPRESENTS A REVISED FILL HISTORY INTERPRETATION BASED UPON ADDITIONAL REVIEW OF HISTORIC MAPS AND SITE-SPECIFIC BORING LOG DATA

SOURCES:

UNITED STATES COAST GEODETIC SURVEY 1859, 1903, 1919, 1927, 1930, AND 1941;
OAKLAND PORT OF BOARD COMMISSIONERS 1936 AND 1945;
UNITED STATES GEOLOGICAL SURVEY 1949, 1959
[PHOTO REVISED 1968 AND 1973], 1980a, 1980b, 1980c, AND 1980d;
E.C. SESSIONS 1906.

Evaluation of Arsenic and Other Metals
at IR Sites 30 and 31

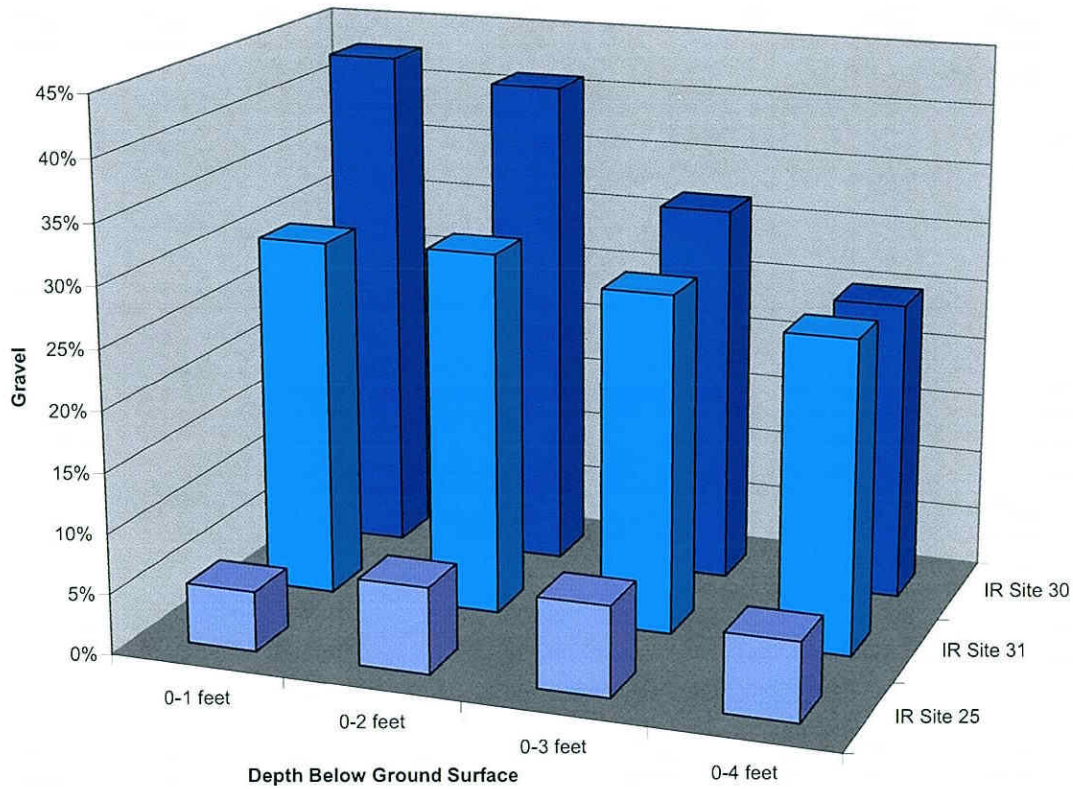
Figure 6

History of Artificial Fill (1859-1973)

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/5/07
File No.: 089L15613
Job No.: 23818-089
Rev No.: A

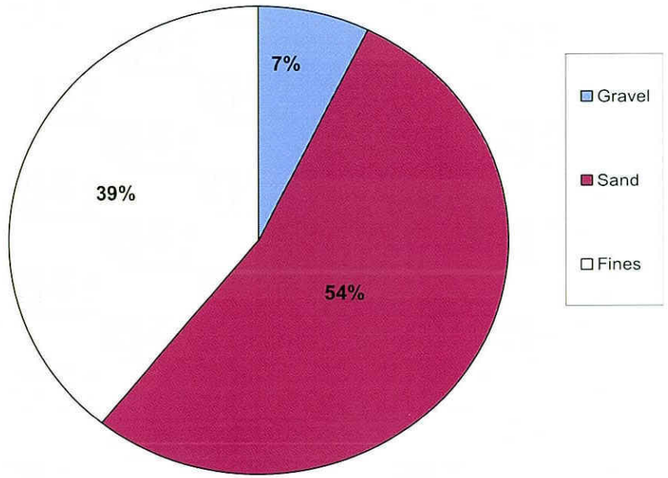


Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31

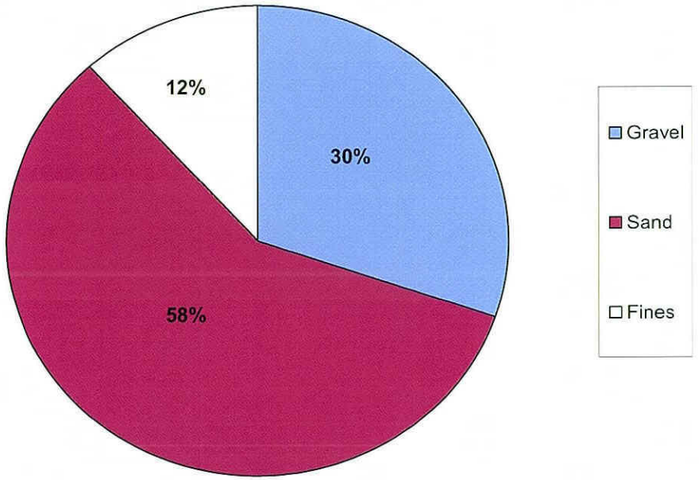
Figure 7
Percent Gravel at 0–4 Feet Below Ground Surface at IR Sites 25, 30, and 31

Alameda Point, Alameda, California

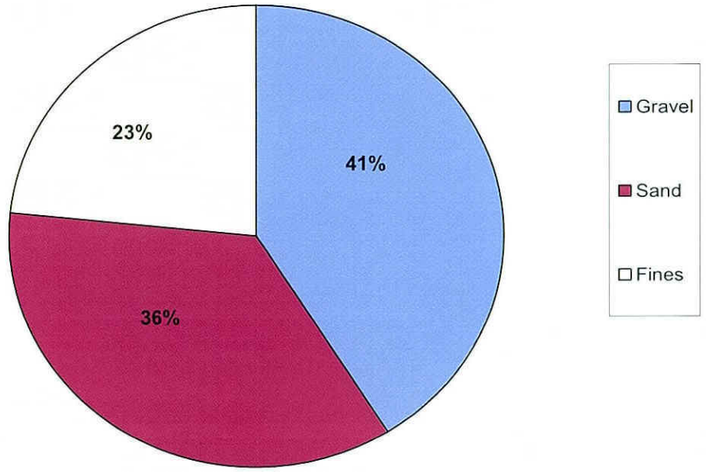
BECHTEL	***Bechtel Environmental, Inc.*** CLEAN 3 Program	Date: 06/07/07 File No. 089005 Rev. D



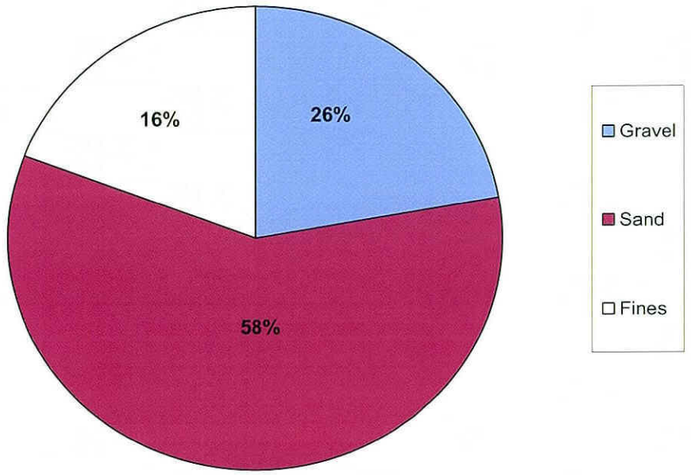
IR Site 25 Grain-Size Distribution
(0–2 feet bgs)



IR Site 31 Grain-Size Distribution
(0–2 feet bgs)



IR Site 30 Grain-Size Distribution
(0–2 feet bgs)



IR Site 31 Grain-Size Distribution
(2–4 feet bgs)

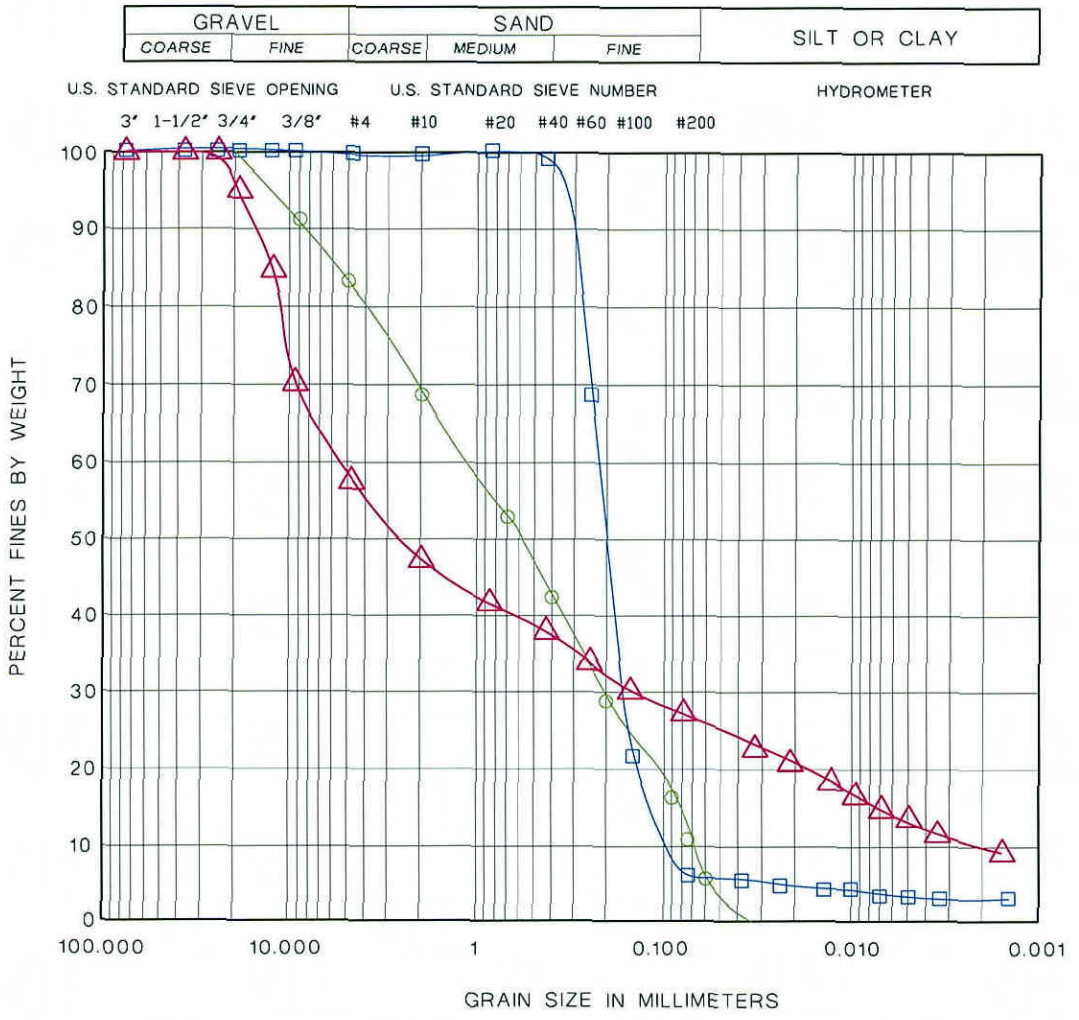
Evaluation of Arsenic and Other Metals
in Soil at IR Sites 30 and 31

Figure 8
Grain-Size Distribution for IR Sites 25, 30, and 31

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 06/05/07
File No. 089006
Rev. B



LEGEND

- IR SITE 30 - GC (UPLAND GRAVEL SOURCE)
- IR SITE 31 - SW (UPLAND - SAND & GRAVEL MIXTURE)
- IR SITE 35 - SP-SM (TYPICAL HYDRAULIC FILL)

GC - CLAYEY GRAVEL

SW - WELL GRADED SAND WITH GRAVEL

SP-SM - POORLY GRADED SAND - SILTY SAND

Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31

Figure 9

Typical Grain Size Distribution Curves

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/7/07
File No: 089C15614
Job No: 23818-089
Rev No: C

TABLES

Table 1
Average Percentage of Gravel by Depth at IR Sites 25, 30, and 31

Site	Total Boring Logs	DEPTH RANGE (feet bgs)		AVERAGE PERCENTAGE		
		Top	Bottom	Gravel	Sand	Fines
IR Site 25[a]	198	0	1	5	52	43
		0	2	7	54	39
		0	3	7	56	37
		0	4	7	54	40
		2	4	6	54	40
		4	6	2	54	44
		4	8	1	59	40
		6	8	1	64	36
IR Site 30[b]	78	0	1	43	37	21
		0	2	41	36	23
		0	3	32	33	35
		0	4	25	31	44
		2	4	9	28	63
		4	6	1	18	82
		4	8	1	27	72
		6	8	0	38	62
IR Site 31[c]	212	0	1	30	58	12
		0	2	30	58	12
		0	3	28	59	13
		0	4	26	58	16
		2	4	22	59	19
		4	6	9	45	46
		4	8	5	34	60
		6	8	2	23	75

Notes:
[a] the percentages of gravel, sand, and fines were estimated for 15 percent of the boring logs based on ASTM standards for visual classification because the percentages were not noted on the logs
[b] the percentages of gravel, sand, and fines were estimated for 13 percent of the boring logs based on ASTM standards for visual classification because the percentages were not noted on the logs
[c] the percentages of gravel, sand, and fines were estimated for 50 percent of the boring logs based on ASTM standards for visual classification because the percentages were not noted on the logs

Acronyms/Abbreviations:
ASTM – *American Society for Testing and Materials*
bgs – below ground surface
IR – Installation Restoration (Program)

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Table 2
Soil Type and Grain-Size Distribution Summary for
IR Sites 25, 30, 31, and 35 and FISCA Annex

Site	Boring Number	Sample Number	Depth (feet bgs)	Soil Type	GRAIN SIZE PERCENTAGE		
					Gravel	Sand	Fines[a]
IR Site 25	CH-08	178-0035	2.0	GC	NA	NA	NA
	CH-03	181-0800	7.0	SP	NA	NA	NA
	CH-05	181-0802	7.0	SP	NA	NA	NA
	CH-09	176-0031	2.0	SP	NA	NA	NA
	CH-02	181-0798	7.0	SP-SM	NA	NA	NA
	CH-03	181-0799	2.0	SP-SM	NA	NA	NA
	CH-06	181-0803	2.0	SP-SM	NA	NA	NA
	CH-09	176-0032	7.0	SP-SM	NA	NA	NA
	CH-01	181-0796	7.0	SM	NA	NA	NA
	CH-02	181-0797	2.0	SM	NA	NA	NA
	CH-05	181-0801	2.0	SM	NA	NA	NA
	CH-04	181-0806	7.0	ML	NA	NA	NA
	CH-06	181-0804	7.0	ML	NA	NA	NA
	CH-10	181-0807	2.0	ML	NA	NA	NA
	CH-10	181-0808	7.0	ML	NA	NA	NA
	CH-01	181-0795	2.0	CL	NA	NA	NA
	CH-08	178-0036	7.0	CL	NA	NA	NA
	CH-04	181-0805	2.0	CL	NA	NA	NA
IR Site 30[b]	C3S030B050	C072S201	1.0–2.0	GC	42	31	27
	C3S030B064	C072S206	3.0–3.5	SP-SM	0	90	10
	C3S030B051	C072S200	3.0–4.0	CH	0	5	95
	C3S030B059	C072S202	2.5–3.5	CH	0	3	97
	C3S030B065	C072S203	4.5–5.5	CH	0	2	98
	C3S030B061	C072S204	2.0–3.0	CH	0	5	95
	C3S030B076	C072S207	2.5–3.5	CH	0	3	97
	C3S030B078	C072S205	3.5–4.0	CL	0	20	80
	C3S030B074	C072S208	1.0–2.0	CL	0	4	96
IR Site 31	3122	31066	0.0–2.0	SW	17	73	11
	3113	31037	0.0–2.0	SW	24	72	4
	3113	31038	2.0–4.0	SW	14	73	13
	3104	31007	0.0–2.0	SW	18	71	11
	3104	31008	2.0–4.0	SW	15	77	8
	3132	31087	0.0–2.0	SW	20	73	6
	3132	31088	2.0–4.0	SW	11	78	11
	3132	31090	5.0–7.0	SW	10	81	9
	3102	31144	0.0–2.0	SW	21	74	5
	3102	31145	2.0–4.0	SW	21	74	5

Table 2 (continued)

Site	Boring Number	Sample Number	Depth (feet bgs)	Soil Type	GRAIN SIZE PERCENTAGE		
					Gravel	Sand	Fines[a]
IR Site 31 (continued)	3127	31081	0.0–2.0	SW	23	71	6
	3127	31082	2.0–4.0	SW	2	89	10
	3113	31039	4.0–6.0	SM	5	79	16
	3122	31068	2.0–4.0	ML	0	27	73
	3104	31009	4.0–6.0	ML	0	4	96
IR Site 35	A11SB03	C077S178	2.5–4.0	SP-SM	0	95	5
	A11SB03	C077S179	6.5–8.0	SP-SM	0	95	5
	A18SB04	C077S311	2.5–3.0	SP-SM	0	95	5
	A23SB15	C077S395	2.5–3.5	SP-SM	0	92	8
	A18SB03	C077S308	2.5–3.0	SP-SM	0	94	6
	A23SB37	C077S443	2.0–3.5	SP-SM	0	94	6
	A02SB02	C077S026	4.0–4.5	SM	5	78	17
	A02SB03	C077S028	2.5–4.0	SM	18	67	15
	A17SB01	C077S281	0.5–2.0	SM	12	73	15
	A17SB01	C077S282	2.5–4.0	SM	0	88	12
	A23SB37	C077S444	5.0–6.5	SM	0	73	27
	A15SB02	C077S265	2.5–3.5	SC	0	63	37
	A15SB02	C077S266	5.0–6.0	CL	0	3	97
	A23SB15	C077S396	6.5–7.5	CL	0	15	85
FISCA Annex	A38	A38-9.0	9.0	SP-SM	0	90	10
	S23	S23-10	10.0	SM	0	77	23
	A72	A72-9	9.0	CH	0	2	99
	S1	S1-9.5	9.5	CH	0	2	98
	S1	S1-15.5	15.5	CH	0	1	99

Notes:
[a] fines represent a combination of silt and clay
[b] the soil type results for IR Site 30 reflect the original purpose of the sampling, which included evaluation of the physical properties of the clay for the vapor transport modeling efforts; the overlying gravel was not generally collected for geotechnical analysis (BEI 2005)

Acronyms/Abbreviations:
bgs – below ground surface
CH – fat clay
CL – lean clay
FISCA – Fleet and Industrial Supply Center Alameda
GC – clayey gravel
IR – Installation Restoration (Program)
ML – silt
NA – not available
SC – clayey sand
SM – silty sand
SP – poorly graded sand
SW – well graded sand

ATTACHMENT A

SUPPORTING INFORMATION FOR STATISTICAL ANALYSIS

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A-1 Probability Plots for Select Metals at IR Site 31 and Iron in Pink Background

A-2 Box Plots of Arsenic Concentrations in IR Sites 30 and 31 and East Housing Area Data Sets

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A-1 Arsenic Concentrations at IR Sites 30 and 31 and the East Housing Area

A-2 Results of Distributional Testing

A-3 Results of Rosner's Outlier Test

A-4 Results of Distributional Testing for Select Metals at IR Site 31

ACRONYMS/ABBREVIATIONS

bgs	below ground surface
CLEAN	Comprehensive Long-Term Environmental Action Navy
CTO	contract task order
DTSC	(California Environmental Protection Agency) Department of Toxic Substances Control
IR	Installation Restoration (Program)
IVP	individual value plot
mg/kg	milligrams per kilogram
NAVFAC	Naval Facilities Engineering Command
RI	remedial investigation
WRS	Wilcoxon rank sum

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Attachment A
SUPPORTING INFORMATION FOR STATISTICAL ANALYSIS

This attachment presents supporting information for the statistical analysis of arsenic data at Installation Restoration (IR) Program Sites 30 and 31 and data for five additional metals (cadmium, chromium, iron, lead, and vanadium) at IR Site 31, as presented in Appendix H2. A site-specific statistical methodology was used to determine whether arsenic concentrations in soil at IR Sites 30 and 31 are ambient (naturally occurring) or related to Navy activities. The evaluation was done in three steps.

1. Evaluation of Arsenic Data at IR Sites 30 and 31 – California Environmental Protection Agency Department of Toxic Substances Control (DTSC) policy was followed to evaluate the distributional characteristics of arsenic in soil at IR Sites 30 and 31 (DTSC 1997). The DTSC policy sets criteria for determining whether a data set is from one population and therefore representative of ambient concentrations, or from multiple populations, which may indicate that releases have occurred.

2. Evaluation of Select Metals at IR Site 31 – The process used for arsenic was also applied to cadmium, chromium, iron, lead, and vanadium in soil at IR Site 31. These five metals were included in the statistical evaluation based on regulatory agency comments on the draft Soil Remedial Investigation (RI) Report – Revision 1 for IR Site 31 because the metals were reported at concentrations above a risk-based screening level, were risk drivers, or were present in groundwater at concentrations above historical levels.

3. Comparison of IR Sites 30 and 31Arsenic Data With East Housing Area Data – The concentrations of arsenic in soil at IR Sites 30 and 31 were compared with data from the East Housing Area. Concentrations of arsenic and other metals in the East Housing Area can be considered ambient because the area was used only for residential housing and not for industrial Navy activities. The East Housing Area is not proposed as a background location for IR Sites 30 and 31 because a background location is not needed once it has been established that the arsenic concentrations, considered separately at IR Site 30 and 31, meet DTSC criteria for an ambient population.

The statistical evaluations are described below. The descriptions are supported by graphs and tables that are either specific to this attachment or associated with Appendix H2.

Data used in the statistical evaluation are presented in Table A-1 and are ranked from highest to lowest concentrations. The nondetect results are highlighted, and the value listed is one-half the reporting limit. A proxy value of one-half the reporting limit was used for all graphs and calculations with the exception of the Gehan test, which uses the full reporting limit.

The following describes the data sets used in this attachment.

- IR Site 30 – The data set consists of 50 data points from the 0- to 5-foot below ground surface (bgs) vadose zone data set that was used in the risk assessment conducted during the RI for IR Site 30 (BEI 2005). One sample was removed from the data set that was used in the risk assessment because the location of this sample was the subject of a removal action and the soil is no longer present.

- IR Site 31 – The data set consists of 120 data points from the 0- to 7-foot bgs vadose zone data set that was used in the risk assessment conducted during the RI for IR Site 31 (CDM 2006). Two depth intervals were evaluated: 2 to 7 feet bgs and 0 to 7 feet bgs. Soil in the 0- to 2-foot-bgs interval was imported in the early 1990s as construction fill for current housing. Therefore, the upper 2 feet of soil was not impacted by Navy activities.
- East Housing Area – The data set consists of 21 data points collected from the surface to 4.5 feet bgs (ERM 2002).

A1 EVALUATION OF ARSENIC DATA AT IR SITES 30 AND 31

This section describes the methodology used to evaluate the distribution of arsenic concentrations in soil at IR Sites 30 and 31. The primary purpose of the evaluation was to determine whether arsenic data sets from IR Sites 30 and 31 represent single populations.

The DTSC policy describes criteria for determining whether there are multiple populations represented by a data set (suggesting contamination) or only a single population (ambient levels). The policy recommends a multifaceted approach including 1) calculation of the range and coefficient of variation, 2) distributional testing, and 3) examination of probability plots. All three approaches were used to evaluate data sets from IR Sites 30 and 31. In addition, a test of outliers was conducted.

A1.1 Range and Coefficient of Variation

DTSC criteria for determining one population include a range of detected values that is no more than two orders of magnitude (i.e., a ratio of the maximum to minimum value that does not exceed 100) and a coefficient of variation that is not greater than 1. The coefficient of variation is equal to the standard deviation divided by the mean. The arsenic concentration ranges and coefficients of variation for IR Sites 30 and 31 meet these criteria as follows.

- IR Site 30 – Concentrations range from 0.8 to 56.3 milligrams per kilogram (mg/kg) (a ratio of 70), and the coefficient of variation is 0.81.
- IR Site 31, 2 to 7 feet – Concentrations range from 2.3 to 42.4 mg/kg (a ratio of 18), and the coefficient of variation is 0.69.
- IR Site 31, 0 to 7 feet – Concentrations range from 2.3 to 42.4 mg/kg (a ratio of 18), and the coefficient of variation is 0.69.

Additional summary statistics for IR Sites 30 and 31 are presented in Attachment B Tables B-4 and B-5, respectively.

A1.2 Distributional Testing

Results of distributional testing (Table A-2) show that IR Sites 30 and 31 arsenic data are lognormally distributed, without removal of any high values. Probability plots of the logtransformed data are shown on Figure 2 of the main report. This conformance to the

lognormal distribution indicates that the arsenic data for each site represent a single population with no outliers. In fact, the Shapiro-Wilk normality test can be used as an outlier identification method (Gibbons 1994) where values are removed one at a time until a normal or lognormal distribution is obtained. Statistica (StatSoft 2004) was used to conduct the Shapiro-Wilk tests. If there are more than 50 observations, Statistica uses a modified version of the Shapiro-Wilk test.

In summary, distributional testing indicates that arsenic data for IR Sites 30 and 31 represent single, lognormal populations. Results of distributional testing are presented in Table A-2.

A1.3 Probability Plots and Outlier Tests

Probability plots of IR Sites 30 and 31 arsenic concentrations in soil are shown on Figure 2 of Appendix H2. The data were logtransformed (natural log) prior to plotting because distributional testing showed that the data are lognormal. This finding is consistent with the DTSC policy, which states that trace inorganic constituents (metals) in soil are generally lognormally distributed.

Cumulative probability plots can be presented in more than one way. On the Figure 2 plots, the natural log of the arsenic concentration is plotted on the y-axis and the expected normal value is plotted on the x-axis.

The probability plots for IR Sites 30 and 31 show that the arsenic data closely follow the lognormal distribution (i.e., closely follow the straight line), with only minor gaps and inflections. It is common for the tails of the distribution to depart from the line, and for minor gaps and inflections to occur in the data set.

Although distributional testing indicates that there are no outliers in the data, a second method, Rosner's outlier test, was used to test values at the upper tails of the arsenic distributions. Rosner's test was conducted in Excel following procedures presented in United States Environmental Protection Agency's Statistical Methods for Practitioners (U.S. EPA 2006). Rosner's test was applied to the maximum value in the IR Site 30 data set and the highest two values in the IR Site 31 data sets (Table A-3). None of these values were identified as outliers.

Distributional testing was conducted on the data without the suspected outliers to assure that assumptions of the outlier test were satisfied. Rosner's test requires that the data without the outlier(s) are normally or lognormally distributed. The IR Sites 30 and 31 data sets are lognormal both before and after removal of the suspected outliers (Table A-2).

In summary, arsenic data for IR Sites 30 and 31 closely follow the lognormal distribution. Rosner's test indicates that high values are not outliers, thereby providing additional evidence that the data represent single populations.

A1.4 Conclusions

Multiple lines of evidence suggest that arsenic concentrations in soil at IR Sites 30 and 31 represent single, ambient populations. The lines of evidence include range and coefficient of variation, distributional testing, probability plots, and outlier tests.

A2 EVALUATION OF SELECT METALS AT IR SITE 31

The DTSC methodology, with additional statistics used to evaluate distributions of arsenic concentrations in soil at IR Sites 30 and 31, was applied to concentrations of five other metals at IR Site 31: cadmium, chromium, iron, lead, and vanadium. Results of that analysis are discussed here. Details of the methods are given in Section A1. The range of detected values and coefficient of variation for the five metals are as follows.

- Cadmium – Observations range from 0.017 to 1.5 mg/kg (a ratio of 88), and the coefficient of variation is 0.80.
- Chromium – Observations range from 3.0 to 197 mg/kg (a ratio of 66), and the coefficient of variation is 0.67.
- Iron – Observations range from 10,500 to 67,000 mg/kg (a ratio of 6.4), and the coefficient of variation is 0.35.
- Lead – Observations range from 6.1 to 168 mg/kg (a ratio of 28), and the coefficient of variation is 1.1.
- Vanadium – Observations range from 21to 104 mg/kg (a ratio of 5.0), and the coefficient of variation is 0.37.

The concentration ranges for all five metals are less than two orders of magnitude. The coefficient of variation is less than 1.0 for all metals except for lead, which has a coefficient of variation of 1.1. The coefficient of variation for lead does not meet the DTSC criterion that the coefficient of variation for an ambient population is typically less than 1.

Results of distributional testing (Table A-4) show that cadmium, chromium, and vanadium are lognormally distributed at a significance level of 2 percent. This step is not required by the DTSC policy but is an additional verification that the data are lognormally distributed and that there are no outliers. A review of the probability plots (Figure A-1) for those three metals indicates a potential low-end outlier for chromium. Rosner's test confirmed that the value is an outlier at a significance level of 5 percent (the test statistic, R, is equal to 3.930, which exceeds the critical value of 3.436). The chromium data remain lognormally distributed after removal of the low-end outlier; therefore, assumptions of Rosner's test are satisfied.

Probability plots for each of the five IR Site 31 metals are shown on Figure A-1. The logtransformed data were used because, based on the Shapiro-Wilk test statistic (Table A-4), the lognormal distribution provides a better fit than the normal distribution in all five instances. A probability plot of iron data for pink background soil is also presented.

The probability plots indicate that cadmium, chromium, and vanadium belong to one population, which is supported by the distributional tests. Iron and lead, however, appear to have multiple populations. The probability plot for iron in background soil also indicates the presence of multiple populations.

A3 COMPARISON OF IR SITES 30 AND 31 ARSENIC DATA WITH EAST HOUSING AREA DATA

This section describes the methodology used to compare arsenic concentrations in soil at IR Sites 30 and 31 with concentrations in soil at the East Housing Area. As noted earlier, East Housing Area data are not proposed as a background data set. This comparison is for informational purposes because the East Housing Area is near IR Sites 30 and 31 and has similar arsenic concentrations. A statistical similarity in arsenic concentrations supports the evidence that arsenic at IR Sites 30 and 31 is naturally occurring.

Statistical comparisons were conducted for the vadose zone soil intervals used in the risk assessments, which were 0 to 5 feet bgs for IR Site 30 and 2 to 7 feet bgs for IR Site 31. Arsenic concentration data for the East Housing Area were attained from samples collected at 0 to 4.5 feet bgs.

Three two-population statistical tests (Wilcoxon rank sum [WRS] test, Gehan test, and two-sample t-test) were conducted to compare the IR Sites 30 and 31 arsenic data with East Housing Area arsenic data. The tests were conducted to determine whether the populations of data from IR Sites 30 and 31 have concentrations that are statistically greater than those from the East Housing Area. The WRS and two-sample t-tests were conducted using Statistica, and the Gehan test was performed in Excel. Each test is described in more detail below.

Summary statistics for the arsenic data used in the comparisons are presented in Attachment B Tables B-4 (IR Site 30), B-5 (IR Site 31), and B-6 (East Housing Area). IR Site 30 has 50 arsenic observations, all of which are detects, and IR Site 31 has 120 arsenic observations, all of which are detects. Twelve of the 21 East Housing Area arsenic observations are detects, resulting in a detection frequency of 57 percent.

Statistical comparisons were conducted with and without the maximum East Housing Area arsenic value of 40.7 mg/kg. The maximum value is not a statistical outlier. If the maximum value were an outlier, then the Shapiro-Wilk test would not conclude that the data are lognormally distributed (see Section A1.2). A single high value in 21 samples is not unexpected. The next highest arsenic value is 20 mg/kg. Nevertheless, there could be a perception that this value is an outlier. Therefore, the two-sample statistical comparisons were conducted both with and without this value.

A3.1 Evaluation of Nondetect Observations

Nondetect observations in the East Housing Area data were evaluated to assure that they would not produce misleading conclusions when used in the statistical analysis. Nine of

the 21 East Housing Area arsenic observations are nondetects; five nondetects have a reporting limit of 10 mg/kg, and the remaining four have a reporting limit of 20 mg/kg.

Individual value plots (IVPs) of the nondetect and detected concentrations for the East Housing Area are shown on Figure A-2. A proxy value of one-half the reporting limit was used for all nondetects. (One-half the reporting limit was used for the nondetects in all graphs and statistical calculations with the exception of the Gehan test, which uses data at the reporting limit.) The IVPs show that nondetect proxy values are generally lower than the detects. Table A-1 supports the graphical analysis; only one detected observation, 9.96 mg/kg, is lower than the maximum nondetect proxy value of 10 mg/kg. Based on this evaluation, all nondetects were retained in the East Housing Area data set. The IVPs were produced using Minitab (2004).

A3.2 Box Plots

Box plots were constructed for all data sets to provide a visual representation of the data. It is important to have a visual representation of data to evaluate in conjunction with statistical comparisons. Therefore, box plots are often used by statisticians to aid in the interpretation of statistical comparison results; however, decisions are not made on the box plots alone. Statistica (StatSoft 2004) was used to generate the box plots. The plots (Figure A-2) were constructed using both the original and logtransformed data. The standard box plot was used in this analysis. The box itself contains the center 50 percent of data (i.e., the interquartile range), and the median is indicated as a horizontal line within the box. The top edge of the box is the 75th percentile, and the bottom edge is the 25th percentile. Vertical lines, sometimes called whiskers, extend to the last observation within one step beyond either end of the box. A step is 1.5 times the height of the box. Data points that fall outside the step are plotted individually. Although these individual points on box plots are commonly referred to as outliers, they may or may not be statistical outliers. Hypothesis tests such as the Rosner's test should be used to identify statistical outliers.

A3.3 Wilcoxon Rank Sum Test

There are two versions of the WRS test: the exact test and the large-sample approximation. If the size of the smaller sample does not exceed 20 and the size of the larger sample does not exceed 40, the exact version of the WRS test is used. Otherwise, the large-sample approximation version of the test is appropriate. The large-sample approximation is appropriate for this analysis. More details regarding the WRS test are presented in Statistical Methods for Environmental Pollution Monitoring (Gilbert 1987) and the Naval Facilities Engineering Command (NAVFAC) guidance (NAVFAC 2002).

Results of the WRS tests are presented in Table A-4. The WRS tests were conducted as described below.

- The null and alternative hypotheses were expressed as follows.
  - H_0: the median arsenic concentration in site samples is less than or equal to the median arsenic concentration in East Housing Area samples.

- H_A: the median arsenic concentration in site samples is greater than the median arsenic concentration in East Housing Area samples.

- A significance level (α) of 0.05 was selected for the test.
- Sample sizes were indicated as n1 and n2 for site and East Housing Area data, respectively.
- Site and East Housing Area data were combined and ranked.
- The test statistic, W_{RS}, was calculated as the sum of ranks for the site data (designated as "Rank Sum Site" in Statistica output).
- Z_{RS}, which is the large sample statistic adjusted for ties, was calculated from W_{RS} as shown in equation 18.9 in Gilbert (1987) (designated as "Z adjusted" in Statistica output).
- $Z_{1-\alpha}$ was obtained from Table A-1 in Gilbert (1987), which gives Z values for varying levels of α.
- H_0 was rejected and H_A was accepted if $Z_{RS} \geq Z_{1-\alpha}$.

The null hypothesis was accepted in all cases, indicating that the median arsenic concentrations at IR Sites 30 and 31 are less than or equal to the median arsenic concentration at the East Housing Area, both with and without the maximum value in the East Housing Area data set.

Box plots were examined to assure that the upper tails of the site data are not higher than the upper tails of the East Housing Area data. This evaluation was conducted because the WRS test primarily identifies differences in central tendency rather than differences in tails of the distributions.

There are a few samples from IR Sites 30 and 31 with concentrations of arsenic that are higher than concentrations in the East Housing Area. These results can be attributed to differences in sample size, which is considered in the statistical approaches. There are 50 arsenic observations at IR Site 30, and 71 arsenic observations at IR Site 31, compared with 21 arsenic observations at the East Housing Area. As sample size increases, there is an increase in the number of observations at the tails of the distribution (DTSC 1997). This fact explains why, although IR Sites 30 and 31 appear to have higher arsenic concentrations, results of the statistical analysis support the conclusion that the populations are the same as the East Housing Area. None of the WRS conclusions were changed based on inspection of the box plots.

A3.4 Gehan Test

The Gehan test is specifically intended for two-sample comparisons of data sets with nondetect data at multiple reporting limits. There are no nondetect data in the IR Sites 30 and 31 data sets. The East Housing Area data set has nine nondetects (21 samples), resulting in a detection frequency of 57 percent. The nondetects are present at reporting limits of either 10 or 20 mg/kg. Proxy values such as one-half the reporting limit are not

used in the Gehan test. Rather, each data point is coded as a nondetect (at the reporting limit) or as a detect.

Results of the Gehan tests are presented in Table A-4. The null and alternative hypotheses are the same as those used for the WRS test. The Gehan tests were conducted in accordance with NAVFAC guidance (NAVFAC 2002) as summarized below.

- The null and alternative hypotheses were expressed as follows.
  - H_0: the median arsenic concentration in site samples is less than or equal to the median arsenic concentration in East Housing Area samples.
  - H_A: the median arsenic concentration in site samples is greater than the median arsenic concentration in East Housing Area samples.
- A significance level (α) of 0.05 was selected for the test.
- IR Sites 30 and 31 and East Housing Area data were combined and ranked from smallest to largest. The less than (<) sign on the nondetects was disregarded when ranking the data.
- The test statistic, G, was calculated according to equations presented in NAVFAC guidance (NAVFAC 2002).
- $Z_{1-\alpha}$ was obtained from Table C1 in NAVFAC guidance (NAVFAC 2002), which gives Z values for varying levels of α.
- H_0 was rejected and H_A was accepted if $G \geq Z_{1-\alpha}$.

The null hypothesis was accepted in all cases, indicating that the median arsenic concentrations at IR Sites 30 and 31 are less than or equal to the median arsenic concentration at the East Housing Area, both with and without the maximum value in the East Housing Area data set.

A3.5 Two-Sample t-Test

The two-sample t-test is a useful procedure for conducting two-sample comparisons if both data sets follow either the normal or lognormal distribution (NAVFAC 2002). The WRS and Gehan tests compare medians, whereas the two-sample t-test compares means. For this reason, the tails of the distribution are given more consideration in the t-test than in either the WRS or Gehan test.

The Shapiro-Wilk test evaluated the distribution of the arsenic data sets used in the two-sample t-tests. Arsenic concentrations at IR Sites 30 and 31 are lognormally distributed assuming a significance level of 5 percent. The East Housing Area data are approximately lognormally distributed with a probability value (p-value) of 0.043.[1] With

[1] The significance level is the probability of rejecting the null hypothesis when it is in fact true. In this case, the null hypothesis states that the data are normally (or lognormally) distributed. The p-value is the smallest level of significance that would have allowed the null hypothesis to be rejected. So for the p-value of 0.043, the null hypothesis would be rejected at a significance level of 5 percent, but accepted at a significance level of 4 percent.

the maximum value removed, however, East Housing Area data are not lognormally distributed (they fit the normal distribution). Results of distributional testing are presented in Table A-2.

Based on results of the distributional testing, the two-sample t-test was used to compare IR Sites 30 and 31 arsenic data with the East Housing Area arsenic data. The data were logtransformed prior to conducting the comparisons. The two-sample t-test was not used to compare IR Sites 30 and 31 data with the East Housing Area data set with the maximum value removed, because that data set is not lognormally distributed.

The t-test can be performed by assuming that the variances of the data sets are either equal or unequal. Levene's test for variances (U.S. EPA 2006) was conducted and the variances were shown to be equal. (The null hypothesis of equal variances is accepted if $p > 0.05$, and p-values of 0.14 and 0.26 were achieved for IR Sites 30 and 31, respectively.) Levene's test and the two-sample t-test were conducted using Statistica. Results of the two-sample t-test are presented in Table A-4.

The null and alternative hypotheses are different from hypotheses used with the WRS and Gehan tests because the two-sample t-test compares mean (rather than median) concentrations. The two-sample t-tests were conducted as summarized below.

- The null and alternative hypotheses were expressed as follows.
  - H_0: the mean arsenic concentration in site samples is less than or equal to the mean arsenic concentration in East Housing Area samples.
  - H_A: the mean arsenic concentration in site samples is greater than the mean arsenic concentration in East Housing Area samples.
- A significance level (α) of 0.05 was selected for the test.
- The test statistic, T, was calculated using Statistica (StatSoft 2004).
- t_{CRIT} was obtained from Table C-9 in NAVFAC guidance (NAVFAC 2002).
- H_0 was rejected and H_A was accepted if $T \geq t_{CRIT}$.

The null hypothesis was accepted in both cases, indicating that the mean arsenic concentrations at IR Sites 30 and 31 are less than or equal to the mean arsenic concentration at the East Housing Area.

A3.6 Conclusions

Results of the three statistical approaches, with and without the highest value in the East Housing Area data set, are as follows.

- IR Site 30 – All three statistical tests found that the arsenic concentrations are less than or equal to those from the East Housing Area.
- IR Site 31 – All three statistical tests found that the arsenic concentrations are less than or equal to those from the East Housing Area.

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FIGURES

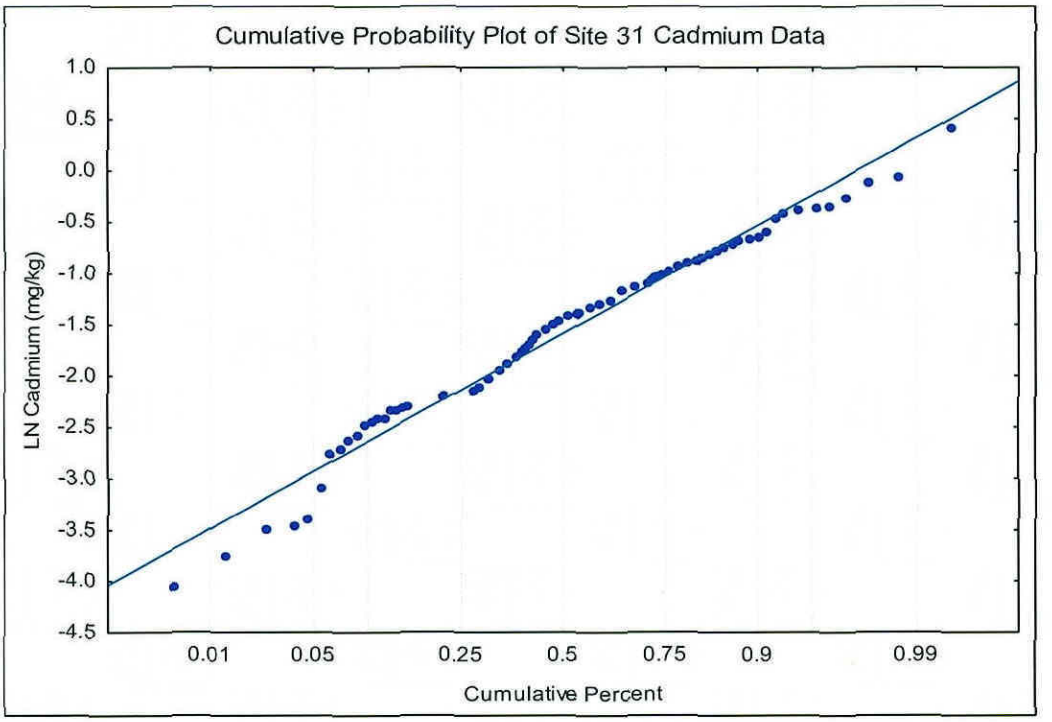
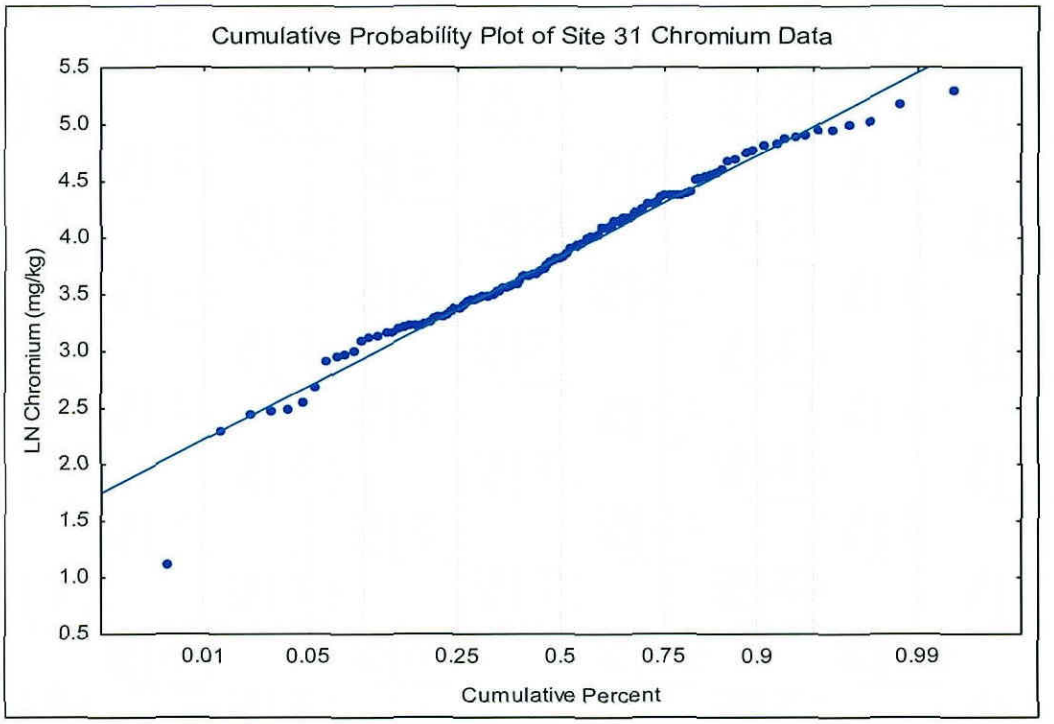
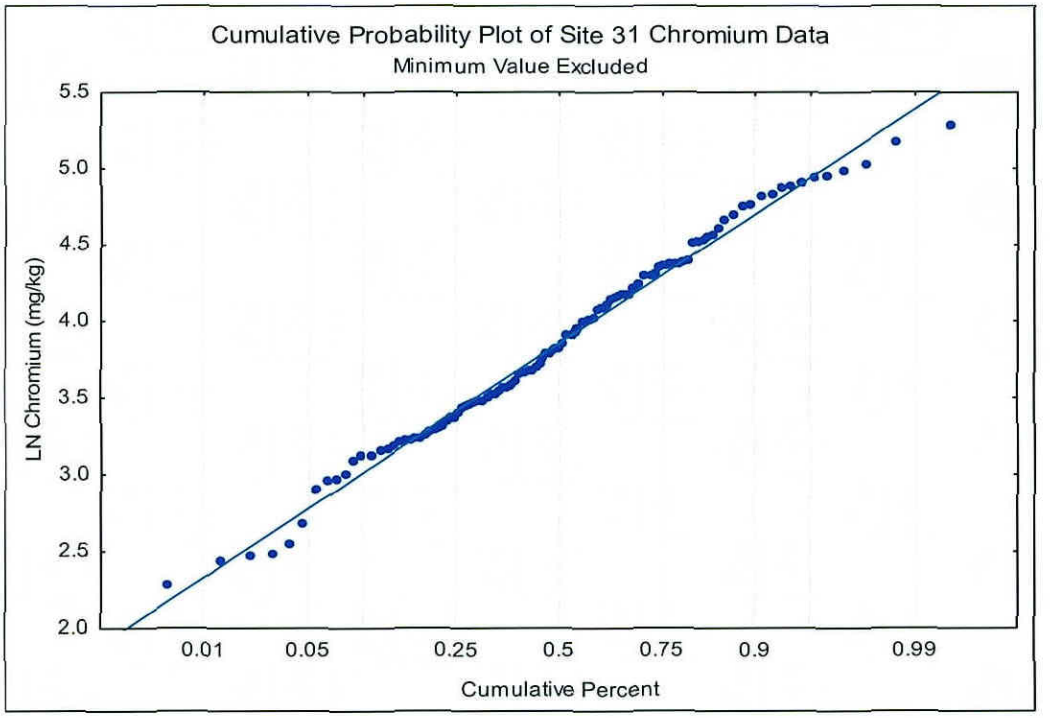


Figure A-1
Probability Plots for Select Metals at IR Site 31 and Iron in Pink Background





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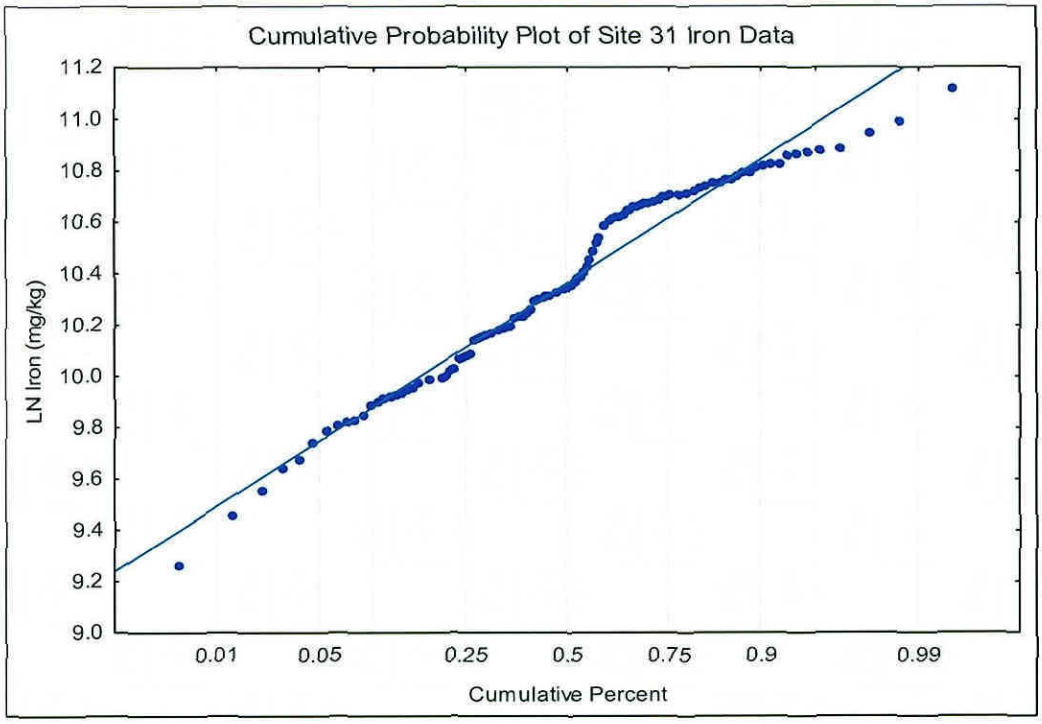
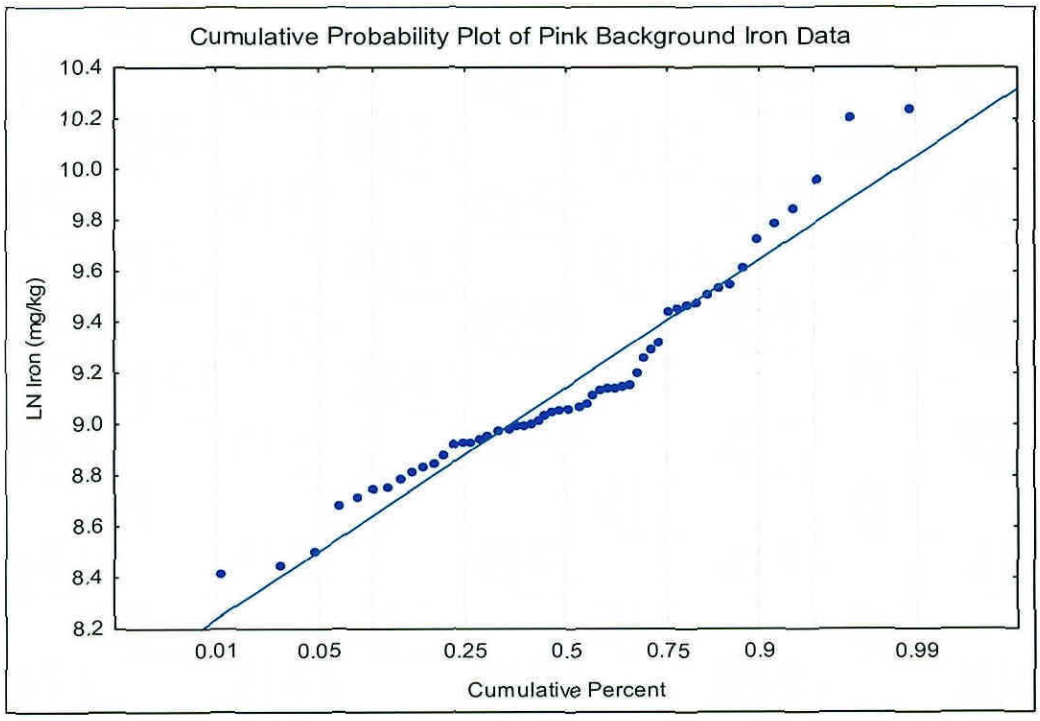
Probability Plots for Select Metals at IR Site 31 and Iron in Pink Background





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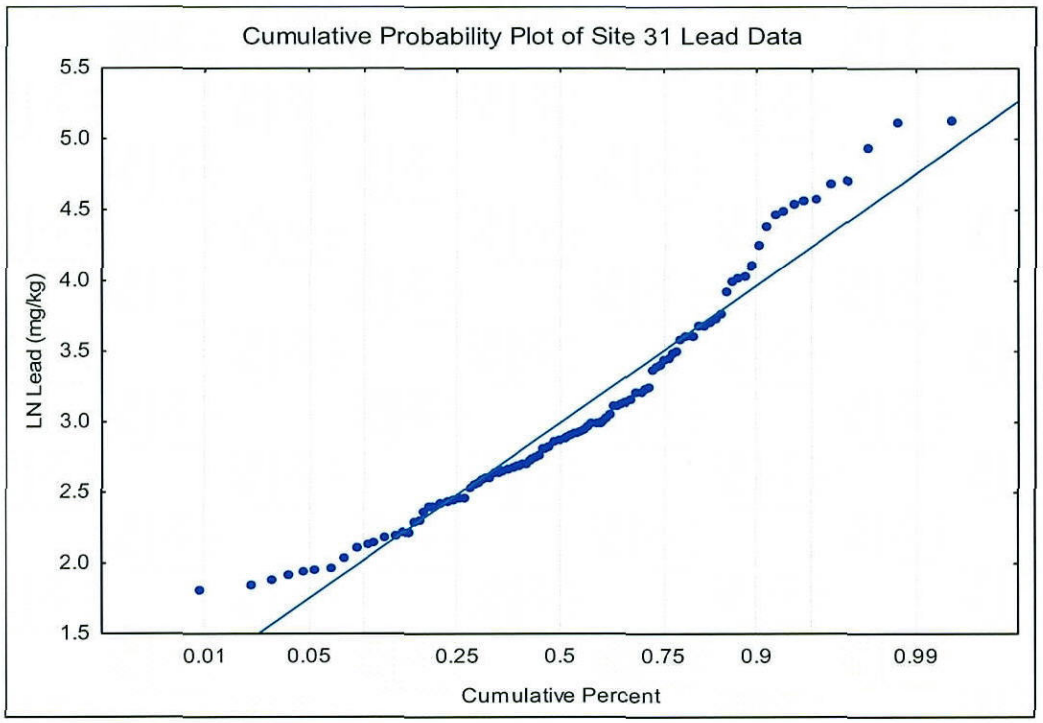
Probability Plots for Select Metals at IR Site 31 and Iron in Pink Background



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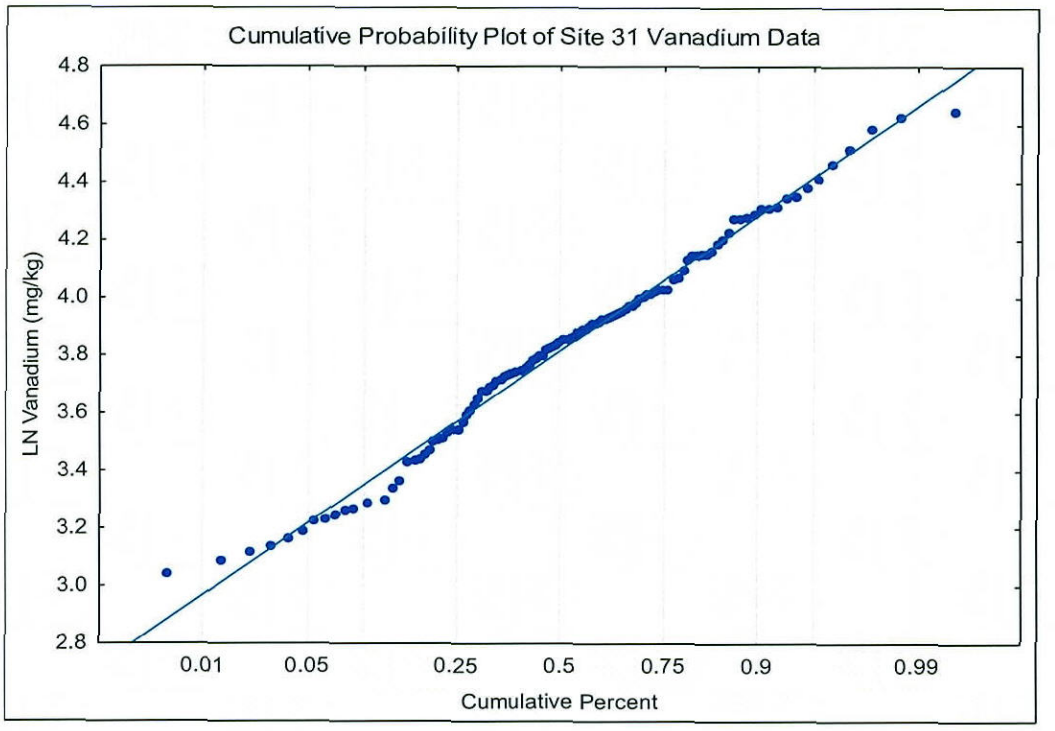

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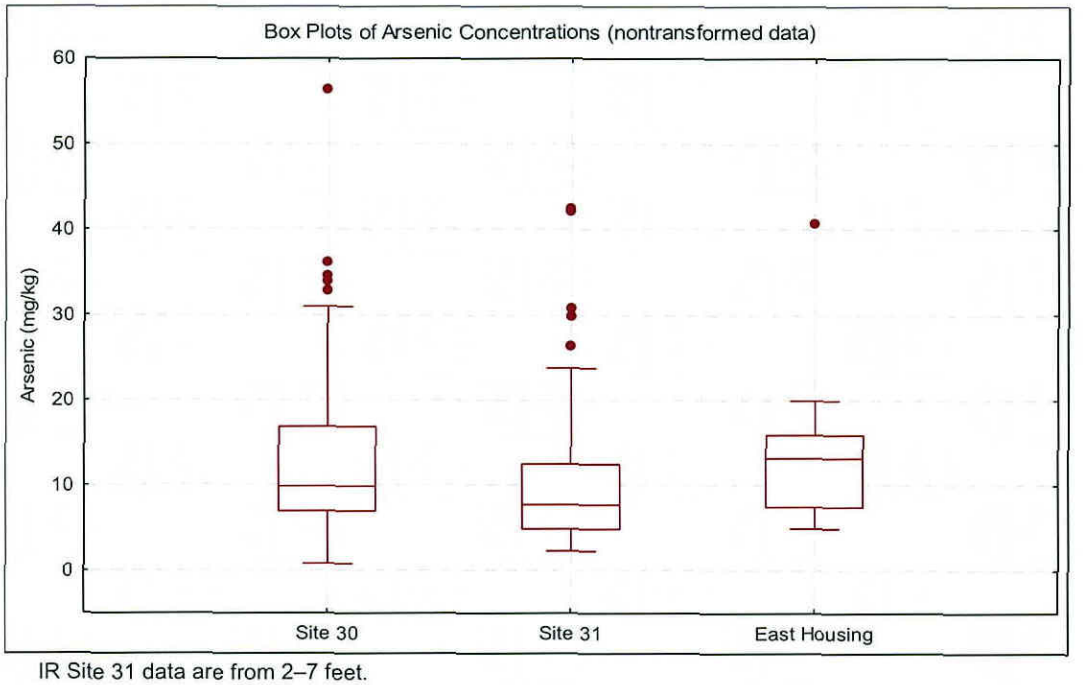
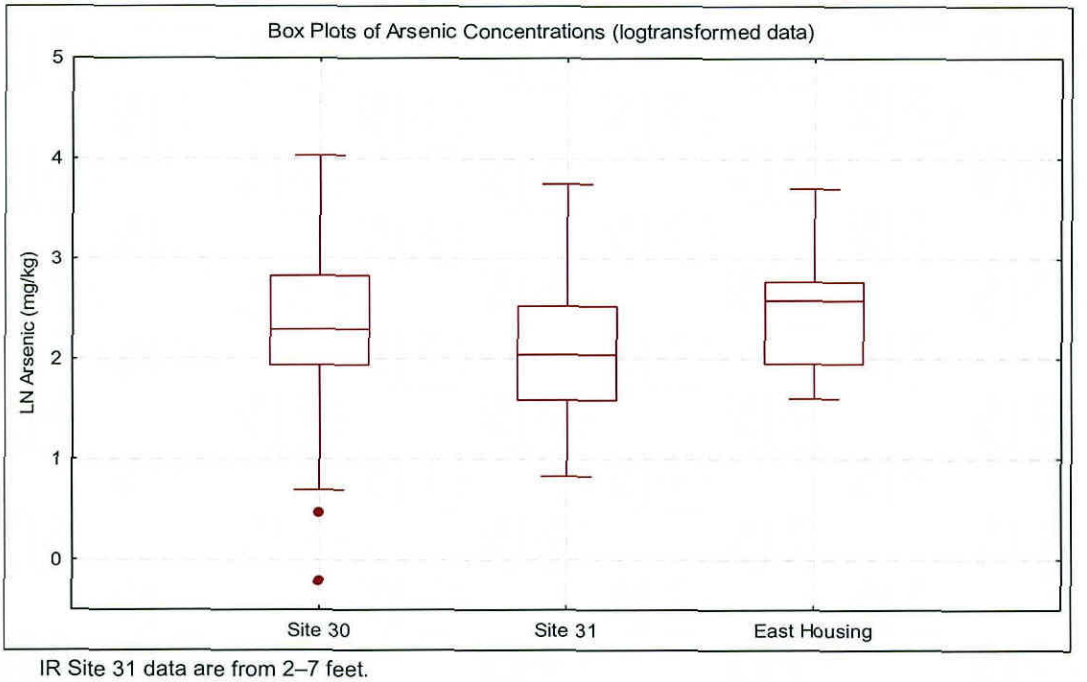
Probability Plots for Select Metals at IR Site 31 and Iron in Pink Background



IR Site 31 data are from 2–7 feet.



IR Site 31 data are from 2–7 feet.

Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31

Figure A-2
Box Plots of Arsenic Concentrations in IR Sites 30 and 31 and East Housing Area Data Sets

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/11/07
File No. 0890A2
Rev. B

TABLES

Table A-1
Arsenic Concentrations at IR Sites 30 and 31 and the East Housing Area
(concentrations in milligrams per kilogram)

IR Site 30	LN IR Site 30	IR Site 31 2–7 ft bgs	LN IR Site 31 2–7 ft bgs	IR Site 31 0–7 ft bgs	LN IR Site 31 0–7 ft bgs	East Housing Area	LN East Housing Area
56.30	4.031	42.40	3.747	42.400	3.747	40.7	3.706
36.10	3.586	42.10	3.740	42.100	3.740	20	2.996
34.60	3.544	30.80	3.428	32.600	3.484	19.8	2.986
33.90	3.523	29.80	3.395	30.800	3.428	16.7	2.815
32.80	3.490	26.30	3.270	29.800	3.395	16.5	2.803
31.00	3.434	23.80	3.170	27.200	3.303	15.4	2.734
27.00	3.296	23.70	3.165	26.800	3.288	15.1	2.715
25.50	3.239	18.80	2.934	26.300	3.270	14.8	2.695
22.70	3.122	17.40	2.856	23.800	3.170	14	2.639
20.90	3.040	17.40	2.856	23.700	3.165	13.9	2.632
19.20	2.955	15.90	2.766	18.800	2.934	13.2	2.580
17.10	2.839	14.70	2.688	18.400	2.912	10*	2.303
16.80	2.821	14.40	2.667	17.400	2.856	10	2.303
14.70	2.688	13.90	2.632	17.400	2.856	10	2.303
14.40	2.667	13.60	2.610	16.700	2.815	10	2.303
14.40	2.667	13.20	2.580	15.900	2.766	9.96	2.299
13.90	2.632	12.50	2.526	15.500	2.741	5	1.609
13.30	2.588	12.50	2.526	15.300	2.728	5	1.609
13.10	2.573	11.80	2.468	14.700	2.688	5	1.609
13.00	2.565	11.60	2.451	14.400	2.667	5	1.609
12.70	2.542	11.50	2.442	14.300	2.660	5	1.609
11.30	2.425	11.50	2.442	14.200	2.653	—	—
11.10	2.407	10.70	2.370	14.100	2.646	—	—
10.50	2.351	10.70	2.370	13.900	2.632	—	—
10.10	2.313	10.10	2.313	13.900	2.632	—	—
9.70	2.272	9.80	2.282	13.600	2.610	—	—
9.70	2.272	9.70	2.272	13.400	2.595	—	—
9.50	2.251	9.70	2.272	13.200	2.580	—	—
9.30	2.230	9.60	2.262	13.200	2.580	—	—
9.10	2.208	9.40	2.241	12.500	2.526	—	—
8.60	2.152	9.10	2.208	12.500	2.526	—	—
7.90	2.067	9.00	2.197	12.500	2.526	—	—
7.80	2.054	8.30	2.116	12.000	2.485	—	—
7.60	2.028	8.30	2.116	11.900	2.477	—	—
7.40	2.001	8.10	2.092	11.800	2.468	—	—
7.30	1.988	7.70	2.041	11.600	2.451	—	—
7.30	1.988	7.40	2.001	11.500	2.442	—	—
7.10	1.960	7.10	1.960	11.500	2.442	—	—
6.50	1.872	6.90	1.932	11.500	2.442	—	—
5.60	1.723	6.80	1.917	11.500	2.442	—	—
5.30	1.668	6.70	1.902	11.500	2.442	—	—
5.00	1.609	6.30	1.841	11.200	2.416	—	—
4.40	1.482	6.20	1.825	11.100	2.407	—	—
4.30	1.459	6.20	1.825	10.800	2.380	—	—
3.90	1.361	6.20	1.825	10.800	2.380	—	—
3.30	1.194	6.10	1.808	10.700	2.370	—	—
2.00	0.693	5.90	1.775	10.700	2.370	—	—

Table A-1
Arsenic Concentrations at IR Sites 30 and 31 and the East Housing Area
(concentrations in milligrams per kilogram)

IR Site 30	LN IR Site 30	IR Site 31 2–7 ft bgs	LN IR Site 31 2–7 ft bgs	IR Site 31 0–7 ft bgs	LN IR Site 31 0–7 ft bgs	East Housing Area	LN East Housing Area
1.60	0.470	5.70	1.740	10.600	2.361	—	—
1.60	0.470	5.40	1.686	10.300	2.332	—	—
0.80	-0.223	5.00	1.609	10.200	2.322	—	—
—	—	5.00	1.609	10.100	2.313	—	—
—	—	4.90	1.589	9.800	2.282	—	—
—	—	4.90	1.589	9.700	2.272	—	—
—	—	4.90	1.589	9.700	2.272	—	—
—	—	4.70	1.548	9.600	2.262	—	—
—	—	4.60	1.526	9.500	2.251	—	—
—	—	4.50	1.504	9.400	2.241	—	—
—	—	4.40	1.482	9.400	2.241	—	—
—	—	4.30	1.459	9.100	2.208	—	—
—	—	3.90	1.361	9.000	2.197	—	—
—	—	3.70	1.308	9.000	2.197	—	—
—	—	3.50	1.253	8.700	2.163	—	—
—	—	3.50	1.253	8.600	2.152	—	—
—	—	3.50	1.253	8.300	2.116	—	—
—	—	3.40	1.224	8.300	2.116	—	—
—	—	3.20	1.163	8.200	2.104	—	—
—	—	3.00	1.099	8.200	2.104	—	—
—	—	2.90	1.065	8.100	2.092	—	—
—	—	2.90	1.065	8.100	2.092	—	—
—	—	2.80	1.030	8.100	2.092	—	—
—	—	2.30	0.833	7.900	2.067	—	—
—	—	—	—	7.700	2.041	—	—
—	—	—	—	7.700	2.041	—	—
—	—	—	—	7.500	2.015	—	—
—	—	—	—	7.500	2.015	—	—
—	—	—	—	7.400	2.001	—	—
—	—	—	—	7.300	1.988	—	—
—	—	—	—	7.200	1.974	—	—
—	—	—	—	7.100	1.960	—	—
—	—	—	—	6.900	1.932	—	—
—	—	—	—	6.900	1.932	—	—
—	—	—	—	6.800	1.917	—	—
—	—	—	—	6.800	1.917	—	—
—	—	—	—	6.700	1.902	—	—
—	—	—	—	6.700	1.902	—	—
—	—	—	—	6.300	1.841	—	—
—	—	—	—	6.300	1.841	—	—
—	—	—	—	6.200	1.825	—	—
—	—	—	—	6.200	1.825	—	—
—	—	—	—	6.200	1.825	—	—
—	—	—	—	6.100	1.808	—	—
—	—	—	—	5.900	1.775	—	—
—	—	—	—	5.700	1.740	—	—
—	—	—	—	5.400	1.686	—	—
—	—	—	—	5.000	1.609	—	—

Table A-1
Arsenic Concentrations at IR Sites 30 and 31 and the East Housing Area
(concentrations in milligrams per kilogram)

IR Site 30	LN IR Site 30	IR Site 31 2–7 ft bgs	LN IR Site 31 2–7 ft bgs	IR Site 31 0–7 ft bgs	LN IR Site 31 0–7 ft bgs	East Housing Area	LN East Housing Area
—	—	—	—	5.000	1.609	—	—
—	—	—	—	4.900	1.589	—	—
—	—	—	—	4.900	1.589	—	—
—	—	—	—	4.900	1.589	—	—
—	—	—	—	4.700	1.548	—	—
—	—	—	—	4.600	1.526	—	—
—	—	—	—	4.600	1.526	—	—
—	—	—	—	4.600	1.526	—	—
—	—	—	—	4.500	1.504	—	—
—	—	—	—	4.500	1.504	—	—
—	—	—	—	4.400	1.482	—	—
—	—	—	—	4.300	1.459	—	—
—	—	—	—	3.900	1.361	—	—
—	—	—	—	3.700	1.308	—	—
—	—	—	—	3.700	1.308	—	—
—	—	—	—	3.500	1.253	—	—
—	—	—	—	3.500	1.253	—	—
—	—	—	—	3.500	1.253	—	—
—	—	—	—	3.400	1.224	—	—
—	—	—	—	3.200	1.163	—	—
—	—	—	—	3.000	1.099	—	—
—	—	—	—	2.900	1.065	—	—
—	—	—	—	2.900	1.065	—	—
—	—	—	—	2.800	1.030	—	—
—	—	—	—	2.300	0.833	—	—

Note:
* shaded cells indicate nondetect results at one-half the reporting limit

Acronyms/Abbreviations:
bgs – below ground surface
ft – feet
IR – Installation Restoration (Program)
LN – natural logtransformed

Table A-2
Results of Distributional Testing

Data Set Description	Are Data Logtransformed?	Number of Observations	Shapiro-Wilk W Statistic	P-value	Conclusion[a]
IR Site 30	No	50	0.835	0.000	Data not normal
IR Site 30, highest value removed	No	49	0.875	0.000	Data not normal
IR Site 31 (2–7 ft bgs)	No	71	0.763	0.000	Data not normal
IR Site 31 (2–7 ft bgs), highest 2 values removed	No	69	0.838	0.000	Data not normal
IR Site 31 (0–7 ft bgs)	No	120	0.797	0.000	Data not normal
IR Site 31 (0–7 ft bgs), highest 2 values removed	No	118	0.858	0.000	Data not normal
East Housing	No	21	0.791	0.000	Data not normal
East Housing, highest value removed	No	20	0.911	0.068	Data are normal
IR Site 30	Yes	50	0.968	0.193	Data are lognormal
IR Site 30, highest value removed	Yes	49	0.954	0.052	Data are lognormal
IR Site 31 (2–7 ft bgs)	Yes	71	0.976	0.190	Data are lognormal
IR Site 31 (2–7 ft bgs), highest 2 values removed	Yes	69	0.981	0.380	Data are lognormal
IR Site 31 (0–7 ft bgs)	Yes	120	0.987	0.324	Data are lognormal
IR Site 31 (0–7 ft bgs), highest 2 values removed	Yes	118	0.988	0.421	Data are lognormal
East Housing	Yes	21	0.905	0.043	Data not lognormal[b]
East Housing, highest value removed	Yes	20	0.853	0.006	Data not lognormal

Notes:

[a] null hypothesis: data are normal (lognormal);
accept null hypothesis if p-value > selected significance level of 0.05;
reject null hypothesis if p-value ≤ selected significance level of 0.05

[b] null hypothesis rejected by a narrow margin; data are lognormal at a significance level of 4 percent

Acronyms/Abbreviations:

bgs – below ground surface
ft – feet
IR – Installation Restoration (Program)
p – probability

Table A-3
Results of Rosner's Outlier Test

Data Set Description	Are Data Logtransformed?	Number of Potential Outliers	Test Statistic, R	Critical Value, λ	Conclusion*
IR Site 30 – highest value removed	Yes	1	2.016	3.130	Highest value is not an outlier
IR Site 31 (2–7 ft bgs) – highest 2 values removed	Yes	2	2.572	3.255	Highest 2 values are not outliers
IR Site 31 (0–7 ft bgs) – highest 2 values removed	Yes	2	2.680	3.430	Highest 2 values are not outliers

Note:
* null hypothesis: there are no outliers in the data;
accept null hypothesis if $R \leq \lambda$;
reject null hypothesis if $R > \lambda$

Acronyms/Abbreviations:
bgs – below ground surface
ft – feet
IR – Installation Restoration (Program)

Table A-4
Results of Distributional Testing for Select Metals at IR Site 31

Data Set Description	Are Data Logtransformed?	Number of Observations	Shapiro-Wilk W Statistic	P-value	Conclusion[a]
IR Site 31 – Cadmium	No	120	0.827	0.000	Data not normal
IR Site 31 – Chromium	No	120	0.891	0.000	Data not normal
IR Site 31 – Chromium – lowest value removed	No	119	0.885	0.000	Data not normal
IR Site 31 – Iron	No	120	0.962	0.002	Data not normal
IR Site 31 – Lead	No	120	0.650	0.000	Data not normal
IR Site 31 – Vanadium	No	120	0.948	0.000	Data not normal
IR Site 31 – Cadmium	Yes	120	0.975	0.026	Data are not lognormal[b]
IR Site 31 – Chromium	Yes	120	0.977	0.038	Data are not lognormal[b]
IR Site 31 – Chromium – lowest value removed	Yes	119	0.988	0.356	Data are lognormal
IR Site 31 – Iron	Yes	120	0.964	0.003	Data are not lognormal
IR Site 31 – Lead	Yes	120	0.941	0.000	Data are not lognormal
IR Site 31 – Vanadium	Yes	120	0.986	0.264	Data are lognormal

Notes:
[a] null hypothesis: data are normal (lognormal)
accept null hypothesis if p-value > selected significance level of 0.05
reject null hypothesis if p-value ≤ selected significance level of 0.05
[b] null hypothesis rejected by a narrow margin; data are lognormal at a significance level of 2 percent

Acronyms/Abbreviations:
IR – Installation Restoration (Program)
p – probability

ATTACHMENT B

STATISTICS TABLES

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B-9 Summary Statistics for IR Site 25

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Table B-1
Summary Statistics[a] for PRC Pink Background Data

	SAMPLE SIZE		Detection	CENSORED DATA		DETECTED DATA		DETECTED AND CENSORED DATA[b]					
Metal	Detected	Total	Frequency	Min	Max	Min	Max	Median[b]	Q95[b]	Mean[c]	SD[c]	CV	UCL95[d]
aluminum	55	55	100%	N/A	N/A	1,760	22,600	5,230	13,960	5,799.87	374.73	0.06	6,521.20
antimony	18	55	33%	0.46	11.00	0.70	8.60	2.60	9.50	2.77	0.66	0.24	3.82
arsenic	45	55	82%	0.59	10.00	0.44	15.60	1.70	9.14	2.58	0.38	0.15	4.21
barium	55	55	100%	N/A	N/A	6.91	156.00	32.50	93.68	41.33	3.15	0.08	47.55
beryllium	28	55	51%	0.15	1.00	0.25	1.47	0.58	1.27	0.50	0.37	0.75	0.61
cadmium	11	55	20%	0.08	1.19	0.10	3.19	0.33	1.72	0.36	0.09	0.24	0.71
calcium	55	55	100%	N/A	N/A	816	66,600	2,400	16,800	3,805.34	419.95	0.11	4,704.82
chromium	55	55	100%	N/A	N/A	15.60	66.70	29.20	54.84	30.31	1.23	0.04	32.56
cobalt	48	55	87%	3.96	5.70	3.02	49.70	4.70	14.30	5.68	0.45	0.08	6.58
copper	52	55	95%	8.80	10.20	3.12	49.10	6.91	39.14	8.95	0.77	0.09	10.51
iron	55	55	100%	N/A	N/A	4,500	27,900	8,590	22,280	10,108.88	555.72	0.05	11,154.70
lead	51	55	93%	1.90	3.00	0.47	165.00	3.20	37.66	7.05	1.20	0.17	9.98
magnesium	55	55	100%	N/A	N/A	1,290	8,800	2,320	7,304	2,859.91	166.36	0.06	3,175.36
manganese	55	55	100%	N/A	N/A	55.50	748.00	108.00	383.00	145.19	11.12	0.08	167.20
mercury	7	54	13%	0.05	0.27	0.06	2.71	0.10	0.52	0.11	0.02	0.23	0.36
molybdenum	0	16	0%	2.80	5.20	N/A	N/A	3.10	5.20	N/A	N/A	N/A	N/A
nickel	55	55	100%	N/A	N/A	11.50	80.40	24.30	55.72	27.22	1.25	0.05	29.53
potassium	55	55	100%	N/A	N/A	209	2,480	691	1,232	740.63	42.05	0.06	820.09
selenium	0	55	0%	0.18	10.00	N/A	N/A	0.42	1.70	N/A	N/A	N/A	N/A
silver	11	55	20%	0.18	5.20	0.32	5.64	0.54	2.22	0.53	0.12	0.22	1.12
sodium	54	55	98%	520	520	62.60	1,580	325	1,230	411.81	40.19	0.10	495.34
thallium	0	55	0%	0.11	10.00	N/A	N/A	0.30	0.50	N/A	N/A	N/A	N/A
titanium	1	1	100%	N/A	N/A	518	518	518	518	N/A	N/A	N/A	N/A
vanadium	55	55	100%	N/A	N/A	10.50	55.30	21.00	47.34	22.52	1.07	0.05	24.50
zinc	54	55	98%	18.00	18.00	9.98	191.00	20.60	67.48	25.68	1.85	0.07	29.27

Source:

Tetra Tech EM Inc. 2004. Final Remedial Investigation Report, Sites 6, 7, 8, and 16, Alameda Point, Alameda, California. Appendix E, Table E-2: Summary Statistics for Pink Soil Data Set. November 18.

References:

Gilbert, R.O. 1987. *Statistical Methods for Environmental Pollution Monitoring*. New York: John Wiley & Sons, Inc.

U.S. Environmental Protection Agency. 1992. Supplemental Guidance to RAGS: Calculating the Concentration Term. Intermittent Bulletin, Volume 1, Number 1. Publication 9285.7-081.

———. 2002. Calculating Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10. Washington DC. December.

Table B-1
Summary Statistics[a] for PRC Pink Background Data

Notes:

[a] units are mg/kg; for samples with less than 15 percent censored data, one-half the reporting limit is substituted for each nondetect measurement in all calculations; for higher frequencies of censored data, all calculations were performed using stochastic modeling, following the "bounding" approach for U.S. EPA (2002), as described below under note d; no calculations of the mean, SD, CV, or UCL95 are performed for sample sizes less than 3 or detection frequencies of zero

[b] estimated for all samples using a nonparametric approach, based on rank ordering of the data (reported values used for all censored data)

[c] for all samples with at least one detection, calculated using distribution-dependent formulae; for confirmed or estimated normal distributions with fewer than 15 percent censored data, calculated using equations 4.3 (mean) and 4.4 (standard deviation) in Gilbert (1987); for confirmed or estimated lognormal distributions with fewer than 15 percent censored data, these are the minimum variance unbiased (MVU) estimators, following equations 13.3 (mean) and 13.5 (standard deviation) in Gilbert (1987); all other calculations use the median values generated from 2,000 iterations of a Monte Carlo model, following the "bounding" approach described in U.S. EPA (2002)

[d] for confirmed or estimated normal distributions with fewer than 15 percent censored data, calculated using equation 11.6 in Gilbert (1987); for confirmed or estimated lognormal distributions with fewer than 15 percent censored data, calculated using Land's method (U.S. EPA 1992, Gilbert 1987); calculations for all cases with greater than 15 percent censored data use the 95th percentile generated from 2,000 iterations of a Monte Carlo model, following the "bounding" approach described in U.S. EPA (2002); calculations are based on either normal or lognormal (nonparametric Chebyshev inequality) model equations

Acronyms/Abbreviations:

CV – coefficient of variation (SD/mean)
max – maximum concentration reported
mg/kg – milligrams per kilogram
min – minimum concentration reported
N/A – not applicable
OSWER – Office of Solid Waste and Emergency Response
PRC – PRC Environmental Management, Inc.
Q95 – 95th quantile
RAGS – (U.S. EPA) Risk Assessment Guidance for Superfund
SD – standard deviation
UCL95 – 95 percent upper confidence limit of the mean
U.S. EPA – United States Environmental Protection Agency

Table B-2
Summary Statistics[a] for PRC Yellow Background Data

	SAMPLE SIZE		Detection	CENSORED DATA		DETECTED DATA		DETECTED AND CENSORED DATA[b]					
Metal	Detected	Total	Frequency	Min	Max	Min	Max	Median	Q95	Mean	SD	CV	UCL95[c]
aluminum	49	49	100%	—[d]	—	3,830	13,300	5,220	12,250	6,308	2,389	0.38	7,796
antimony	3	49	6%	1.3	7.3	1.3	7	6	7	6	1.40	0.24	3
arsenic	20	49	41%	10	12	1.1	33	11	25	11	6	0.52	12
barium	42	49	86%	21	24	21	260	30	78	40	36	0.89	61
beryllium	8	49	16%	1	1.2	0.30	1.3	1.00	1.20	1.00	0.15	0.15	0.68
cadmium	12	49	24%	0.355	1.2	0.33	3	1.0	2	1.1	0.40	0.38	0.98
chromium	49	49	100%	—	—	23	70	31	45	33	7	0.22	37
cobalt	18	49	37%	5	7.6	4	11	5	9	6	1.4	0.23	6
copper	47	49	96%	5.5	5.6	5	49	12	48	17	12	0.71	20
iron	49	49	100%	—	—	7,150	20,800	9,050	18,850	10,590	3,567	0.34	12,811
lead	49	49	100%	—	—	4	752	23	175	49	109	2.23	117
manganese	49	49	100%	—	—	66	330	109	315	141	72	0.51	186
mercury	5	8	63%	0.05	0.15	0.05	0.18	0.10	0.18	0.11	0.05	0.47	0.13
nickel	49	49	100%	—	—	20	71	25	48	28	9	0.33	34
selenium	0	49	0%	0.167	23	—	—	—	—	—	—	—	—
silver	6	49	12%	0.18	6	0.18	30	5	8	5	4	0.81	6
thallium	0	49	0%	0.215	12	—	—	—	—	—	—	—	—
vanadium	49	49	100%	—	—	17	50	23	47	26	8	0.30	31
zinc	49	49	100%	—	—	17	140	34	125	49	32	0.66	69

Notes:

[a] units are mg/kg

[b] summary statistics were compiled from ProUCL and Statistica model output; for censored data, one half the detection limit was used in calculations

[c] the UCL95 was selected from ProUCL based on a heirarchy established by U.S. EPA; the t-statistic was used for normally distributed data, the H-statistic was used for lognormally distributed data, the approximate gamma was used for data following a gamma distribution, and the 95% Chebyshev was used for nonparametric data sets

[d] dash indicates not applicable

Table B-2
Summary Statistics[a] for PRC Yellow Background Data

Acronyms/Abbreviations:

CV – coefficient of variation (SD/mean)
max – maximum concentration reported
mg/kg – milligrams per kilogram
min – minimum concentration reported
PRC – PRC Environmental Management, Inc.
Q95 – 95th quantile
SD – standard deviation
UCL95 – 95 percent upper confidence limit of the mean
U.S. EPA – United States Environmental Protection Agency

Table B-3
Summary Statistics[a] for PRC Blue Background Data

	SAMPLE SIZE		Detection	CENSORED DATA		DETECTED DATA		DETECTED AND CENSORED DATA[b]					
Metal	Detected	Total	Frequency	Min	Max	Min	Max	Median[b]	Q95[b]	Mean[c]	SD[c]	CV	UCL95[d]
aluminum	88	88	100%	N/A	N/A	2,880.00	26,800.00	4,965.00	16,000.00	6,417.49	352.02	0.05	7,073.70
antimony	2	88	2%	0.46	9.20	0.89	1.00	2.40	7.71	2.16	0.39	0.18	2.90
arsenic	33	88	38%	0.61	13.00	0.74	23.00	2.90	16.55	4.59	0.95	0.21	6.39
barium	85	88	97%	24.00	25.00	0.30	198.00	38.75	114.60	53.01	5.04	0.10	63.26
beryllium	25	88	28%	0.20	1:30	0.09	0.77	0.30	1.20	0.37	0.06	0.15	0.49
cadmium	29	88	33%	0.06	1.30	0.10	0.82	0.30	1.20	0.40	0.08	0.19	0.49
calcium	88	88	100%	N/A	N/A	1,360.00	19,200.00	2,600.00	14,165.00	3,883.74	267.39	0.07	4,201.93
chromium	88	88	100%	N/A	N/A	11.40	81.70	29.50	64.26	33.50	1.25	0.04	35.74
cobalt	66	88	75%	3.94	6.80	1.90	14.00	5.35	12.04	5.37	0.45	0.08	6.45
copper	83	88	94%	5.80	6.30	4.20	89.40	9.70	40.35	13.12	1.07	0.08	15.23
iron	88	88	100%	N/A	N/A	760.00	26,900.00	8,140.00	20,995.00	10,072.09	548.13	0.05	11,092.99
lead	27	88	31%	1.40	6.80	1.30	41.00	5.90	13.01	5.31	0.88	0.17	7.54
magnesium	88	88	100%	N/A	N/A	1,510.00	42,400.00	2,240.00	6,503.00	2,867.67	154.94	0.05	3,156.01
manganese	88	88	100%	N/A	N/A	50.00	1,060.00	108.50	340.75	143.63	8.45	0.06	159.52
mercury	0	22	0%	0.07	0.18	N/A	N/A	0.17	0.18	N/A	N/A	N/A	N/A
molybdenum	0	85	0%	0.31	6.50	N/A	N/A	1.40	6.20	N/A	N/A	N/A	N/A
nickel	88	88	100%	N/A	N/A	11.60	88.50	23.80	64.13	29.17	1.35	0.05	31.64
potassium	87	88	99%	610.00	610.00	310.00	6,382.00	769.50	2,310.00	902.98	50.21	0.06	996.73
selenium	1	88	1%	0.43	13.00	5.70	5.70	5.00	12.00	4.05	0.97	0.24	4.67
silver	2	88	2%	0.18	6.50	0.44	0.61	0.70	6.20	1.07	0.27	0.25	1.88
sodium	88	88	100%	288.00	650.00	88.10	3,510.00	340.00	1,544.50	422.62	47.51	0.11	718.20
thallium	1	88	1%	0.36	13.00	5.30	5.30	3.10	12.00	3.20	0.83	0.26	4.16
titanium	66	66	100%	N/A	N/A	223.00	1,020.00	372.50	701.20	407.10	16.33	0.04	436.76
vanadium	88	88	100%	N/A	N/A	12.80	62.30	20.00	41.78	22.23	0.81	0.04	23.68
zinc	88	88	100%	N/A	N/A	14.00	84.00	24.65	65.38	28.55	1.30	0.05	30.93

Source:

Tetra Tech EM Inc. 2004. Final Remedial Investigation Report, Sites 6, 7, 8, and 16, Alameda Point, Alameda, California. Appendix E, Table E-1: Summary Statistics for Blue Soil Data Set. November 18.

References:

Gilbert, R.O. 1987. *Statistical Methods for Environmental Pollution Monitoring*. New York: John Wiley & Sons, Inc.

U.S. Environmental Protection Agency. 1992. Supplemental Guidance to RAGS: Calculating the Concentration Term. Intermittent Bulletin, Volume 1, Number 1. Publication 9285.7-081.

———. 2002. Calculating Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10. Washington DC. December.

Table B-3
Summary Statistics[a] for PRC Blue Background Data

Notes:

[a] units are mg/kg; for samples with less than 15 percent censored data, one-half the reporting limit is substituted for each nondetect measurement in all calculations; for higher frequencies of censored data, all calculations were performed using stochastic modeling, following the "bounding" approach for U.S. EPA (2002), as described below under note d; no calculations of the mean, SD, CV, or UCL95 are performed for sample sizes less than 3 or detection frequencies of zero

[b] estimated for all samples using a nonparametric approach, based on rank ordering of the data (reported values used for all censored data)

[c] for all samples with at least one detection, calculated using distribution-dependent formulae; for confirmed or estimated normal distributions with fewer than 15 percent censored data, calculated using equations 4.3 (mean) and 4.4 (standard deviation) in Gilbert (1987); for confirmed or estimated lognormal distributions with fewer than 15 percent censored data, these are the minimum variance unbiased (MVU) estimators, following equations 13.3 (mean) and 13.5 (standard deviation) in Gilbert (1987); all other calculations use the median values generated from 2,000 iterations of a Monte Carlo model, following the "bounding" approach described in U.S. EPA (2002)

[d] for confirmed or estimated normal distributions with fewer than 15 percent censored data, calculated using equation 11.6 in Gilbert (1987); for confirmed or estimated lognormal distributions with fewer than 15 percent censored data, calculated using Land's method (U.S. EPA 1992, Gilbert 1987); calculations for all cases with greater than 15 percent censored data use the 95th percentile generated from 2,000 iterations of a Monte Carlo model, following the "bounding" approach described in U.S. EPA (2002); calculations are based on either normal or lognormal (nonparametric Chebyshev inequality) model equations

Acronyms/Abbreviations:

CV – coefficient of variation (SD/mean)
max – maximum concentration reported
mg/kg – milligrams per kilogram
min – minimum concentration reported
N/A – not applicable
PRC – PRC Environmental Management, Inc.
Q95 – 95th quantile
SD – standard deviation
UCL95 – 95 percent upper confidence limit of the mean
U.S. EPA – United States Environmental Protection Agency

Table B-4
Summary Statistics[a] for IR Site 30

Metal	SAMPLE SIZE		Detection	CENSORED DATA		DETECTED DATA		DETECTED AND CENSORED DATA[b]					
	Detected	Total[c]	Frequency	Min	Max	Min	Max	Median	Q95	Mean	SD	CV	UCL95[d]
aluminum	50	50	100%	—[e]	—	4,570	29,100	16,750	27,225	16,187.60	5,848.20	0.36	17,574
antimony	4	35	11%	0.5	0.9	0.47	1.3	0.3	1.06	0.39	0.21	0.55	0.55
arsenic	50	50	100%	—	—	0.8	56.3	9.9	35.275	13.58	11.06	0.81	16
barium	50	50	100%	—	—	14.2	176	85.25	159.9	88.46	33.94	0.38	97
beryllium	50	50	100%	—	—	0.098	2.2	0.305	1.245	0.41	0.38	0.91	0.64
cadmium	48	50	96%	0.5	0.9	0.033	0.78	0.305	0.659	0.32	0.15	0.47	0.36
calcium	50	50	100%	—	—	559	41,000	5,605	24,855	8,046.62	7,364.55	0.92	10,391
chromium	50	50	100%	—	—	7.4	97.6	41.35	93.98	44.22	24.30	0.55	51
cobalt	50	50	100%	—	—	4.8	24.8	13.45	21.925	13.96	5.09	0.36	15
copper	50	50	100%	—	—	4.1	208	38.9	135.7	47.05	37.14	0.79	56
iron	50	50	100%	—	—	8,690	69,600	38,750	55,560	37,607.80	11,428.48	0.30	40,317
lead	50	50	100%	—	—	0.98	87.1	22.1	74.65	25.80	18.49	0.72	31
magnesium	50	50	100%	—	—	1,160	19,800	8,240	16,775	8,685.40	4,123.03	0.47	9,663
manganese	50	50	100%	—	—	124	2,300	759	1,449.5	801.62	434.96	0.54	905
mercury	37	50	74%	0.043	0.19	0.13	0.58	0.19	0.519	0.23	0.15	0.65	0.27
molybdenum	3	7	43%	2.7	3	3.2	5.3	1.5	5.3	2.53	1.53	0.60	4.65
nickel	50	50	100%	—	—	3.8	149	33.6	121.2	39.44	30.59	0.78	47
potassium	50	50	100%	—	—	97.1	4,260	1,085	3,917.5	1,342.76	1,112.14	0.83	1,634
selenium	21	50	42%	0.48	0.9	0.32	2.5	0.35	2.245	0.77	0.70	0.91	1.21
silver	3	50	6%	0.1	0.35	0.08	0.39	0.05	0.17	0.08	0.06	0.77	0.11
sodium	24	50	48%	137	403	228	2,160	198.5	1,298	333.77	387.27	1.16	572
thallium	7	48	15%	0.51	4	0.29	2	1	1.955	1.06	0.39	0.36	1.30
vanadium	50	50	100%	—	—	17.8	158	61.25	123.9	65.13	29.25	0.45	73
zinc	50	50	100%	—	—	21.2	248	118	220.25	127.93	47.44	0.37	139

Notes:

[a] units are mg/kg

[b] summary statistics were compiled from ProUCL and Statistica model output; for censored data, one half the detection limit was used in calculations

[c] sample C072S068 from boring C3S030B068 (0–0.5 foot bgs) was removed as part of a soil excavation

[d] the UCL95 was selected from ProUCL based on a hierarchy established by U.S. EPA; the t-statistic was used for normally distributed data, the H-statistic was used for lognormally distributed data, the approximate gamma was used for data following a gamma distribution, and the 95% Chebyshev was used for nonparametric data sets

[e] dash indicates not applicable

Table B-4
Summary Statistics[a] for IR Site 30

Acronyms/Abbreviations:

bgs – below ground surface
CV – coefficient of variation (SD/mean)
IR – Installation Restoration (Program)
max – maximum concentration reported
mg/kg – milligrams per kilogram
min – minimum concentration reported
Q95 – 95th quantile
SD – standard deviation
UCL95 – 95 percent upper confidence limit of the mean
U.S. EPA – United States Environmental Protection Agency

Table B-5
Summary Statistics[a] for IR Site 31

	SAMPLE SIZE		Detection	CENSORED DATA		DETECTED DATA		DETECTED AND CENSORED DATA[b]					
Metal	Detected	Total	Frequency	Min	Max	Min	Max	Median	Q95	Mean	SD	CV	UCL95[c]
aluminum	120	120	100%	—[d]	—	6,040	33,300	1,320	23,795	14,279	5,143	0.36	15,045
antimony	17	120	14%	5.3	7.6	0.14	3.2	1.7	3.1	1.6	1.2	0.73	2.1
arsenic	120	120	100%	—	—	2.3	42	9.0	27	11	7.4	0.69	12
barium	120	120	100%	—	—	31	476	149	377	167	105	0.63	184
beryllium	75	120	63%	0.21	0.26	0.0065	0.66	0.14	0.5	0.20	0.14	0.70	0.25
cadmium	98	120	82%	0.21	0.34	0.017	1.5	0.24	0.7	0.27	0.22	0.80	0.31
chromium	120	120	100%	—	—	3.0	197	45	139	58	39	0.67	64
cobalt	120	120	100%	—	—	5.5	29	14	26	15	5.1	0.34	16
copper	120	120	100%	—	—	3.6	118	31	76	35	21	0.59	39
iron	120	120	100%	—	—	10,500	67,000	30,900	52,695	33,866	11,965	0.35	38,627
lead	120	120	100%	—	—	6.1	168	18	97	28	31	1.08	41
manganese	120	120	100%	—	—	118.0	2,750	751	1,840	869	517	0.59	953
mercury	97	120	81%	0.21	0.67	0.13	2.4	0.45	1.9	0.62	0.54	0.86	0.71
molybdenum	4	120	3%	0.22	0.3	0.47	2.5	0.11	0.3	0.16	0.28	1.75	0.27
nickel	120	120	100%	—	—	2.4	474	53	356	95	102	1.07	135
selenium	13	120	11%	0.51	0.65	0.88	3.1	0.28	2.1	0.52	0.59	1.13	0.75
thallium	44	120	37%	0.51	0.85	0.48	3.7	0.30	2.8	0.87	0.91	1.04	1.2
vanadium	120	120	100%	—	—	21	104	47	82	48	18	0.37	51
zinc	120	120	100%	—	—	28	901	96	182	103	83	0.81	137

Notes:

[a] units are mg/kg

[b] summary statistics were compiled from ProUCL and Statistica model output; for censored data, one half the detection limit was used in calculations

[c] the UCL95 was selected from ProUCL based on a hierarchy established by U.S. EPA; the t-statistic was used for normally distributed data, the H-statistic was used for lognormally distributed data, the approximate gamma was used for data following a gamma distribution, and the 95% Chebyshev was used for nonparametric data sets

[d] dash indicates not applicable

Table B-5
Summary Statistics[a] for IR Site 31

Acronyms/Abbreviations:

CV – coefficient of variation (SD/mean)
IR – Installation Restoration (Program)
max – maximum concentration reported
mg/kg – milligrams per kilogram
min – minimum concentration reported
Q95 – 95th quantile
SD – standard deviation
UCL95 – 95 percent upper confidence limit of the mean
U.S. EPA – United States Environmental Protection Agency

Table B-6
Summary Statistics[a] for the East Housing Area

	SAMPLE SIZE		Detection	CENSORED DATA		DETECTED DATA		DETECTED AND CENSORED DATA[b]					
Metal	Detected	Total	Frequency	Min	Max	Min	Max	Median	Q95	Mean	SD	CV	UCL95[c]
arsenic	12	21	57%	10	20	9.96	40.7	13.2	38.6	13.1	8.0	0.61	16.3
barium	21	21	100%	—[d]	—	20.20	224.0	85.9	220.0	94.1	53.7	0.57	114.3
beryllium	21	21	100%	—	—	0.23	0.8	0.5	0.79	0.5	0.1	0.29	0.6
cadmium	2	21	10%	1	2	1.06	1.6	1.0	1.5	0.9	0.3	0.31	1.2
chromium	20	21	95%	2	2	6.17	70.9	32.3	70.8	34.3	21.3	0.62	42.3
cobalt	21	21	100%	—	—	4.34	21.7	7.3	20.9	8.3	3.7	0.44	9.6
copper	21	21	100%	—	—	13.20	85.2	31.2	84.9	38.0	19.5	0.51	45.9
lead	15	21	71%	7.5	15	7.66	57.9	20.0	56.7	21.2	15.5	0.73	27.1
mercury	21	21	100%	—	—	0.09	9.4	0.4	8.5	0.8	2.0	2.49	2.7
molybdenum	1	21	5%	2	4	1.17	1.2	2.0	2.0	1.7	0.5	0.28	2.1
nickel	20	21	95%	6	6	11.70	89.4	37.0	87.7	41.1	21.5	0.52	49.2
vanadium	21	21	100%	—	—	15.90	71.7	32.8	70.5	37.7	16.3	0.43	43.8
zinc	21	21	100%	—	—	32.80	216.0	70.6	208.2	83.2	38.8	0.47	97.8

Notes:

[a] units are mg/kg

[b] summary statistics were compiled from ProUCL and Statistica model output; for censored data, one half the detection limit was used in calculations

[c] the UCL95 was selected from ProUCL based on a hierarchy established by U.S. EPA; the t-statistic was used for normally distributed data, the H-statistic was used for lognormally distributed data, the approximate gamma was used for data following a gamma distribution, and the 95% Chebyshev was used for nonparametric data sets

[d] dash indicates not applicable

Acronyms/Abbreviations:

CV – coefficient of variation (SD/mean)
max – maximum concentration reported
mg/kg – milligrams per kilogram
min – minimum concentration reported
Q95 – 95th quantile
SD – standard deviation
UCL95 – 95 percent upper confidence limit of the mean
U.S. EPA – United States Environmental Protection Agency

Table B-7
Summary Statistics[a] for the FISCA Warehouse Area

	SAMPLE SIZE		Detection	CENSORED DATA		DETECTED DATA		DETECTED AND CENSORED DATA[b]					
Metal	Detected	Total	Frequency	Min	Max	Min	Max	Median	Q95	Mean	SD	CV	UCL95[c]
antimony	1	18	6%	6	12	12.50	12.50	6.0	—	5.2	2.3	0.45	7.6
arsenic	10	18	56%	10	40	5.24	25.40	10.0	25.4	10.6	5.3	0.50	12.9
barium	18	18	100%	—[d]	—	9.82	180.00	50.2	180.0	59.7	43.9	0.74	82.1
beryllium	18	18	100%	—	—	0.13	0.76	0.4	0.8	0.4	0.2	0.45	0.5
chromium	17	18	94%	4	4	1.07	182.00	28.5	182.0	40.1	44.7	1.11	65.2
cobalt	18	18	100%	—	—	2.07	28.60	6.8	28.6	8.4	6.5	0.78	11.6
copper	18	18	100%	—	—	1.95	87.80	16.7	87.8	21.8	21.8	1.00	33.3
lead	15	18	83%	15	30	3.90	32.40	13.5	32.4	14.1	7.7	0.54	17.2
mercury	15	18	83%	0.05	0.05	0.04	1.01	0.2	1.0	0.3	0.3	1.02	0.4
molybdenum	4	18	22%	2	8	1.99	4.53	2.0	4.5	2.0	1.0	0.51	3.1
nickel	17	18	94%	12	12	3.32	592.00	31.4	592.0	77.5	139.3	1.80	140.8
vanadium	18	18	100%	—	—	4.44	71.70	25.8	71.7	30.1	17.0	0.57	37.1
zinc	18	18	100%	—	—	10.10	152.00	47.3	152.0	55.3	35.5	0.64	69.8

Notes:

[a] units are mg/kg

[b] summary statistics were compiled from ProUCL and Statistica model output; for censored data, one half the detection limit was used in calculations

[c] the UCL95 was selected from ProUCL based on a hierarchy established by U.S. EPA; the t-statistic was used for normally distributed data, the H-statistic was used for lognormally distributed data, the approximate gamma was used for data following a gamma distribution, and the 95% Chebyshev was used for nonparametric data sets

[d] dash indicates not applicable

Acronyms/Abbreviations:

CV – coefficient of variation (SD/mean)
FISCA – Fleet and Industrial Supply Center Alameda
max – maximum concentration reported
mg/kg – milligrams per kilogram
min – minimum concentration reported
Q95 – 95th quantile
SD – standard deviation
UCL95 – 95 percent upper confidence limit of the mean
U.S. EPA – United States Environmental Protection Agency

Table B-8
Summary Statistics[a,b] for FISCA SWMUs and AOCs

Chemical	SWMU 1					SWMU 3					SWMU 4/AOC 2				
	SAMPLE SIZE		Detection	DETECTED DATA		SAMPLE SIZE		Detection	DETECTED DATA		SAMPLE SIZE		Detection	DETECTED DATA	
	Detected	Total	Frequency	Min	Max	Detected	Total	Frequency	Min	Max	Detected	Total	Frequency	Min	Max
aluminum	388	396	98%	501	46,600	16	16	100%	1,960	17,600	51	51	100%	2,270	25,400
antimony	197	396	50%	0.33	35.8	8	16	50%	0.34	0.81	32	51	63%	0.36	3.3
arsenic	296	396	75%	0.27	212	16	16	100%	0.78	7.7	46	51	90%	0.58	30.4
barium	390	396	98%	2.8	358	16	16	100%	17.3	60.7	51	51	100%	16.9	1,610
beryllium	227	396	57%	0.05	1.1	8	16	50%	0.06	0.16	30	51	59%	0.05	0.42
cadmium	174	396	44%	0.07	86.4	5	16	31%	0.12	0.49	37	51	73%	0.07	2.6
calcium	373	396	94%	208	445,000	16	16	100%	835	4,790	51	51	100%	1,280	12,500
chromium	384	396	97%	0.46	458	16	16	100%	13.3	70.3	51	51	100%	0.9	81.7
cobalt	384	396	97%	0.61	212	16	16	100%	2.5	13	51	51	100%	2.5	15.6
copper	387	396	98%	1	2,110	16	16	100%	2.8	32	51	51	100%	1.8	529
iron	368	396	93%	1,440	170,000	3	16	19%	4,460	31,200	51	51	100%	4,500	36,700
lead	390	396	98%	0.56	26,600	16	16	100%	2	39.4	51	51	100%	2	498
magnesium	376	396	95%	262	123,000	16	16	100%	1,130	11,600	51	51	100%	1,130	13,000
manganese	385	396	97%	12.2	1,690	16	16	100%	40.6	363	51	51	100%	49.1	39,500
mercury	281	396	71%	0.007	9.4	11	16	69%	0.009	0.107	36	51	71%	0.008	0.29
molybdenum	43	396	11%	0.21	24	—[c]	16	0%	—	—	2	51	4%	0.2	20.7
nickel	384	396	97%	1	1,070	16	16	100%	13.9	73.5	51	51	100%	3.6	65.3
potassium	364	396	92%	134	7,640	16	16	100%	275	3,790	51	51	100%	166	4,790
selenium	43	396	11%	0.1	4.4	—	16	0%	—	—	—	—	—	—	—
silver	24	396	6%	0.2	5.4	—	16	0%	—	—	—	—	—	—	—
sodium	329	396	83%	12.8	20,200	9	16	56%	55.4	795	35	51	69%	43.5	21,300
thallium	10	396	3%	0.25	2	—	16	0%	—	—	3	51	6%	0.34	39.1
vanadium	377	396	95%	1.5	106	16	16	100%	11.4	52.9	51	51	100%	7.1	65.4
zinc	383	396	97%	9.1	1,580	16	16	100%	11.4	76.4	51	51	100%	12.7	393

Table B-8
Summary Statistics[a,b] for FISCA SWMUs and AOCs

	AOC 1					AOC 3					AOC 8				
	SAMPLE SIZE		Detection	DETECTED DATA		SAMPLE SIZE		Detection	DETECTED DATA		SAMPLE SIZE		Detection	DETECTED DATA	
Chemical	Detected	Total	Frequency	Min	Max	Detected	Total	Frequency	Min	Max	Detected	Total	Frequency	Min	Max
aluminum	58	61	95%	2,230	17,400	8	8	100%	2,980	15,400	12	12	100%	4,010	17,700
antimony	50	61	82%	0.34	0.93	4	8	50%	0.54	1.2	12	12	100%	0.58	7.2
arsenic	42	61	69%	0.93	5.5	5	8	63%	0.47	5.1	12	12	100%	2.5	19.6
barium	61	61	100%	15	191	8	8	100%	23	123	12	12	100%	47.3	433
beryllium	16	61	26%	0.04	0.56	4	8	50%	0.06	0.29	7	12	58%	0.21	0.55
cadmium	11	61	18%	0.07	0.87	4	8	50%	0.09	0.45	12	12	100%	0.58	38.9
calcium	57	61	93%	766	52,800	8	8	100%	1,210	10,700	12	12	100%	3,790	21,900
chromium	60	61	98%	2.9	54.6	8	8	100%	5.3	47.6	12	12	100%	19.9	205
cobalt	19	61	31%	2.6	19	8	8	100%	3.7	11.8	12	12	100%	6.7	73.7
copper	60	61	98%	2.9	109	8	8	100%	2.8	53	12	12	100%	24.7	373
iron	55	61	90%	3,970	39,800	8	8	100%	5,890	26,300	12	12	100%	13,700	52,100
lead	60	61	98%	2.1	17.5	8	8	100%	2	13.2	12	12	100%	83.2	785
magnesium	57	61	93%	1,140	9,240	8	8	100%	1,540	4,930	12	12	100%	2,940	13,500
manganese	59	61	97%	50.6	866	8	8	100%	73.9	671	12	12	100%	227	14,300
mercury	51	61	84%	0.0185	2.47	4	8	50%	0.022	0.221	12	12	100%	0.136	15
molybdenum	3	61	5%	0.16	0.68	—	—	—	—	—	6	12	50%	1.8	6
nickel	59	61	97%	3.9	55.1	8	8	100%	4.8	40.7	12	12	100%	23.1	334
potassium	59	61	97%	201	2,600	8	8	100%	330	1,170	12	12	100%	518	3,520
selenium	—	—	—	—	—	—	—	—	—	—	1	12	8%	2	2
silver	1	61	2%	0.22	0.22	—	—	—	—	—	1	12	8%	8	8
sodium	41	61	67%	12.8	650	8	8	100%	97	1,140	12	12	100%	963	11,800
thallium	1	61	2%	0.66	0.66	—	—	—	—	—	2	12	17%	20.4	20.4
vanadium	59	61	97%	6.6	108	8	8	100%	13.7	37	12	12	100%	17.7	92.1
zinc	59	61	97%	9.3	101	8	8	100%	14.2	92.4	12	12	100%	185	1,590

Table B-8
Summary Statistics[a,b] for FISCA SWMUs and AOCs

	COA				
	SAMPLE SIZE		Detection	DETECTED DATA	
Chemical	Detected	Total	Frequency	Min	Max
aluminum	20	20	100%	2,920	60,100
antimony	19	20	95%	0.51	5.6
arsenic	20	20	100%	1.6	25.6
barium	19	20	95%	34.4	400
beryllium	13	20	65%	0.32	2.1
cadmium	10	20	50%	0.08	1.3
calcium	20	20	100%	2,420	108,000
chromium	20	20	100%	9.2	314
cobalt	20	20	100%	4.3	64.6
copper	20	20	100%	14	238
iron	20	20	100%	7,310	119,000
lead	20	20	100%	4.3	168
magnesium	20	20	100%	1,740	37,800
manganese	20	20	100%	172	1,440
mercury	19	20	95%	0.071	0.989
molybdenum	3	20	15%	0.33	0.46
nickel	20	20	100%	9.7	335
potassium	20	20	100%	602	8,850
selenium	—	—	—	—	—
silver	2	20	10%	0.22	0.28
sodium	19	20	95%	53.6	6,420
thallium	—	—	—	—	—
vanadium	20	20	100%	11.5	236
zinc	20	20	100%	25.5	417

Reference:
PRC 1996. Fleet and Industrial Supply Center. Oakland, Alameda Facility /Alameda Annex, Alameda, California

Notes:
[a] units are mg/kg
[b] summary statistics were compiled from PRC 1996
[c] dash indicates not applicable

Acronyms/Abbreviations:
AOC – area of concern
COA – College of Alameda
FISCA – Fleet and Industrial Supply Center Alameda
max – maximum concentration reported
mg/kg – milligrams per kilogram
min – minimum concentration reported
PRC – PRC Environmental Management, Inc.
SWMU – solid waste management unit

Table B-9
Summary Statistics[a,b] for IR Site 25

Metal	SAMPLE SIZE Detected	SAMPLE SIZE Total	Detection Frequency	DETECTED DATA Min	DETECTED DATA Max	Mean	EPC
antimony	13	28	46%	2.57	6.59	4.21	4.79
arsenic	28	28	100%	1.37	8.71	3.59	4.24
barium	28	28	100%	26.74	157.63	65.02	75.64
beryllium	11	28	39%	0.11	0.67	0.26	0.34
cadmium	13	28	46%	0.09	0.91	0.24	0.30
chromium	28	28	100%	25.66	96.33	48.47	54.25
cobalt	28	28	100%	3.90	17.18	8.77	10.09
copper	28	28	100%	5.70	51.26	21.50	26.60
lead	28	28	100%	7.00	49.35	21.00	25.77
mercury	25	28	89%	0.05	0.71	0.18	0.24
molybdenum	5	28	18%	0.11	3.09	1.37	3.09
nickel	28	28	100%	20.61	91.01	47.64	54.82
selenium	14	28	50%	0.28	18.02	1.14	1.01
silver	2	28	7%	0.28	0.57	0.44	0.50
thallium	12	28	43%	0.28	42.98	2.21	1.90
vanadium	28	28	100%	18.26	71.72	35.25	40.08
zinc	28	28	100%	19.34	123.69	57.02	69.77

Notes:

[a] units are mg/kg

[b] summary statistics were compiled from Table B-28 of Appendix B of Operable Unit 5 Remedial Investigation Report, Alameda Point, Alameda, California (Neptune 2002)

Acronyms/Abbreviations:

EPC – exposure point concentration
IR – Installation Restoration (Program)
max – maximum concentration reported
mg/kg – milligrams per kilogram
min – minimum concentration reported

ATTACHMENT C

BORING LOGS

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Attachment

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C2 BORING LOGS FOR IR SITE 30

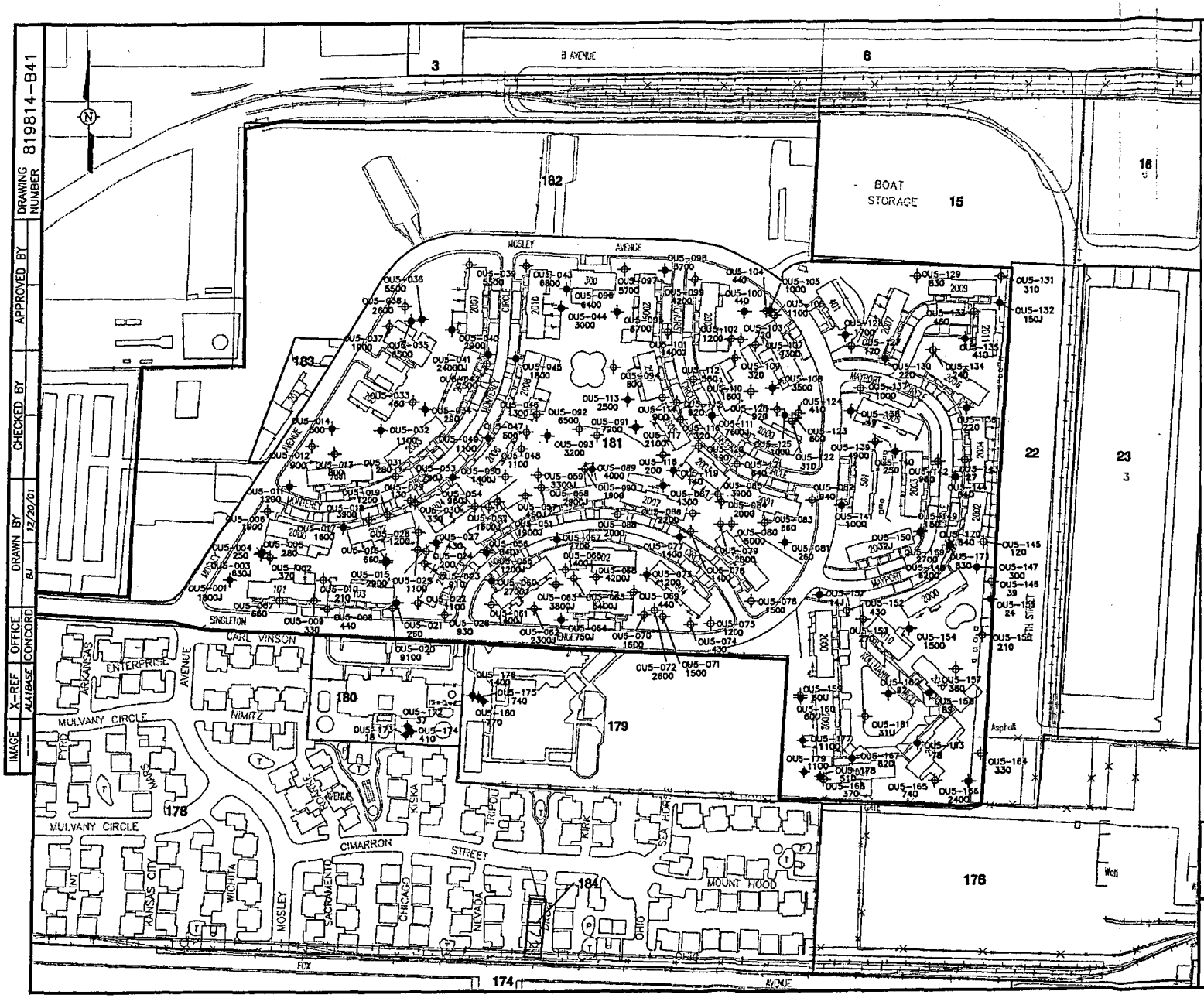
C3 BORING LOGS FOR EAST HOUSING AREA

C4 BORING LOGS FOR FISCA (Including College of Alameda)

C5 ADDITIONAL BORING LOGS FOR FISCA WAREHOUSE AREA

ATTACHMENT C1

BORING LOGS FOR IR SITE 25



LEGEND

- OU5 BOUNDARY
- 181 PARCEL NUMBER
- PARCEL BOUNDARY
- X OU5-169 SOIL BORING LOCATION (0–0.5 FT. BGS)
- OU5-139 SOIL BORING LOCATION (0–4 FT. BGS)
- OU5-138 SOIL BORING LOCATION (0–8 FT. BGS)
- 260 BaP EQUIVALENT CONCENTRATION IN MICROGRAMS PER KILOGRAM
- 120J ESTIMATED VALUE
- 60U NOT DETECTED ABOVE LISTED VALUE

SCALE

0 200 400 FEET

OPERABLE UNIT 5
REMEDIAL INVESTIGATION REPORT
ALAMEDA POINT
ALAMEDA, CALIFORNIA

FIGURE 4–7

BaP EQUIVALENT CONCENTRATIONS
0–0.5 FEET DEPTH INTERVAL

IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
	ALATBASE	CONCORD	BJ 12/20/01			819814-B41

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO · 31 Alameda	
BORING NUMBER: CH-1	COORDINATES:	DATE: 6-4-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH (ft)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (")	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
				Topsoil 6"				
2	181-438 TOC		100%	silty sand med dense - dense fine - dry-moist dk grayish brown 10YR 4/2 ↓ dk yellowish brn 10YR 5/6	SM			-Trace of Shells
4								
6			85%					-Trace wood
	181-479 TOC			7'				
8				sand - silty clay wet - soft + loose dk grayish brn 10YR 4/2 8'	SC			
				9'				
			100%	sand moist - wet - fine loose med dense dk grayish brn 10YR 4/2	SW			-Trace of Shells

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9600

Steve Truman

MUC 839-841
842-844
848-850
851-853

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 8198M	PROJECT NAME: CTO 31 Alameda	
BORING NUMBER: CH-1	COORDINATES:	DATE: 6-4-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: McZellman	Depth Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
				(cont'd from prev. page				
14			100%		SP			- very wet
16								
				17.5'				
18			100%	clay soft, moist v. dark gray 2.5Y N3/1	CH			- some organics - odor
20				TD = 20 ft				

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Direct Push 9600

Driller: Steve Truman

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 Aberdeen	
BORING NUMBER: CH 2	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT RIG		PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
				TOPSOIL 6"				
			80%	Sand loose-med dense moist Fine lt brownish gray 2.5Y 6/2	SP			
2	181-480 TOC							
4								
6			60%					
	181-481 TOC							
8								
10			90%					

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power Probe 9600

Driller: Steve Truman

MUC 51-53
54-56
57-59
60-62
63-65

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 874814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: C12	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				(cont'd from pg 1				
			100%	clay dk gray soft moist 2.5Y N4/ 14'	CH			
14				Sand Moist - wet loose brown 10YR4/3 ↓ Gray 2.5YR N5/	SP			
16								
18			100%					
20				TD 20'				

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9100

Driller: Steve Truman

MVC-

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH3	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				Topsoil 6"				
			40%	Sand fine med dense moist brown 10YR 5/3	SP1			- some silty sands
2	181-482 TOC							
4				4'6"				
			100%	silty clay black hard 5'	OL			
				Sand loose-med dense moist brown 10YR 4/3	SP			
6	181-483 TOC							
8			100%					
10								
12								

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9100

Driller: Steve Truman

MVC- 98-99
100-102
103-105
106-108
109-111

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 619814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH 3	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
14			100%	cont'd from P.1	SP			- Becoming wet
16								
18			100%					
				18.5' silty clay firm-hard moist brn-black	OH			- mash crust - odor → organic debris
20				TD 20'				

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9100

Driller: Steve Truman

MVC-

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 817814	PROJECT NAME: CTO-37 Alameda	
BORING NUMBER: CM4	COORDINATES:	DATE: 6-6-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Lettman	Depth Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL .25'				
				silty clay firm moist dk grayish brown 2.5YR 4/2	CL			
2	181-707	TOC	60%					
4								- some organic debris
6	181-708	TOC	70%					
				7'10"				
8				sand loose fine moist-wet dk Gray 2.5YR N4/	SP			
10			70%					
12								

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Push 9600

Driller: Steve Trumer

MUC 212-214
215-217
218-220
221-222
223-224

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 Alameda	
BORING NUMBER: CH 4	COORDINATES:	DATE: 6-6-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
14			10%	V ?				
				silty clay soft, moist. dk gray 2.5 ~~YR N4/~~	CL			
16								
16			10%	18'				- organic debris - odor
				silty clay ~~soft~~ moist olive gray 5Y 4/2	OH			
20								- some odor
24			30%	dk gray 2.5YR N4/				
				TD 24'				

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Probe 9600

Driller: Steve Tivma

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH-5	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zollman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL 6"				
				silty sand firm dry - moist Dark Brn. 7.5 YR 3/2	SM			- Crushed Rock
2	181-484	TOC	80%					
4								
			60%		SM			
6	181-485	TOC		Sand Med dense moist brown 10YR 5/3 ↓ Gray 10YR 5/1	SP			
8								
10			100%					
12								

NOTES:

Drilling Contractor Kehoe

ing Equipment Power Push 9600

er: Steve Truman

MVC 863 - 865
866 - 867
874 - 876
877 - 879
880 - 882

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH-5	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: N. Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				↓				
14					SP			
16								
18				19'				
				Clay moist, soft v. dark gray 10YR 3/1	CI			
20				TD · 20'				

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Pull 9610

Driller: Steve Trum

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH-6	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL 6"				
2	181-486	TOC	70%	Sand loose fine dry-moist lt brownish gray 10YR 6/2	SP			
4				5'				
6	181-487	TOC	100%	clay soft moist dk gray 2.5Y N3/ 7'	CH			
8				clayey Sand loose, fine, moist brown 7.5YR 5/4 9'	SL			
10			90%	Sand med dense moist fine gray 2.5YR N4/	SP			
12								

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

er: Steve Truman

MVC- 124-125
126-128
129-131
132-134
135-~~137~~ 136 [illegible] 6/25/01

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH 6	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
				Sand from pg 1				
14			100%		SP			
16								- odor - dark sediment - black
18			100%	18'				- organic debris - odor
				clay firm moist very dk gray 7.5YR N3/	OH			
20				TD 20'				

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

Driller: Steve Truman

MVC-

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: RTO-37 Alameda	
BORING NUMBER: CH8	COORDINATES:	DATE: 6-6-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: HPT RIG		PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL 6"				
				silty Sand fine - fine Gravel loose - med dense dry - moist v dark grayish brn 10YR 3/2	GM			-crushed Rock
2	178-0018	TOC	100%					
4								-some clay
				5' silty clay → clay w/ depth firm moist wetter & softer w/ depth	ML ↓ CH			
6	178-0019	TOC	100%					
8								-some sandy clay
10			60%	clay				

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9600

Driller: Steve Truman

MVC - 225 - 228
229 - 232
233 - 235
236 - 238
239
240 - 241

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819874	PROJECT NAME: CTO 31 Alameda	
BORING NUMBER: CH 8	COORDINATES:	DATE: 6-6-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Zellman	Depth. Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
14			60%	Clay from pg 1				
				15'6"				
16				Sand fine wet loose dk gray 2.5Y N4/	SP			
18			10%					
20								
22			30%	Silty clay moist soft dk greyish brn 10YR 4/2	OL			organic debris
24				TD 24'				

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Push 9600

Driller: Steve Truman

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH-9	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL .5'				
			80%	silty sand med-dense-dense dry-fine brown 7.5YR 4/4	SM			
2	181-704	TOC		Sand loose clay-moist fine lt brownish Gray 10YR 6/2	SP			-Trace Crushed Rock
4								
6	181-705	TOC	60%					
8				8.6'				
			100%	Silty Clay soft, moist Gray 7.5YR N5/ 10'	OL			
10				Clay soft, moist dk gray 7.5YR N4/	CH			
12								

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9600

Driller: Steve Truman

MUC-~~885~~ 886-888

892 - 894

901 - 903

904, 0013, 0025

003 - 005

006 - 008

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 814815	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH-9	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellmer	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				sand fine, moist yellowish brn 10YR 5/4 12'6	SP			
				clay soft, moist gray 2.5Y N5/ 13'	CH			
14			60%	sand gray 10YR 5/1 14'6	SP			
				Clayey sand soft moist gray 10YR5/1	SC			
16								
18			80%	sand fine, moist brown - gray 19'6"	SP			
20				clay soft moist dark gray	OH			organics
				TD = 20'				

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9600

Driller: Steve Truman

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 Alameda	
BORING NUMBER: CH-10	COORDINATES:	DATE: 6-4-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL				
2	181-702	TOC	90%	Clayey sand / moist, loose, fine grayish brn 10YR 5/2 3.5'	SC			
4				Clay moist, firm v. dark gray 2.5YR N3/ 7'	CH			
6	181-703	TOC	80%					
8				SAND fine, moist, firm v. dark gray 2.5YR N3 ↓ To dark gray 5Y 4/1	SP			
10			60%					
12								

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9600

Driller: Steve Truran

MUC-813s - 815
819s - 821s
822 - 823
827 - 829
830 - 832

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 37 Alameda		
BORING NUMBER: CH 10	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				cont from previous page				
14			60%		SP			
16								
18			50%	18.5'				
				Clay soft, moist v. dark gray 2.5Y N3/ 19'	OH			Trace organics - slight odor
20				silty clay firm, moist v. dark grayish brown 2.5Y 3/2	CL			
				TD 20'				

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Push 9600

Driller: Steve Truman

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: Cto-31 Alameda	
BORING NUMBER: CH-11	COORDINATES:	DATE: 6-4-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
				TOPSOIL 1'				
2			100%	silty clay moist, firm very dark Gray 10YR 3/1 3.5'	CL			
4			100%	SAND Dry-moist Loose Brown 10YR 5/3. 6.5'	SP			
6				Clay moist - firm v. dark gray 2.5Y N/3 7'	OH			
8			100%	sand Dry-moist, firm dark yellow brn 10YR 4/6 to grayish brn 10YR 5/2 11'6"	SP			-Trace of Shells
10								
12				Clay moist. firm v. dark gray 2.5Y N3/	OH			

NOTES:

Drilling Contractor Kehoe

ing Equipment Power Push 9610

er: Steve Truman

MWC 787S - 789S
793 - 795S
796S - 798S
799S - 801S
805 - 806

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH-11	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
			100%	sand med dense - dense moist - wet well graded dark Gray 5YR 4/1	SW			
14								
				16'				
16								
				silty clay dk. gray firm 5YR 4/1 moist 17'	CL			
				Clay silt - firm moist W. dark gray 2.5YR N3/	OH			
18			50%					
20				20'				
				TD 20'				

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Push 9600

Driller: Steve Truman

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: E19814	PROJECT NAME: C10-31 Alameda	
BORING NUMBER: CH 12	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL 1'				
2			60%	clayey silt firm moist dk brown 10YR 3/3	OL			- some concrete + crushed rock
4								
6			90%	6'				
				clay firm moist dk gray 2.5YR N4/ 7'6"	OH			- some organics
8				sand Med dense - dense moist wet fine gray 2.5Y N5/	SP			
10			100%					

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

Driller: Steve Truman

MVC-

66-67
68-70
71-73
74-76
77-79

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: EM814	PROJECT NAME: CTO-81 Alameda	
BORING NUMBER: CH 12	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT) 12	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
				SMD ↓				
14			100%		SP			-some shells
16				Cont'd from pg 1				
18			100%					
20				TD 20'				

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9100

Driller: Steve Truman

MVC-

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 89814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH-13	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
				Topsoil 1'				
2			90%	silty clay firm - moist dk Grayish brn. 2.5Y 4/2	ML			Trace of crushed Rock
4				5'				
6			90%	sand med dense, fine, moist dk Grayish Brn. 2.5Y 4/2	SP			
8								
10			90%		SP			
12								

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Push 9600

Driller: Steve Turner

7745
7755
7765
7835 - 7845
7855 - ~~7865~~ ALL
6/25/01

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: Co 31 Alameda		
BORING NUMBER: CH-13	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				sand fine, med dense, moist dk grayish Brn. 2.5Y 4/2				
14			50%		SP			
16								
18			60%	18.5'				
				silty clay - clay soft - moist v. dark gray 2.5Y N/3 18.5'	CL			
20				silty clay firm, moist v. dark grayish Brn	CL			
				TD 20' 2.5YR 3/2				

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 7600

Driller: Steve Truman

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 8A8H	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH-14	COORDINATES:	DATE: 6-4-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellma	Depth Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DIRECT PUSH		PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
2			80%	SILTY SAND - SAND FINE, DRY - MOIST Med Dense - Dense dk. GRAY GRN 10YR 4/2	SM			
4				5'				
6			80%	CLAY, MOIST, FIRM	CL			
				7'				
8				SAND, MOIST LOOSE - MED Dense dark Gray 7.5 YR N4/ 8'	SP			- w/ clay lenses
10			100%	SAND, MOIST, FIRM WELL SORTED GRAY 10YR 5/1	SP			
12								

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 7680

Driller: Steve Truman

MUC - 4745
MUC - 4785
MUC - 4825
4865
4875

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH-14	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Tillman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				Clayey SAND GRADING TO SAND LOOSE, MOIST-WET FINE GRAY 10YR 5/1	SC			
14			100%					
16								
18			100%					
20				20' TD-20'				

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Probe 7610

Driller: Steve Truma

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CH-31 Alameda		
BORING NUMBER: CH-15	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
				TOPSOIL 1'				
2			100%	SILTY SAND very fine - dry dense Brown 10YR 5/3 3'	SM			
				clay - firm, MOIST v DARK GRAY 10YR 3/1 3.5'	CL			
4				SAND - fine - loose DK Gray 5Y 4/1 Grading to Clay - Soft DK Gray 5Y 4/1 5'	SP			
6			100%	silty clay - clay loose - MOIST v. dark Gray 7.5 YR N3/ 8'	ML			
8				SAND - FINE soft - firm, MOIST - wet DK Gray 5Y 4/1	SP			
10			100%					
12								

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Parker Push 9600

: Steve Truman

MUC - 7605
7615
7623
7665
7675

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 8984	PROJECT NAME: CTO 31 Alameda		
BORING NUMBER: CH15	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
				SAND - FINE SOFT, FIRM, MOIST - wet DK GRAY 5Y 4/1				
			80%		SP			
14								
16								
			80%					
18				18.5'				
				Clay FIRM, MOIST VR. DK. GRAY 7.5YR N3/	CL			
20				20'				
				TD 20'				

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 7610

Driller: Steve Truman

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

OJECT NUMBER: EM814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH 116	COORDINATES:		DATE: 6-5-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL 6"				
2			90%	silty sand v. fine - coarse dry - moist loose - dense brown 7.5YR 5/2 3'	SM			-some rock
4				sand moist fine loose lt brownish gray 10YR 6/2	SP			
6			90%	8'				
8			80%	silty clay soft moist very dk gray 2.5Y N3/ 11.5'	ML			
10				sand wet, fine, loose grayish brown 10YR 5/2	SP			
12								

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

Driller Steve Truman

MVC- 163-165
166
167-169
170-172
173-175

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 619814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH-16	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
				Sand fine moist loose grayish brown 10YR 5/2	SP			
14			66%					
16								
18								some clay
				19'				organic debris marsh crust
				Silty clay soft - firm moist brown 7.5YR 4.2	CL			Bay mud
20								
				TD 20'				
22								

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9100

Driller: Steve Truman

MVC-

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 ALAMEDA	
BORING NUMBER: CH-17	COORDINATES:	DATE: 6-4-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT 817		PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
2			80%	SILTY SAND - SAND, FIRM, DRY-MOIST, FINE BROWN 10YR 4/3	SM			
4				5'5"				- TRACE BE ROCK
6			100%	SILTY SAND - CLAY FIRM Wet-MOIST DARK GRAY 2.5Y N 4/ 7'	SC			
8				SAND, FINE, med dense, MOIST Well sorted GRAY 7.5YR N5/	SP			
10								
12								

NOTES:

Drilling Contractor: Cehoe

Drilling Equipment: Power Push 9600

Driller: Steve Truman

MUC - 750S
751S
752S
753S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH-17	COORDINATES:	DATE: 6-4-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				SAND FINE MED DENSE, MOIST-WET well sorted GRAY 7.5YR N5/				
14			100%		SP			
16								
18			100%					
20				TD 20'				

NOTES:

Drilling Contractor Cahoe

Drilling Equipment ~~DPT Rig~~ Power Push 9600

Driller: Steve Truma

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: Alameda CTO - 31		
BORING NUMBER: CH-18	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL .5'				
				sand, fine, medium, moist dark yellowish Brn. 10YR 3/4 1.5	SP			Trace crushed Rock
2	CH'		80%	sand - fine, moist dark grayish Brn 10YR 4/2	SP			
4				5'				
				sandy clay - clay, moist, firm 7.5YR N14 6'	CL			
6			90%	SAND - FINE, MOIST yellowish Brown 10YR5/4	SP			
8				8'				
				silty SAND. fine; MOIST, FIRM BRN - DK. GRAY 10YR5/4 10YR 4/2 9'	SM			
10			100%	SAND - FINE, MOIST, FIRM yellowish BRN 10YR 5/4	SP			
12								

NOTES:

Drilling Contractor: Kellee

Drilling Equipment: Power Push 4610

Driller: Steve Truman

MVL - 4625
MVL 4675
MVL 4685
MVL [illegible] ?
4695
4705

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 817814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH-18	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Cellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				SAND - FINE · MOIST GRAY 10 YR 5/1				
14			90%	14'	SP			
16				SAND, MOIST-WET, FINE Yellowish BRN 10YR5/4				~~TRACE~~ CLAY (Gray) 3" of
18			100%	18.5'				-TRACE ORGANIC (MARSH CRUST
				CLAY - MOIST - FIRM dk. GRAY 7.5YR N/4	CH			
20				TD 20'				

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Rust 9600

Driller: Steve Torma

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

OJECT NUMBER: 819814	PROJECT NAME: CTO-81 Alameda		
BORING NUMBER: CH 19	COORDINATES:		DATE: 6-5-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				silty sand yellowish brn 10YR 5/4 dense fine dry-moist 1'	SM			-Crushed Rock
2			80%	Sand - silty sand dense dry - moist fine gray 10YR 5/1	SP/SM			
4								
6			100%	7'				
				clay soft firm moist	CH			
8								
10								
12								

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

D Steve Truman

MVC- 80S- 82S
86 - 88
89-91
92-94
95-97

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 619814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH 19	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
				Clayey sand very soft wet	SC			
14			100%	v. dark gray 2.5YR N3/				
				15'				
				sand - clayey sand w/ depth med dense - dense moist dk. gray 2.5YR N4/	SP/SC			
16								
18			100%					
				19'				
				sand dkg ray fine 2.5YR N4/ moist med dense	SP			
20								
				TD 20'				

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

Driller: Steve Truman

MVC-

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH-20	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				Sand med dense - dry fine - coarse light gray 10YR 6/1 3'	SW			- poorly sorted
2			100%					
4				Sand brown 10YR 4/3 loose moist 5'	SW			
6			100%	Clay soft moist-wet gray 7.5YR N5/ 7'	CH			- shells
8				Sand loose moist gray 7.5YR N5/	SP			
10			8%	NR				
12								

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9100

Driller: Steve Truman

MVC - 112-114
115-117
118-120
121-123

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH 20	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
14			0%	NR 19'				
16				Sand				
				grading to				
18			80%					
20				Clayey sand	SC			
			100%	Sand loose wet ~~moist~~ gray 7.5YR N5/	SP			
22								
24								

TD 24'

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9100

Driller: Steve Truman

MVC-

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: C11-21	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellmer	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT		PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
				TOPSOIL .75'				
				silty sand - sand fine, dry-moist loose-med dense Dark Gray 5YR 4/1	SM			
2			100%					
4								
6			30%					
8								
				9.5'				
10			100%	silty clay v. soft, gray 7.5YR N 5/ 10.5'	CL			
				sand fine, moist, loose gray 10YR 5/1	SP			

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9610

Driller: Steve Turner

MUC - 375-39
40-41
42-44
45-47
48-50

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH-21	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Pellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: OPT		PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				(cont'd from PS 1	SP			
14			100%	silty clay very soft wet gray 7.5YR N5/ 15'	CL			
16				clayey sand very soft wet fine dk gray 5Y 4/1	SC			
18			100%	19'6"				
20				sand moist fine loose-med dense gray 7.5YR N/5 20'	SP			
				TD 20'				

NOTES:

Drilling Contractor: Kelue

Drilling Equipment: Power Push 9610

Driller: Steve Truman

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 684814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH 22	COORDINATES:		DATE: 6-4-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M Zellman	Depth	Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
				TOPSOIL				
2			60%	Sand dry-moist fine-med grain v. dense pale Brn 10YR 6/3 3.5'	GC			- Crushed Rock
4				silty clay dry-moist firm-hard	CH			
			50%					
6				Sand dry-moist fine w/ some med grain dense-v. dense pale Brn 10YR 6/3 9'	SP			
8								
10			100%	clay moist soft-firm gray 2.5Y N5/ 10' Sand moist fine gray 2.5Y N5/ 10'6" Clay	CH SP CH			
12								

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Push 9610

Driller: Steve Tr—

MWC- 021S-023S
028-029
30-32
33-36

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819414	PROJECT NAME: CTO 31 Alameda	
BORING NUMBER: CH-22	COORDINATES:	DATE: 6-4-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-4-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-4-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				silty clay wet, very soft gray 7.5YR N/5 13'	OL			
14			80%	sand wet, fine, med dense gray 7.5 YR N/5 16'6"	SP			
16				silty clay wet soft gray 7.5YR N/5 17'6"	OL			
18			100%	sand wet fine...	SP			
20				TD 20'				

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Puch 9600

Driller: Steve Truman

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: E19814	PROJECT NAME: CTO-81 Alameda		
BORING NUMBER: CH-23	COORDINATES:		DATE: 6-5-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0								
2			60%	- silty sand med dense dry fine-coarse pale brn 10YR 6/3	SM			- crushed Rock - poorly sorted
4								
6								
				7' clay Hard dry-moist 8'	CH			
8				silty sand	SM			
			60%	10'				
10				silty clay soft moist 7.5YR 4/2	CL			
12								

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

: Steve Truman

MVC- ~~138 - 140~~ 2 RAC 6/05/01

141 - 143

144 - 146

147 - 149

150 - 152

damaged files

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH-23	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				clayey silt from pg 1	ML			
14			70%					
16								
18								
20				TD 20'				

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

Driller: Steve Truman

MVC-

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: SA814	PROJECT NAME: CTO-31 Alameda		
BORING NUMBER: CH 24 P175	COORDINATES:		DATE: 6-6-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0								
2			60%	silty sand dry - moist fine - coarse sand med dense grey - reddish yellow 7.5YR 6/8 5'	SM			
4				Sand loose moist fine ++ brownish gray 2.5Y 6/2	SP			
6			90%	Clay soft - firm moist 6'	CL			} some clay
8				Sand loose, moist, fine lt. brownish gray 2.5Y 6/2	SP			
10			100%					
12								

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9600

Driller: Tyler Deets

MUC - 256-258
259-262
263-265
266-268
269-272
273-276

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 81984	PROJECT NAME: CTO 37 Alameda.		
BORING NUMBER: CH 24 P175	COORDINATES:		DATE: 6-6-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				sand from PJ 1				
14			100%	grading to gray sand 2.5Y 5/N	SP1			shells
16								wet
18			100%	silty clay soft fine gray 2.5Y 5/N 19.5'	C1			
					O1			marsh crust - dk. organics
20				silty clay soft moist dk grayish brn 7.5Y 4/2	C1			
22								
24								

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Powerpush 9600

Driller: Tyler Deets

TD 24'

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-81 Alameda	
BORING NUMBER: CH 25	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL .5'				
2			50%	clayey sand moist - wet soft reddish brown 5YR 5/3 3'	SC			
4				silty sand loose fine - medium very pale brown 10YR 7/4	SM			- some crushed Rock
6			50%	7'				
8			60%	silty clay soft moist gray 2.5YR N5/	CL			
10								
12								

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

Steve Truman

MVC- 185 - 187
188 - 189
190 - 192
193-195

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH-25	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				silty clay ↓ pg 1.	CL			
14			60%	14.5'				
				Sand very wet loose dk. gray 2.5Y 4/1	SP			
16								
18			0%	no Recovery - sample stuck				
20				TD. 20'				

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9100

Driller: Steve Truman

MVC-

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 614814	PROJECT NAME: CTO-81 Alameda	
BORING NUMBER: CH26	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				Silty sand dense dry fine-loose yellowish Brn 10YR 5/4	SM			- some clay
2			50%					
4				Clay soft moist Dk. Gray 2.5Y N/4	CH			- some fines
6			40%					
8								
10								
12								

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

: Steve Truman

MVC-

153-155
156-157
158-159
160-162

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: E19814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH 26	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
14			0%	NR				
16				silty clay very soft wet	CL			
18			100%	Dk Gray 2.5Y N/4				-sacks
20								
				TD 20'				

NOTES:

Drilling Contractor Kehoe Drilling

Drilling Equipment Power probe 9100

Driller: Steve Truman

MVC-

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 615814	PROJECT NAME: CTO-31 Alameda	
BORING NUMBER: CH-27	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 1 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0								
2			0%	?				
4				silty sand dry, loose, fine-coarse ltbrn - yellowbrn. 5Y	GM			- crushed Rock - crushed shells
4			70%	Clay silt - firm, moist, dk gray 7.5YR N4/	CH			
6				silty sand dry loose - dense fine - coarse brown 7.5YR 5/2 9'	SM			
8				silty clay soft moist dk gray 7.5YR N4/	CL			
10								
12								

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9100

Driller: Steve Truman

MVC- 174-177
178-180
181-182
183-184

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 814814	PROJECT NAME: CTO-81 Alameda	
BORING NUMBER: CH 27	COORDINATES:	DATE: 6-5-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig		PAGE 2 OF 2

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
				silty clay psl				
14			50%		CL			
16								
18			50%	18.5'				- marsh crust
				silty clay soft-firm moist brown 7.5 YR 4.2	CL			
20				TD 20'				

NOTES:

Drilling Contractor: Kehoe Drilling

Drilling Equipment: Power probe 9600

Driller: Steve Truman

MVC-

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO -31 Alameda		
BORING NUMBER: CH 28	COORDINATES:		DATE: 6-5-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Gollmar	Depth	Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0								
2			60%	very silty sand loose - med dense dry - moist fine - coarse olive gray 5Y 5/2 3'6"	GM			- poorly graded - Rocky - Crushed shells
4				clay soft - firm moist dk gray 2.5Y N4/	CH			
6			60%					
8								
10								
12								

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9610

Driller: Steve Truman

MUC 196-197
198, 199
200-202
203-205
206-208
208-211
AOC 6/25/01

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 81 Alameda		
BORING NUMBER: CH 28	COORDINATES:		DATE: 6-5-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-5-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-5-01
DRILLING METHODS: DPT - Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
				Clay from pg 1				
14								
								- Some organic debris
16					CH			
								- no ~~bay~~ marsh crust
18								
20				TD-20'				

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9610

Driller: Steve Truman

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 Alameda		
BORING NUMBER: CH 29 P178	COORDINATES:		DATE: 6-6-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: DPT Rig			PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				Topsoil 6"				
2			80%	Silty clay soft-firm moist strong Brown 7.5YR 4/6	GC			Crushed Rock
4				?				
6			70%	Clay soft moist 2.5Y 4/1	CH			
8								
10								
12								

NOTES:

Drilling Contractor Kehoe

Drilling Equipment Power Push 9600

Driller: Tyler Deets

242-244
245-248
249-252
253
254-255

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 Alameda	
BORING NUMBER: CH 29 P178	COORDINATES:	DATE: 6-6-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: DPT - Rig		PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12				↓ PS' 13'				
14			100%	Sand wet fine loose dk gray 2.5Y N4/ 15'6"	SP			3 clay lense 1"
16				very silty clay moist soft dk gray 7.5Y N4/	CL			16" dark organics - odor
18			100%					
20								
22			90%	Sand wet loose fine dk gray 7.5Y N4/	SP			
24								

NOTES:

Drilling Contractor: Kehoe

Drilling Equipment: Power Push 9600

Driller: Tyler Deets

TD 24'

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 Alameda	
BORING NUMBER: CH 30 P 184	COORDINATES:	DATE: 6-6-01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Zellman	Depth Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: DPT - Rig		PAGE 1 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				Topsoil 6"				
2			70%	Silty sand loose - med dense moist fine - med coarse St. brown 7.54R 5/8 - 3'	GM			- crushed Rock
4				Silty clay soft - firm moist St brown 7.54R 5/8 7'	CL			- some sand
6			100%					
8				silty clay soft moist Gray 7.54R N5/	CL			- some silt - some sand
10			100%					
12								

NOTES:

Drilling Contractor Kehoe

'ing Equipment PowerPush 9600

ller: Tyler Dent

MUC - 277 - 279
280 - 282
283 - 285
286 - 288
289 - 291
292 - 293

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 89814	PROJECT NAME: CTO 31 Alameda		
BORING NUMBER: CH 30 P 104	COORDINATES:		DATE: 6-6-01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6-6-01
ENGINEER/GEOLOGIST: M. Zellman	Depth	Date/Time	DATE COMPLETED: 6-6-01
DRILLING METHODS: DPT Rig			PAGE 2 OF 2

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
12								
			100%	Sand moist-wet fine loose } very wet	SP			-some clayey sand
14				Gray 7.5 YR N5/				
16								
18			60%					-some clayey sand
20								
22			100%					
24								

NOTES:

Drilling Contractor: Geoloc

Drilling Equipment: Power Push 9600

Driller: Tyler Deets

TD 24'

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-001	COORDINATES:	DATE: 23 MAY 2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 23 MAY 2001
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 23 MAY 2001
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			100%	CLAY, MOIST, FAT, DARK GRAYISH BROWN, 10YR 4/2, ROOTS	CL			
2								
4				TRACE 1/4" GRAVEL	CL			
6			100%	CLAY, MOIST TO SATURATED, PLASTIC, DARK GRAY, 2.5Y 4/0	CL			
8				SAND, FINE, WELL GRADED, SATURATED DARK GRAY 2.5Y 4/0	SW			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING AND ENG.

Drilling Equipment

: TYLER DEEDS

PHOTOS ~~USER~~ MVC-841S TO MVC-846S

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-002	COORDINATES:	DATE: 23 MAY 2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 23 MAY 2001
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 23 MAY 2001
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			75% COMPACTED	GRAVELLY SAND, FINE TO COARSE MOSTLY FINE, SILT (5-10%) GRAVEL (5-10%) CLAY (0-5%), DRY TO SLIGHTLY MOIST, DARK GRAY 10YR 4/1	SP			
2								
3				SILTY CLAY, PLASTIC, SLIGHTLY MOIST, SILT (10-15%) SAND (0-5%) DARK GRAY, 10YR 4/1	CL			
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING AND DRILLING

Drilling Equipment

Driller: TYLER DEEDS

PHOTO No. MVC-847S
MVC-848S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-003	COORDINATES:	DATE: 23 MAY 2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 23 MAY 2001
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 23 MAY 01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE TO COARSE MOSTLY FINE POORLY GRADED SILT (5-10%) GRAVEL (0-5%) CLAY (0-5%) SLIGHTLY MOIST, 10YR 4/1, DARK GRAY	SP			
2								
3				SILTY CLAY, SLIGHTLY PLASTIC, SLIGHTLY MOIST. 10YR 4/1 DARK GRAY	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING AND DRILLING

Drilling Equipment

Driller: TYLER DEEDS

PHOTO NO MVC-8495
MVC-8505

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31-ALAMEDA	
BORING NUMBER: OU5-004	COORDINATES:	DATE: 23 MAY 2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 23 MAY 2001
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 23 MAY 01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2				CLAYEY SAND, FINE SAND, ROOT MOTTLE, WET, DARK GRAY 10YR 4/1 CLAY (5-10%)	SM			
4				SILTY CLAY, TRACE GRAVEL ROOT MOTTLE, SLIGHTLY PLASTIC, SILT (10-15%) GRAVEL (0-5%)	CL			
6				SAME AS ABOVE, ~~MORE~~ LESS COMPACT GRADES TO WET PLASTIC LESS COMPACT CLAY; 2.5YR 3/0 VERY DARK GRAY	CL			
8								

NOTES:

Drilling Contractor KEHOE TESTING AND ENG.

Drilling Equipment

Driller: TYLER DEEDS

PHOTO No.

MUC-851, MUC-852 > 0-4'

MUC-853, MUC-854, MUC-855 > 4'-8'

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-005	COORDINATES:		DATE: 23 MAY 01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 23 MAY 01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 23 MAY 01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SAND, FINE, WELL GRADED WET, 10YR 3/2 VERY DARK ~~REDDISH~~ GRAYISH BROWN	SW			
2								
				SAME AS ABOVE				
3				~~SILTY, CLAY~~ SILTY CLAY NON-PLASTIC, SLIGHTLY MOIST, SILT (10-15%) 10YR 3/2 VERY DARK GREYISH BROWN	CL			
4				TD = 4'				

NOTES:

Drilling Contractor: KENDE TESTING/ENG

Drilling Equipment: POWERPROBE 9600

Driller: TYLER DEEDS

NO PHOTOGRAPHS

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-006	COORDINATES:	DATE: 23 MAY 01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 23 MAY 01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 23 MAY 01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE TO MEDIUM, MOSTLY MEDIUM, SILT (5-10%) GRAVEL (5-10%) DRY TO SLIGHTLY MOIST, POORLY GRADED, 10YR 4/2, DARK GRAYISH BROWN	SP			
2								
3				SILTY CLAY, SLIGHTLY PLASTIC DRY TO SLIGHTLY MOIST, SILT (10-15%) 10YR 4/2 DARK GRAYISH BROWN	CL			
4				TDF 4				

NOTES:

Drilling Contractor ~~8198~~ KEHOE TESTING

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

PHOTOS MVC - 8565
MVC - 8573
MVC - 8585 PDL 6/25/01

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-007	COORDINATES:		DATE: 23 MAY 2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 23 MAY 01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 23 MAY 01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (ft)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY GRAVEL, UP TO 1/2" SA-SR, SILT (5-10%) SAND (0-5%), DRY, 10YR 4/2 DARK GRAYISH BROWN	GM			
2								
3				SILTY CLAY WITH TRACE GRAVEL, SILT (10-15%) GRAVEL (0-5%) DRY, 10YR 4/2 DARK GRAYISH BROWN	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-859S

MVC-860S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-008	COORDINATES:	DATE: 23 MAY 2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 23MAY01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 23MAY01
DRILLING METHODS:		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				CLAYEY SILT, NON-PLASTIC, CLAY (0-5%) 10YR 4/2 DARK GRAYISH BROWN, MOIST	~~SM~~ ML			
2								
3				SILTY CLAY, PLASTIC, MOIST SILT (10-15%) 10YR 4/2 DARK GRAYISH BROWN	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-861S

MVC-862S

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-009	COORDINATES:	DATE: 23 MAY 2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 23MAY01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 23MAY01
DRILLING METHODS:		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY GRAVEL, UP TO 1/2" SILT (20-25%) SAND (10-15%) FINE DRY, DARK GRAYISH BROWN 10YR 4/2	GM			
3				CLAY, MOIST, PLASTIC, DARK GRAY ~~10YR~~ 5YR 4/1 ~~10YR~~	CL			
4								

NOTES:

Drilling Contractor KEHOE DRILLING/ENG

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-8635
MVC-8645
MVC-8655

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: GTO 31 - ALAMEDA	
BORING NUMBER: OU5-010	COORDINATES:	DATE: 23 MAY 2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 23 MAY 01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 23 MAY 01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL GRADES TO SANDY GRAVEL WITH CLAY TO SANDY CLAY				
1								
2			<50%					
3								
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWERPROBE 9600

Driller: TYLER DODDS

PHOTO. NO. MVC-866S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-011	COORDINATES:	DATE: 23 MAY 2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 23 MAY 01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 23 MAY 01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2				SANDY SILT, FINE SAND (10-15%) GRAVEL (0-5%) SLIGHTLY MOIST, LOOSE 10YR 3/2 VERY DARK GRAYISH BROWN	ML			
4				CLAY, PLASTIC, TRACE FINE SAND (0-5%) TRACE SILT (0-5%) MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
6								
8				SAME AS ABOVE 10YR 2/2 VERY DARK BROWN				
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

g Equipment POWERPROBE 9600

er: TYLER DEEDS

PHOTOS MVC-8675
MVC-8685
MVC-8695

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-012	COORDINATES:	DATE: 5/23/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/23/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/23/01
DRILLING METHODS: DPT R16		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			75%	SANDY CLAY, FINE SAND (20-25%) PLASTIC, WET, TRACE GRAVEL LENSES, 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
2				CLAY, PLASTIC, TRACE FINE SAND (0-5%) TRACE SILT (0-5%) MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
3								
4				SAME AS ABOVE TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment

Driller: TYLOR DEEDS

PHOTOS MVC-8705
MVC-8715

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31-ALAMEDA	
BORING NUMBER: OUS-013	COORDINATES:	DATE: 5/22/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/22/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/22/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (ft)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			75%	CLAYEY SAND, FINE SAND, CLAY (15-20%) WELL GRADED, MOIST TO WET, VERY DARK GRAYISH BROWN, 10YR 3/2	SM SC			
3				SILTY CLAY, PLASTIC, MOIST, SILT (10-15%) DARK BROWN, 10YR 4/3	CL			
4				GRADES TO CLAY, PLASTIC, SILT (0-5%) TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-872S
MVC-873S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-14	COORDINATES:		DATE: 5/23/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/23/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/23/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2				GRAVELLY CLAY, (5-10 %) GRAVEL, SAND (0-5 %) FINE	CL			
4				CLAY, PLASTIC, TRACE FINE SAND (0-5%) TRACE SILT (0-5%) MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
6				SAND, FINE, WELL GRADED WET, 10YR 3/2 VERY DARK GRAYISH BROWN	SP			
8				CLAY PLASTIC, SATURATED 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-8745
MVC-8755
MVC-8765
MVC-8775

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: SUS-15	COORDINATES:		DATE: 5/23/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/23/01
ENGINEER/GEOLOGIST: J. POLEY	Depth	Date/Time	DATE COMPLETED: 5/23/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2				SANDY CLAY, FINE SAND (20-25%) PLASTIC, MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
4				CLAY, PLASTIC, TRACE FINE SAND (0-5%) TRACE SILT (5-10%) MOIST DARK GRAYISH BRN 10YR 3/2	CL			
6				SAME AS ABOVE GRADES TO 7.5YR 4/0 DARK GRAY, MOIST ~~TOP~~	CL			
8				SAND, FINE, WELL GRADED, SILT (0-5%) SATURATED 7.5YR 4/0 DARK GRAY	SW			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-883S
MVC-884S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-16	COORDINATES:		DATE: 5/1/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/1/2001
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/1/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				CLAYEY SAND, FINE SAND, CLAY (10-15%) GRAVEL (0-5%) SILT (5-10%) COMPACT, DARK BROWN 10YR 4/3	SM SC			
2								
				CLAY PLASTIC, MOIST COMPACT, FINE SAND (0-5%) 10YR 4/3 DARK BRN				
3				SAND, FINE, WELL GRADED, MOIST DARK BROWN, 10YR 4/3	SW			
				CLAY, PLASTIC, MOIST, 10YR 4/3 DARK BROWN	CL			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

8885
8895

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-17	COORDINATES:		DATE: 5/23/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/23/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/23/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			2.5 ft	SILTY GRAVEL, SILT (10-15%) FINE SAND (5-10%) COMPACT DRY DARK GRAYISH BROWN 10YR 4/2	GM			
4				CLAY, PLASTIC, MOIST, 10YR 4/2 DARK GRAYISH BROWN	CL			
6			3 ft	GRADES TO 7.5YR 4/0	CL			
8				CLAY PLASTIC, WET, 7.5YR 4/0 DARK GRAY	CL			
				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-890S
MVC-891S
MVC-892S
MVC-893S
MVC-894S
MVC-895S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-18	COORDINATES:		DATE: 5/23/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/23/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/23/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY SILT, GRAVEL (5-10%) SAND, FINE, (0-5%) COMPACT, DRY 10YR 4/2 DARK GRAYISH BROWN	ML			
2								
3				CLAY PLASTIC, MOIST, 10YR 4/2 DARK GRAYISH BROWN	CL			
4				SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BRN	SW			
				TD=4'				

NOTES:

Drilling Contractor KEHOE ENG/TESTING

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-896S
MVC-897S

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-19	COORDINATES:	DATE: 5/23/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/23/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/23/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY SANDY SILT, FINE SAND (10-15%) GRAVEL (10-15%) CLAY (0-5%) 10 YR 4/2 DARK GRAYISH BROWN, DRY	ML			
2								
3				SAND, FINE, WELL GRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
				CLAY, PLASTIC WET 10YR 4/2 DARK GRAYISH BROWN	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-898S
MVC-899S
MVC-900S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-TRO	COORDINATES:	DATE: 5/24/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	~~SILT~~ CLAYEY SILT, COMPACT NON-PLASTIC, CLAY (5-10%) SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	ML			
2								
3				CLAY, PLASTIC, MOIST TRACE SAND (0-5%) TRACE SILT (0-5%) 10YR 4/2 DARK GRAYISH BRN	CL			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

~~HW~~ MVC-001S
MVC-002S
MVC-003S

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-021	COORDINATES:		DATE: 5/24/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				GRAVELLY SILT W/CLAY GRAVEL (5-10%) CLAY (0-5%) COMPACT, 10YR 4/2 DARK GRAYISH BROWN, MOIST	ML			
2				SILTY GRAVEL, SILT (20-25%) SA-SR, SLIGHTLY MOIST 10YR 4/2 DARK GRAYISH BROWN	GM			
4				CLAY PLASTIC, MOIST, SILT (0-5%) 10YR 4/2 DARK GRAYISH BROWN MOIST	CL			
6				GRADES TO WET/SATURATED 7.5YR 3/0 VERY DARK GRAY	CL			
8				SAND, FINE, BLACK W/ SATURATED TPH ODOR	SW			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

ng Equipment POWER PROBE 9600

r: T. DEEDS

MVC-004S
MVC-005S
MVC-006S
MVC-007S
MVC-008S
MVC-009S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-022	COORDINATES:	DATE: 5/24/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			95%	SILT, NON-PLASTIC, SLIGHTLY MOIST, CLAY (5-10%) GRAVEL (10-15%) 10YR 4/2 DARK GRAYISH BROWN	ML			
2								
3				GRADES TO 0% GRAVEL AND 10-15% CLAY	ML			
4				SAME AS ABOVE	ML			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-0105
MVC-0115

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-023	COORDINATES:	DATE: 5/24/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	SILT, NON-PLASTIC, SAND (5-10%) GRAVEL (5-10%) CLAY (5-10%) 10YR 4/2 DARK GRAYISH BROWN SLIGHTLY MOIST	ML			
2								
3				FINE SAND LENSE, MOIST, 10YR 4/2	SW			
				CLAY, PLASTIC, MOIST, SILT (0-5%) 10YR 4/2 DARK GRAYISH BROWN, MOIST	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-0125
MVC-0135
MVC-0145

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-024	COORDINATES:	DATE: 5/24/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (ft)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			95%	SILT, NON-PLASTIC, SAND (5-10%) GRAVEL (5-10%) CLAY (5-10%) 10YR 4/2 DARK GRAYISH BROWN, SLIGHTLY MOIST	ML			
2								
3				CLAY, PLASTIC, MOIST, SILT (0-5%) 10YR 4/2 DARK GRAYISH BROWN, MOIST	CL			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVP-015S
MVP-016S
MVP-017S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-025	COORDINATES:		DATE: 5/24/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			95%	SILT, NON-PLASTIC, LOOSE, MOIST, SAND (5-10%) GRAVEL (0-5%) CLAY (5-10%)	ML			
2								
3				SILTY CLAY, PLASTIC, MOIST SILT (10-15%) 10YR 4/2 DARK GRAYISH BROWN	CL			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

ng Equipment POWER PROBE 9600

er: T. DEEDS

MVC-0185
MVC-0195

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 -ALAMEDA	
BORING NUMBER: OUS-026	COORDINATES:	DATE: 5/24/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			90%	CLAYEY SILT, NON-PLASTIC SLIGHTLY MOIST, FINE SAND (5-10%) CLAY (10-15%) 10YR 4/2 DARK GRAYISH BROWN	ML			
2								
3				INCREASED CLAY CONTENT 25-30%	ML-CL			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-020S
MVC-021S
MVC-022S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-027	COORDINATES:	DATE: 5/24/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			80%	SILTY SAND, FINE, WELL GRADED, SILT (10-15%) DRY 10YR 4/2 DARK GRAYISH BROWN	~~SW~~ SM			
4				CLAY, PLASTIC, MOIST, VERY DARK GRAYISH BROWN 10YR 3/2	CL			
			95%	SAND, FINE, WELL GRADED WET TO SATURATED, 10YR 4/2	SP			
6				GRADES TO 7.5YR 4/0 DARK GRAY				
8				TD = 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MKC-023S
MVC-024S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-28 (REDRILL)	COORDINATES:		DATE: 06/05/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/05/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/05/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	SILTY SAND SILT (20-25%) FINE SAND, TRACE GRAVEL, 10YR 4/2 DARK GRAYISH BROWN DRY	SM			
2				SAME AS ABOVE, NO GRAVEL	SM			
3				COBBLE, ROUNDED				
				SILTY CLAY, COMPACT, DRY 10YR 4/2	CL			
4				SANDY CLAY, MOIST, FINE SAND (10-15%) MOIST, 10YR 4/2	CL			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-~~865~~ 083S
084S
085S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31- ALAMEDA		
BORING NUMBER: OUS-028	COORDINATES:		DATE: 5/24/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			90%	SILTY SAND, FINE POORLY GRADED, SILT (10-15%) GRAVEL (0-5%) SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM			
2								
3				CLAYEY SILT, PLASTIC, MOIST, 10YR 4/2 DARK GRAYISH BROWN	ML			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

g Equipment POWER PROBE 9600

..ler: T. DEEDS

MVC-0255
MVC-0265

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-029	COORDINATES:		DATE: 5/24/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				CLAYEY SAND, FINE, POORLY GRADED, CLAY (10-15%) SILT (5-10%) GRAVEL (0-5%)	SM			
2								
3				SAMPLE AS ABOVE GRAVEL (5-10%)	SM			
				SILTY CLAY, PLASTIC, MOIST, SILT (10-15%) FINE SAND (0-5%) 10YR 4/2 DARK GRAYISH BROWN	CL			
4				SAND FINE, WELL GRADED, ~~WET~~ MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 0275
MVC - 0285
MVC - 0295

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-030	COORDINATES:	DATE: 5/24/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER. ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			85%	GRAVELLY CLAY, MOIST, GRAVEL (20-25%) SAND (5-10%) SILT (5-10%) 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
2								
3				SILTY CLAY, PLASTIC, MOIST SILT (10-15%) 10YR 3/2	CL			
4				FINE SAND, MOIST, 10YR 3/2	SP			

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 030S
MVC - 031S
MVC - 032S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-031	COORDINATES:		DATE: 5/24/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				CLAYEY SAND, FINE TO COARSE POORLY GRADED CLAY (5-10%) COMPACT, MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM SP			
2			90%	LESS CLAY (0-5%) COMPACT	SP			
3				CLAYEY SILT, PLASTIC, MOIST SILT (10-15%) 10YR 4/2	ML			
4								

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-033S
MVC-034S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-32	COORDINATES:	DATE: 5/23/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/23/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/23/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			95%	SANDY SILT, TRACE GRAVEL (0-5%) SAND (5-10%) LOOSE DRY 10YR 3/2 DARK BROWN	ML			
2				SILTY SAND, FINE, SILT (15-20%) DRY 10YR 3/2 DARK BROWN	SP-SM			
			90%	SILT, COMPACT, SLIGHTLY MOIST 7.5YR 4/2 BROWN	ML			
4								
			90%	SILTY SAND 7.5YR 4/0	SM			
6				SAND, FINE, WELL GRADED SILT (0-5%) SATURATED 7.5YR 4/0 DARK GRAY	SW			
8				TD=8'				
10								

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

Driller: TYLER DEEDS

MVC-8785
MVC-8795
MVC-8805
MVC-8815
MVC-8825

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OVS-033	COORDINATES:	DATE: 5/24/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			75%	SILTY SAND, FINE, POORLY GRADED, SILT (15-20%) CLAY (5-10%) MOIST, 10YR 4/2	SM			
2								
3				SILTY CLAY, PLASTIC MOIST SILT (10-15%) 10YR 4/2	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-035S
MVC-036S

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-034	COORDINATES:		DATE: 5/24/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2				CLAYEY SILT, NONPLASTIC CLAY (15-20%) FINE SAND (5-10%) MOIST, DARK GRAYISH BROWN 10YR 4/2	ML			
				FINE CLAYEY SAND CLAY (5-10%)	SP-SC			
4				CLAY, PLASTIC, MOIST, SILT (5-10%) 10YR 4/2	CL			
6				GRADES TO 7.5YR 4/0 DARK GRAY				
8				SAND, FINE, SATURATED 7.5YR 4/0	SW			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVP-0375
MVP-0385
-0395
-0405
-0415
MVP-0425

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 ALAMEDA		
BORING NUMBER: OUS-035	COORDINATES:		DATE: 5/24/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2				CLAY, PLASTIC, MOIST SILT (5-10%) DARK GRAYISH BROWN 10YR 4/2	CL			
4								
6				SAND, FINE WELL GRADED SILT (5-10%) WET, DARK GRAYISH BROWN 10Y 4/2	SW			
8				TD = 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Equipment POWER PROBE 9600

T. DEEDS

MVC-0435
MVC-0445
MVC-0455
MVC-0465
MVC-0475

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 -ALAMEDA		
BORING NUMBER: OUS-036	COORDINATES:		DATE: 05/24/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2				SILTY SANDY CLAY, NON PLASTIC, SLIGHTLY MOIST, SILT (5-10%) FINE SAND (5-10%) 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
4				GRADES TO 10YR 4/2 DARK GRAYISH BROWN				
6				SAND, FINE, WELL GRADED WET TO SATURATED, 10YR 4/2	SW			
				2" PLASTIC CLAY LENSES				
8				SAME AS ABOVE, SATURATED	SW			
				TD = 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-0485
MVC-0495
MVC-0505
MVC-0515

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-037	COORDINATES:		DATE: 05/24/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, POORLY GRADED SILT (20-25%) MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2								
3				CLAY, PLASTIC, MOIST SILT (10-15%) VERY DARK GRAYISH BROWN	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-0525
MVC-0535

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-038	COORDINATES:		DATE: 5/24/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY CLAY, COMPACT, SLIGHTLY MOIST TO MOIST NON-PLASTIC SILT (20-25%) FINE SAND (5-10%) 10YR 4/2 DARK GRAYISH BROWN	CL			
2								
3				SAME AS ABOVE				
4				SAND FINE DRY 10YR 4/2 TD=4'	SW			

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 0545

MVC - 0555

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-039	COORDINATES:		DATE: 05/24/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			80%	SILTY CLAY, DENSE, NON-PLASTIC, SLIGHTLY MOIST SILT (10-15%) 10YR 4/2 DARK GRAYISH BROWN	CL			
2								
3				SAND, FINE, WELL GRADED SILT (5-10%), SLIGHTLY MOIST, 10YR 4/2, DARK GRAYISH BROWN	SW			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-056S
MVC-057S
MVC-058S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-040	COORDINATES:		DATE: 5/24/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			75%	SILY SAND, FINE, POORLY GRADED, SILT (20-25%) 10YR 3/2 VERY DARK GRAYISH BROWN	SP SM			
4				GRADES TO 10YR 4/2 DARK GRAYISH BROWN	SP SM			
6			80%	CLAY, PLASTIC, MOIST, SILT (0-5%) 10YR 4/2	CL			
8				SAND, FINE, WELL GRADED, SILT (0-5%); WET. TO SATURATED 10YR 4/2	SW			
				TD=8'				

NOTES:

Drilling Contractor: KEHOE TESTING/ENG

Drilling Equipment: POWER PROBE

Driller: T. DEEDS

MVC-059S
MVC-060S
MVC-061S
MVC-062S
MVC-063S

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-041	COORDINATES:	DATE: 5/24/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, MOIST SILT (20-25%) 10YR 3/2 VERY DARK ~~BROWN~~ GRAYISH BROWN	SM			
2				SAME AS ABOVE				
6				CLAY, PLASTIC, MOIST SILT (0-5%)				
8				SAND, FINE, WELL GRADED SILT (5-10%) SATURATED 7.5YR 3/2 DARK GRAY				
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

g Equipment POWER PROBE 9600

.ner: T. DEEDS

MVC-0645
MVC-0655
0665
0675

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-042	COORDINATES:	DATE: 5/24/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			8/6	SANDY GRAVEL, SAND FINE TO COARSE SILT (10-15%) SILT (5-10%) MOIST 10YR 4/2 DARK GRAYISH BROWN	GM			
2				SAME AS ABOVE				
3				CLAY, PLASTIC, MOIST, SILT (0-5%) 10YR 4/2	CL			
4				SAND, FINE, POORLY GRADED MOIST, 10YR 4/2 SILT (5-10%)	SP			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. TEEDS

MVC-068S
MVC-069S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-043	COORDINATES:		DATE: 5/25/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SANDY SILT, FINE SAND (20-25%) SLIGHTLY MOIST, 10YR 3/2 VERY DARK ~~BROWNISH GRAY~~ GRAYISH BROWN	ML			
1			85%					
2				SAND, FINE, WELL GRADED LOOSE, SLIGHTLY MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
3				SILT, LOOSE, DRY, 10YR 8/1 WHITE	ML			
4				SAND, FINE, WELL GRADED, DRY 10YR 7/4	SW			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-0735
MVC-0745
MVC-0755

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31-ALAMEDA	
BORING NUMBER: OU5-044	COORDINATES:	DATE: 5/25/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			75%	SILTY SAND, FINE TO COARSE MOSTLY FINE SILT (15-20%) GRAVEL (5-10%) VERY DARK GRAYISH BROWN 10YR 3/2 DRY	SM			
				SAND, FINE WELL GRADED	SW			
4				CLAY PLASTIC MOIST 10YR 4/2	CL			
			100%	SAND, FINE, WELL GRADED WET 10YR 4/2	SW			
6				TPH STAINED SOIL w/ODOR				
8				SAME AS ABOVE, SATURATED	SW			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-076S
MVC-077S
MVC-078S

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-045	COORDINATES:	DATE: 5/25/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			50%	SILTY SAND, FINE TO COARSE MOSTLY FINE, SILT (15-20%) GRAVEL (5-10%) 10YR 3/2 DRY TO SLIGHTLY MOIST VERY DARK GRAYISH BROWN	SM			
4				SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
6			80%	CLAY PLASTIC MOIST 10YR 4/2	CL			
				BLACK STAINED SOIL				
8				SAND, FINE WELL GRADED SATURATED 10YR 4/2	SW			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING / ENG

ing Equipment POWERPROBE 9600

Driller: T. DEEDS

MVC - ~~0785~~ 6/25/01
0795
0815
0825
0835
0845
0805

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-046	COORDINATES:	DATE: 5/25/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (10-15%) GRAVEL (5-10%) DRY 10YR 4/2 DARK GRAYISH BROWN	~~SP~~ SM			
2			100%	SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				SILTY CLAY, WET, SILT (20-25%) 10YR 4/2	CL			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MUC-085S
MUC-086S
MUC-087S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819816	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-047	COORDINATES:		DATE: 5/25/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			70%	SAND, FINE, POORLY GRADED, SILT (0-5%) CLAY (0-5%) MOIST 10YR 4/2 DARK GRAYISH BROWN	SP			
2				SAND FINE WELL GRADED MOIST, 10YR 4/2	SW			
3								
4								

NOTES:

Drilling Contractor KEHOE TESTING/ENG

ng Equipment POWER PROBE 9600

..iller: T. DEEDS

MVC-0885
MVC-0895
MVC-0905

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-048	COORDINATES:	DATE: 5/25/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			90%	SANDY SILT, FINE SAND (~~[illegible]~~ 5-20) GRAVEL (5-10%) MOIST VERY DARK GRAYISH BROWN 10YR 3/2	ML			
2				SAND FINE WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
3				CLAY, MOIST, PLASTIC, 10YR 4/2	CL			
4				SAND, FINE, WELL GRADED MOIST 10YR 4/2	SW			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MUC-091S
-092S
-093S

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5249	COORDINATES:		DATE: 5/25/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			90%	SILTY SAND, FINE TO COARSE MOSTLY FINE, SILT (10-15%) GRAVEL (0-5%) 10YR 4/2	SM			
2				SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
				CLAYEY SAND, FINE, CLAY (20-25%) WET, 7.5YR 4/0 DARK GRAY	SM	SC		
4				SAND, FINE TO COARSE MOSTLY FINE SILT (5-10%) GRAVEL (0-5%) 10YR 4/2 MOIST	SP			
			60%	SAND, FINE WELL GRADED, MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
6				CLAY, PLASTIC, MOIST, 7.5YR 3/2 DARK GRAY	CL			
				SAND, FINE, WELL GRADED, SATURATED, 7.5YR 4/0 DARK GRAY	SW			
8				TD = 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 102S
- 103S
- 104S
- 105S
- 106S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 899814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-050	COORDINATES:	DATE: 5/25/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			90%	SANDY SILT, FINE SAND (15-20%) GRAVEL (0-5%) SLIGHTLY MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	ML			
2				SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
3				SILTY CLAY, PLASTIC, MOIST 10YR 4/2	CL			
4				GRADES TO CLAY, PLASTIC SILT (0-5%) MOIST	CL			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-094S
MVC-095S
MVC-096S

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-051	COORDINATES:		DATE: 05/25/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			0.1	SILTY SAND, FINE TO COARSE MOSTLY FINE, POORLY GRADED, SILT (15-20%) DRY TO SLIGHTLY MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	SP			
2								
3				SANDY SILT, FINE SAND (25-30%) MOIST, LOOSE 10YR 3/2 VERY DARK GRAYISH BROWN	ML			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

g Equipment POWER PROBE 9600

or: T DEEDS

MVC-107S
MVC-108S
MVC-109S

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-052	COORDINATES:		DATE: 5/25/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0			6	TOP SOIL				
1				SANDY SILT - SILTY SAND (50%/50%) FINE SAND, MOIST, LOOSE TO COMPACT 10YR 3/2 VERY DARK GRAYISH BROWN	ML-SM			
2								
3				SAND, FINE, MOIST, TRACE CLAY IN LENSES (0-5%) 10YR 3/2 VERY DARK GRAYISH BROWN	SP			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-1105
MVC-1115
MVC-1125

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-053	COORDINATES:		DATE: 5/25/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL				
			75%	SILTY SAND, MOSTLY FINE, FINE TO COARSE SILT (15-20%) CLAY (0-5%) GRAVEL (5-10%) MOIST, 10YR 4/2 DARK GRAYISH BRN	SM			
2				CLAY, PLASTIC, MOIST, 10YR 4/2	CL			
				GRAVEL LENSE (FILL) SAND, FINE, WELL GRADED, MOIST 10YR 4/2	SW			
4			100%	CLAYEY SAND, FINE, CLAY (10-15%) WET TO SATURATED, 10YR 4/2	SM	SC		
6				CLAY, PLASTIC, WET TO SATURATED, 10YR 4/0 DARK GRAY	CL			
				SAND, FINE, WELL GRADED, WET TO SAT. 7.5YR 4/0 DARK GRAY	SW			
8				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

ng Equipment POWER PROBE 9600

ller: T. DEEDS

MVC-097S
MVC-098S
MVC-099S
MVC-100S
MVC-101S

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5 - 054	COORDINATES:		DATE: 5/25/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2				SAND, FINE, WELL GRADED SILT (5-10%) MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
4				CLAY, PLASTIC, MOIST, 10YR 4/2 DARK GRAYISH BROWN	CL			
				TD=4'				
6								
8								

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 113S
MVC - 114S
MVC - 115S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-055	COORDINATES:		DATE: 5/25/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			100%	GRAVELLY SILT, FINE SAND (5-10%) GRAVEL (15-20%) DRY 10YR 4/2 DARK GRAYISH BROWN	ML			
				SILT, COMPACT, DRY, 10YR 4/2				
4				SILTY CLAY, WET, 7.5YR 3/0 DARK GRAY SILT (20-25%)				
				SAND, FINE, WELL GRADED, MOIST 10YR 4/6 DARK YELLOWISH BROWN	SW			
6				GRADES TO 7.5YR 4/0 DARK GRAY				
				SATURATED				
8				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drill Equipment POWER PROBE 9600

T. DEEDS

MVC-116S
MVC-117S
MVC-118S
MVC-119S
MVC-120S
MVC-121S
MVC-122S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-056	COORDINATES:		DATE: 5/25/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY SILT, COMPACT, GRAVEL (10-15%) DRY 10YR 4/2 DARK GRAYISH BROWN	ML			
2			0.001					
3				SILT, MOIST, COMPACT, DARK GRAYISH BROWN	ML			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MUC-1235
MUC-1245
MUC-1255

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5 - 057	COORDINATES:		DATE: 5/25/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. FOLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY SILT, LOOSE, GRAVEL (20-25%) DRY, 10YR 4/2 DARK GRAYISH BROWN	ML			
2			90%	SAND, FINE, WELL GRADED, MOIST, 10YR 4/2	SW			
3				CLAY, PLASTIC, WET, 7.5YR 3/0 DARK GRAY	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-126S
MVC-127S
MVC-128S

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-058	COORDINATES:		DATE: 5/25/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			95%	GRAVELLY SILT, GRAVEL (15-20%) SLIGHTLY MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	ML			
2								
3				SAND, FINE, WELL GRADED, MOIST 10YR 4/2	SW			
4				SILTY CLAY, PLASTIC, MOIST SILT (20-25%) 10YR 4/2 DARK GRAYISH BROWN	CL			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 1295
MVC - 1305
MVC - 1315

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-059	COORDINATES:		DATE: 5/ /2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/ /01
ENGINEER/GEOLOGIST: D. FOLEY	Depth	Date/Time	DATE COMPLETED: 5/ /01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			80%	SAND, FINE, WELL GRADED, SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
2				SILTY SAND, FINE, DRY TO SLIGHTLY MOIST, SILT (15-20%) 10YR 4/2	SM			
3				SILTY CLAY, DRY, NON-PLASTIC SILT (20-25%)	CL			
4								

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-1325
MVC-1335
MVC-1345

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5 - 060	COORDINATES:		DATE: 5/25/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/25/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/25/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			100%	GRAVELLY SILT, LOOSE, GRAVEL (15-20%) SLIGHLY MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	ML			
4				CLAY, PLASTIC, MOIST, SILT (0-5%) 10YR 4/2 DARK GRAYISH BROWN	CL			
6			90%	SAND, FINE, WELL GRADED MOIST TO WET, 7.5YR 3/0 DARK GRAY	SW			
				GRADES CLOSER TO 10YR 4/2 STILL DARK GREY, SHELL FRAGMENTS				
8				SANDY CLAY, PLASTIC, 7.5YR 3/0	CC			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

1355 1415
1365 1425
1375
1385
1395
1405

243B-3-85

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-061	COORDINATES:		DATE: 5/1/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/1/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/1/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			95%	GRAVELLY SILT, LOOSE, GRAVEL (10-15%) SLIGHTLY MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	ML			
2								
3				SILTY CLAY, PLASTIC, MOIST 10YR 4/2 DARK GRAYISH BROWN	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-1435
MVC-1445
MVC-1455
MVC-1465

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814		PROJECT NAME: CTO 31 - ALAMEDA			
BORING NUMBER: OUS-062		COORDINATES:		DATE: 5/25/2001	
ELEVATION:		GWL: Depth	Date/Time	DATE STARTED: 5/25/01	
ENGINEER/GEOLOGIST: D. POLEY		Depth	Date/Time	DATE COMPLETED: 5/25/01	
DRILLING METHODS: DPT RIG				PAGE 1 OF 1	

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY GRAVEL, SILT (20-25%) LOOSE, DRY, 10YR 4/6 DARK YELLOWISH BROWN	GM			
2								
3				CLAY PLASTIC, MOIST, ~~10YR~~ 10YR 3/1 VERY DARK GRAY	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-1475
MVC-1485
MVC-1495
MVC 1505

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

JECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-063	COORDINATES:		DATE: 5/ /2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/ /01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/ /01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	SILT, GRAVEL (5-10%) COMPACT SLIGHTLY MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	ML			
2				SILT, COMPACT, 10YR 4/2	ML			
3				SAND, FINE WELL GRADED, MOIST, 10YR 4/2	SW			
				CLAY, PLASTIC, MOIST 10YR 4/2 DARK ~~BROWNISH GRAY~~ BROWN	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drill Equipment POWER PROBE 9600

T. DEEDS

MVC-1515
MVC-1525
MVC-1535

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-064	COORDINATES:		DATE: 5/ /2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/ /01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/ /01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			100%	SANDY SILT, FINE SAND (15-20%) SLIGHTLY MOIST 10YR 4/2 DARK GRAYISH BROWN	ML			
				SAND, FINE, WELL GRADED 10YR 4/2 MOIST	SW			
4				CLAY PLASTIC, SILT (10-15%) DRY, 10YR 4/2	CL			
6			100%	SAND, FINE, WELL GRADED, WET TO SATURATED 7.5YR 3/0 DARK GRAY	SW			
8				SAME AS ABOVE				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-1545
MVC-1555
MVC-1565
MVC-1575

MWC-1585
1595
1605
1615

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-065	COORDINATES:		DATE: 5/24/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY SANDY SILT GRAVEL (5-10%), SAND (5-10%) FINE SLIGHTLY MOIST 10YR 4/2 ~~VERY~~ DARK GRAYISH BROWN	ML			
2				SAND, FINE, WELL GRADED, MOIST, DARK GRAYISH BROWN 10YR 4/2	SW			
3								
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-162S
-163S
-164S
-165S

RDL 6/25/01

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5 - 066	COORDINATES:		DATE: 5/24/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SILTY SAND, FINE WELL GRADED, SLIGHTLY MOIST	SM			
1								
2				CLAY, PLASTIC, MOIST 10YR 4/2 DARK GRAYISH BROWN	CL			
3								
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 166s
- 167s
- 168s

KDL 6/25/01

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

JECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
ORING NUMBER: OU5-067	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL				
2			90%	SAND, FINE, WELL GRADED, SLIGHTLY MOIST, 10YR4/2 DARK GRAYISH BROWN	SW			
4				CLAY, PLASTIC, MOIST, 7.5YR 4/0 DARK GRAY	CL			
				SAND, FINE, WELL GRADED, 7.5YR 4/0 DARK GRAY	SW			
6			75%	CLAY, PLASTIC, SATURATED TO WET, 7.4YR 4/0 DARK GRAY	CL			
8				SAND, FINE, WELL GRADED, SATURATED, 7.5YR 4/0 DARK GRAY				
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-1695 MVC-1725
1705 -1735
1715 -1745

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-068	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEI	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			80%	CLAYEY SAND, FINE, CLAY (10-15%) SILT (0-5%) 10YR3/2 DARK GRAYISH BROWN, SLIGHTLY MOIST TO MOIST	SM SC			
2				SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
3				SILT, LOOSE, SLIGHTLY MOIST, 10YR 4/2	ML			
				CLAY PLASTIC SILT (5-10%), SLIGHTLY MOIST TO DRY 10YR 4/2 DARK GRAYISH BROWN	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller T. DEEDS

MWC-1755
-1765
-1775

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-069	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			90%	SILTY SAND, FINE, SILT (10-15%) SLIGHTLY MOIST 10YR 4/2 DARK ~~BROWN~~ GRAYISH BROWN	SM			
2								
3				SILTY CLAY PLASTIC, SLIGHTLY MOIST, SILT (10-15%) 10YR 4/2	CL			
4				SAND, FINE, WELL GRADED 10YR 4/2 SLIGHTLY MOIST TD=4'	SW			

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-178S

-179S

-180S

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-070	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SANDY CLAY, FINE SAND (10-15%) SILT (5-10%) MOIST 10YR 3/2 ~~DAR~~ VERY DARK GRAYISH BROWN	CL			
2			100%	~~SANDY CLAY/OY~~ ~~GRAVEL~~ GRAVEL, SAND FINE TO COARSE SILT ~~(15-20%)~~ 5-10 CLAY (10-15%) (5-10%) SLIGHTLY MOIST 10YR 4/2 DARK GRAYISH BROWN (FILL MATERIAL)	GM			
3								
4				CLAY, PLASTIC MOIST, 10YR 4/2	CL			
				TD = 4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC 1815
1825
1835
1845

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

JECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
RING NUMBER: OUS-071	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY SILT, GRAVEL (15-20%) FINE SAND (10-15%) DRY TO SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN (FILL MATERIAL)	ML			
2			90%					
3				SILTY CLAY, PLASTIC, SLIGHTLY MOIST, SILT (10-15%) 7.5YR 3/2 DARK GRAY	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-1855
-1865
-1875

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-072	COORDINATES:		DATE: 5/24/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY SANDY SILT, GRAVEL (10-15%) SAND (15-20%) FINE TO COARSE, SLIGHTLY MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	ML			
2			0%					
3				CLAY, PLASTIC, MOIST, 2.5 YR 3/2 DARK GRAY MIXED WITH 10YR 4/2 DARK BROWNISH GRAY	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-1885
1895
1905

2439-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

JECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
ORING NUMBER: OU5-073	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL				
2			95%	GRAVELLY SANDY SILT, GRAVEL (5-10%) SAND, FINE TO COARSE (20-25%), DRY, 10YR 4/2 DARK BROWNISH GRAY	ML			
4				SAME AS ABOVE				
6			100%	CLAY, PLASTIC, WET, 7.5YR 4/0 DARK GRAY	CL			
				SAND, FINE WELL SORTED SATURATED, 10YR 4/2	SW			
8				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-191S -194S
-192S -195S
-193S -196S
-197S

BL 6/25/01

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-074	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			95%	GRAVELLY SANDY SILT, GRAVEL (5-10%) FINE TO COARS SAND (20-25%), DRY, 10YR 3/2 VERY DARK BROWNISH GRAY	ML			
2								
3				CLAY, PLASTIC, MOIST, 10YR 3/2 VERY DARK BROWNISH GRAY	CL			
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-1995
1995
2005

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-075	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY CLAY, GRAVEL (5-10%) SILT (0-5%) MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN, NON-PLASTIC	CL			
2			95%	CLAY, PLASTIC, MOIST, 10YR 3/2 V. DARK GRAYISH BROWN, SLIGHTLY MOIST	CL			
3				SILTY SANDY CLAY, SILT (10-15%) V. FINE SAND (10-15%), DRY TO SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	CL			
4				SAME AS ABOVE				
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drill Equipment POWER PROBE 9600

T. DEEDS

MVC -201S
-202S
-203S

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-076	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY CLAY, SILT (10-15%) GRAVEL (0-5%) SAND (0-5%) DRY, COMPACT 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
2			95%	SAND, FINE, WELL GRADED, DRY, 10YR 4/3 DARK ~~GRAYISH~~ YELLOWISH BROWN	SW			
				SILTY CLAY, NON PLASTIC, DRY 10YR 4/2 DARK BROWNISH GRAY	CL			
3				CLAY, PLASTIC, MOIST, 7.5YR 3/2 DARK GRAY, MOIST	CL			
4				SAND, FINE, WELL GRADED, MOIST 10YR 4/2	SW			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-2045
2055
2065

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

JECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
JORING NUMBER: OUS-077	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			75%	~~CLAY~~ SILTY SANDY CLAY, MOIST SILT (10%) SAND (5-10%) 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
2				SAND, FINE WELL GRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
				CLAY, PLASTIC, MOIST, 10YR 4/2 DARK GRAYISH BROWN	CL			
4								
			75%	SAND, FINE, WELL GRADED MOIST, 10YR 4/2, DARK ~~BROWNISH~~ GRAYISH BROWN	SW			
6				BLACK SILT (ASH?)				
				SOME 10S ABOVE				
				GRADES TO DARK ~~GRAY~~ 10YR 3/2				
8				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-206S
MVC-209S
MVC-208S

MVC-209S
-210S
-211S
-212S RA 6/21/01

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-078	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL				
1				SILTY SAND FINE SILT (15-20%) DRY 10YR 4/2 DARK GRAYISH BROWN	SM			
2			95%	SAND, FINE, WELL GRADED, SLIGHTLY MOIST, 10YR 4/2	SW			
				SAME AS ABOVE				
3				CLAY, PLASTIC, MOIST, 10YR 4/2 DARK GRAYISH BROWN	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 2135
- 2145
- 2155

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

JECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-079	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (10-15%) MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2			85%	SAND, FINE, WELL GRADED SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
3				SILTY CLAY, PLASTIC, SILT (15-20%) SLIGHTLY MOIST 10YR 4/2 DARK GRAYISH BROWN	CL			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drill Equipment POWER PROBE 9600

T. DEEDS

MVC-216S
-217S
-218S

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5 - 080	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			85%	SILTY SAND, FINE, SILT (15-20%) CLAY (10-15%) MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2				SAND, FINE, WELL GRADED MOIST, 10YR 4/2	SW			
3				CLAY, PLASTIC, MOIST 10YR 4/2	CL			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-219S
220S
221S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-089	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			95%	SILTY SAND, FINE, SILT (15-20%) MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2				CLAYEY SILT, CLAY (5-10%) MOIST, 10YR 4/2 DARK GRAYISH BROWN	ML			
				SAND, FINE WELL GRADED MOIST 10YR 4/2	SW			
4				CLAY, PLASTIC MOIST 7.5YR 3/2 DARK GRAY	CL			
			75	SAND, FINE, WELL GRADED, 10YR 4/2, WET	SW			
6				GRADES TO 7.5YR 3/2 DARK GRAY, SATURATED				
8				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-222S MVC-225S
-223S -226S
-224S -227S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-082	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			90%	SILTY SAND FINE, SILT (20-25%) CLAY (5-10%) SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM			
2								
3				SILTY CLAY, PLASTIC MOIST 7.5YR 3/2 DARK GRAY	CL			
				SAND, FINE, WELL GRADED, MOIST 10YR 4/2	SW			
4				CLAY, PLASTIC, MOIST 7.5YR 3/2	CL			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

228S
229S
230S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-083	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%) CLAY (5-10%) SLIGHTLY MOIST, 10YR 4/2	SM			
2			80%	SAND, FINE, WELLGRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				SAME AS ABOVE				
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drill Equipment POWER PROBE 9600

T. DEEDS

MVC - 231S
- 232S
- 233S

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS - 084	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (15-20%) CLAY (5-10%) SLIGHTLY MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2			90%	SAND, FINE, WELL GRADED	SW			
3				SILTY CLAY, NON-PLASTIC, MOIST, 10YR 4/2 DARK GRAYISH BROWN	CL			
4				CLAY, PLASTIC MOIST, 7.5Y 3/2 DARK GRAY TD=4	CL			

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC — 234S
235S
236S

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

JECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-085	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			80%	SILTY SAND, FINE, SILT (20-25%) CLAY (5-10%) GRAVEL (0-5%) MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2								
3				SAME AS ABOVE				
				SAND, FINE, WELL GRADED, WET 10YR 4/2 DARK GRAYISH BROWN	SW			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drill Equipment POWER PROBE 9600

T. DEEDS

MVC-237
238
239

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS - 086	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%) CLAY (5-10%) SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM			
2								
3				SAND, WELL GRADED, MOIST 10YR 4/2	SW			
				CLAYEY SILT, MOIST, CLAY (5-10%) 7.5YR 3/2 DARK GRAY	ML			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Drillers T. DEEDS

MVC - 240S
- 241S
- 242S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-087	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			90%	~~SAND~~ SILTY SAND, FINE, SILT (20-25%) CLAY (10-15%) GRAVEL (0-5%) SLIGHTLY MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2								
3								
4				SILT, CLAY (5-10%) MOIST 10YR 4/2	ML			
6			100%	~~TD=4.5'~~ SAND, FINE, WELL GRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
8				SAME AS ABOVE, SATURATED				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-2435 MVC-2465
2445 -2475
2455 -2485

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-088	COORDINATES:		DATE: 5/24/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/24/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/24/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%) CLAY (5-10%) MOIST 10YR 4/2 DARK GRAYISH BROWN	SM			
2				SAND, FINE, WELL GRADED, MOIST, 10YR 4/2	SW			
3				SANDY SILT, VERY FINE SAND (15-20%), MOIST CLAY (5-10%) 10YR 4/2	ML			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

~~MVC-246S~~ ~~247S~~ ~~248S~~ ~~Pr~~

MVC-249S
250S
251S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-089	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
				TOP SOIL				
1			85%	SILTY SAND, FINE, MOIST SILT (~~5-10%~~ 10-15%) 10YR 4/2 DARK GRAYISH BROWN	SM			
2				CLAY, PLASTIC, MOIST 10YR 4/2 DARK ~~BROWNISH~~ GRAYISH BROWN	CL			
3								
4				SAME AS ABOVE				
			80%	CLAY, SAME ~~ID=4 M~~ AS ABOVE	CL			
6				SAND, FINE WELL GRADED WET TO SATURATED, 10YR 4/2	SW			
8								

NOTES:

Drilling Contractor KEHOE TESTING/ENG TD=8

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-252S 253S 254S

MVC-255S -256S -257S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5 - 090	COORDINATES:		DATE: 5/29/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/29/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/29/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE SILT (20-25%) CLAY (5-10%) GRAVEL (0-5%) SLIGHTLY MOIST, 10YR4/2 DARK GRAYISH BROWN	SM			
2								
3								
4				SAME AS ABOVE				
				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller T. DEEDS

MVL-258S
259S
260S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-091	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			TD	~~SICTY~~ SANDY SILT FINE SAND (10-15%) LOOSE, 10YR 4/2 DARK GRAYISH BROWN, DRY TO SLIGHTLY MOIST	ML			
2								
3				SAME AS ABOVE	ML			
4				SAME AS ABOVE	ML			
				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

g Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-2615
2625
2635

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-092	COORDINATES:	DATE: 5/30/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SILTY SAND, FINE, SILT (15-20%) DRY, 10YR 3/2 VERY DARK ~~BROWN~~ GRAYISH BROWN	~~SILTO~~ SM			
1				SILT, COMPACT, DRY 10YR 4/2 DARK GRAYISH BROWN.	ML			
				CLAY, PLASTIC, MOIST, 10YR 4/2	CL			
2								
3								
				SAND, FINE, WELL GRADED 10YR 4/2	SW			
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-264
265
266

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-093	COORDINATES:	DATE: 5/30/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			100%	SILTY SAND, FINE, SILT (0-15%) DRY, 10YR 4/2 DARK GRAYISH BROWN	SM			
				SAME AS ABOVE SILT (5-10%)	SM			
6			100%	SAME AS ABOVE SMALL CLAY (PLASTIC) ZONE 2"				
8				SAME AS ABOVE, SATURATED				
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-2765
2775
2785

4-8 NO PICS

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: CTO 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: 005-094	COORDINATES:	DATE: 5/30/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			95%	SILTY SAND, FINE, SILT (5-10%) SLIGHLY MOIST 10YR 4/2 DARK GRAYISH BROWN,	SM			
2				SILTY GRAVEL, SILT (5-10%) LOOSE SLIGHLY MOIST 10YR 4/3 DARK YELLOWISH BROWN,	GM			
3				SAND, FINE, WELL GRADED, MOIST 10YR 4/2	SW			
				SILTY CLAY, PLASTIC, MOIST SILT (15-20%) 10YR 4/2	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-267S
268S
269S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-095	COORDINATES:		DATE: 05/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			90	SANDY SILT, LOOSE, FINE SAND (5-20%) MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	ML			
				SAND, FINE, WELL GRADED, MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
4			95	CLAY, PLASTIC, MOIST 10YR 4/2	CL			
				SILTY SAND, FINE, SILT (5-10%) MOIST, 10YR 4/2	SM			
6				CLAY, WET TO SATURATED TPH ODOR W/BLACK STAINING 7.5YR 3/2 DARK GRAY PLASTIC	CL			
8				SAND, FINE, WELL GRADED UPPER FOOT TPH ODOR W/BLACK STAINING, SATURATED, 7.5YR 3/2	SW			
				TD 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-2705 MVC-2735
-2715 2745
-2725 2755

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-016	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			100	SILTY SAND, SILT (20-25%) CLAY (5-10%) GRAVEL (0-5%) MOIST 10YR 3/2 VERY DARK GRAYISH BRN	SM			
2				GRAVEL (10-15%)				
4				CLAYEY GRAVEL, LOOSE CLAY (10-15%) SILT (10-15%)	GC			
			100	SILTY SAND, FINE, SILT (10-15%) CLAY (5-10%) 10YR 4/2	SM			
6				SAND, FINE, WELL GRADED WET 7.5YR 3/2 DARK GRAY	SW			
				SOME DS ABOVE, 10YR 4/2				
8				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-2795
2805
2815

MVC-2825
-2835
-2845

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-097	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	SILTY SAND, FINE, SILT (20-25%) CLAY (5-10%) GRAVEL (0-5%) DRY, 10YR 4/2 DARK GRAYISH BROWN	SM			
3				SAME AS ABOVE SLIGHTLY MOIST	SM			
4				TD=4'				

NOTES:

Drilling Contractor: KEHOE TESTING/ENG

Drilling Equipment: POWER PROBE 9600

Driller: T. DEEDS

MVC- 2855
2865
2875

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-018	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			75%	SILTY SAND, FINE, SILT (20-25%) GRAVEL (0-5%) CLAY (~10%) MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
4				SILTY SAND, FINE SLIGHTLY MOIST 10YR 5/2 YELLOWISH BROWN, SILT (10-15%) GRAVEL (5-10%)	SM			
6			90%	SAND, VERY FINE, SILT (0-5%) MOIST 10YR 4/2 DARK GRAYISH BROWN	SP			
				CLAY, WET, PLASTIC, 7.5YR 3/2 DARK GRAY	CV			
8				SAME AS ABOVE, BLACK STRONG TPH ODOR	CL			
				TD = 8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-2885 MVC-2915
2895 2925
2905 2935

243B-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-099	COORDINATES:		DATE: 5/30/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	SILTY SAND, FINE, SILT (10-15%) GRAVEL (0-5%) DRY, 10YR 4/2 DARK GRAYISH BROWN				
3				SAME AS ABOVE (SILT 5-10)				
4				SAME AS ABOVE				
				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: ~~DP KEHOE TESTING~~ T. DEEDS

MVC -2945
-2955
-2965

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-100	COORDINATES:	DATE: 05/30/2001
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			75% 300+	SILTY SAND, SILT (15-20%) FINE SAND, CLAY (5-10%) MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2				SAND, FINE, WELL GRADED SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
4				SAME AS ABOVE				
6				SAME AS ABOVE, SATURATED 7.5YR 4/0 DARK GRAY	SW			
8				TD=8'				

NOTES:

Drilling Contractor ILEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 297S -300S
298S -301S
299S -302S

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-101	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			90-58	SILTY SAND, FINE, SILT (20-25%) GRAVEL (0-5%) MOIST, 10YR 3/2 DARK GRAYISH BROWN	SM			
2								
3				SILTY GRAVEL, SILT (10-15%) CLAY (5-10%) 10YR 4/5 YELLOWISH BROWN, MOIST	GM			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-315S
-316S
-317S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: QU5-102	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%) CLAY (5-10%) GRAVEL (0-5%) MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2								
3								
4				SAME AS ABOVE	SM			
				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-318S
-319S
-320S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-103	COORDINATES:		DATE: 5/30/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SAND, FINE, WELL GRADED DRY 10YR 4/2	SW			
1				SILTY SAND, FINE, SILT (15-20%) MOIST	SM			
			75%					
2				SAND, FINE, WELL GRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				CLAY, PLASTIC, MOIST 10YR 4/2	CL			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

~~MVC-3035~~ ~~-3045~~ ~~-3055~~

MVC-3035
-3045
-3055

TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-104	COORDINATES:		DATE: 5/30/2001
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (5-10%) MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM			
2			90%	SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				SAME AS ABOVE	SW			
				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-3065
-3075
-3085

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 719814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-105	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			75%	SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
2								
4				SAME AS ABOVE				
6				CLAY, WET, PLASTIC 7.5YR 4/2 DARK GRAY	CL			
				STRONG TPH ODOR (BLACK)				
8				SAND, FINE, SATURATED, 7.5YR 4/2 DARK GRAY	SW			
				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

g Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-309S 310S 311S

MVC-312S -313S -314S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-106	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SAND, FINE, WELL GRADED, SLIGHTLY MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
2				SAME AS ABOVE, MOIST	SW			
3				SAME AS ABOVE	SW			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG MVC-3215

Drilling Equipment POWER PROBE 9600 3225

T. DEEDS 3235

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-107	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. FOLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			90%	SILTY SAND, FINE, SILT (10-15%) CLAY (0-5%), SLIGHTLY MOIST, 10YR 3/2 VERY DARK ~~BROWNISH~~ & GRAYISH BROWN	SM			
2				SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK ~~BROWNISH~~ GRAYISH BROWN	SW			
3								
4				SAME AS ABOVE	SW			
				TD=				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

g Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-3245
-3255
-3265

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-108	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			90%	SAND, WELL GRADED, FINE SLIGHTLY MOIST, 10 YR 4/2 DARK GRAYISH	SW			
2				SAME AS ABOVE, MOIST				
4				SILTY CLAY, PLASTIC MOIST SILT (5-20%) 7.5 YR 4/2 DARK GRAY	CL			
			75%	SAME AS ABOVE, WET				
6				STRONG TPH ODOR				
				SAND, FINE, WELL GRADED SATURATED, 7.5 YR 3/2	SW			
8				CLAY, COMPACT, HARD, SLIGHTLY MOIST 7.5 YR 4/2 TD=8				
10								

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-327 -330S
328 -331S
329 -332S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319314	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-109	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (10-15%) SLIGHTLY MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2			90%	SAND, FINE, WELLGRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				SAME AS ABOVE	SW			
				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-333S
334S
335S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814 RA 6/25/01	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-DPT 110	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT(0-5%) GRAVEL (0-5%) DRY, 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2			80%	SAND, FINE, WELL GRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				SAME AS ABOVE	SW			
				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MW-336S
337S
338S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-111	COORDINATES:	DATE: 5/30/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 5/30/01
ENGINEER/GEOLOGIST: D. FOLEY	Depth Date/Time	DATE COMPLETED: 5/30/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			95%	SILTY SAND, FINE, SILT (15-20%) CLAY (0-5%) MOIST, 10YR 3/2 VERY DARK BROWN ~~BROWNISH~~ GRAYISH	SM			
				SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
4				SAME AS ABOVE				
6			60%	SAME AS ABOVE, GRADES TO 7.5YR 4/2 DARK GRAY				
				CLAY, PLASTIC, COMPACT HARD, MOIST 7.5YR	CL			?
8				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-3395 MVC-3425
3405 3435
3415

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OV5-112	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	SILTY SAND, FINE, SILT (15-20%) CLAY (0-5%) GRAVEL (0-5%) SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM			
2				SAND, FINE, WELL GRADED, MOIST, 10YR 4/2.	SW			
3								
4				SAME AS ABOVE TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller T. DEEDS

MVC - 3445
3455
3465

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-113	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOPSOIL				
			2.5'	SILTY SAND, FINE, SILT (20-25%) CLAY (0-5%) GRAVEL	SM			
2				SAND, FINE, WELL GRADED, SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
4			2.0'	CLAY, WET TO SATURATED, PLASTIC LOOSE, 7.5YR 4/0 DARK GRAY	CL			
6				BLACK STAINING w/STRONG TPH ODOR				
				SAND, FINE, WELL GRADED, SATURATED, 7.5YR 4/0 DARK GRAY BLACK STAINING WITH STRONG TPH ODOR	SW			
8				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drill Equipment POWER PROBE 9600

T. DEEDS

MVC-3475 MVC-3505
3485 -3515
3495 -3525

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319314	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-114	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. Foley	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	SILTY SAND, FINE, SILT (20-25%) CLAY (5-10%) GRAVEL (0-5%) SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM			
2								
3				SAND, FINE, SILT (5-10%) MOIST 10YR 4/2 DARK GRAYISH BROWN	SP-SM			
4				GRAVELLY CLAY, GRAVEL (10-15%) SAND (5-10%) MOIST 10YR 4/5 YELLOWISH BROWN	CL			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 3535
3545
3555

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-115	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. FOLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	GRAVELLY SILT, LOOSE GRAVEL (20-25%) DRY 10YR 4/2 DARK GRAYISH BROWN	~~SM~~ ML	no		
2				SAND, FINE, WELLGRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-356S
357S
358S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-116	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY CLAY, GRAVEL (15-20%) MOIST 10YR 4/2 DARK GRAYISH BROWN	CL			
2			90%	SAND, FINE, SILT (5-10%) MOIST 10YR 4/2	SM			
3				CLAY, PLASTIC, MOIST 10YR 4/2	CL			
4				SAND, FINE, WELL GRADED, MOIST, 10YR 4/2	SW			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVL - 3595
3605
3615

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-117	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			90%	SILTY SAND FINE, SILT (20-25%) GRAVEL (0-5%) DRY 10YR 4/2	SM			
2				SAND, FINE, WELL GRADED, COAL LIKE MATERIAL, DRY, 10YR 4/2 NO ODOR	SW			
				SILTY CLAY, LOOSE, DRY, 10YR 4/2 DARK BROWNISH GRAY	CL			
				CLAY PLASTIC, MOIST, HARD, COMPACT 10YR 4/2	CL			
4			90%	SAND, FINE, WELL GRADED, MOIST	SW			
6				BLACK STAINING W/HYDROCARBON ODOR				
8				SAME AS ABOVE, SATURATED	SW			
				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Equipment POWER PROBE 9600

Driller T. DEEDS

MVC-3625 -3655
3635 -3665
3645 -3675

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-118	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			75%	SANDY CLAY, FINE SAND, PLASTIC, MOIST (5-10%) 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
2				SAND, VERY FINE, SILT (10-15%), MOIST 10YR 4/2 DARK ~~BR~~ GRAYISH BROWN	SM			
3				CLAY, PLASTIC, MOIST, SILT (10-15%)	CL			
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Drill T. DEEDS

MUC-3685
3695
3705

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-119	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			60%	SILTY SAND, FINE, SILT (20-5%) MOIST, 10YR 3/2 DARK GRAYISH BROWN	SM			
2				SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
4				SAND FINE, WELL GRADED MOIST, 10YR 4/2	SW			
			50%	SOME COARSE SAND				
6				FINE SAND WELL GRADED				
				SAME AS ABOVE, 7.5YR 4/0 DARK GRAY				
8				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9610

T. DEEDS

MVC-371S
372S
373S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: DU5-120	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%) GRAVEL (0-5%) MOIST 10YR 4/2 DARK GRAYISH BROWN	SM			
2			90%	SAND, FINE, WELL GRADED, MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				SAME AS ABOVE	SW			
				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Logged by T. DEEDS

MVC - 3745
3755
3765

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-121	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (10-15%) GRAVEL (5-10%) DRY, 10YR 4/2 DARK BROWNISH GRAY	SM			
2			75%	SAND, FINE, WELL GRADED, MOIST 10YR 4/2	SW			
				CLAYEY GRAVEL, CLAY (10-15%) SAND (5-10%) MOIST 10YR 4/2	GM			
3				SAND, FINE, WELL GRADED MOIST, 10YR 4/2	SW			
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-377S
-378S
-379S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-122	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%), DRY, 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
				SANDY GRAVEL, SAND (20-25%) FINE TO COARSE, LOOSE, SLIGHTLY MOIST, 10YR 4/3 YELLOWISH BROWN	GM			
2			80%	SAND, FINE, WELL GRADED WITH 1" CLAY ZONES, MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				SAME AS ABOVE	SW			
				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Inspector T. DEEDS

MVC-3805
3815
3825

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-123	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%) GRAVEL (5-10%) MOIST 10YR 4/2 DARK GRAYISH BROWN	SW-SM			
2			95%	SAND, FINE, TRACE SILT (0-5%)				
3				SOME AS ABOVE, CLAY (5-10%)	SW-SM	SW-SC		
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Equipment POWER PROBE 9600

T. DEEDS

MVC — 3835
3845
3855

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-124	COORDINATES:		DATE: 05/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 05/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 05/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				GRAVELLY SAND, FINE TO COARSE, GRAVEL (5-10%) DRY 10YR 4/5 YELLOWISH BROWN	SW			10/90/0
2			50%	SAND, FINE, WELL GRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				SAME AS ABOVE				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-386S
-387S
-388S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-125	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			205	SILTY SAND, FINE, SILT (20-25%) MOIST CLAY (0-5%) 10YR 3/2	SM			
2				SAND, FINE, WELL GRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
4			100	SAME AS ABOVE SATURATED	SW			
6				CLAY, SATURATED, PLASTIC 7.5YR 4/0 DARK GRAY	CL			
8				TD = 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 389S MVC - 392S

390S - 393S

391S - 384S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-126	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SILTY SAND, FINE, SILT (20-25%) MOIST 10YR 4/2 DARKGRAYISH BROWN	SM			
1				GRAVELLY SAND, FINE TO COARSE GRAVEL (5-10%), DRY, 10YR 4/5 YELLOWISH BROWN	SP			
			70%	SAND, FINE, WELL GRADED, MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
2								
3								
				SAME AS ABOVE	SW			
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-3925
3935
3945

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-127	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. FOLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			2.5 ft	SAND, FINE, WELL GRADED DRY, 10YR 4/2 DARK ~~BROW~~ GRAYISH BROWN	SW			
2				SAME AS ABOVE, MOIST	SW			
3								
4				SAME AS ABOVE TD=4'	SW			

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-3955
-3965
-3975

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-128	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				CLAY, PLASTIC, MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN	CL			
				SAND, FINE, WELL GRADED MOIST	SW			
2								
4				SAME AS ABOVE	SW			
6								
				SAME AS ABOVE, 7.5YR3/2 DARK GRAY, SATURATED	SW			
8				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Logger: T. DEEDS

MVC-398S MVC-401S
399S -402S
400S -403S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-129	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				GRAVELLY SAND, FINE TO COARSE SAND, SILT (5-10%) GRAVEL (20-25%) MOIST 10YR 4/5 YELLOWISH BROWN	SP	SP	STET	
1								
			100%					
2				SAND FINE, WELL GRADED, MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
3								
4				SAME AS ABOVE	SW			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Equipment POWER PROBE 9600

...er: T. DEEDS

MVC - 404S
405S
406S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-130	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			90%	SANDY SILT, SAND (30-35%) CLAY (10-15%) MOIST, 10YR 4/2 DARK GRAYISH BROWN	ML			
4				SAND, FINE, WELL GRADED MOIST, 10YR 4/2 DARK ~~BROWNISH~~ GRAYISH BROWN	SW			
6			100%					
8				SAME AS ABOVE 7.5YR 4/0 DARK GRAY	SW			
				TD = 8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-407S, 408S, 409S } 4-8

MVC-410S, -411S, -412S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319314	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-131	COORDINATES:		DATE: 5/30/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			50%	GRAVELLY SAND, FINE TO COARSE, GRAVEL (15-20%) SILT (10-15%), SLIGHTLY MOIST 10YR 4/5 YELLOWISH BROWN	SP			
2								
3				SILTY SAND, FINE, SILT (15-20%) MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM			
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-413S
-414S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319314	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-13B	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			60%	~~CLAYEY GRAVEL~~, GRAVELLY CLAY, GRAVEL (20-25%) MOIST, 10YR 3/2 VERY DARK GRAYISH BROWN GRADES TO 10YR 4/5 YELLOWISH BROWN	CL			
				CLAY PLASTIC, MOIST, 7.5 4/2 4/0 DARK GRAY	CL			
4				SAND FINE WELL GRADED, MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
6								
8				SAME AS ABOVE SATURATED	SW			
				TD = 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-4155 NO 4-8 PICS
-4165

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-133	COORDINATES:		DATE: 5/31/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 5/31/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 5/31/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				CLAYEY SAND FINE, CLAY (20-25%) MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM			
2				SANDY CLAY, PLASTIC, MOIST ~~SAND~~ FINE SAND (15-20%) 7.5YR 4/0 DARK GRAY	CL			
3								
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-417S
-418S
-419S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219314	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-134	COORDINATES:		DATE: 6/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 6/01/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SANDY SILT ~~RAVO~~ SAND (10-15%) DRY 10YR 4/2 DARK GRAYISH BROWN	ML			
2				GRAVELLY CLAY, DRY GRAVEL (15-20%) 10YR 4/5 YELLOWISH BROWN	CL			
3				CLAY PLASTIC MOIST 10YR 4/2, MOIST	CL			
4				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller T. DEEDS

MVC-~~4195~~ Rec 6/25/01
-4205
-4215
-4225

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-135	COORDINATES:		DATE: 6/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED:
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			75%	SILTY SAND, FINE SILT (15-20%), 10YR 4/2 DARK GRAYISH BROWN	SM			
2								
				SAND, FINE, WELL GRADED, MOIST, 10YR 4/2	SW			
4				SILTY SAND, FINE, SILT (15-20%) GRAVEL (5-10%) 10YR 4/2	SM			
				SILTY SAND, FINE, 10YR 4/2 WITH 7.5YR 4/0 STRIATIONS MOIST	SM			
6								
8				SAND, FINE, WELL GRADED 7.5YR 4/0 DARK GRAY, SATURATED	SW			
				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-423A MVC-426A
-424A -427A
-425A -428A

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219314	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-136	COORDINATES:		DATE: 6/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 6/01/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				~~TOP~~ SOIL				
2			100%	GRAVELLY SAND, FINE, SILT (10-15%) GRAVEL (15-20%) DRY, 10YR 4/5 YELLOWISH BROWN	SP			
				SILTY CLAY, MOIST, PLASTIC, SILT (15-20%) 7.5YR 3/6 DARK BROWN	CL			
4				~~CLY~~ SAND, FINE CLAY (10-15%) MOIST 7.5YR 3/4	~~SM~~	SC		
				SAME AS ABOVE, 10 YR 4/2				
6				SAME AS ABOVE SATURATED	~~SM~~	SC		
8				CLAYEY GRAVEL, SAND (10-15%) CLAY (15-20%) SATURATED	GC			
				TD = 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller T. DEEDS

MVL 4295
-4305
-4315

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-137	COORDINATES:		DATE: 6/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 6/01/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				CLAYEY SAND, FINE, WELL GRADED, CLAY (15-20%) MOIST 10YR 4/2 DARK GRAYISH BROWN	~~SM~~ SC			
2			20%					
3								
4				SAME AS ABOVE	~~SM~~ SC			
				TD=				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller T. DEEDS

MVL 432S

~~435S~~ 433s RDC 6/25/01

434S

~~435S~~

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-138	COORDINATES:		DATE: 6/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 6/01/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			80%	SILTY SAND FINE, SILT (20-25%) MOIST 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2				SAND, FINE, WELL GRADED, MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
4			60%	SAME AS ABOVE				
6								
8				SAME AS ABOVE 7.5YR 4/0 SATURATED DARK GRAY	SW			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

BRL 6/21/01

MVC — ~~335S~~ 435S

~~336S~~ 436S 4-8

~~337S~~ 437S NO PICS

~~338S~~

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 219814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-139	COORDINATES:		DATE: 8/01/07
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/07
ENGINEER/GEOLOGIST: D. FOLEY	Depth	Date/Time	DATE COMPLETED: 6/01/07
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			3.00'	SILTY SAND, FINE, SILT (20-25%) GRAVEL (0-5%) SLIGHTY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SM			
2								
3				SAND, FINE, WELL GRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

T. DEEDS

Rev 6/25/01

MVC — ~~3385~~ 438s

~~3395~~ 439s

~~3405~~ 440s

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 319314	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-140	COORDINATES:		DATE: 6/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 6/01/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SILTY SAND, FINO, SILT (20-25%) DRY 10YR 4/2 DARK GRAYISH BROWN	SM			
2			90%	SILTY CLAY, SILT (15-20%) PLASTIC MOIST, 10YR 4/2	CL			
				SAND, FINE, WELL GRADED MOIST 10YR 4/2	SW			
4				SATURATED				
				SAME AS ABOVE				
6				SAME AS ABOVE, 7.5YR 4/0 DARK GRAY	SW			
				CLAY 20-25%	SM			
				SAME AS ABOVE, FINE SAND	SW			
8				TD=8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG.

Drilling Equipment POWER PROBE 9600

T. DEEDS

MVC-4415 MVC-4455
4425 4465
4435 4475
4445

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-141	COORDINATES:		DATE: 6/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 6/01/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			100%	SILTY SAND, FINE, SILT (30-35%) DRY, GRAVEL (0-5%) 10YR 4/2 DARK BROWNISH GRAY	SM			
2								
				SILTY CLAY, PLASTIC, MOIST SILT (15-20%) 10YR 4/2	CL			
4				SAND, FINE, WELL GRADED MOIST 10YR 4/2	SW			
				SILTY CLAY, SATURATED, PLASTIC, LOOSE, 7.5YR 4/0 DARK GRAY	CL			
6								
8				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

g Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-448S -451s
-449S -452s
-450S -453s

BR 6/2/01

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-142	COORDINATES:		DATE: 6/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 6/01/01
DRILLING METHODS: DPT RIG			PAGE 01 OF 01

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (25-30%) GRAVEL (5-10%) DRY, 10YR 4/2 DARK BROWNISH GRAY	SM			
2			100%					
				SAND, FINE, WELL GRADED 10YR 4/5 VELLOWISH BRN	SW			
				CLAY, PLASTIC, COMPACT, S. MOIST 10YR 4/2	CL			
3				SAND,	SW			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - ~~4515~~ - 454s
~~4525~~ - 455s
~~4535~~ - 456s

6/25/01

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-143	COORDINATES:	DATE: 6/01/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 6/01/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%) GRAVEL (5-10%) DRY, 10YR 4/2 DARK ~~BROW~~ GRAYISH BROW	SM			
2			100%	CLAYEY SAND, FINE, CLAY (25-30%) COMPACT MOIST 7.5YR 4/0 DARK GRAY	~~SM~~ SC			
3								
4				SAME AS ABOVE, CLAY (15-20%) TD=4'	~~SM~~ SC			

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-457S
458S
459S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-144	COORDINATES:		DATE: 6/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 6/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 6/01/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			100%	SILTY SAND, FINE, SILT (20-25%) GRAVEL (0-5%) MOIST 10YR 4/2 ~~DARK BROWNISH~~ GRAYISH BROWN	SM			
4				SILTY SAND, FINE, SILT (5-10%) MOIST, 10YR 4/2 ~~DARK BROWNISH~~ GRAYISH BROWN	SM			
6			100%	GRADES TO 7.5YR 4/0 DARK GRAY, SATURATED	SM			
8				SAME AS ABOVE TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC — 4609 — 4635
4615 — 4645
4625 — 4655

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819816	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5- ~~1247~~ 145	COORDINATES:	DATE: 6/4/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			95%	SANDY GRAVEL SAND FINE, ~~[illegible]~~ ~~[illegible]~~, 10YR 4/2 DARK BROWNISH GRAY	GM			
2								
3				SILTY SAND, FINE, MOIST SILT (15-20%) 10YR 4/2	SM			
4				SAND, FINE, WELL GRADED, MOIST, 10YR 4/2,	SW			
				TD=4				

NOTES:

Drilling Contractor KENDE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVE-471
472
473

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-146	COORDINATES:	DATE: 06/04/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. Polsz	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS:		PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			99%	SILTY SAND, SILT (25-30%) GRAVEL (5-10%) FINE SAND	SM			
2								
3				SANDY CLAY FINE SAND, (10-15%) MOIST	CL			
4				SAND FINE WELL GRADED, MOIST, 10YR 4/2	SW			
				TD=4				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVL 475S
476S
477S

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-~~146~~ 147	COORDINATES:	DATE: 06/01/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/01/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2				SILTY SAND, FINE TO COARSE, MOSTLY FINE SILT (15-20%) GRAVEL (0-5%) CLAY (10-15%) MOIST	SM			
					SW			
					SW			
4					SM			
				SAND, FINE, SILT (15-20%) 10YR 4/2 MOIST				
6				SAND FINE, SILT (10-15%) 10YR 4/2 MOIST	SM			
				CLAYS (10-15%)				
8				SAND, FINE, WELL GRADED SATURATED 7.5YR 3/2, DARK GRAY	SW			
				TD = 8'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9650

Driller: T. DEEDS

MVC - 4795 MVC-4833
-4805 4845
-4815 4853

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 51 - ALAMEDA		
BORING NUMBER: OU5-148	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			100	SANDY CLAY, PLASTIC, MOIST 10YR 4/2, FINE SAND (20-25%)	CL			
				GRADES TO FINE SAND (5-10%)	CL			
4				SAND FINE, WELL GRADED 10YR 4/2 MOIST	SW			
6				CLAYEY SAND, FINE, CLAY (15-20%) MOIST	SM			
8				CLAY, LOOSE, SATURATED, PLASTIC 7.5YR 3/2, DARK GRAY	CL			
				TD = 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9620

Driller: T. REEDS

MVC - 754, 755, 756 } 4-8'

~~-488s~~ ~~-40~~ -488s -748s -749s

6/20/01

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: GTO 31 - ALAMEDA		
BORING NUMBER: OU5-149	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SAND, FINE TO COARSE, SILT (5-10%) GRAVEL (0-5%) 10YR 4/2 DARK GRAYISH BROWN	SP			
2			90%	SILTY SAND, FINE, SILT (20-25%) CLAY (5-10%) 10YR 4/2	SM			
3				SAND, FINE, WELL GRADED MOIST	SW			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

ing Equipment POWER PROBE 9600

ller: T. REEDS

MVC-7575
7585
7598

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-150	COORDINATES:	DATE: 06/04/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			95	SILTY SAND, FINE, SILT (20-25%) CLAY (5-10%) SLIGHTLY MOIST 10YR 4/2	SM			
4				SILTY SAND, FINE, SILT (10-15%) CLAY (5-10%) MOIST	SM			
6			55%	SAND FINE, WELL GRADED, SILT (0-5%) 7.5 YR 3/2 DARK GRAY	SW			
8				SAME AS ABOVE				
				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC- ~~[illegible]~~ 763 S ~~7685~~ [illegible] 6/25/01

~~[illegible]~~ 764 S 76[illegible]

~~[illegible]~~ 765 S 770 S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819816	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-151	COORDINATES:	DATE: 06/04/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SAND, FINE, SILT (0-5%) MOIST 10YR 4/2	SP			
2								
				CLAY, PLASTIC MOIST COMPACT, 10 YR 4/2	CL			
4				SAND, FINE, WELL GRADED, MOIST 10YR 4/2	SW			
6			100	SAME AS ABOVE 7.5YR 3/0 DARK GRAY. SATURATED	SW			
8				TD=8				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

...ng Equipment POWER PROBE 9600

...er: T. DEEDS

Rele 6/25/01

MVC - ~~471S~~ ~~-477S~~

-771s -777s - ~~472S~~ ~~478S~~

-772s -778s

-773s -779s - ~~473S~~ ~~-479S~~

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819816	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU3-152	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE SILT (10-20%) CLAY (0-5%) GRAVEL (0-5%) SLIGHTY MOIST 10YR 4/2 DARK ~~BROWNISH GRAY~~ GRAYISH BROWN	SM			
2								
					SM			
3				SAND, FINE, WELL GRADED, MOIST 10YR 4/2	SW			
4				CLAY, MOIST PLASTIC 7.5YR 4/0 DARK GRAY	CL			
				TD=4				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

No photos BEL 6/25/01

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819816	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-153	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SAND, FINE, WELL GRADED, DRY, 10YR 4/2 DARK GRAYISH BROWN	SW			
2				SAME AS ABOVE SLIGHTLY MOIST				
3								
4				SAME AS ABOVE, MOIST TD=				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment

Driller: T. DEEDS

MVC ~~-78~~ ~~-78~~ RDL 6/25/01 ~~-78~~ ~~-81~~ -781 RDL 6/25/01 ~~-82~~ 782 RDL 6/25/01 ~~-83~~ RDL 6/25/01

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OUS-~~155~~ 150	COORDINATES:		DATE: 06/04/07
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/07
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/07
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			0.01	SILTY SAND FINE, SILT (5-10%) GRAVEL (0-5%) 10YR 4/2 DARK BROWISH	SM			
2				SAND, FINE WELL GRADED MOIST 10YR 4/2, DARK ~~BROWN~~ GRAYISH BROWN	SW			
4								
			0.01	SAME AS ABOVE	SW			
6				CLAYEY SAND, FINE SILT (5-10%) CLAY (15-20%) 7.5YR 4/0 DARK GRAY	SM			
				SAND FINE, WELL GRADED, SATURATED 7.5YR 4/0 DARK GRAY	SW			
8				TD=8				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC -790S
-791S
-792S

MVC-802S
-803S
-804S

2438-3-88

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OUS-155	COORDINATES:	DATE: 06/04/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			95%	SILTY SAND, FINE TO COARSE, MOSTLY FINE SILT (10-15%) GRAVEL (0-5%) DRY 10YR 4/2	SM			
				CLAYS (5-10%	SM			
4				SAND FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
6								
8				SAME AS ABOVE, 7.5 YR 4/0 DARK GRAY, SATURATED, CLAY (0-5%)	SM			
				TD = 8'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

g Equipment ~~D~~ POWER PROBE 9600

T. QEEDS

MVC-8075 -8105
8085 -8115
8095 -8125

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-~~[illegible]~~156	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEZ	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1			100%	SILTY SAND, FINE, SILT (15-20%) ~~SLIGHTLY MOIST~~ DRY 10 YR 4/2 DARK GRAYISH BROWN	SM			
2				SAME AS ABOVE				
				SAND, VERY FINE, SILT (5-10%) DRY 10YR 4/2	SM			
3								
4				SAME AS ABOVE	SM			
				TD = 4'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T DEEDS

MVC-859S
858S
859S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-157	COORDINATES:		DATE: 06/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/01/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SILTY SAND, FINE, SILT (5-10%) MOIST 10YR 4/2 DARK GRAYISH BROWN	SM			
1								
			90%					
2								
3								
4				SAME AS ABOVE	SM			
				TD=4'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-816S
817S
818S

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31-ALAMEDA		
BORING NUMBER: OU5-158	COORDINATES:		DATE: 06/01/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/01/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/01/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
2			80%	SAND, FINE, WELL GRADED, MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
4				SAME AS ABOVE				
6				SILTY CLAY, SILT (5-10%) WET TO SATURATED, PLASTIC LOOSE 7.5YR 4/0 DARK GRAY	CL			
8				SAND FINE, WELL GRADED, SATURATED, 7.5YR 4/0 DARK GRAY	SW			
				TD=8				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T DEEDS

MVC-8245
-8255
-8265

MVC-8335
8345
8355

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819816	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-159	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE TO COARSE MOSTLY FINE, SILT (15-20%) GRAVEL (5-10%) 10YR 4/2 DARK BROWNISH GRAY DRY	SM			
2				SAND, FINE, WELL GRADED MOIST 10YR 4/2	SW			
3				SILTY CLAY, MOIST, COMPACT SILT (15-20%)	CL			
4				TD=4				

NOTES:

Drilling Contractor KEHOE TEST/ENG

ing Equipment

Driller: T. DEEDS

MVC-836
837
838

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: DUS-160	COORDINATES:	DATE: 06/04/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SILTY SAND, FINE TO COARSE MOSTLY FINE SILT (15-20%) GRAVEL (0-5%) DRY 10YR 4/2 DARK GRAYISH BROWN	SM			
2			2.0 ft	CLAY, PLASTIC, MOIST, 10YR 4/2	CL			
				SAND, FINE, WELL GRADED MOIST 10YR 4/2, DARK GRAYISH BROWN	SW			
4								
				CLAY, PLASTIC, LOOSE, SILT (10-15%) WET, 7.5YR 4/0 DARK GRAY	CL			
6				SAND, FINE, WELL GRADED, WET TO SATURATED, 10YR 4/2	SW			
8				TD=8'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-845S
846S
847S

MVC-854S
855S
856S

2438-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-161	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SILTY SAND, FINE, SILT (15-20%) GRAVEL (0-5%), dry 10YR 4/2 DARK GRAYISH BROWN	SM			
1				SAND, FINE, WELL GRADED MOIST, 10YR 4/2	SW			
2			90%					
3								
				CLAY, PLASTIC, MOIST, 7.5YR 4/0 DARK GRAY	CL			
4				TD=4'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

8605
8615
8625

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-162	COORDINATES:	DATE: 06/04/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SILTY SAND, FINE, SILT (20-25%) DRY 10YR 4/2 DARK GRAYISH BROWN	SM			
2			100	SAND, FINE, WELL GRADED, SLIGHTLY MOIST, 10YR 4/2	SW			
4								
			100	SILTY CLAY, WET, PLASTIC SILT (15-25%) LOOSE, 7.5 YR 4/0 DARK GRAY	CL			
6								
				SAND FINE, WELL GRADED SATURATED 7.5 YR 4/0 DARK GRAY	SW			
8				TD=8				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC - 8685 - 8715
8695 - 8728
8705 - 8735

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-163	COORDINATES:	DATE: 06/04/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
				SILTY SAND, FINE, SILT (20-25%) DRY, 10YR 4/2	SM			
2			20%	SAND, FINE, WELL GRADED MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
4				SILTY CLAY WET TO SATURATED, LOOSE, PLASTIC SILT (15-20%) 7.5YR 4/0 DARK GRAY	CL			
6			20%					
8				SAND, FINE WELL GRADED SATURATED 7.5YR 3/0	SW			
				TD=8'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

...ng Equipment POWER PROBE 9600

...er: T. DEEDS

MVC - 8835 - 8895
- 8845 - 8905
- 8855 - 8915

Rel 6'

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: ~~EB~~ OU5-164	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%) DRY, 10YR 4/2 DARK GRAYISH BROWN	SM			
2								
3				SAND, FINE, WELL GRADED MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
4				TD=4'	SW			

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MIC-8955
8968
8975

2438-3-98

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: 819814		
BORING NUMBER: OUS-165	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SAND, FINE, WELL GRADED SLIGHTLY MOIST, 10YR 4/2 DARK GRAYISH BROWN	SW			
2								
3								
4				SAME AS ABOVE, MOIST	SW			
				TD = 4'				

NOTES:

Drilling Contractor KEHOE TESTING/END

g Equipment POWER PROBE 9600

er: T. DEEDS

MVC-898S
899S
900S

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA		
BORING NUMBER: OU5-166	COORDINATES:		DATE: 06/04/01
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth	Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG			PAGE 1 OF 1

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			75%	SAND SILT, SAND, MOIST, FINE SILT (20-25%) 10YR 3/2 VERY DARK GRAYISH BROWN	SM			
2				SAND, FINE, WELL GRADED, MOIST 10YR 4/2 DARK GRAYISH BROWN	SW			
4				SILTY CLAY, MOIST, PLASTIC, 10YR 4/2	CL			
6				SAME AS ABOVE				
				SAND, FINE, WELL GRADED SATURATED, 10YR 4/2	SW			
				SAME AS ABOVE, 7.5YR 3/0 DARK GRAY	SW			
8				TD = 8'				

NOTES:

Drilling Contractor KEHOE TESTING/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. DEEDS

MVC-015S -018S
016S -019S
017S -020S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: CTO 31 - ALAMEDA	
BORING NUMBER: OU5-167	COORDINATES:	DATE: 06/04/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
			90%	SILTY SAND, FINE, SILT (20-25%) DRY, 10YR 4/2 DARK GRAYISH BROWN	SP			
2				SAND, FINE, WELL GRADED MOIST 10YR 4/2	SW			
4				CLAY, PLASTIC, WET, SILT (10-15%) LOOSE, 7.5YR 4/0 DARK GRAY	CL			
6								
				SAND FINE, WELL GRADED, SATURATED 7.5YR 4/0 DARK GRAY	SW			
8				TD=8'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

...ng Equipment POWER PROBE 9600

...er: T. DEEDS

MVC-~~008~~
009S -012S
010S -013S
011S -014S

243B-3-86

INTERNATIONAL TECHNOLOGY CORPORATION

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 819814	PROJECT NAME: 819814 CTO 31 - ALAMODA	
BORING NUMBER: OUS-168	COORDINATES:	DATE: 06/04/01
ELEVATION:	GWL: Depth Date/Time	DATE STARTED: 06/04/01
ENGINEER/GEOLOGIST: D. POLEY	Depth Date/Time	DATE COMPLETED: 06/04/01
DRILLING METHODS: DPT RIG		PAGE 1 OF 1

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	WELL CONSTRUCTION	REMARKS
0				TOP SOIL				
1				SILTY SAND, FINE, SILT (20-25%) GRAVEL (0-5%), MOIST, 10YR 4/2 DARK GRAYISH BROWN				
2			100%					
				SAND, FINE WELL GRADED, MOIST 10YR 4/2	SW			
3				SAME AS ABOVE GRADES TO 7.5 4/0 DARK GRAY	SW			
4				TD = 4'				

NOTES:

Drilling Contractor KEHOE TEST/ENG

Drilling Equipment POWER PROBE 9600

Driller: T. REEDS

MVC - 0245
0255
0265
0275

2438-3-86

ATTACHMENT C2

BORING LOGS FOR IR SITE 30

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B050
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-15-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,857.2 E 6,045,024.8 / LOGGED BY: E. Johansen	ROCK (FT): NA	COMPLETED: 8-15-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 11.01 / CHECKED BY: Cathie Stumpenhaus RG 4451	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	100	1.0		C072S001 (0.0 - 0.5)				Sandy silt (ML): very dark gray [5Y 3/1], moist, firm, organic, roots, trace gravel, 20% sand, 80% fines.	FID Background is 1.03 ppm No hardscape inside planter
1.42	77	3.0		C072S201 (Geotech) (1.0 - 2.0)	10.0	1		Gravelly lean clay (CL): light olive brown [2.5Y 5/4], moist, firm-stiff, fine gravel, angular, 30% gravel, 10% sand, 60% fines.	planter area is higher than parking area (~ 1 foot)
				C072S002 (En Core) (2.5 - 2.5)	9.0	2		Clayey gravel (GC): yellowish brown [10YR 5/6], angular, moist, dense, fine-coarse grain, angular with fine-medium sand, 60% gravel, 10% sand, 30% fines.	
1.53	100	3.0		C072S003 (En Core) (5.0 - 5.0)	7.0	4		Fat clay (CH): dark bluish gray [5B 4/1], high plasticity, moist to saturated, soft to firm to stiff. (more stiff 4-5.5 ft), 100% fines.	
1.64	100	3.0				7			
					1.5			Poorly graded sand (SP): dark greenish gray [5BG 4/1], loose, saturated, fine sand, loose, well sorted, 95% sand.	
					1.0	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 1/5/05 · STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B050

Report form: CTO 070 LOG Time: 9:06:26 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B051

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-15-04

DRILL MAKE AND MODEL	COORDINATES (NORTHING, EASTING)	LOGGED BY:	ROCK (FT)	COMPLETED
Direct-Push XD-2	N 2,113,849.4 E 6,045,090.5	E. Johansen	NA	8-15-04

HOLE SIZE DIAMETER (IN)	CORE SIZE DIAMETER (IN)	GROUND ELEVATION (FT MLLW)	CHECKED BY:	TOTAL DEPTH (FT BGS)	UPDATE
2	1 11/16	10.15	Cathie Stumpenhaus RG 4451	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	100	1.0		C072S004 (0.0 - 0.5)				**Gravelly lean clay (CL)**: dark olive brown [2.5Y 3/3], moist, low plasticity, firm, some organic debris, 20% fine gravel, 10% sand, 70% fines.	FID Background is 1.03 ppm No hardscape inside planter area
	67	3.0			9.2	1		**Fat clay (CH)**: dark greenish gray [5BG 4/1], moist, high plasticity, firm-stiff, black mottling, 100% fines.	
						2			
						3			
	83	3.0		C072S200 (Geotech) (3.0 - 4.0) C072S005 (En Core) (3.5 - 3.5) C072S006 (En Core) (4.5 - 4.5)	6.2	4		**Fat clay (CH)**: Same as above.	
						5			
						6			
	100	3.0				7			
						8			
					1.2	9		**Poorly graded sand (SP)**: dark greenish gray [5BG 4/1], saturated, loose, fine grain.	
					0.2	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
1/5/05
STATE OF CALIFORNIA

	SITE and LOCATION	HOLE NO.
	IR Site 30 Alameda Point	C3S030B051

Report: TO 070 LOG Time: 9:06:29 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B052
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-15-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,844.8 E 6,045,191.0 / LOGGED BY: E. Johansen	ROCK (FT): NA	COMPLETED: 8-15-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 9.72 / CHECKED BY: Cathie Stumpenhaus RG 4451	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	50	1.0		C072S007 (0.0 - 0.5)	9.4			**Organic soil (OL/OH)**: very dark gray [2.5Y N3/0], moist, organic silt and wood fragments, 10% sand, 90% fines.	FID Background is 1.02 ppm No hardscape inside planter area
					9.2			**Sandy lean clay (CL)**: olive brown [2.5Y 4/3], moist, low plasticity, firm, 10% gravel, 20% sand, 70% fines.	
	43	3.0		C072S008 (En Core) (1.5 - 1.5)	8.5	1		**Clayey gravel (GC)**: olive brown [2.5Y 4/3], moist, low plasticity, dense, 50% gravel, 10% sand, 40% fines. No recovery.	8/21/04 C072S008 1.5 feet bgs En Core resample.
						2			
						3			
				C072S009 (3.5' En Core) (3.5 - 4.0)	6.2			**Clayey gravel (GC)**: Same as above.	8/21/04 C072S009 3.5 feet bgs En Core resample.
	87	3.0		C072S010 (En Core) (4.0 - 4.0)	5.7	4		**Fat clay (CH)**: dark greenish gray [5G 4/1], moist to saturated, firm, high plasticity, orange and gray/black mottling, 100% fines..	8/21/04 C072S010 4.0 feet bgs En Core resample.
				C072S010 (4.5 - 5.0)		5			
				C072S011 DUP (5.0 - 5.5)					
						6			
	100	3.0			2.7	7		**Fat clay (CH)**: Same as above.	
						8			
					0.7	9		**Poorly graded sand (SP)**: greenish gray [5GY 5/1], loose, saturated, 95% fine grain sand, 5% fines.	
					-0.3	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 1/5/05 · STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B052

Report form: CTO-070.LOG Time: 9:08:31 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B053
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-15-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,878.7 E 6,045,278.3 / LOGGED BY: E. Johansen	ROCK (FT): NA	COMPLETED: 8-15-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 9.02 / CHECKED BY: Cathie Stumpenhaus RG 4451	TOTAL DEPTH (FT BGS): 9.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	67	3.0			8.6			**Asphalt**	FID Background is 1.03 ppm
				C072S012 (1.5 - 2.0)		1, 2		**Well-graded sand with silt and gravel (SW-SM)**: dark gray [5Y 4/1], dense, moist, fine-coarse sand and gravel, some silt, 40% gravel, 50% sand, 10% fines.	
	83	3.0		C072S013 (En Core) (3.0 - 3.0)	6.0	3		**Fat clay (CH)**: greenish gray [5GY 5/1], high plasticity, moist to saturated, firm, 100% fines.	
				C072S014 (En Core) (4.5 - 4.5)		4, 5			
	100	3.0			3.5	6, 7, 8		**Poorly graded sand (SP)**: dark greenish gray [5GY 4/1], saturated, fine grain, loose, fossiliferrous.	
					0.0	9		TOTAL DEPTH = 9.0 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 1/5/05 · STATE OF CALIFORNIA

TO 070 LOG Time: 9:06:32 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B054
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-14-04
DRILL MAKE AND MODEL: Direct-Push GP-1	COORDINATES (NORTHING, EASTING): N 2,113,814.5 E 6,045,284.1 / LOGGED BY: S. Quayle	ROCK (FT): NA	COMPLETED: 8-14-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 10.20 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	100	4.0		C072S015 (0.0 - 0.5)		1		**Well-graded sand with clay and gravel (SW-SC)**: yellowish brown [10YR 5/6], moist, fine to coarse sand and gravel, some clay, 20% gravel, 70% sand, 10% clay (FILL).	FID Background is 1.04 ppm
					8.2	2		**Lean clay (CL)**: dark greenish gray [5G 4/1], moist, with orange/brown mottling, medium plasticity, firm, 100% clay.	
				C072S016 (En Core) (3.0 - 3.0)		3			8/21/04 C072S016 3 feet bgs En Core resample
					6.7 ▽				
					6.5	4		**Well-graded sand (SW)**: black [5Y 2.5/1], wet, fine to coarse sand with hydrocarbon odor.	
	100	4.0			5.9			**Sandy lean clay (CL)**: dark greenish gray [5G 4/1], fine sand, medium plasticity, 35% sand, 65% clay.	
						5		**Fat clay (CH)**: dark greenish gray [5G 4/1], with black mottling, wet, high plasticity, firm to soft with depth, 100% clay.	
						6			
						7			
					2.7			**Poorly graded sand (SP)**: dark greenish gray [5GY 4/1], wet, homogeneous, fine sand, trace shells, 100% sand, trace fines.	
	100	2.0				8			
						9			
					0.2	10			
								TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
Eric Johansen
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B054

Report form: CTO 070 LOG Time: 8:06:35 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B055
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-16-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,856.7 E 6,045,423.8 / LOGGED BY: S. Quayle	ROCK (FT): NA	COMPLETED: 8-16-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 10.03 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-21-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	50	2.0						**Asphalt**	FID Background is 3.58 ppm
				C072S018 (0.5 - 1.0)	9.6	1		**Well-graded sand with silt and gravel (SW-SM)**: olive brown [2.5Y 4/3], moist, fine to coarse sand, fine angular gravel, 40% gravel, 50% sand, 10% fines (FILL).	
	88	2.0			8.0	2		**Well-graded sand with silt and gravel (SW-SM)**: yellowish brown [10YR 5/6], moist, fine to coarse sand, fine angular gravel, 30% gravel, 60% sand, 10% fines (FILL).	
				C072S020 DUP (En Core) (3.5 - 3.5) C072S019 (En Core) (3.5 - 3.5)	7.3	3		**Fat clay (CH)**: dark greenish gray [5GY 4/1], moist to wet, high plasticity, stringers of fine sand with perched water 2 to 2.75 feet bgs, 100% clay.	
	73	3.0			6.0	4		**Poorly graded sand (SP)**: dark greenish gray [5GY 4/1], wet, fine sand, some shell fragments, 100% sand, trace fines.	
	92	3.0				5, 6, 7, 8, 9			
					0.0	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B055

Report: TO 070 LOG Time: 4:11:06 PM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B056

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-16-04
DRILL MAKE AND MODEL	**COORDINATES (NORTHING, EASTING)** / **LOGGED BY:**	**ROCK (FT)**	**COMPLETED**
Direct-Push XD-2	N 2,113,850.9 E 6,045,554.4 / S. Quayle	NA	8-16-04
HOLE SIZE DIAMETER (IN) / **CORE SIZE DIAMETER (IN)**	**GROUND ELEVATION (FT MLLW)** / **CHECKED BY:**	**TOTAL DEPTH (FT BGS)**	**UPDATE**
2 / 1 11/16	10.24 / Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	55	2.0			9.9			**Asphalt**	FID Background is 3.58 ppm
				C072S022 (1.0 - 1.5)		1		**Well-graded sand with silt and gravel (SW-SM):** olive brown [2.5Y 4/3], moist, fine to coarse sand, fine angular gravel, 40% gravel, 50% sand, 10% fines (FILL). At 1.25 feet bgs color changes to yellowish brown [10YR 5/6].	
				C072S021 DUP (1.5 - 2.0)	8.5				
	88	2.0				2		**Clayey sand (SC):** olive brown [2.5Y 4/3], moist, fine sand, 80% sand, 20% clay.	
					8.0			**Fat clay (CH):** dark greenish gray [5GY 4/1], moist, firm, high plasticity, 100% fines.	
						3			
				C072S023 (En Core) (3.5 - 3.5)	7.0			**Lean clay (CL):** greenish gray [5GY 5/1], moist, low plasticity, firm, 100% fines.	
				C072S024 (En Core) (4.0 - 4.0)	6.2	4		**Fat clay (CH):** dark greenish gray [5GY 4/1], soft, moist, high plasticity, 100% fines.	
	100	3.0				5			
						6			
					4.0			**Poorly graded sand (SP):** dark greenish gray [5GY 4/1], wet, fine sand, some shell fragments, 100% sand, trace fines, homogeneous.	
	50	3.0				7			
						8			
						9			
					0.2	10			
								TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B056

Report form: CTO 070 LOG Time: 9:08:39 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B057
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-18-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,831.6 E 6,045,689.8 / LOGGED BY: S. Quayle	ROCK (FT): NA	COMPLETED: 8-18-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 10.54 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	75	2.0						Asphalt	FID Background is 2.35 ppm
				C072S025 (0.5 - 1.0)	10.1	1		Gravelly Sand (SW): Olive brown [2.5Y 4/4], fine to coarse grained sand, moist, 40% fine gravel, 50% sand, 10% fines.	
	70	2.0		C072S026 (En Core) (3.5 - 3.5)	9.0	2, 3		Sandy Gravel (GW): Yellowish brown [10YR 5/6], fine to coarse grained sand, moist, 25% gravel, 70% sand, 5% fines.	
	67	0.0 3.0		C072S027 (En Core) (4.0 - 4.0)	6.5	4		Silt (ML): Dark greenish gray [5GY 4/1], moist, low plasticity, 100% fines.	
	67	3.0			5.5 ▽	5, 6, 7, 8, 9		Sand (SP): Dark greenish gray [5GY 4/1], wet, homogeneous, 100% sand, trace fines.	
					0.5	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B057

Report ID: TO 070 LOG Time: 8:08:41 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B058

DRILLER	SITE and LOCATION		OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30	Alameda Point	NA	8-19-04
DRILL MAKE AND MODEL	**COORDINATES (NORTHING, EASTING)**	**LOGGED BY:**	**ROCK (FT)**	**COMPLETED**
Direct-Push XD-2	N 2,113,818.4 E 6,045,884.7	T. Takagi	NA	8-19-04
HOLE SIZE DIAMETER (IN) / CORE SIZE DIAMETER (IN)	**GROUND ELEVATION (FT MLLW)**	**CHECKED BY:**	**TOTAL DEPTH (FT BGS)**	**UPDATE**
2 / 1 11/16	10.96	Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	35	2.0			10.6			Asphalt	FID Background is 3.88 ppm
						1		Well-graded sand with gravel (SW): olive brown [2.5Y 4/4], moist, fine subrounded gravel, 15% gravel, 80% sand, 5% fines.	
				C072S028 (1.5 - 2.0)	9.2	2		Well-graded sand with clay and gravel (SW-SC): dark yellowish brown [10YR 4/6], moist, subangular coarse to fine gravel, 40% gravel, 40% sand, 10% fines.	
	63	2.0				3			
				C072S030 DUP (En Core) (3.5 - 3.5) C072S029 (En Core) (3.5 - 3.5)	7.7			Poorly graded sand (SP): olive brown [2.5Y 4/4], moist, 100% fine sand, homogeneous.	
	83	3.0			7.2	4		Silt (ML): dark greenish gray [5GY 4/1], very soft, wet, 100% fines, laminated.	
						5			
						6			
					4.7			Poorly graded sand (SP): dark greenish gray [5GY 4/1], soft, saturated, 100% fine sand, homogeneous, approximately 3% shell fragments up to 1/4 inch.	
	50	3.0				7			
						8			
						9			
					1.0	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION		HOLE NO.
IR Site 30	Alameda Point	C3S030B058

Report form: CTO 070 LOG Time: 8:08:43 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B059

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-15-04

DRILL MAKE AND MODEL	COORDINATES (NORTHING, EASTING)	LOGGED BY:	ROCK (FT)	COMPLETED
Direct-Push XD-2	N 2,113,795.0 E 6,045,028.1	E. Johansen	NA	8-15-04

HOLE SIZE DIAMETER (IN)	CORE SIZE DIAMETER (IN)	GROUND ELEVATION (FT MLLW)	CHECKED BY:	TOTAL DEPTH (FT BGS)	UPDATE
2	1 11/16	9.48	Cathie Stumpenhaus RG 4451	9.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	50	3.0		C072S032 (0.0 - 0.5)				Lean clay with sand (CL): dark yellowish brown [10YR 4/6], stiff, moist, low plasticity, some organics, roots, leaves, with sand and gravel, 10% gravel, 10% sand, 80% fines.	FID Background is 1.03 ppm Tan-bark at surface. Planter area, no hardscape
					8.5	1		Fat clay (CH): black [2.5Y N2/0], moist, high plasticity, firm, 100% fines.	
						2			
	100	3.0		C072S202 (Geotech) (2.5 - 3.5) C072S033 (En Core) (2.5 - 2.5)	6.5	3			
						4			
						5			
				C072S034 (En Core) (5.5 - 5.5)					
	100	3.0				6			
						7			
						8			
					1.0			Poorly graded sand (SP): dark bluish gray [5B 4/1], saturated, fine grain, loose.	
					0.5	9			
								TOTAL DEPTH = 9.0 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
1/5/05
STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B059

TO 070 LOG Time: 8:08:45 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B060

DRILLER	SITE and LOCATION		OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30	Alameda Point	NA	8-14-04
DRILL MAKE AND MODEL	**COORDINATES (NORTHING, EASTING)**	**LOGGED BY:**	**ROCK (FT)**	**COMPLETED**
Direct-Push GP-1	N 2,113,787.8 E 6,045,301.8	S. Quayle	NA	8-14-04
HOLE SIZE DIAMETER (IN) / CORE SIZE DIAMETER (IN)	**GROUND ELEVATION (FT MLLW)**	**CHECKED BY:**	**TOTAL DEPTH (FT BGS)**	**UPDATE**
2 / 1 11/16	10.28	Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	88	4.0			10.1			Concrete	FID Background is 1.04 ppm
				C072S035 (0.5 - 1.0)		1		Well-graded sand with clay and gravel (SW-SC): yellowish brown [10YR 5/6], moist, 70% fine to coarse sand and gravel, some clay, 20% gravel, 70% sand, 10% clay, sandy clay lense 2 to 2.2 feet bgs.	
				C072S036 (En Core) (2.0 - 2.0)		2			8/21/04 C072S036 2 feet bgs En Core resample
						3			
	100	4.0		C072S037 (En Core) (4.0 - 4.0)	6.3	4		Fat clay (CH): dark greenish gray [5GY 4/1], wet, high plasticity, with black mottling, firm to soft with depth, 100% clay.	8/21/04 C072S037 4 feet bgs En Core resample
						5			
						6			
						7			
	100	2.0			2.8	8		Poorly graded sand (SP): dark greenish gray [5GY 4/1], wet, fine sand, trace shells, 100% sand, trace fines, homogeneous.	
						9			
					0.3	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
Eric Johansen
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION		HOLE NO.
IR Site 30	Alameda Point	C3S030B060

Report form: CTO 070 LOG Time: 9:06:47 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 . 23818-072	1 of 1	C3S030B061

DRILLER	SITE and LOCATION		OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30	Alameda Point	NA	8-16-04
DRILL MAKE AND MODEL	**COORDINATES (NORTHING, EASTING)**	**LOGGED BY:**	**ROCK (FT)**	**COMPLETED**
Direct-Push XD-2	N 2,113,774.7 E 6,045,361.9	S. Quayle	NA	8-16-04
HOLE SIZE DIAMETER (IN) / CORE SIZE DIAMETER (IN)	**GROUND ELEVATION (FT MLLW)**	**CHECKED BY:**	**TOTAL DEPTH (FT BGS)**	**UPDATE**
2 / 1 11/16	10.32	Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	100	1.0		C072S038 MS/MSD (0.0 - 0.5)				**Well-graded sand with silt and gravel(SW-SM)**: light olive brown [2.5Y 5/3], dry, fine to coarse sand, fine angular gravel (FILL), 50% gravel, 40% sand, 10% fines.	FID Background is 2.64 ppm No surface hardpan or cover (i.e. sand or tan bark)
	20	3.0				1			
					8.8			**Well-graded sand with clay and gravel(SW-SC)**: yellowish brown [10YR 5/6], dry to moist, fine to coarse sand, fine gravel, (FILL), 30% gravel, 60% sand, 10% clay.	
					8.3	2		**Lean clay (CL)**: dark greenish gray [5GY 4/1], moist, medium plasticity, trace sand, 100% silt/clay.	
				C072S205 (Geotech) (2.0 - 3.0)					
						3			
				C072S041 (3.5' En Core) (3.5 - 4.0)					
	17	3.0				4			
						5			
						6			
				C072S042 (6.5' En Core) (6.5 - 7.0)					
	67	3.0			3.3 ▽	7		**Poorly graded sand (SP)**: dark greenish gray [5GY 4/1], wet, fine sand, 100% sand, trace fines, homogeneous.	
						8			
						9			
					0.3	10			

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

TOTAL DEPTH = 10.0 FEET

SITE and LOCATION		HOLE NO.
IR Site 30	Alameda Point	C3S030B061

Report 1 O 070 LOG Time: 9:08:49 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B062
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-19-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,775.0 E 6,045,612.9 / LOGGED BY: T. Takagi	ROCK (FT): NA	COMPLETED: 8-19-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 10.90 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	100	2.0						Wood Chips	FID Background is 2.32 ppm Wood chips at surface removed before sampling
					10.1	1		Asphalt	
					9.6			Well-graded sand with gravel (SW): dark yellowish brown [10YR 4/6], moist, 30% subangular fine gravels, 65% coarse to fine sand, 5% fines.	
	75	2.0		C072S043 (1.5 - 2.0) C072S044 (En Core) (1.5 - 1.5)	9.1	2		Poorly graded sand with silt (SP-SM): olive brown [2.5Y 4/4], wet, 90% fine sand, 10% fines.	
				C072S045 (3.5' En Core) (3.0 - 3.5)	8.1	3		Lean clay (CL): dark greenish gray [5GY 4/1], medium stiff, wet, low plasticity, softens with depth, laminated layers less than 0.1 inch thick, 5% fine sand, 95% fines.	
	33	3.0				4 5 6			
	53	3.0			3.9	7 8 9		Poorly graded sand (SP): dark greenish gray [5GY 4/1], soft, saturated, homogeneous, 100% fine sand.	
					0.9	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION: IR Site 30 Alameda Point		HOLE NO.: C3S030B062

Report form: CTO 070 LOG Time: 9:06:51 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B063
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-17-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,722.5 E 6,045,781.7 / LOGGED BY: T. Takagi	ROCK (FT): NA	COMPLETED: 8-17-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 11.38 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
1.05	80	2.0						Asphalt	FID Background is 1.05 ppm
				C072S047 (0.5 - 1.0)	11.0			Well-graded sand with gravel (SW): yellowish brown [10YR 5/6], moist, fine to coarse sand, fine gravel, 20% gravel, 75% sand, 5% fines.	
				C072S048 (En Core) (1.5 - 1.5)		1			
	85	2.0				2			
				C072S049 (2.5 - 2.5)					
				C072S049 (MS/MSD) (En Core) (3.0 - 3.0)	8.6	3		Fat clay (CH): dark greenish gray [5GY 4/1], firm to stiff, moist, black and orange oxidized mottling, high plasticity, 100% clay.	
					7.6	4		Silt (ML): greenish gray [5GY 5/1], moist, 100% silt, trace sand, homogeneous structure.	
	83	3.0		C072S050 (4.5' En Core) (4.0 - 4.5)					
				C072S051 (4.5' En Core) (4.5 - 5.0)		5			
						6			
					4.9			Fat clay (CH): dark greenish gray [5GY 4/1], firm to stiff, moist, high plasticity, black and orange oxidized mottling, 100% clay.	
	100	3.0			4.4	7		Poorly graded sand (SP): dark greenish gray [5GY 4/1], saturated, 100% sand, homogeneous.	
						8			
						9			
					1.4	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B063

Report: TO 070 LOG Time: 9:08:53 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B064

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-17-04
DRILL MAKE AND MODEL	**COORDINATES (NORTHING, EASTING)** / **LOGGED BY:**	**ROCK (FT)**	**COMPLETED**
Direct-Push XD-2	N 2,113,718.2 E 6,045,942.0 / T. Takagi	NA	8-17-04
HOLE SIZE DIAMETER (IN) / **CORE SIZE DIAMETER (IN)**	**GROUND ELEVATION (FT MLLW)** / **CHECKED BY:**	**TOTAL DEPTH (FT BGS)**	**UPDATE**
2 / 1 11/16	11.92 / Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
1.15	70	2.0			11.5			**Asphalt**	FID Background is 1.15 ppm
				C072S052 (1.0 - 1.5) C072S053 (En Core) (1.5 - 1.5)	10.7	1		**Clayey sand with gravel (SC)**: olive brown [2.5Y 4/4], moist, fine to coarse sand, 15% gravel, 70% sand, 15% fines (FILL).	
	75	2.0		C072S054 (2.5' En Core) (2.0 - 2.5)		2		**Well-graded sand with gravel (SW)**: yellowish brown [10YR 5/6], dry to moist, fine to coarse sand and gravel, 30% gravel, 60% sand, 10% fines (FILL).	
				C072S206 (Geotech) (3.0 - 3.5)	8.7	3		**Poorly graded sand (SP)**: dark greenish gray [5GY 4/1], moist, 100% fine sand, homogeneous.	
	60	3.0		C072S055 (4.5' En Core) (4.5 - 5.0)		4			
						5			
						6			
					5.7			**Fat clay (CH)**: dark greenish gray [5GY 4/1], soft, wet, high plasticity, 100% clay.	
	50	3.0				7			
						8			
					3.2	9		**Poorly graded sand (SP)**: dark greenish gray [5GY 4/1], wet, 100% fine sand, homogeneous.	
					1.9	10		**TOTAL DEPTH = 10.0 FEET**	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B064

Report form: CTO 070 LOG Time: 9:06:56 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B065

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-15-04

DRILL MAKE AND MODEL	COORDINATES (NORTHING, EASTING)	LOGGED BY:	ROCK (FT)	COMPLETED
Direct-Push XD-2	N 2,113,732.3 E 6,045,027.1	E. Johansen	NA	8-15-04

HOLE SIZE DIAMETER (IN)	CORE SIZE DIAMETER (IN)	GROUND ELEVATION (FT MLLW)	CHECKED BY:	TOTAL DEPTH (FT BGS)	UPDATE
2	1 11/16	9.45	Cathie Stumpenhaus RG 4451	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	60	1.0		C072S056 (0.0 - 0.5)				Poorly graded sand (SP): light gray [2.5Y 7/2], moist, fine grained, note: mix of "playground" sand and native soil, 95% sand, 5% fines.	FID Background is 1.03 ppm Sandbox area, no hardscape
	50	3.0		C072S057 (En Core) (2.0 - 2.0)	8.5	1 2		Sandy lean clay (CL): dark yellowish brown [10YR 4/6], moist, low plasticity, fine sand, firm-stiff, 15% sand, 85% clay.	
	50	3.0		C072S058 (3.5' En Core) (3.5 - 4.0)	7.0	3 4		Fat clay (CH): black [10YR 2/1], high plasticity, moist to saturated, firm to stiff, 100% fines.	
	93	3.0		C072S203 (Geotech) (4.5 - 5.5) C072S059 (5.5' En Core) (5.0 - 5.5)		5 6 7 8 9			
					-0.3 -0.5	10		Poorly graded sand with clay (SP-SC): grayish green [5G 4/2], saturated, loose, fine grain, 90% sand, 10% clay	
								TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST CATHIE L. STUMPENHAUS No. 4451 1/5/05 STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B065

Report TO 070 LOG Time: 9:06:58 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B066

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-14-04

DRILL MAKE AND MODEL	COORDINATES (NORTHING, EASTING)	LOGGED BY:	ROCK (FT)	COMPLETED
Direct-Push GP-1	N 2,113,718.2 E 6,045,093.1	S. Quayle	NA	8-14-04

HOLE SIZE DIAMETER (IN) / CORE SIZE DIAMETER (IN)	GROUND ELEVATION (FT MLLW)	CHECKED BY:	TOTAL DEPTH (FT BGS)	UPDATE
2 / 1 11/16	10.30	Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	50	4.0		C072S060 MS/MSD (0.0 - 0.5)				**Well-graded sand with clay and gravel (SW-SC)**: yellowish brown [10YR 5/6], moist, fine to coarse grained sand and some clay, 20% gravel, 70% sand, 10% clay (FILL).	Bark at surface FID Background is 1.20 ppm
					9.0	1		**Lean clay (CL)**: black [5Y 2.5/1], moist, low plasticity, trace sand, 95% clay.	
				C072S062 DUP (1.5 - 1.5) C072S061 (En Core) (1.5 - 1.5)	8.5	2		**Fat clay (CH)**: dark greenish gray [5GY 4/1], moist, high plasticity, with black mottling and trace orange oxidized nodules, soft.	8/21/04 C072S061 1.5 feet bgs En Core resample 8/21/04 C072S062 DUP 1.5 feet bgs En Core resample
						3			
				C072S063 (3.5' En Core) (3.5 - 4.0)					8/21/04 C072S063 3.5 feet bgs En Core resample 8/21/04 C072S063 MS/MSD 3.5 feet bgs En Core resample
	100	4.0				4			
						5			
						6			
						7			
					2.8			**Lean clay (CL)**: dark greenish gray [5GY 4/1], wet, low to medium plasticity, 10% fine sand, 90% clay.	
	100	2.0				8			
					1.3	9		**Fat clay (CH)**: dark greenish gray [5G 4/1], high plasticity, trace orange oxidized nodules, moist to wet, soft.	
					0.3	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B066

Report form: CTO 070 LOG Time: 8:07:00 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B067
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-15-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,724.3 E 6,045,147.3 / LOGGED BY: E. Johansen	ROCK (FT): NA	COMPLETED: 8-15-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 11.14 / CHECKED BY: Cathie Stumpenhaus RG 4451	TOTAL DEPTH (FT BGS): 2.3	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	100	0.5		C072S065 (0.0 - 0.5)				Silty gravel with sand (GM): dark yellowish brown [10YR 3/4], dense, dry to moist, fine to coarse grained sand and angular gravel, 50% gravel, 30% sand, 20% silt/clay.	FID Background is 1.03 ppm Samples collected via hand slide hammer, limited access area
	100	0.5							
	80	0.5				1			
	80	0.5							
	40	0.5		C072S066 (En Core) (2.3 - 2.3)	8.9	2			Refusal at 2.25 feet bgs
								TOTAL DEPTH = 2.3 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 1/5/05 · STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B067

Report: TO 070 LOG Time: 9:07:01 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B068
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-14-04
DRILL MAKE AND MODEL: Direct-Push GP-1	COORDINATES (NORTHING, EASTING): N 2,113,719.5 E 6,045,217.7 / LOGGED BY: S. Quayle	ROCK (FT): NA	COMPLETED: 8-14-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 10.58 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-21-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	75	4.0		C072S068 (0.0 - 0.5)				**Lean clay (CL)**: olive brown [2.5Y 4/3], moist, low plasticity, with black mottling, some fine sand, 10% sand, 90% clay.	Grass at surface. FID Background is 1.04 ppm
					9.8	1		**Well-graded sand with clay and gravel (SW-SC)**: yellowish brown [10YR 5/6], moist, fine to coarse grained sand and gravel, some clay, 20% gravel, 70% sand, 10% clay.	
				C072S069 DUP (En Core) (2.0 - 2.0) C072S070 (En Core) (2.0 - 2.0)	8.6	2		**Lean clay with sand (CL)**: black [5Y 2.5/1], moist, low plasticity, 15% sand, 85% clay.	8/22/04 C072S069 2 feet bgs En Core resample 8/22/04 C072S070 DUP 2 feet bgs En Core resample
					8.1	3		**Lean clay (CL)**: dark greenish gray [5GY 4/1], moist, low to medium plasticity, with orange oxidized mottling, firm, trace fine sand, 5% sand, 95% clay.	
				C072S071 (4.0' En Core) (3.5 - 4.0)		4			
	70	4.0			6.3			**Fat clay (CH)**: dark greenish gray [5G 4/1], wet, high plasticity, soft, 100% clay.	8/22/04 C072S071 4 feet bgs En Core resample
						5			
						6			
						7			
	100	2.0				8			
						9			
					1.1			**Poorly-graded sand (SP)**: dark greenish gray [5GY 4/1], fine to medium grained sand, wet, homogeneous, 100% sand, trace fines.	
					0.6	10			

TOTAL DEPTH = 10.0 FEET

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B068

Report form: CTO 070 LOG Time: 3:29:34 PM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B069
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-14-04
DRILL MAKE AND MODEL: Direct-Push GP-1	COORDINATES (NORTHING, EASTING): N 2,113,712.9 E 6,045,286.9 / LOGGED BY: S. Quayle	ROCK (FT): NA	COMPLETED: 8-14-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 10.66 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	60	4.0			10.5			**Concrete**	FID Background is 1.04 ppm
				C072S073 (0.5 - 1.0)		1		**Well-graded sand with clay and gravel(SW-SC)**: Yellowish brown [10YR 5/6], moist, fine to coarse grained sand and coarse gravel, some clay, 20% gravel, 70% sand, 10% clay.	
					9.2	2		**Fat clay (CH)**: dark greenish gray [5GY 4/1], moist, high plasticity, with black mottling and oxidized roots, trace fine sand, 100% clay.	
				C072S074 (En Core) (3.0 - 3.0)		3			8/21/04 C072S074 3 feet bgs En Core resample
	83	4.0		C072S075 (En Core) (4.0 - 4.0)	6.7	4		**Fat clay (CH)**: same as above, except becomes soft with depth and wet at 5 feet bgs.	8/21/04 C072S075 4 feet bgs En Core resample
						5			
						6			
						7			
	100	2.0				8			
						9			
					1.2			**Poorly-graded sand (SP)**: dark greenish gray [5GY 4/1], fine grained sand, wet, homogeneous, 100% sand, trace fines.	
					0.7	10			

TOTAL DEPTH = 10.0 FEET

REGISTERED GEOLOGIST
Eric Johansen
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B069

Report: TO 070 LOG Time: 9:07:08 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B070
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-18-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,625.4 E 6,045,463.2 / LOGGED BY: T. Takagi	ROCK (FT): NA	COMPLETED: 8-18-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 11.35 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
3.25	60	2.0						Asphalt	FID Background is 3.25 ppm
				C072S076 (0.5 - 1.0)	10.8	1		Well-graded sand with gravel (SW): yellowish brown [10YR 5/6], moist, fine to coarse sand and gravel, subangular gravel, 35% gravel, 60% sand, 5% clay.	
	60	2.0		C072S077 (En Core) (2.0 - 2.0)		2			
					8.6	3		Asphalt weathered asphalt with strong asphalt odor.	
	100	3.0			7.6	4		Sandy lean clay (CL): dark greenish gray [5GY 4/1], soft, moist to wet, low plasticity, with black mottling, 70% clay, 30% sand.	
						5			
	28	10.0			6.1	6		Lean clay (CL): dark greenish gray [5GY 4/1], moist, low to medium plasticity, firm to soft with depth, 100% clay.	
						7			
						8			
						9			
					1.6	10		Poorly graded sand (SP): dark greenish gray [5GY 4/1], wet, 100% fine sand, homogeneous.	
					1.3			TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERICA JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B070

Report form: CTO 070 LOG Time: 9:07:08 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B071

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-18-04
DRILL MAKE AND MODEL	**COORDINATES (NORTHING, EASTING)** / **LOGGED BY:**	**ROCK (FT)**	**COMPLETED**
Direct-Push XD-2	N 2,113,644.5 E 6,045,596.9 / T. Takagi	NA	8-18-04
HOLE SIZE DIAMETER (IN) / **CORE SIZE DIAMETER (IN)**	**GROUND ELEVATION (FT MLLW)** / **CHECKED BY:**	**TOTAL DEPTH (FT BGS)**	**UPDATE**
2 / 1 11/16	11.06 / Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
3.55	50	2.0		C072S079 (0.0 - 0.5)		1		**Well-graded gravel with sand (GW):** dark yellowish brown [10YR 3/6], moist, fine to coarse subangular gravel, 80% gravel, 15% sand, 5% silt.	FID Background is 3.55 ppm Tan bark at surface; remove prior to sampling.
	75	2.0		C072S081 MS/MSD (En Core) (2.0 - 2.0) C072S080 DUP (En Core) (2.0 - 2.0)	9.3	2		**Clayey sand (SC):** black [5Y 2.5/1], moist, 80% fine sand, 20% clay.	
				C072S082 (3.5' En Core) (3.0 - 3.5)	8.3	3		**Lean clay (CL):** dark greenish gray [5GY 4/1], moist, low to medium plasticity, firm to soft with depth, 10% clay, 90% silt, homogeneous.	
	83	3.0		C072S083 (En Core) (4.5 - 4.5)		4			
				C072S083 (5.0 - 5.5)		5			
						6			
	83	3.0				7			
						8			
						9			
					1.6			**Poorly graded sand (SP):** dark greenish gray [5GY 4/1], wet, 100% fine sand, homogeneous.	
					1.1	10		**TOTAL DEPTH = 10.0 FEET**	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B071

TO 070 LOG Time: 9:07:10 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B072

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-18-04
DRILL MAKE AND MODEL	**COORDINATES (NORTHING, EASTING)** / **LOGGED BY:**	**ROCK (FT)**	**COMPLETED**
Direct-Push XD-2	N 2,113,628.6 E 6,045,680.5 / T. Takagi	NA	8-18-04
HOLE SIZE DIAMETER (IN) / **CORE SIZE DIAMETER (IN)**	**GROUND ELEVATION (FT MLLW)** / **CHECKED BY:**	**TOTAL DEPTH (FT BGS)**	**UPDATE**
2 / 1 11/16	11.82 / Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
3.20	50	2.0			11.5			Asphalt	FID Background is 3.20 ppm
				C072S084 (0.5 - 1.0)		1		Well-graded sand with gravel (SW): yellowish brown [10YR 5/6], moist, fine to coarse sand and gravel, 40% gravel, 55% sand, 5% clay, (FILL).	
	50	2.0				2			
						3			
				C072S085 (En Core) (3.5 - 3.5)	8.6			Silt (ML): dark greenish gray [5GY 4/1], stiff, moist, low plasticity, with black mottling, 90% silt, 10% clay.	
	58	3.0			7.8	4		Lean clay (CL): dark greenish gray [5GY 4/1], medium stiff, moist to wet, low to medium plasticity, homogeneous, 40% silt, 60% clay.	
						5			
						6			
	100	3.0				7			
						8			
					3.6			Poorly graded sand (SP): dark greenish gray [5GY 4/1], wet, 100% fine sand, homogeneous.	
					3.1	9		Lean clay (CL): dark greenish gray [5GY 4/1], medium stiff, wet, low to medium plasticity, homogeneous, 40% silt, 60% clay.	
					2.1			Poorly graded sand (SP): dark greenish gray [5GY 4/1], wet, 100% fine sand, trace fines, homogeneous.	
					1.8	10		TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B072

Report form: CTO 070 LOG Time: 9:07:13 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B073
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-17-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,618.2 E 6,045,873.4 / LOGGED BY: T. Takagi	ROCK (FT): NA	COMPLETED: 8-17-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 13.15 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
1.25	50	2.0			12.8			**Asphalt**	FID Background is 1.25 ppm
								Clayey sand with gravel (SC): olive brown [2.5Y 4/4], moist, fine to coarse grained sand, 70% sand, 15% fines, 15% clay (FILL).	
				C072S087 (En Core) (1.0 - 1.0)	12.1	1		**Well-graded sand (SW)**: yellowish brown [10YR 5/6], dry to moist, fine to coarse sand and subangular gravel, 30% gravel, 60% sand, 10% silt (FILL).	
	50	2.0		C072S087 (2.0 - 2.5)		2			
						3			
				C072S088 (En Core) (3.5 - 3.5)					
				C072S089 (En Core) (4.0 - 4.0)	9.4			**Sandy lean clay (CL)**: olive brown [2.5Y 4/4], stiff, moist, low plasticity, 40% fine sand, 30% silt, 30% clay.	
	50	3.0				4			8/19/04 C072S089 4 feet bgs En Core resample
						5			
						6			
					6.9			**Poorly graded sand (SP)**: dark greenish gray [5GY 4/1], wet, 100% fine sand, homogeneous.	
	83	3.0				7			
					5.1	8		**Fat clay (CH)**: dark greenish gray [5GY 4/1], very soft, wet, high plasticity, 100% clay, homogeneous.	
						9			
					3.1	10		**TOTAL DEPTH = 10.0 FEET**	

REGISTERED GEOLOGIST
Eric Johansen
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

	SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B073

Report TO 070 LOG Time: 9:07:15 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B074
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-18-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,864.9 E 6,045,793.8 / LOGGED BY: T. Takagi	ROCK (FT): NA	COMPLETED: 8-18-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 10.17 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	75	2.0			9.8			**Asphalt**	FID Background is 3.14 ppm
				C072S090 (0.5 - 1.0)	9.2	1		**Well-graded gravel with clay and sand (GW-GC)**: olive brown [2.5Y 4/4], moist, 90% gravel, 5% fine sand, 5% clay.	
				C072S208 (Geotech) (1.0 - 2.0)				**Well-graded gravel with sand (GW)**: yellowish brown [10YR 5/6], fine to coarse grained sand, dry, 80% gravel, 20% sand.	
	100	2.0		C072S092 (En Core) (2.0 - 2.0) C072S091-DUP (2.0 - 2.5) C072S093 (En Core) (2.5 - 2.5)	7.9	2 3		**Lean clay (CL)**: dark greenish gray [5GY 4/1], soft, moist, low plasticity, 100% fines, homogeneous.	
	67	3.0			6.4 ▽	4 5 6 7 8 9		**Poorly graded sand (SP)**: dark greenish gray [5GY 4/1], wet, trace shell fragments, 100% fine sand, homogeneous.	
		3.0			0.2	10		**TOTAL DEPTH = 10.0 FEET**	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION: IR Site 30 Alameda Point		HOLE NO.: C3S030B074

Report form: CTO 070 LOG Time: 9/07:17 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B075

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-19-04
DRILL MAKE AND MODEL	**COORDINATES (NORTHING, EASTING)** / **LOGGED BY:**	**ROCK (FT)**	**COMPLETED**
Direct-Push XD-2	N 2,113,785.8 E 6,045,992.4 / T. Takagi	NA	8-19-04
HOLE SIZE DIAMETER (IN) / **CORE SIZE DIAMETER (IN)**	**GROUND ELEVATION (FT MLLW)** / **CHECKED BY:**	**TOTAL DEPTH (FT BGS)**	**UPDATE**
2 / 1 11/16	11.40 / Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	50	2.0			11.1			**Asphalt**	FID Background is 4.70 ppm
						1		**Well-graded sand with gravel (SW):** olive brown [2.5Y 4/4], moist, low plasticity, 15% fine subangular gravel, 80% sand, 5% fines.	
				C072S095 (1.5 - 2.0)	10.1	2		**Clayey sand (SC):** dark yellowish brown [10YR 4/6], moist, 10% fine subrounded gravel, 70% coarse to fine sand, 20% fines, color changes at 2.8 feet bgs to dark olive brown [2.5Y 3/3], 50% fine sand, 50% fines.	
	50	2.0				3			
				C072S096 (En Core) (3.5 - 3.5)	8.1	4		**Poorly graded sand (SP):** olive brown [2.5Y 4/4], wet, 100% fine sand, trace fines, homogeneous.	
	40	3.0				5			
					5.6	6		**Lean clay (CL):** dark greenish gray [5GY 4/1], soft, 100% fines.	
	58	3.0			4.6	7		**Poorly graded sand (SP):** dark greenish gray [5GY 4/1], saturated, 100% fine sand, homogeneous, shell fragments at 9.5 feet bgs.	
						8			
						9			
					1.4	10		**TOTAL DEPTH = 10.0 FEET**	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B075

Report: TO 070 LOG Time: 9:07:19 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B076

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-18-04
DRILL MAKE AND MODEL	**COORDINATES (NORTHING, EASTING)** / **LOGGED BY:**	**ROCK (FT)**	**COMPLETED**
Direct-Push XD-2	N 2,113,727.4 E 6,045,690.6 / T. Takagi	NA	8-18-04
HOLE SIZE DIAMETER (IN) / **CORE SIZE DIAMETER (IN)**	**GROUND ELEVATION (FT MLLW)** / **CHECKED BY:**	**TOTAL DEPTH (FT BGS)**	**UPDATE**
2 / 1 11/16	11.13 / Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
3.40	70	2.0			10.8			**Asphalt**	FID Background is 3.40 ppm
				C072S098 (0.5 - 1.0)		1		**Well-graded sand with gravel (SW)**: dark yellowish brown [10YR 4/6], moist, 25% subangular gravel, 70% sand, 5% clay.	
	88	2.0			9.4	2		**Poorly graded sand (SP)**: olive brown [2.5Y 4/4], wet, 100% sand, homogeneous.	
				C072S207 (Geotech) (2.5 - 3.5) C072S099 (En Core) (3.0 - 3.0)	8.4	3		**Lean clay (CL)**: dark greenish gray [5GY 4/1], very stiff, moist, low plasticity, with black mottling, 100% fines.	
	100	3.0		C072S101 (DUP, MS/MSD) (En Core) (4.0 - 4.0) C072S100 (En Core) (4.0 - 4.0)	7.4	4		**Silt (ML)**: dark greenish gray [5GY 4/1], very soft, moist, low plasticity, 5% clay, 95% silt.	
					6.4 ▽	5		**Elastic silt (MH)**: dark greenish gray [5GY 4/1], very soft, high plasticity, 95% silt, 5% clay, laminated.	
	50	3.0			4.1	7		**Poorly graded sand (SP)**: dark greenish gray [5GY 4/1], saturated, 100% fine sand, homogeneous.	
					1.1	10		**TOTAL DEPTH = 10.0 FEET**	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B076

Report form: CTO 070 LOG Time: 9:07:22 AM

BOREHOLE LOG

PROJECT and JOB NUMBER: CLEAN 3 23818-072		SHEET NO.: 1 of 1	HOLE NO.: C3S030B077
DRILLER: Precision Sampling, Inc.	SITE and LOCATION: IR Site 30 Alameda Point	OVERBURDEN: NA	BEGUN: 8-17-04
DRILL MAKE AND MODEL: Direct-Push XD-2	COORDINATES (NORTHING, EASTING): N 2,113,720.7 E 6,045,867.5 / LOGGED BY: T. Takagi	ROCK (FT): NA	COMPLETED: 8-17-04
HOLE SIZE DIAMETER (IN): 2 / CORE SIZE DIAMETER (IN): 1 11/16	GROUND ELEVATION (FT MLLW): 11.75 / CHECKED BY: Eric Johansen RG 6643	TOTAL DEPTH (FT BGS): 10.0	UPDATE: 12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
1.34	35	2.0						Asphalt	FID Background is 1.34 ppm
				C072S102 (0.5 - 1.0)	11.4			Clayey sand with gravel (SC): olive brown [2.5Y 4/4], moist, fine with coarse sand and gravel, 15% gravel, 70% sand, 15% clay (FILL).	
					10.7	1		Well-graded sand (SW): yellowish brown [10YR 5/6], dry to moist, fine with coarse sand and gravel, 30% gravel, 60% sand, 10% clay (FILL).	
	90	2.0		C072S103 (En Core) (2.5 - 2.5)		2			
					9.0	3		Fat clay (CH): dark greenish gray [5GY 4/1], firm, moist, high plasticity, with oxidized mottling, 100% clay, homogeneous.	
					8.2			Poorly graded sand (SP): olive brown [2.5Y 4/4], moist to wet, 100% fine sand, homogeneous.	
	33	3.0				4			
						5			
						6			
					5.5			Silt (ML): greenish gray [5GY 5/1], very soft, wet, low plasticity, 100% silt/fines, homogeneous.	
					5.0	7		Fat clay (CH): dark greenish gray [5GY 4/1], very soft, wet, high plasticity, 100% fines, homogeneous.	
	50	3.0							
					3.7	8		Poorly graded sand (SP): dark greenish gray [5GY 4/1], wet, 100% fine sand, homogeneous.	
						9			
					1.7	10			
								TOTAL DEPTH = 10.0 FEET	

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION: IR Site 30 Alameda Point	HOLE NO.: C3S030B077	

Report: TO 070 LOG Time: 9:07:25 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B078

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-17-04

DRILL MAKE AND MODEL	COORDINATES (NORTHING, EASTING)	LOGGED BY:	ROCK (FT)	COMPLETED
Direct-Push XD-2	N 2,113,598.3 E 6,045,788.1	T. Takagi	NA	8-17-04

HOLE SIZE DIAMETER (IN) / CORE SIZE DIAMETER (IN)	GROUND ELEVATION (FT MLLW)	CHECKED BY:	TOTAL DEPTH (FT BGS)	UPDATE
2 / 1 11/16	12.59	Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	50	2.0						Asphalt	FID Background is 1.25 ppm
				C072S105 (0.5 - 1.0)	12.2	1		Well-graded sand with gravel (SW): olive brown [2.5Y 4/4], moist, fine to coarse sand and subangular gravel, 40% gravel, 60% sand.	
	50	2.0				2			
						3			
				C072S205 (Geotech) (3.0 - 4.0) C072S106 (En Core) (3.0 - 3.0)	9.3			Fat clay (CH): dark greenish gray [5GY 4/1], firm to stiff, moist, high plasticity, 5% sand, 95% clay, homogeneous.	
	67	3.0				4			
				C072S107 (En Core) (4.5 - 4.5)	8.1 ▽			Poorly graded sand (SP): dark greenish gray [5GY 4/1], wet, 100% fine sand, homogeneous.	8/19/04 C072S107 4.5 feet bgs En Core resample
						5			
						6			
	100	3.0			5.6	7		Fat clay (CH): dark greenish gray [5GY 4/1], very soft, wet, high plasticity, 100% fines, homogeneous.	
						8			
						9			
					2.6	10			

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

TOTAL DEPTH = 10.0 FEET

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B078

Report form: CTO 070 LOG Time: 9:07:27 AM

BOREHOLE LOG

PROJECT and JOB NUMBER	SHEET NO.	HOLE NO.
CLEAN 3 23818-072	1 of 1	C3S030B079

DRILLER	SITE and LOCATION	OVERBURDEN	BEGUN
Precision Sampling, Inc.	IR Site 30 Alameda Point	NA	8-19-04

DRILL MAKE AND MODEL	COORDINATES (NORTHING, EASTING)	LOGGED BY:	ROCK (FT)	COMPLETED
Direct-Push XD-2	N 2,113,665.9 E 6,045,991.9	T. Takagi	NA	8-19-04

HOLE SIZE DIAMETER (IN)	CORE SIZE DIAMETER (IN)	GROUND ELEVATION (FT MLLW)	CHECKED BY:	TOTAL DEPTH (FT BGS)	UPDATE
2	1 11/16	12.85	Eric Johansen RG 6643	10.0	12-17-04

Organic Vapor Reading (ppm)	Core / Soil Recovery (%)	Core Length / Sampler Advance	Blow Counts or Recovery (ft)	Sampler Type / BEIDMS No.	Elevation (ft. MLLW)	Depth in Feet (below ground surface)	Graphics	Description and Classification	Remarks:
	88	2.0			12.6			Asphalt	FID Background is 4.70 ppm
				C072S108 (0.5 - 1.0)	12.1			Well-graded sand with gravel (SW): dark olive brown [2.5Y 3/3], moist, low plasticity, 35% fine subangular gravel, 60% coarse to fine sand, 5% fines.	
				C072S109 (1.0 - 1.5) C072S110 (En Core) (1.5 - 1.5)		1		Well-graded sand with clay and gravel (SW-SC): dark yellowish brown [10YR 4/6], moist, 35% subangular fine gravel, 45% sand, 20% fines.	
	75	2.0			11.1	2		Lean clay (CL): dark grayish brown [2.5Y 4/2], stiff, with oxidized layers, 100% fines, laminated.	
				C072S111 (3.5' En Core) (3.0 - 3.5)	9.6	3		Poorly graded sand (SP): olive brown [2.5Y 4/4], moist, 100% fine sand, trace fines, homogeneous.	
	67	3.0		C072S112 (En Core) (4.0 - 4.0)		4			
						5			
						6			
					6.1	7		Elastic silt (MH): dark greenish gray [5GY 4/1], very soft, 100% fines, with black mottling.	
	73	3.0				8			
						9			
					3.1			Poorly graded sand (SP): dark greenish gray [5GY 4/1], saturated, sand (100%), homogeneous.	
					2.8	10			

TOTAL DEPTH = 10.0 FEET

REGISTERED GEOLOGIST
ERIC A. JOHANSEN
No. 6643
Exp. 10/31/06
STATE OF CALIFORNIA

SITE and LOCATION	HOLE NO.
IR Site 30 Alameda Point	C3S030B079

Report TO 070.LOG Time: 9:07:30 AM

Site 30 - PAH Study

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B001

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,873.1 E 6,045,064.1	9.1 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ 6.0 ft / 3.1ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					8.9			ASPHALT	
C0592948		10:35:00 AM	NR					CLAYEY GRAVEL (GC): Yellowish brown [10YR 5/6], dense, moist, fine and coarse gravel, angular, (FILL). 85/0/15	FID Background = 3 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0592949		10:40:00 AM	NR						
					7.1	2		CLAY (CH): Dark greenish gray [5GY 6/1], stiff from 2-3', soft below 3', moist, high plasticity, laminated, black mottles from 2-3', marsh crust?? from 2-3'. (BAY MUD).	
						3			
C0592950		10:45:00 AM	NR						
						4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C0592951		10:50:00 AM	NR						
						7		at 7.0 ft.: sandy.	
						8			
					0.9			TOTAL DEPTH = 8.3 FEET	

REGISTERED GEOLOGIST CATHIE L. STUMPENHAUS No. 4451 2/5/04 STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B001

Report frame: CTO-059 ALAMEDA BORING LOG Time: 3:09:19 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B002

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,869.8 E 6,045,131.4	9.1 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 3.1ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					8.9			**ASPHALT**	
C0592952		11:10:00 AM	NR					**CLAYEY GRAVEL with SAND (GC)**: Yellowish brown [10YR 5/6], dense, moist, fine and coarse gravel, angular, 50% gravel, 30% clay and silt, 20% sand. (FILL).	FID Background = 3 ppm
						1		~~50/30/20~~ 50/20/30	Hole backfilled with bentonite-cement grout after completion
C0592953		11:15:00 AM	NR						
					7.1	2		**CLAY (CH)**: Dark greenish gray [5GY 6/1], stiff in upper 12" to soft, moist, high plasticity, laminations throughout black mottles in upper foot, marsh crust?. (BAY MUD).	
						3			
C0592954		11:20:00 AM	NR						
						4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C0592955		11:25:00 AM	NR						
						7		at 7.0 ft.: sandy.	
						8			
					0.9			**TOTAL DEPTH = 8.3 FEET**	

REGISTERED GEOLOGIST CATHIE L. STUMPENHAUS No. 4451 2/5/04 STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B002

Report form: CTO459 ALAMEDA BORING LOG Time: 3:59:21 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B003

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,867.3 E 6,045,188.4	12.7 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 6.7ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.5			ASPHALT	
C0592957 C0592956		11:35:00 PM	NR					CLAYEY GRAVEL (GC): Yellowish brown [10YR 5/6], dense, moist, fine and coarse gravel, angular, (FILL).	FID Background = 3 ppm
						1		85/0/15	Hole backfilled with bentonite-cement grout after completion
C0592958		11:40:00 PM	NR						
					10.7	2		CLAY (CH): Dark greenish gray, stiff (upper 12") to soft, moist, laminated, high plasticity, black mottles upper 12", marsh crust @ 2 to 3 feet bgs. (BAY MUD).	
						3			
C0592959		11:45:00 PM	NR						
						4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C0592960		11:50:00 PM	NR						
						7			
					4.9	8		SAND (SP): poorly graded, (BAY SEDIMENT).	
					4.5				
								TOTAL DEPTH = 8.3 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B003

Report date: CTO-009 ALAMEDA BORING LOG Time: 4:59:35 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B004

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,864.9 E 6,045,260.5	9.4 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 3.4ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					9.2			ASPHALT	
C0592961		12:10:00 PM	NR					CLAYEY GRAVEL (GC): Yellowish brown [10YR 5/6], dense, moist, (FILL).	
						1		85/0/15	Hole backfilled with bentonite-cement grout after completion
C0592963		12:20:00 PM	NR						
					7.4	2		CLAY (CH): Dark greenish gray, soft, high plasticity, laminated, marsh crust @ 2 to 3 feet bgs?, Geofabric @ 2 feet bgs. (BAY MUD).	
						3			
C0592964		12:25:00 PM	NR						
						4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C0592962		12:15:00 PM	NR						
					2.4	7		SAND (SP): Dark gray, wet, poorly graded, fine grained sand, trace shells. (BAY SEDIMENT).	
						8			
					1.2			TOTAL DEPTH = 8.3 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 8/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B004

Report form: CTT-459 ALAMEDA BORING LOG Time: 3:59:39 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B005

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-27-03	8-27-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,849.7 E 6,045,340.4	9.5 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 4.5ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0592965		3:05:00 PM	NR					CLAYEY GRAVEL with SAND (GC): Strong brown [7.5YR 5/6], dense, moist, fine and coarse gravel, angular, composed mostly of keratophyre, 60% gravel, 20% sand, 20% fines. (FILL). 60/20/20	FID Background = 0 ppm. Hole backfilled with bentonite-cement grout after completion
C0592967 C0592966		3:10:00 PM	NR			1			
					7.7	2		CLAY (CH): Brown [7.5YR 4/3], stiff to very stiff, moist, high plasticity, (FILL).	
					7.0			SILT (ML): Pale brown [10YR 6/3], stiff, moist, no plasticity, (FILL).	
C0592968		3:15:00 PM	NR			3			
					6.0	4		CLAY (CH): Greenish gray [10GB 5/1] to Very dark bluish gray [10B 3/1], soft, moist, high plasticity, (BAY MUD).	
				▽		5		at 5.0 ft.: saturated.	
C0592969		3:20:00 PM	NR		3.5	6		SAND (SP): Dark gray [N4], dense, wet, fine grained sand, trace (<2%) shells. (BAY SEDIMENT).	
						7			
					1.5	8		TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B005

Report Name: CT0-059 ALAMEDA BORING LOG Time: 3:59:43 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B006

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-27-03	8-27-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,844.1 E 6,045,391.8	10.3 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 4.3ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.0			**ASPHALT**	
C0592970		1:20:00 PM	NR					**CLAYEY GRAVEL with SAND (GC)**: Yellowish brown [10YR 5/6], dense, moist, fine to course gravel, 50% gravel, 25% sand, 25% fines, composed mostly of keratophere and graywacke sandstone. (FILL). 50/25/25	FID Backgroun = 0 ppm Hole backfilled with bentonite-cement grout after completion
						1			
C0592971		1:25:00 PM	NR						
					8.3	2		**SILTY CLAY (CH)**: Dark greenish gray [5G 4/1] Dark greenish gray [5G 4/1] to greenish gray [10GY 5/1] with black [N25] mottles, stiff to very stiff in upper 12" of unit, gradually decreasing in consistency to soft at bottom, high plasticity, laminated with occassional seams (<1/4") composed of silt, trace (<5%) sand. (BAY MUD).	
						3			
C0592972		1:30:00 PM	NR						
						4			
					6.1			**SAND (SP)**: Dark gray [N4], dense, moist, poorly graded, fine grained sand, some magnetite rich laminations. (BAY SEDIMENT).	
					5.5			**CLAY (CH)**: Dark greenish gray [10GY 4/1], soft, wet, high plasticity, laminated. (BAY MUD).	
						5			
				▽		6		at 6.0 ft.: saturated.	
					4.1			**SAND (SP)**: Dark gray [N4], dense, wet, fine grained sand, (BAY SEDIMENT).	
C0592973		1:35:00 PM	NR						
						7			
						8			
					2.0			**TOTAL DEPTH = 8.3 FEET**	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B006

Report Name: CTI-459 ALAMEDA BORING LOG Time: 3:59:47 PM

BECHTEL	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B007
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Truck Mounted Geoprobe	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-27-03 / FINISHED: 8-27-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 1.5 in	COORDINATES: N 2,113,855.9 E 6,045,461.9		ELEVATION: 9.9 ft / TOTAL DEPTH: 8.3 ft
DEPTH / ELEVATION TO WATER: ▼ 6.0 ft / 3.9ft		LOGGED BY: Pete Holland	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					9.7			ASPHALT	
C0592976		2:30:00 PM	NR					CLAYEY GRAVEL (GC): Yellowish brown [10YR 5/6], dense, moist, fine gravel, angular, 45% gravel, ~~35%~~ 25 sand, and 30% fines. (FILL). 45/25/30	FID Background = 0 ppm Hole backfilled with bentonite-cement grout after completion
					8.7	1			
C0592977		2:35:00 PM	NR					SILTY CLAY (CH): Greenish gray [5GY 5/1], stiff to very stiff, moist, (BAY MUD).	
						2			
						3		at 3.0 ft.: soft, laminated. (BAY SEDIMENT).	
C0592978		2:40:00 PM	NR						
					6.2	4		SAND (SP): Greenish gray [5GB 5/1], dense, moist, poorly graded, fine grained sand, subrounded, (BAY SEDIMENT).	
					4.9	5		CLAY (CH): Bluish gray [5B 5/1] to dark greenish gray [10G 4/1], wet, high plasticity, laminated, trace (<3%) organics. (BAY MUD).	
				▽		6		at 6.0 ft.: saturated.	
C0592979		2:45:00 PM	NR						
					3.2	7		SAND (SP): poorly graded, (BAY SEDIMENT).	
						8			
					1.7				

TOTAL DEPTH = 8.3 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/5/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B007

Report form: CTD-050 ALAMEDA BORING LOG Time: 1:59:52 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B008

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geprobe 5400	IR Site 30	Alameda Point	8-27-03	8-27-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,851.6 E 6,045,529.7	10.2 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 6.2ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0592979 C0592978		4:10:00 PM	NR		9.7			GRAVEL with SAND (GW): Brown [10YR 4/3], moist, well graded, 70% subangular to rounded gravel to 1-inch, 28% sand, 2% fines. (FILL). 70/28/2	FID background = 2.0 ppm
						1		GRAVEL with SAND (GW): Dark yellowish brown [10YR 4/6], 60% subangular gravel to 1.5-inches, 35% sand, 5% fines. (FILL). 60/35/5	Hole backfilled with bentonite-cement grout after completion
C0592980		4:11:00 PM	NR						
					8.2	2		CLAYEY SAND (SC): Dark olive gray [5Y 3/2], moist, poorly graded, 0% gravel, 80% sand, 20% fines. (FILL).	
					7.8			SILTY CLAY (CL): Dark greenish gray [5GY 4/1], medium stiff, laminated, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
C0592981		4:12:00 PM	NR			3			
				▽		4		at 4.0 ft.: saturated.	
						5			
C0592982		4:15:00 PM	NR		4.2	6		SAND (SP): Dark greenish gray [5GY 4/1], saturated, heterogeneous, 0% gravel, 100% sand, 0% fines. (BAY SEDIMENT).	
						7			
					2.2	8		TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 8/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B008

Report form: CTO-S59 ALAMEDA BORING LOG Time: 3:59:55 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B009

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,113,832.3 E 6,045,588.8	10.9 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 3.9ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.4			CONCRETE	FID Background = 1.80 ppm
C0592983		4:25:00 PM	NR			1		GRAVELLY CLAY (CL): Yellowish brown [10YR 5/6], moist, fine to course gravel, angular to subangular, 35% gravel, 10% sand, 55% fines. (FILL). 35/10/55	Hole backfilled with bentonite-cement grout after completion
C0592984		4:28:00 PM	NR		8.9	2		CLAY (CL): Dark greenish gray [GLEYI 4/1] with black [Gleyl 2.5/N4], stiff, moist, medium plasticity, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
						3			
C0592985		4:30:00 PM	NR			4			
						5			
						6			
C0592987 C0592986		4:32:00 PM	NR						
				▽	3.9	7		SAND with silt (SP-SM): Dark gray [GLEYI 4/N], saturated, fine grained sand, 0% gravel, 90% sand, 10% fines. (BAY SEDIMENT).	
						8			
					2.4			TOTAL DEPTH = 8.5 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B009

Report form: CTO-439 ALAMEDA BORING LOG Time: 4/08/02 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B010

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geprobe 5400	IR Site 30	Alameda Point	8-27-03	8-27-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,831.1 E 6,045,656.2	10.7 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 5.7ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0592988		2:57:00 PM	NR					**SAND with GRAVEL (SW)**: Brown [10YR 4/3], moist, well graded, 30% subangular gravel to 0.75-inches, 68% sand, 2% fines. (FILL).	FID background = 2.0 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0592989		2:58:00 PM	NR					at 1.0 ft.: Dark yellowish brown [10YR 4/6], oxide staining. 30/68/2	
					8.7	2		**SILTY CLAY (CH)**: Dark greenish gray [5GY 4/1], stiff, laminated, with black stains throughout, 0% gravel, 0% fines, 100% fines. (BAY MUD).	
C0592990		2:59:00 PM	NR			3			
						4		at 4.0 ft.: strong hydrocarbon odor.	
				▽		5		at 5.0 ft.: saturated.	
C0592991		3:01:00 PM	NR		4.7	6		**SAND (SP)**: Dark greenish gray [5GY 4/1], poorly graded, 0% gravel, 100% sand, 0% fines. (BAY SEDIMENT).	
						7			
					2.7	8		**TOTAL DEPTH = 8.0 FEET**	

REGISTERED GEOLOGIST CATHIE L. STUMPENHAUS No. 4451 2/5/04 STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B010

Report Name: CTO-059 ALAMEDA BORING LOG Time: 4:00:05 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B011

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-25-03	8-25-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,831.3 E 6,045,728.2	10.6 ft	4.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/25/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.3			ASPHALT	
C0592992		10:30:00 AM	NR					CLAYEY GRAVEL with SAND (GC): Brownish yellow [10YR 6/6], dense, moist, fine to course gravel, angular, 40% gravel, 20% sand, 40% silt and clay. (FILL).	FID Background = 3 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0592993		10:35:00 AM	NR					40/20/40	
						2		at 2.3 ft.: Dark greenish gray [10GY 4/1].	
						3			
C0593994		10:40:00 AM	NR		7.3			CLAY (CH): Dark greenish gray [10GY 4/1], very stiff, moist, high plasticity, (BAY MUD).	LEL = 50% in borehole
						4			
					6.3				

TOTAL DEPTH = 4.3 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 3, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B011

Report forms: CTO-409 ALAMEDA DOMESTIC LOG Time: 6:00:00 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B012

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-25-03	8-25-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,824.1 E 6,045,788.0	10.9 ft	4.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/25/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.6			ASPHALT	
C0592997 C0592996		10:55:00 AM	NR					CLAYEY GRAVEL with SAND (GC): Brownish yellow [10YR 6/6], dense, moist, fine and coarse gravel, 50% gravel, 20% sand, 30% clay. (FILL).	FID Background = 3 ppm Hole backfilled with bentonite-cement grout after completion
						1			
C0592998		11:00:00 AM	NR					50/20/30	
						2			
						3			
C0592999		11:05:00 AM	NR						
					7.4			CLAY (CH): Dark greenish gray [10Y 4/1], very stiff, moist, high plasticity, (BAY MUD).	LEL = 55% in borehole
						4			
					6.6				

TOTAL DEPTH = 4.3 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
8/5/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B012

Report form: CTO-859 ALAMEDA BORING LOG Time: 4:06:11 PM

PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B013
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Truck Mounted Geoprobe	SITE: IR Site 30	LOCATION: Alameda Point
BEGUN: 8-25-03	FINISHED: 8-25-03		
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 1.5 in	COORDINATES: N 2,113,820.7 E 6,045,853.9	ELEVATION: 11.0 ft
TOTAL DEPTH: 8.3 ft			
DEPTH / ELEVATION TO WATER: ▼ 6.0 ft / 5.0ft	LOGGED BY: Pete Holland	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical
ABANDON DATE: 8/25/2003			

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.7			ASPHALT	
C0593001		11:30:00 AM	NR					CLAYEY GRAVEL with SAND (GC): Brownish yellow [10YR 6/6], dense, moist, fine to course gravel, 60% gravel, ~~20%~~ 10% sand, 30% clay. (FILL).	FID Background = 3 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0593002		11:35:00 AM	NR					60/10/30	
						2			
					8.0	3		CLAY (CH): Dark greenish gray [10GY 4/1], soft, moist, high plasticity, (BAY MUD).	
C0593003		11:40:00 AM	NR						
					7.0	4		SAND (SP): Dark gray [N4], dense, moist, poorly graded, fine grained sand, (BAY SEDIMENT).	
					6.0	5		CLAY (CH): Gray [N5], soft, moist, high plasticity, (BAY MUD).	
				▽	5.0	6		SAND (SP): black, dense, saturated, poorly graded, fine grained sand, (BAY SEDIMENT).	
C0593004		11:45:00 AM	NR						
						7			
						8			
					2.7				

TOTAL DEPTH = 8.3 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B013

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:00:13 PM

BECHTEL	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B014
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Truck Mounted Geoprobe	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-26-03 / FINISHED: 8-26-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 1.5 in	COORDINATES: N 2,113,817.8 E 6,045,921.5		ELEVATION: 11.0 ft / TOTAL DEPTH: 8.3 ft
DEPTH / ELEVATION TO WATER: ▼ 6.0 ft / 5.0ft		LOGGED BY: Pete Holland	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.8			ASPHALT	
C0593005		2:00:00 PM	NR					CLAYEY GRAVEL with SAND (GC): Brownish yellow [10YR 5/8], dense, moist, fine to course gravel, angular, 50% gravel, 20% sand, 30% fines. (FILL).	FID Background = 3 ppm
						1		50/20/30	Hole backfilled with bentonite-cement grout after completion
C0593007 C0593006		2:05:00 PM	NR						
					9.0	2		CLAY (CH): Greenish gray [5GY 5/1], soft to stiff, high plasticity, laminated. (BAY MUD).	
						3			
C0593008		2:10:00 PM	NR						
						4			
						5			
				▽	5.0	6		SAND (SP): Black [N2.5], medium dense, saturated, fine grained sand, angular to subrounded, (BAY SEDIMENT).	
C0593009		2:15:00 PM	NR						
						7			
						8			
					2.8				

TOTAL DEPTH = 8.3 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · STATE OF CALIFORNIA · 8/15/04

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B014

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:00:18 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B015

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,814.6 E 6,045,984.5	11.1 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 5.1ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.8			ASPHALT	
C0593010		9:30:00 AM	NR			1		CLAYEY GRAVEL with SAND (GC): Yellowish brown [10YR 5/6], dense, moist, fine to coarse gravel, 60% gravel, 15% sand, 25% clay and silt. (FILL). 60/15/25	FID Background = 3 ppm Hole backfilled with bentonite-cement grout after completion
C0593011		9:35:00 AM	NR		9.6			CLAY (CH): Very dark grayish brown [2.5Y 3/2], stiff, moist, high plasticity, (FILL).	
					9.1	2		SAND (SP): Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, (FILL).	
						3			
C0593012		9:40:00 AM	NR						
					7.1	4		CLAY (CH): Greenish gray [5GY 5/1], soft to medium stiff, moist, fine grained sand, fine laminations occassional seams (<1/2") of fine sand. (BAY MUD).	
						5			
				▽	5.1	6		SAND (SP): Dark gray [N4], dense, saturated, poorly graded, fine grained sand, subrounded, (BAY SEDIMENT).	
C0593013		9:45:00 AM	NR						
						7			
						8			
					2.8			TOTAL DEPTH = 8.3 FEET	

REGISTERED GEOLOGIST CATHIE L. STUMPENHAUS No. 4451 2/5/04 STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B015

Report form: CTD-059 ALAMEDA BORING LOG Time: 4:09:21 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B016

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	IR Site 30	Alameda Point	8-23-03	8-23-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,113,798.3 E 6,045,053.4	10.6 ft	12.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ 8.0 ft / 2.6ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/23/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.4			ASPHALT	
						1		GRAVELLY CLAY with SAND (CL): Yellowish brown [10YR 5/4], moist, fine to coarse angular and subrounded gravel, 30% gravel, 15% sand, 55% fines. (ROAD BASE).	FID Background = 0 ppm Hole backfilled with bentonite-cement grout after completion
						2		30/15/55	
					7.6	3		CLAY (CL): Dark greenish gray [GLEY1 4/1] with black [GLEY1 2.5/N], soft, moist, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
C0593014		4:42:00 PM	NR						
						4			
C0593015		4:45:00 PM	NR						
						5			
C0593017 C0593016		4:48:00 PM	NR			6			
						7			
				▽		8		at 8.0 ft.: saturated.	
C0593018		4:52:00 PM	NR			9			
						10			
					-0.4	11		SAND with SILT (SP-SM): Dark greenish gray [GLEY1 4/1], wet, 0% gravel, 90% sand, 10% fines, shell fragments. (BAY SEDIMENT).	
					-1.6	12			
								TOTAL DEPTH = 12.3 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/5/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B016

Report format: CTO-459 ALAMEDA BORING LOG Time: 6:00:25 PM

BECHTEL	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B017
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Precision DA-2	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-23-03 / FINISHED: 8-23-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 3 in	COORDINATES: N 2,113,789.0 E 6,045,271.3		ELEVATION: 10.6 ft / TOTAL DEPTH: 12.3 ft
DEPTH / ELEVATION TO WATER: ▼ 8.0 ft / 2.6ft		LOGGED BY: Lynelle Onishi	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/23/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.3			ASPHALT	
						1		GRAVELLY CLAY with SAND (CL): Yellowish brown [10YR 5/6], moist, fine angular and subrounded gravel, 30% gravel, 15% sand, 55% fines. (ROAD BASE).	FID Background = 0 ppm Hole backfilled with bentonite-cement grout after completion
						2		30/15/55	
					7.6	3		SILTY CLAY (CL): Black [10YR 2/1], soft to medium stiff, 0% gravel, 0% sand, 100% fines. (FILL).	
C0593019		12:15:00 PM	NR		7.1			CLAY (CL): Dark greenish gray [GLEY1 4/1] and black [GLEY1 2.5/N], soft, moist, (BAY MUD).	
						4			
C0593020		12:20:00 PM	NR						
						5			
C0593021		12:22:00 PM	NR			6			
						7			
				▽	2.6	8		SAND with SILT (SP-SM): Dark greenish gray [GLEY1 4/1], saturated, fine grained sand, 0% gravel, 90% sand, 10% fines. (BAY SEDIMENT).	
C0593022		12:30:00 PM	NR			9			
						10			
						11			
					-1.7	12			

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TOTAL DEPTH = 12.3 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B017

Report form: CTO-059 ALAMEDA BORING LOG Time 4:00:29 PM

	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B018
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Truck Mounted Geoprobe	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-27-03 / FINISHED: 8-27-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 1.5 in	COORDINATES: N 2,113,778.2 E 6,045,331.1		ELEVATION: 10.2 ft / TOTAL DEPTH: 8.3 ft
DEPTH / ELEVATION TO WATER: ▼ 5.0 ft / 5.2ft		LOGGED BY: Pete Holland	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.0			**ASPHALT**	
C0593023		3:30:00 PM	NR					**CLAYEY GRAVEL with SAND (GC)**: Yellowish brown [10YR 5/6], dense, moist, fine to course gravel, ~~80%~~ 50% gravel, 20% sand, ~~20%~~ 80% fines. (FILL). 50/20/30	FID Background = 3 ppm Hole backfilled with bentonite-cement grout after completion
					9.0	1			
C0593024		3:35:00 PM	NR					**CLAY (CH)**: Brown [7.5YR 5/4] to Gray [7.5YR 5/1], stiff, high plasticity, trace (<5%) sand, trace (<5%) gravel. (FILL).	
					7.7	2			
								SILT (ML): Light brownish gray [10YR 6/2], stiff, moist, no plasticity, (FILL).	
C0593025		3:40:00 PM	NR		7.0	3		**CLAY (CH)**: Dark greenish gray [10GB 4/1], soft, moist, high plasticity, trace (<5%) organics (stems, leaves). (BAY MUD).	
				▽		4, 5		at 5.0 ft.: saturated.	
C0593027 C0593026		3:45:00 PM	NR			6, 7			
					2.7	8		**SAND (SP)**: Dark gray [N4], dense, wet, poorly graded, fine to medium grained sand, Trace (<1%) shells. (BAY SEDIMENT).	
					1.9				

TOTAL DEPTH = 8.3 FEET

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B018

Report Form: CTO-059 ALAMEDA BORING LOG Time: 4:00:34 PM

BECHTEL	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B019
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Truck Mounted Geoprobe	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-27-03 / FINISHED: 8-27-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 1.5 in	COORDINATES: N 2,113,786.9 E 6,045,383.8		ELEVATION: 10.1 ft / TOTAL DEPTH: 8.0 ft
DEPTH / ELEVATION TO WATER: ▼ 5.0 ft / 5.1ft		LOGGED BY: Pete Holland	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593028		10:10:00 AM	NR		9.8			GRAVEL (GW): (FILL).	
								CLAYEY GRAVEL (GC): Yellowish brown [10YR 5/6], dense, moist, fine to course gravel, (FILL).	FID Background = 0 ppm
						1		85/0/15	Hole backfilled with bentonite-cement grout after completion
C0593029		10:15:00 AM	NR						
					8.1	2		CLAY (CH): Dark greenish gray [5GY 4/1], soft, moist, laminated, silty in top 12". (BAY MUD).	
C0593030		10:20:00 AM	NR			3			
						4			
				▽		5		at 5.0 ft.: saturated.	
C0593031		10:25:00 AM	NR			6		at 6.0 ft.: sandy in bottom 12".	
					3.1	7		SAND (SP): Dark gray [N3], dense, wet, fine grained sand, (BAY SEDIMENT).	
					2.1	8			
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
STATE OF CALIFORNIA
C. L. Stumpenhaus
2/5/04

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B019

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:00:37 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B020

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-27-03	8-27-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,739.6 E 6,045,620.6	11.1 ft	4.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593032		3:32:00 PM	NR		10.6			SAND with GRAVEL (SW): Dark grayish brown [10YR 4/2], moist, well graded, 40% rounded gravel to 0.5-inches, 55% sand, 5% fines. (FILL). 40/55/5	FID background = 2.0 ppm
C0593033		3:33:00 PM	NR		9.1	1		GRAVEL with SAND (GW): Dark yellowish brown [10YR 4/6], moist, well graded, 55% subangular gravel to 1-inch, 43% sand, 2% fines. (FILL). 55/43/2	Hole backfilled with bentonite-cement grout after completion
					8.5	2		CLAYEY SILT (ML): Black [2.5Y 2.5/1], 2% very rounded gravel to 0.33-inch, 10% sand, 88% fines. (FILL). 2/0/10/88	
C0593034		3:34:00 PM	100		7.1	3		SILTY CLAY (CH): Dark greenish gray [5GY 4/1], stiff, laminated, black staining, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
						4		TOTAL DEPTH = 4.0 FEET	C0593035 not taken Abandon boring at 4-feet bgs due to LEL= 30% and FID>100 ppm down the hole

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B020

Report Form: CTO-459 ALAMEDA BORING LOG Time: 4:08:40 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B021

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,765.2 E 6,045,652.7	11.1 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 5.1ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.9			**ASPHALT**	
C059036		3:50:00 PM	NR					**CLAYEY GRAVEL (GC)**: Strong brown [7.5YR 5/6], dense, moist, fine to course gravel, angular, 60% gravel, 10% sand, 30% fines. (FILL).	FID Background = 3 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C059037		3:55:00 PM	NR					60/10/30	
					9.1	2		**CLAY (CH)**: Dark greenish gray [5GY 4/1], stiff, laminated, black mottles in upper 12". (BAY MUD).	
						3			
C059038		4:00:00 PM	NR						
						4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C059039		4:05:00 PM	NR						
					4.6			**SAND (SP)**: Very dark gray [N3], dense, moist, poorly graded, fine grained sand, (BAY SEDIMENT).	
						7			
						8			
					2.9			**TOTAL DEPTH = 8.3 FEET**	

REGISTERED GEOLOGIST
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No. 4451
8/5/04
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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B021

Report format: CTO-459 ALAMEDA DRILLING LOG Time: 4:00:43 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B022

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,761.6 E 6,045,718.6	11.1 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ 6.0 ft / 5.1ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.8			ASPHALT	
C0593040 C0593041		3:05:00 PM	NR					CLAYEY GRAVEL (GC): Yellowish brown [10YR 5/6], dense, moist, fine and course gravel, (FILL).	FID Background = 3 ppm
						1		85/0/15	Hole backfilled with bentonite-cement grout after completion
C0593042		3:10:00 PM	NR						
					9.1	2		SILTY SAND (SM): black, dense, moist, fine grained sand, 70% sand, 30% silt. (FILL).	
						3			
C0593043		3:15:00 PM	NR						
					7.6			CLAY (CH): greenish gray, soft, moist, high plasticity, (BAY MUD).	
						4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C0593044		3:20:00 PM	NR						
						7			
					3.6			SAND (SP): black, dense, moist, poorly graded, fine grained sand, (BAY SEDIMENT).	
						8			
					2.8				
								TOTAL DEPTH = 8.3 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B022

Report Form: CTO-659 ALAMEDA BORING LOG Time: 4:00:43 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B023

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-25-03	8-25-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,758.3 E 6,045,784.5	11.3 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ NA	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/25/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.0			**ASPHALT**	
C0593045		3:50:00 PM	NR					**CLAYEY GRAVEL (GC)**: brownish yellow, dense, moist, fine to coarse gravel, (FILL).	FID Background = 3 ppm
						1		85/0/15	Hole backfilled with cement grout after completion
C0593047 C0593046		3:55:00 PM	NR						
					9.3	2		**CLAY (CH)**: mottled gray and black, stiff to very stiff, 5% organics, marsh crust. (BAY MUD).	
						3			Not sampled below Marsh Crust.
					7.8			**SAND** dark gray, poorly graded, (BAY SEDIMENT).	
					7.3	4		**CLAY (CH)**: Gray [N5], soft to medium stiff, high plasticity, laminated. (BAY MUD).	
						5			
						6			
						7			
					3.8			**SAND (SP)**: Dark gray [N4], dense, wet, fine grained sand, (BAY SEDIMENT).	
						8			
					3.0			**TOTAL DEPTH = 8.3 FEET**	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B023

Report form CTO-659-ALAMEDA BORING LOG Version 4.00.151 XM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B024

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,754.7 E 6,045,850.4	11.6 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 4.6ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.3			ASPHALT	
C0593050		3:20:00 PM	NR					CLAYEY GRAVEL (GC): Brownish yellow [10YR 5/6], dense, moist, fine and coarse gravel, (FILL).	FID Background = 3 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0593051		3:25:00 PM	NR					85/0/15	
						2			
					9.1			SAND (SP): Alternating brownish yellow and dark gray, poorly graded, fine grained sand, (FILL).	
						3			
C0593052		3:30:00 PM	NR						
						4			
					7.1			CLAY (CH): gray, soft to medium stiff, high plasticity, fine luminations 1-5 mm (0.4 - 0.2 inches) apart, trace <1% organics. (BAY MUD).	
						5			
						6			
C0593054 C0593053		3:35:00 PM	NR						
				▽		7		at 7.0 ft.: saturated.	
					4.1			SAND (SP): dark gray, poorly graded, fine grained sand, (BAY SEDIMENT).	
						8			
					3.3			TOTAL DEPTH = 8.3 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B024

Report forms: CTO-857 ALAMEDA BORING LOG Time: 6:08:56 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B025

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-25-03	8-25-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,749.6 E 6,045,916.1	11.6 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 5.6ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/25/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.4			ASPHALT	
C0593819		2:40:00 PM	NR					CLAYEY GRAVEL (GC): Brownish yellow [10YR 5/6], dense, fine and coarse gravel, coursest upward. (FILL).	FID Background = 3 ppm
						1		85/100/15	Hole backfilled with bentonite-cement grout after completion
C0593820		2:45:00 PM	NR						
					9.6	2		CLAY AND SILT (CH): gray, moist, low to high plasticity, laminations 1 mm (0.04 inches) apart. (FILL).	
						3			
C0593821		2:50:00 PM	NR						
						4			
						5			
C0593822		2:55:00 PM	NR						
				▽		6		at 6.0 ft.: saturated.	
					5.1			CLAY (CH): black, high plasticity, organic-rich clay, organics mostly stems, marsh crust. (BAY MUD).	Exclude below 1.5 feet from sample for analysis
						7			
					4.1			SAND Black [N2 5/1], wet, fine grained sand, (BAY SEDIMENT).	
						8			
					3.4			TOTAL DEPTH = 8.3 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 3, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B025

Report Name: CTO-059 ALAMEDA BORING LOG

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B026

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,748.6 E 6,045,980.1	11.7 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.5 ft / 5.2ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.4			ASPHALT	
C0593823		9:50:00 AM	NR					CLAYEY GRAVEL (GC): Yellowish brown [10YR 5/6], dense, moist, fine to course gravel, 60% gravel, 15% sand, 25% fines. (FILL).	FID Background = 3 ppm
					10.7	1		SANDY CLAY (CL): Dark gray [N4], stiff, moist, fine grained sand, 70% fines 30% sand. (FILL). 0/30/70	Hole backfilled with bentonite-cement grout after completion
C0593824		9:55:00 AM	NR		10.2			SAND (SP): Olive [5Y 5/3], dense, moist, poorly graded, fine grained sand, subrounded, (FILL).	
						2			
						3			
C0593825		10:00:00 AM	NR						
						4			
					7.2			CLAY (CH): Greenish gray [5GY 5/1], soft, moist, fine laminations. (BAY MUD).	
						5			
						6			
C0593826		10:05:00 AM	NR	▽	5.2			SAND (SP): Dark gray [N5], dense, saturated, poorly graded, fine grained sand, (BAY SEDIMENT).	
						7			
						8			
					3.4			TOTAL DEPTH = 8.3 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/5/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B026

Report format: CTO-459 ALAMEDA BORING LOG Time: 4/1/04 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B027

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	IR Site 30	Alameda Point	8-23-03	8-23-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,731.6 E 6,045,065.0	10.6 ft	13.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 8.5 ft / 2.1ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/23/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
						1, 2		GRAVELLY CLAY with SAND (CL): Yellowish brown [10YR 5/6], fine angular and subrounded gravel, 30% gravel, 15% sand, 55% fines. (ROAD BASE). 30/15/55	FID Background = 0 ppm Hole backfilled with bentonite-cement grout after completion Direct push sampling begun at 1.5 feet bgs.
C0593829 C0593828		4:00:00 PM	NR		8.1	3		SANDY CLAY (CL): Dark brown [10YR 3/3], fine sand with some fine angular gravel. (FILL). 0/15/85	
C0593830		4:04:00 PM	NR		7.1	4		at 3.4 ft.: greenish gray [GLEY 1 5/1]. CLAY (CL): dark greenish gray [GLEY 1 3/1], soft, moist, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
C0593831		4:10:00 PM	NR			5, 6, 7			
C0593832		4:15:00 PM	NR	▽		8, 9, 10, 11, 12		at 8.5 ft.: saturated.	
					-1.9	13		SAND with SILT (SP-SM): dark greenish gray [GLEY 1 4/1], wet, fine grained sand, (BAY SEDIMENT).	
					-2.9			TOTAL DEPTH = 13.5 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B027

Report form: CTD-459 ALAMEDA BORING LOG Time: 12/07/17 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B028

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	IR Site 30	Alameda Point	8-23-03	8-23-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,725.6 E 6,045,127.3	10.5 ft	12.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 8.0 ft / 2.5ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/23/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
						1		**GRAVELLY CLAY with SAND (CL)**: Yellowish brown [10YR 5/6], moist, fine angular gravel, 30% gravel, 15% sand, 55% fines. (ROAD BASE). 30/15/55	FID Background = 0 ppm Hole backfilled with bentonite-cement grout after completion
					8.5	2		**SILTY CLAY (CL)**: Black [10YR 2/1], soft, moist, 0% gravel, 0% sand, 100% fines. (FILL).	
C0593832		2:26:00 PM	NR		7.8			**CLAY (CL)**: dark greenish gray [GLEY 1 4/1] and black [GLEY1 2.5/N], moist, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
C0593833		2:32:00 PM	NR			3			
						4			
C0593834		2:33:00 PM	NR			5			
						6			
						7			
C0593835		2:40:00 PM	NR	▽		8		at 8.0 ft.: saturated.	
						9			
						10			
						11			
					-1.5	12		**TOTAL DEPTH = 12.0 FEET**	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B028

Report form: CTO-059 ALAMEDA BORING LOG Time: 4/8/11 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B029

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	IR Site 30	Alameda Point	8-23-03	8-23-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,722.4 E 6,045,189.0	10.7 ft	16.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 8.0 ft / 2.7ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/23/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.5			ASPHALT	FID Background = 0 ppm
								GRAVELLY CLAY (CL): Yellowish brown [10YR 5/6], moist, fine to coarse angular and subrounded gravel, 35% gravel, 10% sand, 55% fines. (ROAD BASE). 35/10/55	Hole backfilled with bentonite-cement grout after completion
					6.5			NO RECOVERY rock blocking recovery, 2 inches of soil recovered (type not noted on log).	
						5			
				▽	2.5			at 8.0 ft.: saturated.	
C0593836		10:40:00 AM	NR					CLAY (CL): Very dark greenish gray [GLEY 1 3/1], soft, moist to wet, low to medium plasticity, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
C0593838 C0593837		10:41:00 AM	NR			10			
C0593839		10:42:00 AM	NR		-0.8			SAND with SILT (SP-SM): Very dark greenish gray [GLEY 1 4/1], wet, 0% gravel, 90% sand, 10% fines, shell fragments. (BAY SEDIMENT).	
C0593840		10:56:00 AM	NR			15			
					-5.6			TOTAL DEPTH = 16.3 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B029

Report form: CTP-059 ALAMEDA BORING LOG Time: 4:01:16 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B030

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	IR Site 30	Alameda Point	8-23-03	8-23-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,719.8 E 6,045,255.8	10.8 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 8.0 ft / 2.8ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/23/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.6			**BARK**	
						1		GRAVELLY CLAY with SAND (CL): Yellowish brown [10YR 5/6], moist, fine angular gravel, 30% gravel, 15% sand, 55% fines. (ROAD BASE). 30/15/55	FID Background = 0 ppm Hole backfilled with bentonite-cement grout after completion
						2			
					8.6				
C0593841		11:30:00 AM	NR		8.3			SILTY CLAY (CL): Black [10YR 2/1], soft to medium stiff, moist, trace fine angular gravel, 10% sand, 90% fines. (FILL).	
						3		CLAY (CL): Dark grayish brown [10YR 4/2], soft, moist, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
C0593842		11:34:00 AM	NR						
						4		at 4.3 ft.: dark greenish gray [GLEY1 4/1] with very dark gray [GLEY1 3/N].	
						5			
C0593843		11:35:00 AM	NR						
						6			
						7			
C0593844		11:39:00 AM	500						LEL = 33%, FID = 500 ppm at 8 feet bgs - stopped drilling
				▽		8		at 8.0 ft.: saturated.	
					2.6				
								TOTAL DEPTH = 8.3 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B030

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:01:20 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B031

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-28-03	8-28-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,716.1 E 6,045,328.8	11.0 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 5.0ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/28/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.8			ASPHALT	
C0593845		8:45:00 AM	NR			1		CLAYEY GRAVEL with SAND (GC): Yellowish brown [10YR 5/6], dense, moist, fine to angular gravel composed mostly of mesozoic sedimentary and volcanic raock, ~60% gravel, 20% sand, 20% clay. (FILL).	FID Background = 0 ppm Hole backfilled with bentonite-cement grout after completion
C0593846		8:50:00 AM	NR		9.2	2		CLAYEY SAND (SC): Dark greenish gray [5GY 4/1], dense, moist, fine grained sand, ~55% sand, 45% clay and silt. (FILL). 0/55/45	
C0593848 C0593847		8:55:00 AM	NR			3			
					7.3	4		CLAY (CH): Dark greenish gray [5GY 4/1], soft to medium stiff, moist, high plasticity, trace (<2%) organics, occasional (5%) seams (0.25-inch) of silty and/or sand, laminated. (BAY MUD). 0/5/95	
						5			
C0593849		9:00:00 AM	NR	▽		6		at 6.0 ft.: saturated.	
						7		at 7.0 ft.: sandy (25% sand, 75% clay). 0/25/75	
					2.8	8		TOTAL DEPTH = 8.3 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B031

Report Form: CTO-079 ALAMEDA BORING LOG Time: 4/8/24 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B032

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	IR Site 30	Alameda Point	8-28-03	8-28-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,113,749.7 E 6,045,368.3	10.3 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ 6.0 ft / 4.3ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/28/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.1			ASPHALT	
C0593850		9:20:00 AM	NR					CLAYEY GRAVEL (GC). 85/0/15	FID Background = 0 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0593851		9:25:00 AM	NR		8.6				
						2		CLAY (CH): gray, very stiff, moist, high plasticity, occasional seams (<5%) (0.25-inch) of silt. (FILL).	
						3			
C0593852		9:30:00 AM	NR						
						4			
					5.8			CLAY (CH): Dark greenish gray [5GY 4/1], stiff, moist, high plasticity, trace organics (<5%), laminated. (BAY MUD).	
						5			
				▽		6		at 6.0 ft.: saturated.	
C0593853		9:35:00 AM	NR						
						7			
						8			
					2.1			TOTAL DEPTH = 8.3 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B032

Report Name: CTO-059 ALAMEDA BORING LOG Time: 4:01:39 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B033

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,706.3 E 6,045,587.0	10.7 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 5.7ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593854		9:20:00 AM	NR					**CLAYEY GRAVEL (GC):** Dark yellowish brown [10YR 3/4], wet, 55% subangular gravel to 1.5-inches, 25% sand, 20% fines. (FILL).	
						1		55/25/20	Hole backfilled with bentonite-cement grout after completion
C0593855		9:21:00 AM	NR						
					8.7	2		**SILTY CLAY (CL):** Dark greenish gray [5GY 4/1], medium stiff, laminated. (BAY MUD).	
C0593856		9:22:00 AM	NR			3			
						4			
				▽		5		at 4.5 ft.: soft. at 5.0 ft.: saturated.	
C0593858 C0593857		9:25:00 AM	NR			6			
						7			
					2.7	8		**TOTAL DEPTH = 8.0 FEET**	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S030B033

Report Name: CTO-059 ALAMEDA BORING LOG Time: 4/8/31 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B034

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-27-03	8-27-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,699.2 E 6,045,649.2	11.6 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 3.0 ft / 8.6ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593859		2:28:00 PM	NR					SAND with GRAVEL (SW): Dark yellowish brown [10YR 4/4], moist, well graded, 25% subangular gravel to 1-inch, 65% sand, 10% fines. (FILL). 25/65/10	FID background = 2.0 ppm
					10.8	1		SAND with GRAVEL (SW): Dark yellowish brown [10YR 4/6], oxide staining, 40% gravel, 50% sand, 10% fines. (FILL). 40/50/10	Hole backfilled with bentonite-cement grout after completion
C0593860		2:29:00 AM	NR						
					9.9	2		CLAYEY SAND (SC): Black [10YR 2/1], wet, abundant red staining from oxidized (organics?) matter throughout in long thin streaks reminiscent of rootlets, 0% gravel, 80% sand, 20% fines. (MARSH CRUST). 0/80/20	Marsh Crust from 1.7-3.2-feet bgs, material below 1.7-feet excluded from sampling
				▽	8.4	3		at 3.0 ft.: saturated.	
						4		SILTY CLAY (CL): Dark greenish gray [5GY 4/1], medium stiff, some oxide staining, 0% gravel, 0% sand, 100% fines. (BAY MUD). at 4.0 ft.: laminated, black staining and a few bits of organic matter.	
						5			
						6		at 6.0 ft.: soft, laminated with black staining.	
						7			
					3.6	8		TOTAL DEPTH = 8.0 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B034

Report form: CTD-459 ALAMEDA BORING LOG Time: 4:01:35 PM

BECHTEL	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B035
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Geoprobe 5400	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-25-03 / FINISHED: 8-25-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 2.5 in	COORDINATES: N 2,113,695.9 E 6,045,714.6		ELEVATION: 11.6 ft / TOTAL DEPTH: 8.0 ft
DEPTH / ELEVATION TO WATER: ▼ 7.6 ft / 4.0ft		LOGGED BY: Tina Takagi	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/25/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593863		10:24:00 AM	NR					GRAVEL with SAND (GW): Dark olive brown [2.5Y 3/3], moist, well graded, 60% angular gravel to 1.5-inches, 40% sand, 0% fines. (FILL). 60/40/0	
C0593864		10:25:00 AM	NR			1			Hole backfilled with bentonite-cement grout after completion
					10.0			SANDY CLAY (CL): Very dark grayish brown [10YR 3/2], soft, (FILL). 0/15/85	
					9.4	2		CLAY (CH): Black [5Y 2.5/2], stiff, 1% rootlets. (MARSH CRUST).	Marsh Crust 2.2 to 7.6 feet bgs, no samples taken
						3			
					8.2			SAND (SP): Dark greenish gray [5GY 4/1], wet, poorly graded, 0% gravel, 100% sand, 0% gravel. (BAY SEDIMENT)	
					8.0			CLAY (CH): Dark greenish gray [10GY 4/1], very stiff, mottled appearance and black staining. (BAY MUD).	
					7.6	4		SILTY CLAY (ML): Dark greenish gray [5GY 4/1], soft, stiff interlayers of banded and mottled clays (black staining). (BAY SEDIMENT).	
						5			
						6			
						7			
				▽	4.0			SANDY CLAY (CL): Dark greenish gray [5GY 4/1], soft, saturated, (BAY MUD).	
					3.6	8			

TOTAL DEPTH = 8.0 FEET

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B035

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:01:09 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B036

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-25-03	8-25-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,692.3 E 6,045,781.1	11.8 ft	4.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/25/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593868 C0593867		11:05:00 AM	NR					**SAND (SW)**: Olive brown [2.5Y 4/4], wet, well graded, 10% subangular gravel to 0.67-inches, 85% sand, 5% fines. (FILL). 10/85/5	Hole backfilled with bentonite-cement grout after completion
						1			
C0593869		11:06:00 AM	NR		10.3			**CLAY (CL)**: Very dark gray [10YR 3/1], stiff, medium plasticity, (FILL).	
						2			
					9.4			**SANDY CLAY (CL)**: Olive [5Y 4/3], medium stiff, oxidized rock pieces (broken by drilling), 0% gravel, 40% sand, 60% fines. (FILL). 0/40/60	
C0593870		11:07:00 AM	NR		8.8	3		**CLAY (CL)**: Dark greenish gray [10GY 4/1], stiff, homogeneous, 0% gravel, 0% sand, 100% fines. (BAY MUD). 0/0/100	
					7.8	4		**TOTAL DEPTH = 4.0 FEET**	Abandon hole at 4-feet due to high LEL readings down the hole using tubing attachment

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B036

Report form: CTO-469 ALAMEDA BORING LOG Time: 4/8/03 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B037

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-25-03	8-25-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,688.8 E 6,045,847.0	12.1 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.5 ft / 4.6ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/25/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593872		2:02:00 AM	NR		11.6			GRAVEL with SAND (GW): Olive brown [2.5Y 4/3], moist, well graded, 60% angular gravel to 1-inch, 37% sand, 3% fines. (FILL). 60/37/3	
						1		CLAYEY GRAVEL (GC): Dark yellowish brown [10YR 4/4], moist, 60% subangular gravels to 1-inch, 25% sand, 15% fines. (FILL). 60/25/15	Hole backfilled with bentonite-cement grout after completion
C0593873		2:03:00 AM	NR						
						2			
					9.6			SANDY CLAY (SC): Olive brown [2.5Y 4/3], moist, 0% gravel, 85% sand, 15% fines. (FILL). 0/85/15	
C0593874		2:04:00 AM	NR			3			
					8.1	4		SILTY CLAY (CL): Dark greenish gray [10GY 4/1], stiff, homogeneous. (FILL).	
						5			
					6.5			SAND (SP): Olive gray [5Y 5/2], wet, poorly graded, 0% gravel, 100% sand, 0% fines. (FILL).	
C0593875		2:07:00 AM	NR			6			
					5.7			CLAYEY SAND (SC): Dark greenish gray [5GY 4/1], medium stiff, wet, fine grained sand, laminated, trace black staining, 0% gravel, 85% sand, 15% fines. (FILL).	
						7			
				▽				at 7.5 ft.: saturated.	
					4.1	8			
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/9/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S030B037

Report Name: CTO-059 ALAMEDA BORING LOG Time: 4:08:47 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B038

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-25-03	8-25-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,683.8 E 6,045,911.1	12.4 ft	4.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/25/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593876		2:30:00 PM	NR					GRAVEL with SAND (GW): Dark yellowish brown [10YR 4/4], moist, well graded, 55% subangular to rounded gravel to 1-inch, 40% sand, 5% fines. (FILL).	
						1		at 0.7 ft.: Dark yellowish brown [10YR 4/6]. 55/40/5	Hole backfilled with bentonite-cement grout after completion
C0593878 C0593877		2:31:00 PM	NR						
					10.4	2		SANDY CLAY (CL): Dark brown [10YR 3/3], medium stiff, 5% rounded gravel to 0.33-inches, 35% sand, 60% fines. (FILL). 5/35/60	
C0593879		2:32:00 PM	NR						
					9.6	3		CLAY (CH): Dark greenish gray [5GY 4/1], high plasticity, silty, with rootlets, heterogenous with black mottles. (MARSH CRUST).	Material not sampled below 2.8-feet (Marsh Crust and Bay Mud)
					8.9			SAND (SP): Dark greenish gray [10GY 4/1], wet, poorly graded, 0% gravel, 100% sand, 0% fines. (BAY SEDIMENT).	
					8.4	4			

TOTAL DEPTH = 4.0 FEET

REGISTERED GEOLOGIST
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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B038

Report form: CTD-859 ALAMEDA BORING LOG Time: 4:01:51 PM

BECHTEL	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B039
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Truck Mounted Geoprobe	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-26-03 / FINISHED: 8-26-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 1.5 in	COORDINATES: N 2,113,682.2 E 6,045,975.0		ELEVATION: 12.5 ft / TOTAL DEPTH: 8.3 ft
DEPTH/ ELEVATION TO WATER: ▼ Not Encountered		LOGGED BY: Pete Holland	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.3			ASPHALT	
C0593881		1:55:00 PM	NR					CLAYEY GRAVEL (GC): Yellowish brown [10YR 5/6], dense, moist, fine and coarse gravel, 50% gravel, 20% sand, 30% fines. (FILL).	FID Background = 3 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0593882		2:00:00 PM	NR						
					10.5	2		SAND (SP): Olive [5Y 5/3], dense, moist, fine grained sand, subrounded, occasional pockets of fat clay. (FILL).	
						3			
C0593883		2:05:00 PM	NR						
						4			
						5			
					7.0			CLAY (CH): Dark greenish gray, stiff, moist to wet, high plasticity, laminated. (BAY MUD).	
						6			
C0593884		2:10:00 PM	NR						
						7			
						8			
					4.2				

REGISTERED GEOLOGIST
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2/9/05
STATE OF CALIFORNIA

TOTAL DEPTH = 8.3 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B039

Report form: CTO-459 ALAMEDA BORING LOG Time: 4:01:54 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B041

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-27-03	8-27-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,634.0 E 6,045,446.5	11.3 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 5.3ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/27/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593890		2:02:00 PM	NR					Grand SAND with SAND (SW): Olive brown [2.5Y 4/4], moist, well graded, 30% angular gravel to 0.75-inches, 68% sand, 2% fines. (FILL). 30/68/2	FID background = 1.5 ppm Hole backfilled with bentonite-cement grout after completion
C0593891		2:03:00 PM	NR			1		at 1.0 ft.: Dark yellowish brown [10YR 4/6], moist, 40% subangular gravel to 0.75-inches, 55% sand, 5% fines. (FILL). 40/55/5	
						2			
					8.9			SAND (SW): Very dark grayish brown [10YR 3/2], 5% rounded gravel to 0.5-inches, 90% sand, 5% fines. (FILL). 5/90/5	
C0593892		2:04:00 PM	NR		8.3	3		CLAYEY SAND (SC): Black [2.5Y 2.5/1], fine grained sand, low plasticity, 0% gravel, 40% sand, 60% fines. (FILL).	
					7.8			SAND with CLAY (SP-SC): Dark greenish gray [5GY 4/1], 0% gravel, 90% sand, 10% fines. (FILL).	
					7.3	4		SILTY CLAY (CL): Dark greenish gray [5GY 4/1], soft, laminated with black stains throughout, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
						5			
C0593893		2:06:00 PM	NR	▽		6		at 6.0 ft.: saturated.	
						7			
					3.3	8			
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST
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2/5/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B041

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:01:58 PM

	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B042
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Geoprobe 5400	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-26-03 / FINISHED: 8-26-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 2.5 in	COORDINATES: N 2,113,630.9 E 6,045,513.8		ELEVATION: 11.6 ft / TOTAL DEPTH: 8.0 ft
DEPTH / ELEVATION TO WATER: ▼ 6.0 ft / 5.6ft		LOGGED BY: Tina Takagi	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593894		3:13:00 PM	NR					GRAVEL with SAND (GW): Dark yellowish brown [10YR 4/6], moist, well graded, 60% angular gravel to 1-inch, 35% sand, 5% fines. (FILL).	
C0593895		3:14:00 AM	NR			1		60/35/5	Hole backfilled with bentonite-cement grout after completion
					9.6	2		CLAYEY SILT (ML): Very dark gray [5Y 3/1], wet, low plasticity, slight hydrocarbon odor, 3% rounded coarse sand grains in a sand-silt-clay matrix. (FILL).	
C0593896		3:15:00 PM	NR			3			
					8.0			SAND (SP): Olive [5Y 4/3], wet, poorly graded, 0% gravel, 100% sand, 0% fines. (FILL).	
					7.6	4		SILTY CLAY (CH): Dark greenish gray [5GY 4/1], stiff, laminated, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
						5			
C0593898 C0593897		3:18:00 PM	NR	▽		6		at 6.0 ft.: saturated.	
						7			
					3.6	8			

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TOTAL DEPTH = 8.0 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B042

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:02:01 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B043

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,626.3 E 6,045,570.1	11.8 ft	7.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593899		2:43:00 PM	NR					**SAND with GRAVEL (SW)**: Dark brown [10YR 3/3], moist, well graded, 30% angular gravel to 0.75-inches, 70% sand, trace fines. (FILL). at 0.5 ft.: Dark yellowish brown [10YR 4/4]. 30/70/0	
C0593900		2:44:00 PM	NR			1			Hole backfilled with bentonite-cement grout after completion
					9.6	2		**CLAYEY SAND (SC)**: Dark grayish brown [2.5Y 4/2], wet, fine to coarse grained sand, heterogeneous, multi-colored, 5% rounded gravel to 0.5-inches, 80% sand, 15% fines. (FILL). 5/80/15	
C0593901		2:45:00 PM	NR			3			Refusal, move to hand auger hole to drill 4-8 feet bgs interval
						4		at 4.0 ft.: Very dark gray [5Y 3/1], rootlets, 3% angular to rounded gravel to 0.5-inches, 77% sand, 20% fines. (MARSH CRUST). 3/77/20	Sample C0593902 not taken due to Marsh Crust
						5			
						6			
					4.8	7			Refusal

TOTAL DEPTH = 7.0 FEET

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B043

Report format: CTO-059 ALAMEDA\ BORING LOG Time: 4:32:03 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B044

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,633.3 E 6,045,645.8	11.8 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ 5.0 ft / 6.8ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593903		10:46:00 PM	NR					SAND with GRAVEL (SW): Dark yellowish brown [10YR 3/6], moist, well graded, 20% subangular gravel to 0.75-inches, 78% sand, 2% fines. (FILL). 20/78/2	
C0593904		10:47:00 PM	NR			1			Hole backfilled with bentonite-cement grout after completion
					10.2			SANDY CLAY (CL): Very dark grayish brown [2.5Y 3/2], medium stiff, 0% gravel, 40% sand, 60% fines. (FILL).	
					9.8	2		CLAYEY SAND (SC): Black [N2], heterogeneous, 3% rootlets throughout, 0% gravel, 80% sand, 20% fines. (MARSH CRUST).	No sample taken past 2 feet bgs due to Marsh Crust
						3			
					8.4			SAND with CLAY (SP-SC): Dark greenish gray [5GY 4/1], wet, poorly graded, 0% gravel, 90% sand, 10% fines. (BAY SEDIMENT).	
					7.6	4		SILTY CLAY (CH): Dark greenish gray [5GY 4/1], stiff, laminated, slight hydrocarbon odor, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
				▽	6.8	5		SILTY CLAY (CL): Dark greenish gray [5GY 4/1], soft, saturated, laminated, 0% gravel, 0% sand, 100% fines. (BAY SEDIMENT).	
						6			
						7			
					3.8	8			
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/9/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B044

Report format: CTU-059 ALAMEDA BORING LOG Time: 4/8/2004 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B045

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,629.4 E 6,045,711.7	12.0 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 5.0ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593907 C0593908		11:29:00 AM	NR					GRAVEL with SAND (GW): Dark yellowish brown [10YR 3/6], moist, well graded, 70% oxidized angular gravel to 1-inch, 28% sand, 2% fines. (FILL).	
						1		70/28/2	Hole backfilled with bentonite-cement grout after completion
C0593909		11:30:00 AM	NR						
					10.0	2		NO RECOVERY	Refusal, move to hand auger hole
						3			
					8.0	4		SAND with CLAY (SP-SC): Olive [5Y 5/3], wet, poorly graded, fine grained sand, 0% gravel, 90% sand, 10% fines. (FILL).	Sample taken from hand augered hole at 4 feet bgs
					7.0	5		CLAYEY SILT (ML): Olive gray [5Y 4/2], heterogeous with oxide staining and reddish mottles, 0% gravel, 0% sand, 100% fines. (FILL).	
C0593911		11:32:00 AM	NR			6			
				▽	5.0	7		SILTY CLAY (CL): Dark greenish gray [5GY 4/1], very soft, saturated, laminated, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
					4.0	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · STATE OF CALIFORNIA · 2/9/04

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B045

Report form: CTO-459 ALAMEDA NAVAL AIR STATION Time: 4:02:59 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B046

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-26-03	8-26-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,626.4 E 6,045,777.6	12.5 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 7.5ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593912		1:50:00 PM	NR					**GRAVEL with SAND (GW)**: Dark yellowish brown [10YR 3/4], well graded, 55% angular to subangular gravel to 1-inch, 45% sand, trace fines. (FILL). 55/45/0	Hole backfilled with bentonite-cement grout after completion
C0593913		1:51:00 PM	NR			1			
					10.5	2		**CLAYEY SAND (SC)**: Very dark grayish brown [10YR 3/2], wet, 0% gravel, 80% sand, 20% fines. (FILL).	
C0593914		1:52:00 PM	NR			3			
						4			
					7.9			**SILTY CLAY (CL)**: Dark greenish gray [5GY 4/1], medium stiff, laminated, moderate hydrocarbon odor, 0% gravel, 0% sand, 100% fines, with poorly graded sand lenses. (BAY MUD).	
				▽		5		at 5.0 ft.: saturated.	
C0593915		1:54:00 PM	NR			6			
						7		at 7.0 ft.: soft.	
					4.5	8			
								TOTAL DEPTH = 8.0 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B046

Report form: CTO-059 ALAMEDA BORING LOG Time: 4/23/12 PM

	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B047
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Geoprobe 5400	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-26-03 / FINISHED: 8-26-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 2.5 in	COORDINATES: N 2,113,622.9 E 6,045,843.5		ELEVATION: 13.0 ft / TOTAL DEPTH: 8.0 ft
DEPTH / ELEVATION TO WATER: ▼ Not Encountered		LOGGED BY: Tina Takagi	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593916		10:02:00 AM	NR					GRAVEL with SAND (GW): Dark yellowish brown [10YR 3/6], moist, well graded, 60% subangular to rounded gravel to 1-inch, 35% sand, 5% fines. (FILL). 60/35/5	Hole backfilled with bentonite-cement grout after completion
C0593918 C0593917		10:03:00 AM	NR		11.5	1		CLAYEY SAND (SC): Dark brown [10YR 3/3], moist, coarse grained sand, 0% gravel, 85% sand, 15% fines. (FILL).	
					10.6	2		GRAVEL with SAND (GW): Dark yellowish brown [10YR 3/6], moist, well graded, 60% subangular gravel to 1-inch, 35% sand, 5% fines. (FILL).	
C0593919		10:04:00 AM	NR		9.8	3		SAND with CLAY (SP-SC): Olive brown [2.5Y 4/3], wet, poorly graded, 0% gravel, 90% sand, 10% fines. (FILL).	
					9.0	4		SILTY CLAY (CL): Dark greenish gray [5GY 4/1], very soft, homogeneous, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
C0593920		10:06:00 AM	NR			5, 6			
					6.0	7		SAND (SP): Dark greenish gray [5GY 4/1], wet, poorly graded, 0% gravel, 100% sand, 0% fines. (BAY SEDIMENT).	
					5.0	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · STATE OF CALIFORNIA · 2/9/04

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B047

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:02:16 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S030B048

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	IR Site 30	Alameda Point	8-25-03	8-25-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,113,619.5 E 6,045,909.4	13.3 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/25/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0593921		3:22:00 PM	NR					SAND with GRAVEL (SW): Dark yellowish brown [10YR 4/6], moist, well graded, 30% rounded gravel to 0.5-inches, 65% sand, 5% fines. (FILL).	
						1			Hole backfilled with bentonite-cement grout after completion
C0593922		3:23:00 PM	NR		12.1			CLAYEY SAND (SC): Olive brown [2.5Y 4/4], moist, 20% subangular to rounded gravel to 0.5-inches, 60% sand, 20% fines. (FILL). 20/60/20	
						2			
C0593923		3:24:00 PM	NR			3		at 2.7 ft.: sand-clay matrix, 3% gravel, 77% sand, 20% fines. 3.0 feet 3/77/20	
						4			
					8.8			SILTY CLAY (CL): Dark greenish gray [5GY 4/1], medium stiff, 0% gravel, 0% sand, 100% fines. (FILL).	
						5			
C0593924		3:28:00 PM	NR		7.3	6		SAND (SP): Olive brown [2.5Y 4/4], wet, poorly graded, 0% gravel, 100% sand, 0% fines. (FILL).	
						7			
					5.3	8		TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUSER · No. 4451 · 2/19/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S030B048

Report Name: CTO-459 ALAMEDA BORING LOG Time: 4/21/19 PM

BECHTEL	PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S030B049
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Truck Mounted Geoprobe	SITE: IR Site 30	LOCATION: Alameda Point	BEGUN: 8-26-03 / FINISHED: 8-26-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 1.5 in	COORDINATES: N 2,113,603.4 E 6,045,969.6		ELEVATION: 13.8 ft / TOTAL DEPTH: 8.3 ft
DEPTH / ELEVATION TO WATER: ▼ 6.0 ft / 7.8ft		LOGGED BY: Pete Holland	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz): Vertical / ABANDON DATE: 8/26/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					13.6			ASPHALT	
C0593925		2:35:00 PM	NR					CLAYEY GRAVEL (GC): yellowish brown, dense, moist, fine gravel, angular, (FILL).	FID Background = 3 ppm
						1		85/0/15	Hole backfilled with bentonite-cement grout after completion
C0593926		2:40:00 PM	NR						
					11.8	2		CLAY (CH): greenish gray, stiff, moist, high plasticity, (FILL).	
						3			
C0593927		2:45:00 PM	NR						
						4			
					9.6			SAND (SP): Olive [5Y 5/3], moist to wet, fine grained sand, subrounded, (FILL).	
						5			
				▽		6		at 6.0 ft.: saturated.	
C0593928		2:50:00 PM	NR						
						7			
						8			
					5.6				
								TOTAL DEPTH = 8.3 FEET	

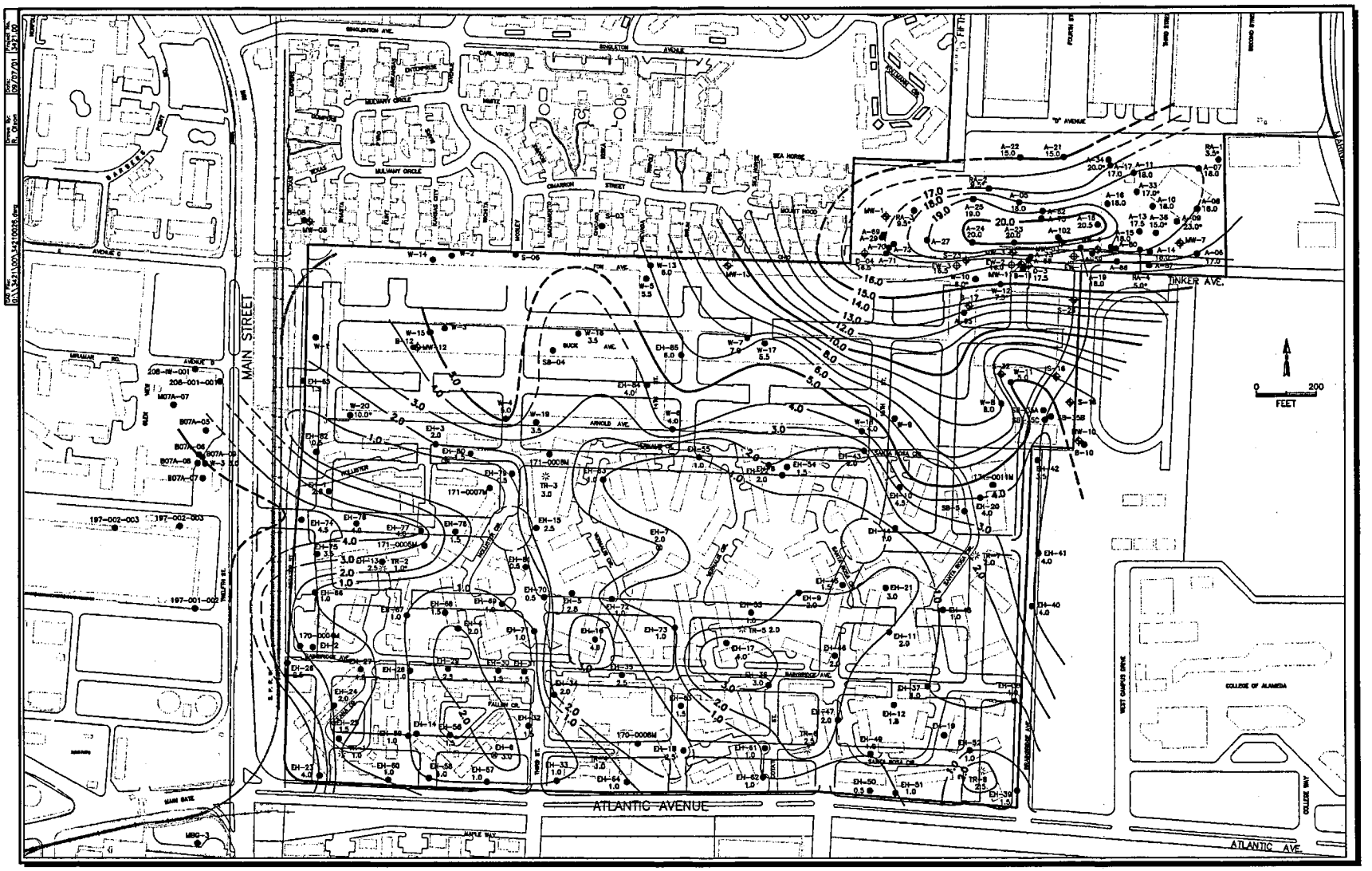
REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/9/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S030B049

Report Inst: CTD-459 ALAMEDA DORING LOG Time: 4:02:22 PM

ATTACHMENT C3

BORING LOGS FOR EAST HOUSING AREA



LEGEND

- Monitoring Well, Shallow Zone
- Monitoring Well, Deep Zone
- Aquifer Well, Phase 2
- Soil Boring
- Geotechnical Soil Boring

2.8 Depth to Artificial Fill/Bay Mud Interface (feet below ground surface)

5.0 Depth to Artificial Fill/Bay Mud Interface Contour (feet); Dashed Where Inferred

Datum Not Used For Contouring

Proposed Street/Infrastructure Layout

Proposed Backbone Infrastructure Layout

Figure 2
Contour Map of the Depth to Artificial Fill/Bay Mud Interface
Alameda Point East Housing/FISC Warehouse Areas
Alameda, California

ERM 08/01

ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421.00

Boring Number SB-T Total Depth of Auger Auger Diameter

Surface Elevation EH-23 Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 ft Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Hand Auger

Driller Paul Log By RDM Date Drilled 8/1/01

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)
					Start: 0930
0			0		Dry sandy silt grainy
			0		Sandy gravelly silt dry
1			0		Gravelly silt very fine
			0		Gravelly Clay small gravel
2			0		Clay dry some organics no odor brown
			0		
3					
4					

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Environmental Resources Management

Drilling Log

Project: Alameda FESC Owner:

Location: East FESC W.O. Number: 3421

Well Number: SB1A Total Depth: 16 Diameter:

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

Casing: Dia.: Length: Type:

Drilling Company: Greg Drilling Method: Direct Push

Driller: Paul Log By: neH Date Drilled: 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				Dry sand w/ silt
1				Dry clay w/ no odor
2				
3				2" Gravel, dry
4			no	
5				Dry clay w/ organics no odor
6				
7				
8			no	
9			no	
10			no	
11			no	
12			no	
13				fine sand moist no odor
14				
15				
16				fine sand moist no odor

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GWLOG

ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB-2 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 ft Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Bregg Drilling Method Hand Auger

Driller Paul Log By BDM Date Drilled 8/1/01

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)
					Start: 0950
0			0		Gravelly Silt dry grainy
			0		Gravelly Silt dry grainy
1	GM		0		Gravelly silt dry grainy
			0		Gravelly silt clay chunks
2			0		Silty Clay slightly moist rootlets lite brown no odor plastic
	CL		0		Same as above
3			0	No	
				No	
4					

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ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421.00

Boring Number: SR-3. Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 ft Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Hand Auger

Driller: Paul Log By: BDM Date Drilled: 8-1-01

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)
					Start: 1010
0			0		Sandy, Silt, dry grainy
1			0		Sandy, Silt, dry, grainy
2			0		Gravelly Silt dry grainy light brown Clay dry some organics no odor
3					Same as above
4					

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421.00

Boring Number SB4 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 ft Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method DIRECT PUSH

Driller Paul Log By Date Drilled 8/1/01

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)
					Start 1120
0			0		Dry sandy SILT
					Sand with Gravel
1					Sand with Gravel some SILT
			0		Sand with Gravel
2					Sand with Gravel
			0		Clay Dry some organics no odor
3					
4					

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421.

Boring Number SB5 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 ft Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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) Start 1125
0					Dry sandy silt with gravel
		0			Dry sandy silt
1					
		0			Clay dry with organics no odor
2					
		0			
3					
4					

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB-6 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					START 1130
0					Dry sand with gravel
1		0			Dry clay with organics no odor
2		0			Same as above
3					
4					

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ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3921.00

Boring Number: SB-7 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 ft Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					START 1135
0					Dry sand w gravel
1			0		Dry silty sand w Gravel
2			0		Dry clay with organics no odor
3			0		
4			0		

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ERM

Drilling Log

Project Alameda FISC Owner

Location ~~SB-8~~ East Housing Project Number 3421

Boring Number SB-8 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method DIRECT PUST

Driller Paul Log By Date Drilled 8/1/01

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)
					Start 1144
0					Dry sandy silt with Gravel
1			0		↓
2			0		Dry clay with organics no odor
3			0		↓
4			0		↓

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB9 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					Start 1149
0					Dry silty sand w gravel
1			0		↓
2			0		Dry Clay w inter bedded sand w organics no odor
3			0		↓
4			0		

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB11 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					Start 1245
0					Dry silty sand with gravel
1			0		Dry clay w/organics no odor
2			0		
3					Dry clay w/organics and interbedded sand no odor
4			0		

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ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421.

Boring Number: SB12 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul 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)
					START 1257
0			0		DRY SAND WITH SILT
1			0		↓
					DRY SAND WITH SILT and Gravel
2			0		DRY CLAY WITH ORGANICS, NO ODOR
3			0		
4					

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ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB13 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					start 1304
0			0		Dry silty sand
1			0		↓
					Dry silty sand w/gravel
2			0		↓
					Dry clay w/organics no odor
3					
4			0		

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ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB14 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					Start 1310
0					Dry Sandy Silt
1					↓ Dry sand w/Gravel
2					↓
3					↓ Dry clay w/Interbedded sand
4					no odor

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB16 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 8 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/11/01

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)
					Start 1335
0			0		Dry sandy silt w/gravel
1			0		Dry clay interbedded w/sand with organics no odor
2			0		
3			0		
4					without organics
5			0		
6					
7					
8			0		wet moist clay without organics no odor

Page____ of____

ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB17 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					Start 1345
0					Dry Silty sand
			0		Dry Silty Sand w/Gravel
1					↓
			0		Dry Clay w/organics Interbedded
2					with sand, no odor
			0		
3					
4					

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ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB 18 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 8 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					Start 1350
0				0	Dry sandy silt
1					Dry sand w/ silt and Gravel
2				0	
3					
4					Dry clay w/ organics no odor
5				0	
6					
7					Dry clay no odor
8				0	~~wet~~ moist clay no odor

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ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB19 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 8 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					START 1409
0			0		Dry silty sand
1					Dry silty sand w/ Gravel
2					Dry sand
3					Dry clay w/ organics - no odor
4					
5					
6					moist clay
7					
8					

Page____ of____

Environmental Resources Management

Drilling Log

Project: Alameda FESC Owner:

Location: East FESC W.O. Number: 3421

Well Number: SB19A Total Depth: 16 Diameter:

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

Casing: Dia.: Length: Type:

Drilling Company: Greg Drilling Method: Direct Push

Driller: Paul Log By: McH Date Drilled: 6/12/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 1254
0				Dry sand w/ Gra SILT
1				Dry sand w/ Gravel
2				Dry sand w/ Gravel
3			no	
4			no	Dry Clay w/ Organic no odor
5			no	
6			no	
7			no	
8				
9				moist clay
10				
11				moist clay
12				
13				
14				moist clay w/ organic odor
15				
16				moist clay w/ Organic odor

ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SP 20 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: DIRECT PUSH

Driller: Paul Log By: Date Drilled: 8/1/01

Sketch Map

Notes

Depth (Feet)	Graphic Log and USCS Designation	FID (ppm)	PID (ppm)	Sample Interval	Start 1416 Soil Description and Observations (Color, Texture, Structures, Odor, Foreign Matter)
0			0		DRY SILTY sand
1			0		↓
					DRY sand w/ Gravel
2			0		↓
					Dry sand w/ silt and Gravel
3					DRY sand w/ Gravel
			0		DRY clay w/ organics no odor
4					

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ERM

Drilling Log

Project Alameda EISC Owner

Location East Housing Project Number 3421

Boring Number SB23 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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			0		Dry silty sand
1					↓ Dry sandy/gravel
2			0		Dry clay interbedded with sand
3					↓
4			0		

Page____ of ____

ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB24 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: DIRECT PUSH

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					Start 1452
0			0		Dry sand w/ silt
1					↓ Dry sand w/ silt and gravel
2			0		↓ Dry clay interbedded w/ sand no odor
3					
4			0		

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421.

Boring Number SB 25 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					START 1458
0					DRY SAND W/ SILT
			0		↓
1					DRY SAND W SILT + GRAVEL
			0		↓
2					DRY CLAY WITH INTERBEDDED SAND
					NO ODOR
3			0		↓
4			0		

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ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB26 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul Log By: Date Drilled: 8/1/01

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			0		Dry silty sand
1					Dry silty sand w/ gravel
2			0		Dry clay w/ organics interbedded w/ sand no odor
3					
4			0		

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB32 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					Start 1350
0					Dry sandy silt
1					↓ Dry sand w/ silt and gravel
2					Dry clay w/ organics and odor
3					
4					

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB37 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/2/01

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)
					Start 0807
0					Dry sand w/ silt
					Dry sand w/ silt and gravel
1					Dry clay w/ organics no odor
2					Dry clay w/ organics no odor
3					Dry clay w/ organics
4					Interbedded sand

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB38 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/2/01

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)
					Start 0905
0					Dry Sand w/ silt
1					Dry sand w/ silt and gravel
					Dry Clay w/ organics no odor
2					Dry Clay w/ organics some gravel
3					Dry Clay w/ organics
4				no	

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB39 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/2/01

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)
					START 0825
0					Dry sand w/silt
					Dry sand w/silt and Gravel
1					Dry clay w/organics no odor
					Interbedded w/ sand
2					
					Dry clay no odor
3					
				no	
4					

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Drilling Log

Project Alameda FISC Owner

Location SB East Housing Project Number 34211

Boring Number SB40 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/2/01

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					Dry sand w/ silt
					Dry sand w/ gravel
1					Dry clay w/ organics, no odor
2					Dry sand w/ silt
					Dry clay w/ organics, no odor
3					
				no	
4					

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ERM

Drilling Log

Project Alameda East Housing Owner 8

Location _____ Project Number 3421.00

Boring Number SB41 Total Depth of Auger _____ Auger Diameter _____

Surface Elevation _____ Water Level: Initial _____ 24-hrs _____

Total Depth of Soil Sampler 4 ft Total Depth of Ground Water Sampler _____

Ground Water Sample Interval(s) _____

Drilling Company Paul Gregg Drilling Method Direct Push

Driller Paul Log By _____ Date Drilled 8-1-01

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)
					start @ 8:46
0					Dry sand w/ silt and gravel
1					Dry clay w/ organics no odor
2					Dry clay w/ organics interbedded w/ sand
3					
4				no	

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ERM

Drilling Log

Project Alameda FISC Owner

Location SB42 East Housing Project Number 3421

Boring Number SB-42 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/2/01

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)
					START @ 848
0					Dry sand w/ silt
1					Dry sand w/ silt and gravel
					Dry clay w/ organics no odor
2					
3					Dry clay w/ organics no odor
4				✓	

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Environmental Resources Management

Drilling Log

Project Alameda EESC Owner

Location East EESC W.O. Number 3421

Well Number SB43 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By mett Date Drilled 02/08/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 1040
0				Dry sand w/gravel
1				
2				Dry clay w/organics
3				Dry gray clay
4				Moist gray clay plastic

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FISC Owner

Location East FISC W.O. Number 3421

Well Number SB ~~53~~ 44 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Grebb Drilling Method Direct Push

Driller Paul Log By meH Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 1147
0				Dry sand w/ SILT
1				Dry sand w/ gravel
				Dry clay w/ organics no odor
2				
3				Slightly moist clay interbedded w/ sand
4			no	

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FESC Owner

Location East FESC W.O. Number 3421

Well Number SB45 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Geoc Drilling Method Direct Push

Driller Paul Log By Meff Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 1214
0				Dry sand w/gravel
1				Dry sand w/ gravel
				Dry clay w/organics
2				
				Dry clay w/organic no odor
3				
4			no	

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FISC Owner

Location East FISC W.O. Number 3421

Well Number SB47 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Gregg Drilling Method Direct Push

Driller ~~Gregg~~ Paul Log By mcH Date Drilled 02/08/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 1008
0				Dry Sand w/ Gravel
1				Dry Clay w/ organics no odor
2				
3				Dry Clay w/ organics no odor
4			no	

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GWLOG

Environmental Resources Management

Drilling Log

Project: Alameda FESC Owner:
Location: East FESC W.O. Number: 3421
Well Number: SB49 Total Depth: 4 Diameter:
Surface Elevation: Water Level: Initial: 24-hrs.:
Screen: Dia.: Length: Slot Size:
Casing: Dia.: Length: Type:
Drilling Company: Greg Drilling Method: Direct Push
Driller: Paul Log By: MEH Date Drilled: 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				START 0947
0				Dry sand w/ silt
1				Dry sand w/ silt and gravel
				Dry clay w/ organics
2				Dry gravel w/ sand
				Dry clay w/ organics no odor
3			48	
4				

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FESC Owner

Location East FESC W.O. Number 3421

Well Number SB50 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By MEH Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				Dry sand w/silt and gravel
1				Dry clay w/organics no odor
2				
3				Dry clay w/organics no odor
4			no	

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GWLOG

ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB51 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller ~~BDM~~ Paul Log By Date Drilled 8/2/01

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)
					START 0919
0					Dry sand w/ silt
1					Dry sand w/ silt and gravel
					Dry clay w/ organics no odor
2					
3					Dry clay w/ organics no odor
4				✓	

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Environmental Resources Management

Drilling Log

Project Alameda FESC Owner

Location East FESC W.O. Number 3421

Well Number SB-52 Total Depth 8 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Geegg Drilling Method Direct Push

Driller Paul Log By BDM Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start: 1113
0	GM			Gravelly Silt unconsolidated brown dry
				Same
1				Clay with lines of silt interbedded. Hard dry light grey rootlets no odor
				Same
2				Same
				Clay dark grey slightly moist plastic brown mottling
3			No	
			No	
4				Silty Clay tan, brown, grey dry flaky
				Grey clay soft moist plastic slight organic odor
5				Same as above
				Same as above
6				Same as above
			No	
7			No	
			No	
8				

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GWLOG

Environmental Resources Management

Drilling Log

Project: Alameda FISC
Owner:
Location: East FISC
W.O. Number: 3421
Well Number: SB54
Total Depth: 8
Diameter:
Surface Elevation:
Water Level: Initial: 24-hrs.:
Screen: Dia.: Length: Slot Size:
Casing: Dia.: Length: Type:
Drilling Company: Gregg
Drilling Method: Direct Push
Driller: Paul
Log By: mcH
Date Drilled: 8/12/01

Sketch Map

Notes

Start: 1104

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				
1				Clay, Silty dark brown to green
				~~Same as above~~ BM Silty gravel large clasts angular lite brown
2			No	Clay with silty chunks and some lime dark brown/green
			No	moist.
3			No	
			No	
4				Clay dark green to black very soft/Plastic moist
5				Same as above
				Same as above
6			No	
			No	
7			No	
			No	
8			No	

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FCSC Owner

Location East FCSC W.O. Number 3421

Well Number SB55 Total Depth 8 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Geo66 Drilling Method Direct Push

Driller Paul Log By MeH Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				start 1127
0				Dry sand w/ silt
1				Dry sand w/ Gravel
2				Dry sand w/ Gravel
3				
4				Dry clay with interbedded sand local black crust no odor
5				
6				Dry clay w/ organics no odor moist clay interbedded sand
7				
8				Moist clay no odor

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FESC Owner

Location East FESC W.O. Number 3421

Well Number SB56 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company GREGC Drilling Method Direct Push

Driller Paul Log By MEH Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 1137
0				Dry sand w/silt
1				Dry sand w/silt
				Dry sand w/gravel
2				Dry clay w/organics no odor
3				Moist clay w/interbedded sand
4			no	

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FESC Owner

Location East FESC W.O. Number 3421

Well Number SB58 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company GEEC Drilling Method Direct Push

Driller Paul Log By MeH Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				START 1030
0				Dry sand w/ SILT
1				Dry clay w/ GRAVEL
2				Dry clay w/ organics no odor
3				Dry clay w/ organics no odor
4			~~no~~	

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FESC Owner

Location East FESC W.O. Number 3421

Well Number SB59 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company GeoG Drilling Method Direct Push

Driller Paul Log By MeH Date Drilled 08/02/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 1003
0				Dry sand w/silt
1				Dry clay w/sand and gravel
2				Dry clay w/organics
3				Dry clay w/organics
4			no	

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FISC Owner

Location East FISC W.O. Number 3421

Well Number SB61 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By MeH Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 0927
0				Dry sand w/ SILT
1				Dry sand w/ Gravel
				Dry Clay w/ organics
2				Interbedded w/ sand no odor
3				Dry Clay no odor
4			no	

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FISC Owner

Location East FISC W.O. Number 3421

Well Number SB63 Total Depth 8 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By melt Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	~~Well~~ PID Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Hand Auger to 2.5 ft bgs Start: 1400
0				TOP 6" CONCRETE
				Sand w/ SILT DRY
1				
				Silt and gravel Brown and grey dry.
2				
		0		
3		0		Silty gravel very hard dry brown and grey
		0	No	Grey layer very platy like shells ~~or~~ black inclusions like
4				organic carbon similar to "marsh crust" but thinner
				Grey layer very platy ~2" thick then Silty Sand dry brown
5				Silty sand with thin (<1") grey platy layer as above
				Silty sand brown moist
6				Same
				Clay dark grey, soft, moist lite organic odor
7				
				Same as above some thin bands of sand.
8				

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GWLOG

ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB10 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 8 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method DIRECT PUSH

Driller Paul Log By Date Drilled 8/1/01

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)
					START 1200
0					Dry sand w silt
1			0		↓
2			0		clay Dry w organics no odor
					Dry sand
3			0		Dry clay w organics no odor
4			0		↓
5					↓
6					moist clay no organics no odor
7					↓
8					↓

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Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB15 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 8 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: DIRECT PUSH

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					START 1325
0			0		DRY SAND WITH SILT
1			0		DRY CLAY WITH ORGANICS NO ODOR
2			0		DRY CLAY NO ORGANICS
3			0		
4					MOIST CLAY NO ORGANICS
5			0		
6					
7			0		
8					

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ERM

Drilling Log

Project: Alameda FISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB21 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					START 1429
0			0		SAND WITH SILT - DRY
1					↓
2			0		Dry clay with organics no odor
3			0		↓
4					Dry clay with interbedded sand

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Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB22 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					START 1436
0			0		DRY SAND W SILT
1			0		DRY CLAY W/ORGANICS AND INTERBEDDED SAND W/ORGANICS
2			0		
3			0		
4					

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB27 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					Start 1504
0			0		Dry Sand w/ Silt
1					↓
			0		Dry Clay w/ organics
2					↓
3					↓
4			0		↓

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421.

Boring Number SB28 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method DIRECT PUSH

Driller Paul Log By Date Drilled 8/1/01

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)
					START 1515
0					Dry sand w/ silt
1			0		Dry clay w/ organics interbedded with sand no odor
2			0		
3			0		
4					

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ERM

Drilling Log

Project: Alameda EISC Owner:

Location: East Housing Project Number: 3421

Boring Number: SB29 Total Depth of Auger: Auger Diameter:

Surface Elevation: Water Level: Initial: 24-hrs:

Total Depth of Soil Sampler: 4 Total Depth of Ground Water Sampler:

Ground Water Sample Interval(s):

Drilling Company: Gregg Drilling Method: Direct Push

Driller: Paul Log By: Date Drilled: 8/1/01

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)
					START 1523
0			0		DRY SAND W/ SILT
1					↓ DRY CLAY W/ ORGANICS
2			0		↓
3					↓
4			0		SATURATED CLAY

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB 30 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					start 1532
0					Dry sand w/ silt
1			0		↓ Dry clay w/ organics, no odor
2			0		↓
3					↓ Dry clay
4			0		↓

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ERM

Drilling Log

Project Alameda EISC Owner

Location East Housing Project Number 3421

Boring Number SB30 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					START 1641
0			0		Dry sand w/ silt
1					Dry clay w/ organics no odor
2			0		
3			0		
4			0		Saturated clay

Page____ of____

ERM

Drilling Log

Project Alameda FISC Owner

Location SB-33 East Housing Project Number 3421

Boring Number SB-33 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Greyg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/1/01

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)
					START 1557
0			0		Dry sand w/ silt
1					↓ Dry clay w/ organics no odor
2			0		
3					
4			0		

Page ____ of ____

ERM

Drilling Log

Project Alameda FISC Owner

Location East FISC Project Number 3421

Boring Number SB34 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/2/01

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)
					Start 0740
0					Dry sand w/silt
1					↓ Dry sand
2					Dry clay w/organics no odor
3					↓
4					

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ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB 35 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 8 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul Log By Date Drilled 8/2/01

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)
					Start 0747
0					Dry Sand w/ silt
1					Dry clay w/ organics no odor
2					
3					
4					moist clay no odor
5					
6					
7					
8					

Page____ of____

ERM

Drilling Log

Project Alameda FISC Owner

Location East Housing Project Number 3421

Boring Number SB36 Total Depth of Auger Auger Diameter

Surface Elevation Water Level: Initial 24-hrs

Total Depth of Soil Sampler 4 Total Depth of Ground Water Sampler

Ground Water Sample Interval(s)

Drilling Company Gregg Drilling Method Direct Push

Driller Paul 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)
					START 0755
0					DRY SAND W/SILT
1					↓ DRY CLAY W/ ORGANICS, NO ODOR
2					↓
3					↓
4				No	↓

Page____ of ____

Environmental Resources Management

Drilling Log

Project: Alameda FESC Owner:

Location: East FESC W.O. Number: 3421

Well Number: SB46 Total Depth: 4 Diameter:

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

Casing: Dia.: Length: Type:

Drilling Company: G&G Drilling Method: Direct Push

Driller: Paul Log By: RCH Date Drilled: 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				START
0				Dry sand w/ silt
1				Dry sand
2				Dry clay w/ organics
3				Dry clay w/ organics
4			no	

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FISC Owner

Location East FISC W.O. Number 3421

Well Number SB48 Total Depth 4 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Geo6C Drilling Method Direct Push

Driller Paul Log By mell Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 0959
0				Dry sand w/silt
1				Dry clay w/organics no odor
2				Dry clay w/ organics no odor
3				
4				Dry clay w/organics no odor

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FESC Owner

Location SB53 East FESC W.O. Number 3421

Well Number SB53 Total Depth 8 Diameter

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Geo66 Drilling Method Direct Push

Driller Paul Log By Matt Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				Dry sand w/ silt
1				Dry clay w/ organic
2				
3				Dry marsh crust like material at ≈3.5
4			no	Moist clay
5				
6				moist clay w/ odor
7			no	
8			no	

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GWLOG

Environmental Resources Management

Drilling Log

Project: Alameda FISC Owner:

Location: ~~SB 57~~ East FISC W.O. Number: 3421

Well Number: SB 57 Total Depth: 16 Diameter:

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

Casing: Dia.: Length: Type:

Drilling Company: Gr66 Drilling Method: Direct Push

Driller: Paul Log By: meH Date Drilled: 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Start 1020
0				Dry sand with silt
1				Dry clay with organics
2				Dry clay w/ organics
3				
4				Dry clay w/ organics
5				
6				Dry clay w/ organics
7				
8				
9				
10				Moist clay w/ organic odor
11				Moist clay w/ Petroleum odor
12				
13				T.D. 16'

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GWLOG

Environmental Resources Management

Drilling Log

Project Alameda FTSC Owner

Location East FTSC W.O. Number 3421

Well Number SB60 Total Depth 8 Diameter 50

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Greg Drilling Method Direct Push

Driller Paul Log By Mark Date Drilled 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				START 1048
0				Dry sand w/ silt
1				Dry clay w/organics
2				Dry clay w/organics no odor
3				Dry clay w/organics no odor
4			NO	
8				
5				Moist clay no odor
6				
7				Moist clay no odor
8				Moist clay no odor

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GWLOG

Environmental Resources Management

Drilling Log

Project: Alameda FCSC Owner:
Location: East FCSC W.O. Number: 3421
Well Number: SB 62 Total Depth: 12 Diameter:
Surface Elevation: Water Level: Initial: 24-hrs.:
Screen: Dia.: Length: Slot Size:
Casing: Dia.: Length: Type:
Drilling Company: GeoEC Drilling Method: Direct Push
Driller: Paul Log By: MEH Date Drilled: 8/2/01

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				Concrete
1				Dry sand w silt
2				Thin band ≈ 2" of shell material
3			NO	
4			NO	moist clay w/ no odor
5				
6				
7			NO	
8				moist clay w/odor
9				
10				
11			NO	
12				

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GWLOG

ATTACHMENT C4

BORING LOGS FOR FISCA
(Including College of Alameda)

CTO 200 | DRILLING LOG | BORING NO. RB1

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	4.5 feet
BORING LOCATION	College of Alameda
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		8	0			SM	Silty Sand: brown; damp; 30% silt; 60% sand; 10% gravel; fine to medium sand; fine, subangular to subrounded gravel (Fill)	
3.0		19 22 11	0					
4.5		22 25				CL	Silty Clay: brown; damp; very stiff; 70% clay; 30% silt; low est K; low plasticity; shell fragments (Fill)	
				5			Terminate borehole at 4.5'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. RB2

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	4.0 feet
BORING LOCATION	College of Alameda
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		15 18 9	0			SM	Silty Sand: brown; damp to moist; 20% silt; 70% fine sand; 10% fine to coarse, subangular gravel; moderate est K (Fill)	
3.0		4 18	0			CL	Silty Clay: brown; damp; stiff; 85% clay; 15% silt; low est K; low plasticity (Fill)	
4.0		20					Terminate borehole at 4.0'	
				5				
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. RB3

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	4.0 feet
BORING LOCATION	College of Alameda
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		17	0			SP	Poorly-graded Sand: brown; damp; 100% medium sand; moderate est K (Fill)	
2.5		25 22	0			SM	Silty Sand: brown; dry to damp; medium dense; 20% silt; 70% fine to medium sand; 10% fine, subangular gravel; moderate est K (Fill)	
		16 18				CL	Silty Clay: brown; damp; very stiff; 60% clay; 40% silt; low est K; low plasticity (Fill)	
4.0		19				SM	Silty Sand: brown; wet; medium dense; 15% silt; 60% medium to coarse sand; 25% fine, subangular gravel; moderate est K; (Fill)	
				5			Terminate borehole at 4.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. RB4

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	4.0 feet
BORING LOCATION	College of Alameda
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		19	0			SP	Poorly-graded Sand: brown; damp; 100% medium to fine sand; moderate est K (Fill)	
2.0		33 41	0			GM	Silty Gravel: yellowish brown; dry to moist; dense; 20% silt; 20% sand; 60% fine to coarse gravel; low est K (Fill)	
4.0		39 46 40					Terminate borehole at 4.0'	
				5				
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. RB5

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	4.0 feet
BORING LOCATION	College of Alameda
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		10	0			SC	Clayey Sand: brown; damp; 30% clay; 70% medium to fine sand; low est K (Fill)	
2.5		13 16	0					
		7 10				CL	Silty Clay: brown; damp; stiff; 60% clay; 40% silt; low est K; low plasticity (Fill)	
4.0		10					Terminate borehole at 4.0'	
				5				
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. RB6

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	4.0 feet
BORING LOCATION	College of Alemeda
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
2.0		8 12 13	0			SC	Clayey Sand: dark brown; damp to moist; 15% clay; 85% medium sand; low est K; semi-consolidated (Fill)	
		2 3 6	0			CL	Silty Clay: brown; damp; stiff; 60% clay; 40% silt; low est K; shell fragments and roots; low plasticity (Fill)	
4.0						ML	Clayey Silt: gray; dry to damp; stiff; 40% clay; 60% silt; low est K (Fill)	
				5		CH	Clayey Silt: gray with black mottling; moist to wet; 60% silt; 40% clay; low est K; high plasticity (Fill)	
							Terminate borehole at 4.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. RB7

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA			PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger		DATE (s) DRILLED 05/26/94
SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 4 inches	BORING DEPTH 4.0 feet	BORING LOCATION College of Alameda
LOGGED BY Aimee Chow	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		13 25 21 8 12 14	0			SP	Poorly-graded Sand: brown; dry; 100% very fine to fine sand; low to moderate est K (Fill)	
2.5						CL	Silty Clay: brown; damp; very stiff; 60% clay; low est K; low plasticity (Fill)	
4.0						SC	Clayey Sand: brown; damp; 15% clay; 85% fine sand; low est K (Fill)	
				5			Terminate borehole at 4.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. RB8

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	4.0 feet
BORING LOCATION	College of Alameda
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		10	0			SP	Poorly-graded Sand: brown; dry; 5% silt; 95% very fine to fine sand; moderate est K (Fill)	
2.5		16 19	0			CL	Silty Clay: brown mottled reddish brown; damp; stiff; 60% clay; 40% silt; low est K; roots; shell fragments; low plasticity (Fill)	
4.0		5 6 8					Terminate borehole at 4.0'	
				5				
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. RB9

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	4.0 feet
BORING LOCATION	College of Alameda
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
2.0		8 25 29	0			SM	Silty Sand: brown; dry; 20% silt; 75% medium sand; 5% fine, subangular gravel; moderate est K (Fill)	
4.0		10 25 34	0			CL	Silty Clay: brown; dry; very stiff; 60% clay; 40% silt; low est K; low plasticity (Fill)	
							Terminate borehole at 4.0'	
				5				
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. RB10

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	4.0 feet
BORING LOCATION	College of Alameda
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		6 15 19	0			SM	Silty Sand: brown; damp; 40% silt; 60% medium to fine sand; moderate est K (Fill)	
2.5		5 6 3	0			CL	Silty Clay: brown; damp to moist; 60% clay; 40% silt; low est K; low plasticity; semi-consolidated (Fill)	
4.0							Terminate borehole at 4.0'	
				5				
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A05

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/16/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - Central Portion
LOGGED BY	Jim Jensen, R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		70 22 14	0.4 1.6				Silty Sand: brown; damp; medium density; fine to medium sand; moderate est K; (Fill)	
2.0		9 12 14	0.9				Shell fragments below 1.5'	
3.5		4 5 7	2.5					
5.5		8 9 9		5		SM	Wet below 5.0'	▽ 09/18/92
		4 2 2	90					
		2 1 1	18	10		CH	Fat Clay: gray to dark gray; wet; soft; very low est K; vertical fractures with sand coating fractures (Fill)	
		2 1 1	100	15		SP	Poorly-graded Sand: gray; wet; very soft; <5% fines; medium sand; high est K; slight odor (Fill)	
		2 3 3	>1000	20		CH	Fat Clay: gray; wet; soft; very low est K; slightly sandy; heavy organics; rootlets; branches; moderate odor (Bay Mud) Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A06

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	7/17/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - Southeast Corner
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		16 65				GM	Silty Gravel: orangish-brown, moist, very dense, fine to coarse sand, subangular gravel, moderate est K, no odor (Fill)	
2.5		18 17 10	32			CL	Silty Clay: orangish-brown, moist, very stiff, fine to coarse sand, gravel to 1/4", low plasticity, very low est K, no odor (Fill)	
4.5		8 4 6	25					
		1 1 3	40	5		SM	Silty Sand: olive gray, moist to wet, very loose, fine to medium sand, subangular gravel, moderate est K, no odor (Fill)	▽ 7/17/92
		1 2 2	170	10		CL	Silty Clay: gray, wet soft, fine sand, low plasticity, very low est K, no odor (Fill)	
15.5		1 2 2	>1000	15			Organic material, HC staining below 15.0'	
		1 2 2	40	20		CH	Fat Clay: gray, wet, soft, fine sand, very low est K, shell fragments, high plasticity, no odor (Bay Mud)	
							Borehole terminated at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A07

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	07/12/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	19.5 feet
BORING LOCATION	SWMU 1 - Northeast Portion
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		37 23 18	1			CL	Silty Clay: dark brown; moist; very stiff; very low est K; trace debris (metal, wood); minor rootholes; medium plasticity (Fill)	
2.5		8 9 13	3			SM	Silty Sand: dark olive; damp; medium dense; fine to medium sand; moderate est K; trace roots (Fill)	
4.0		11 13 15	0			CL	Silty Clay: dark brown; moist; very stiff; very low est K; trace debris (metal, wood); minor rootholes; medium plasticity (Fill)	▽ 7/12/92
		5 5 5	0	5		SM	Silty Sand: dark olive; damp; medium dense; fine to medium sand; moderate est K; trace roots (Fill)	
		3 2 2	0				Wet below 5.0'	
		1 1 1	0				Loose; shell fragments below 6.0'	
		1 2 3	0	10		CL	Silty Clay: dark olive; wet; soft; <5% fine sand; very low est K; rootlets; minor shell fragments; low to moderate plasticity (Fill)	
		1 1 2	2					
		1 2 3	1					
		1 1 8	2	15		SM	Silty Sand: olive gray; wet; very loose; low est K; trace odor; minor shell fragments; trace staining (Fill)	
		1 2 3	3					
		8 6 4	0			CL	Silty Clay: dark olive; damp; stiff; <5% fine sand; very low est K; trace organics; major rootlets; minor shell fragments; low to moderate plasticity (Bay Mud)	
		11 7 9	2	20			Terminate borehole at 19.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A08

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	8/14/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - East central portion
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		100/5.5	<1			GM	Silty Gravel: reddish brown; dry; very dense; poorly sorted; subangular to angular gravel; very high est K (Fill)	
						Con	Concrete layer	
2.5		5 6 6 4	75				Silty Clay: reddish brown mottled greenish gray; moist; firm; very low est K (Fill)	
4.0		3 2 4 3 2	72	5		CL	Wet below 5.0'	∇ 8/14/92
		5 2 2	4	10		SW	Well-graded Sand: greenish gray; wet; very loose; fine to medium sand; high est K; shell fragments (Fill)	
		3 3 3	250	15				
		1 2 4		20		CL	Silty Clay: gray to black; soft; very low est K; high organics; trace shell fragments (Bay Mud)	
							Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A09

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	08/19/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	26.5 feet
BORING LOCATION	SWMU 1 - East central portion
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		100				GW	Well-graded Gravel: reddish brown; very gravel dense; fine to coarse; very high est K; HC odor; trace staining (Fill)	
		111	<1					
		17						
		5						
2.5		7	4			CL	Silty Clay: greenish gray; moist; stiff; <5% fine sand; very low est K (Fill)	
		6						
		8						
		7	11				Silty Sand: greenish gray to brown; medium dense; fine to medium sand; moderate est K (Fill)	
4.5		11						
		4		5				∇ 08/19/92
		5	7			SM	Minor shell fragments below 4.5'	
		5					Wet below 5.0'	
							Silty Clay: gray; stiff; <5% sand; very low est K; trace organics; low plasticity (Fill)	
		3		10				
		5	100			CL		
		9						
							Well-graded Sand: greenish gray; wet; very loose; <5% fines; high est K (Fill)	
		2		15				
		1	390					
		2				SW		
				20				
			2					
							Silty Clay: gray; moist; soft; very low est K; heavy organics; trace shell fragments; low to moderate plasticity (Bay Mud)	
		1		25		CL		
		1	100					
		3					Terminate borehole at 26.5'	
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A10

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	08/14/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - East Central portion
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		53 41 52	5			GW	Well-graded Gravel: reddish brown; dry; very dense; <5% fines; fine to very coarse sand; very high est K; metal and wood fragments (Fill)	
2.5		15 14 11	35					
4.0		2 7 12	52			SW	Silty Clay: gray; moist; stiff; very low est K; wood and shell fragments (Fill)	
5.0		7 12 13	75	5			Wet; HC odor below 5.0'	∇ 08/14.92
		4 7 13	500	10				
		1 2 2	550	15			Well-graded Sand: greenish gray; wet; very loose; fine to medium sand; subangular; high est K; slight odor; staining (Fill)	
		1 1 2	600	20		CL	Silty Clay: greenish gray; wet; very soft; very low est K; hydrogen sulfide odor; low to medium plasticity (Bay Mud)	
							Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A11

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	8/13/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	20.5 feet
BORING LOCATION	SWMU 1 - Northeast Corner of Bldg 366
LOGGED BY	Michael Sellens, R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		22 13 19				GM	Silty Gravel: yellowish brown; dry to damp; medium dense; medium to very coarse subangular gravel; moderate est K (Fill)	
2.5		8 5 7	1 10			CL	Silty Clay: dark brown; moist; firm; very low est K; moderate plasticity; small sand lens; shell fragments >2" (Fill)	
4.0		2 3 3	0	5			Dark gray; wet; HC odor below 4.0'	▽ 8/13/92
		1 2 10	70				No odor below 7.0'	
		1 3 4	400	10		CH	Fat Clay: greenish gray; wet; firm; very low est K; high plasticity; shell fragments; iron staining (Fill)	
		2 3 3	150				Soft below 13.0'	
		5 8 9	500	15		SM	Silty Sand: greenish gray; wet; medium dense; moderate est K; shell fragments; HC odor (Fill)	
		2 3 3	500	20		CH	Fat Clay: greenish gray; wet; firm; high plasticity; organic material; shell fragments; iron staining (Bay Mud)	
							Terminate borehole at 20.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A12

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	07/12/92 - 07/13/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	19.5 feet
BORING LOCATION	SWMU 1 - Northwest corner of Bldg 365
LOGGED BY	John Bird / Michael Sellens R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		33 25 31	5			GM	Silty Gravel: yellowish brown; damp to dry; very dense; fine to coarse sand; subangular gravel; very high est K (Fill)	
2.5		8 7 19	3			CL	Silty Clay: dark brown; moist; stiff; <5% sand; very low est K; trace shell fragments; moderate plasticity (Fill)	
4.0		16 15 12	2					
		5 5 6		5		SM	Silty Sand: light gray; wet; loose; moderately sorted; moderate est K; shell fragments (Fill)	▽ 07/12/92
		1 1 2						
		1 1 1	20					
		1 3 5	6	10		CH	Fat Clay: dark gray to greenish gray; wet; very soft; very low est K; high plasticity (Fill)	
		1 3 4	10				Minor shell fragments; spotty iron staining below 10.5'	
		11 2 2	45					
		18 12 15	500	15		SM	Silty Sand: gray; wet; medium dense; fine to medium sand; moderate est K; shell fragments (Fill)	
		5 7 8	60					
		5 8 9	500					
		2 3 3	300	20			Terminate borehole at 19.5'	
				25				
				30				
				35				

CTO 200 — DRILLING LOG — BORING NO. A13

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	08/19/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - Southwest of Bldg 365
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION (USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES (water levels, with date/time, character of drilling, etc.)
0.5		50				GM	Silty Gravel: yellowish-brown, moist, very dense, coarse angular gravel, asphalt pieces, moderate est K, no odor (Fill)	
1.5		17	<1					
2.5		1	110			SC	Clayey Sand: orangish-brown, moist, loose, low est K, no odor (Fill)	
		5						
		7						
4.0		2					Silty Sand: gray, moist to wet, loose, fine to medium sand, moderate est K, no odor (Fill)	▽ 8/19/92
		4						
		3	6.2					
		2		5			Clay lens approximately 2" thick at 5.0'	
		1	14.5					
		1						
		1		10		SM	Shell fragments below 10.0'	
		1	2.5					
		1						
15.5		1	>1000	15				
		1						
		1						
		1					Fat Clay: wet, very soft, organic material, very low est K, high plasticity, slight HC odor (Bay Mud)	
		1	180					
		2				CH		
		1		20			No odor below 20.0'	
		1						
		1					Borehole terminated at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A14

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	8/14/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - South of RR, eastern portion
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		19 36 44	0			GM	Silty Gravel: reddish brown; damp to moist; dense; fine to coarse sand; subangular to angular gravel; very high est K (Fill)	
2.5'		6 11 12	300			CL	Silty Clay: gray; moist; firm; very low est K; minor shell and glass fragments (Fill)	
4.0		2 4 5	>1000					
		1 3 5	36	5		SM	Silty Sand: gray; saturated; loose; medium sand; moderate est K (Fill)	▽ 08/14/92
		4 4 3	3	10		CL	Silty Clay: dark gray; wet; firm; <5% fine sand; very low est K; trace of shell fragments; low plasticity (Fill)	
		1 2 3	350	15		SM	Silty Sand: gray mottled olive brown; wet; very loose; fine to medium sand; organic material (Fill)	
		1 2 3	90	20		CL	Silty Clay: dark brownish gray; soft; <5% fine sand; very low est K; hydrogen sulfide odor; organic material; moderate plasticity (Bay Mud)	
							Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A15

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	8/14/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - East of South gate
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		22 45 36 19	9			GM	Silty Gravel: reddish brown; damp to dry; dense; fine to coarse sand; subangular gravel; very high est K (Fill)	
2.5		37 37	4					
4.0		7 7 7	48			SM	Silty Sand: gray; moist to wet; loose; fine to medium sand; moderate est K (Fill)	
		3 5 9	80	5			Wet below 5.0'	▽ 08/14/92
		3 3 2	45	10		CL	Silty Clay: dark gray; wet; soft; <5% fine sand; very low est K; hydrogen sulfide odor; trace shell fragments; medium plasticity (Fill)	
		2 4 3	500	15		SM	Silty Sand: gray; very loose; fine to medium sand; moderate est K; HC odor; minor staining (Fill)	
		7 4 3	300	20		CL	Silty Clay: brownish gray; moist; firm; very low est K; hydrogen sulfide odor; minor organics; rootlets; medium plasticity (Bay Mud)	
							Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A16

SITE NAME AND LOCATION	FISCO – ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	8/13/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	20.5 feet
BORING LOCATION	SWMU 1 – West of Building 365
LOGGED BY	Michael Sellens, R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION (USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES (water levels, with date/time, character of drilling, etc.)
0.5		47 50 48	5			GM	Silty Gravel: yellowish orange; dry; very dense; subangular to angular gravel up to 0.3"; very high est K; metal fragments (Fill)	
2.5		3 3 3	45			SM	Silty Sand: gray to dark gray; damp; very loose; moderate est K (Fill)	
4.0		3 3 3	45			CL	Silty Clay: gray to dark gray; damp; soft; very low est K (Fill)	
				5		SM	Silty Sand: gray to dark gray; wet; very loose; fine to medium sand; moderate est K (Fill)	∇ 08/13/92
		1 1 1	350			CL	Silty Clay : gray; wet; very soft; very low est K; medium plasticity (Fill)	
		1 2 2	450	10				
		1 2 2	350			CH	Fat Clay: gray; wet; very soft; very low est K; high plasticity (Fill)	
		1 2 3	100	15		SM	Silty Sand: gray; wet; loose; fine to medium sand; some shell fragments (Fill)	
		1 2 2	375	20		CL	Silty Clay: gray; wet; soft; <5% fine sand; very low est K; hydrogen sulfide odor; medium plasticity (Bay Mud)	
							Terminate borehole at 20.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A17

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1825-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	07/12/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	20.5 feet
BORING LOCATION	SWMU 1 - West of Building 366
LOGGED BY	Michael Sellens, R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		26 24 16	10			GM	Silty Gravel: dark brown to grayish brown; dry; medium dense; medium to very coarse sand, subangular to angular gravel up to 0.3"; very high est K; metal fragments (Fill)	
2.5		3 6 4	200			SM	Silty Sand: gray to dark gray; damp; loose; fine to medium sand; moderate est K (Fill)	
4.0		2 2 3	20	5			Wet below 5.0'	▽ 08/13/92
		1 1 1				CL	Silty Clay: gray; wet; firm; very soft; very low est K; medium plasticity (Fill)	
		1 1 2	100	10				
		1 1 2 1 2 5	400 >1000	15		SM	Silty Sand: gray; wet; very loose; fine to medium sand; moderate est K; some shell fragments (Fill)	
		4 5 7	>1000	20		CL	Silty Clay: gray; wet; firm; very low est K; medium plasticity (Bay Mud)	
							Terminate borehole at 20.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A18

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/17/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - South central portion
LOGGED BY	Jim Jensen, R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		24 62 61	1.0			GM	Silty Gravel: reddish brown; slightly damp; very dense; fine to medium sand; very high est K (Fill)	
2.0		24 19 12	2.0			SM	Silty Sand: brown; damp; medium dense; fine to medium sand; high est K; some metal pieces; shell fragments (Fill)	
3.5		2 1	70			CL	Sandy Clay: dark gray; damp; soft; fine to medium sand; shell fragments; very low est K (Fill)	
4.5 5.0		3 2 1	3.0	5		SM	Silty Sand: gray; wet; very loose; moderate est K; trace shell fragments; slight odor (Fill)	▽ 09/17/92
		2 1 1 1	480			CH	Fat Clay: gray to dark gray; wet; very soft; very low est K; slight odor; high plasticity (Fill)	
		1 1 1	10	10		SM	Silty Sand: gray; wet; very loose; moderate est K; slight odor (Fill)	
		1 2 2	250	15		CH	Fat Clay: gray; moist; very soft; vertical fractures filled with very fine sand; very low est K; high plasticity (Fill)	
						SM	Silty Sand: gray; wet; very loose; fine to medium sand; moderate est K; slight odor (Fill)	
		2 2 2	>1000	20		CH	Fat Clay: gray; wet; soft; very low est K; moderate odor; trace organic plant material and few thin laminae of brown organics (Bay Mud)	
							Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A19

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/16/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - East of southgate
LOGGED BY	Jim Jensen, R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.5		32 33 40	0.1			GM	Silty gravel: reddish brown; damp; dense; fine to medium; gravel very high est K (Fill)	
3.0		27 18 17	0.2			SM	Sand: brown; damp; medium dense; fine to medium sand; fine, subrounded gravel; moderate est K (Fill)	
4.5		11 11 7	0.4	5				
6.0		3 2 5	7.2				Fat Clay: gray; wet; firm; very fine to medium sand; 2" shell fragments; very low est K (Fill)	∇ 09/16/92
		1 1 1	7.0					
		2 2 2	6.8	10		CH	Slight odor below 10.0'	
		2 2 2		15				
						SM	Sand: dark gray to black; wet; loose; fine sand; moderate est K; slight odor (Fill)	
		2 1 2 2 2 4	700 >1000 >1000	20		CH	Fat Clay: dark gray mottled black; wet; very soft; very low est K; organics; moderate odor (Bay Mud)	
							Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A20

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/16/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - Central portion
LOGGED BY	Jim Jensen, R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		80 48 42	0.2			GM	Silty Gravel: yellowish red; damp; very dense; fine to medium sand (Fill)	
2.5		12 16 16	0.2			SM	Silty Sand: brown; damp; medium dense; fine to medium sand; moderate est K; trace shell fragments (Fill) Clay lens between 2.5' and 3.0'	
4.0		5 11 4	0.2					
5.5		6 5 3	0.2	5			Wet below 5.5' HC odor below 6.0'	▽ 09/16/92
		1 1 1	1.5				No HC odor below	
		1 1 2	15	10		CH	Fat Clay: dark gray; damp; very soft; trace shell fragments; very low est K; high plasticity (Fill)	
		5 14 18	20	15		SM	Silty Sand: gray; wet; medium dense; fine to medium sand; moderate est K (Fill) HC odor below 16.5'	
		3 5 5	>1000	20			Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A21

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/17/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	Area 2: North central
LOGGED BY	Jim Jensen, R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0 1.5 2.5		32 21 13 13 16 14	2.2 1.0			SM	Sand: brown; slightly damp; medium dense; very fine to coarse sand; moderate est K (Fill) >5% pebbles; iron staining; shell fragments	
5.5		4 4 4 3 4 5 1 1 1	2.0 300 220	5			Silty; slight odor	▽ 09/17/92
		1 1 1	750	10		CL	Clay: gray to dark gray; very soft; medium dense; interbedded 2" very fine to fine sand; very low est K; slight odor (Fill) Moderate odor; organics; trace rootlets	
		7 7 16	800	15		SM	Sand: gray; wet; medium dense; fine to medium sand; moderate est K; moderate odor; thin hard layer of organics-black; trace shell fragments (Fill)	
		2 2 2	580	20		CH	Fat Clay: gray; soft; very low est K; moderate odor; abundant organics and plant material; rootlets; high plasticity Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A22

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	9/16/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	Area 2: North west
LOGGED BY	Jim Jensen R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		22 11 14	0.1				Sand: brown; slightly damp; medium dense; fine to medium sand; moderate est K (Fill)	
2.5		7 12 15	0.2				Grayish brown	
4.0		4 2 3	0.8	5		SM	Silty; wet below 5.0'	▽ 09/16/92
		2 2 1	80					
		7 14 15	>1000	10		CL	Clay: grayish brown; wet; stiff; very low est K; shell fragments (Fill)	
		2 3 4	>1000	15		SM	Sand: grayish brown; wet; loose; fine to medium sand; moderate est K; slight odor (Fill)	
		3 5 6	>1000	20			Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A23

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/16/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	Area 2: South west
LOGGED BY	Jim Jensen R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		20 22 23	1.0			GM	Gravel: reddish brown; slightly damp; dense; fine to medium gravel >3"; very high est K (Fill)	
2.5		14 18 22	0.7			SM	Sand: brown; slightly damp; medium dense; fine to medium sand; discolored fractures (vertical, yellowish red); moderate est K (Fill)	
4.0		5 8	1					
4.5		9 3	12	5			Sand: brown; slightly damp; medium dense; fine to medium sand; pieces of clay (clay ball); moderate est K (Fill)	09/16/92
5.5		2 2	7					
		1 1 1					Clay: grayish brown; slightly damp; soft; interbedded 4" gray, fine to medium sand; very low est K (Fill)	
							Organics	
			2	10		CL	Slight odor	
		2 3 2						
		3 5 6	150	15		SM	Sand: gray; wet; loose; fine to medium sand; moderate est K; odor (Fill)	
		3 2 3	>1000	20		CH	Clay: gray; damp; soft; very low est K; moderate odor; moderate organic material in parts; some rootlets (Bay Mud)	
							Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A24

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	7/06/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	20.5 feet
BORING LOCATION	SWMU 1 - Southwest Section
LOGGED BY	K. Lyle Dokkin
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		22					Silty Sand: brown, dry to damp, medium dense, fine to medium sand, subrounded to subangular gravel, moderate est K, no odor (Fill)	
		14						
		10						
		4	2					
2.5		4						
		4				SM	Very loose below 1.5'	
		5						
		2						
		2	0	5				
5.5		4	25					
6.5		1					Fat Clay: olive-brown, moist to wet, very loose, fine sand, very low est K, high plasticity, slight odor (Fill)	7/6/92
		2						
		1					No odor below 9.0'	
		1						
		2		10		CH		7/6/92
		6					Silty Sand: olive-brown, wet, fine to medium sand, subrounded to subangular gravel, moderate est k, HC odor and staining (Fill)	
		9						
		10		15				
						SM		
		2						
		4						
		8		20		CH	Fat Clay: greenish-gray, wet, firm, very low est K, high plasticity (Bay Mud)	
							Borehole terminated at 20.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A25

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	7/06/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	20.5 feet
BORING LOCATION	Area 1: North central
LOGGED BY	John C. Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
.5		28 24 20	1			GP	Sandy Gravel: brown (2.5Y5/3); damp; medium dense; fine to medium, small gravel; subrounded to subangular; high est K (Fill)	
2.5		17 16 14				SW	Sand: grayish brown (2.5Y5/1); damp to moist; medium dense; fine to medium sand; high est K (Fill)	
5.5		8 9 9	1	5				07/06/92
		1 2 2						
		1 1 2		10		CL	Silty Clay: olive brown (2.5Y5/3); wet; very soft; <5% fine sand; very low est K; medium to high plasticity (Fill)	07/06/92
		9 12 11		15		SW	Well-graded Sand: olive brown (2.5Y5/2); saturated; medium dense; sorted; fine to medium sand; high est K; HC odor; minor staining (Fill)	
		2 2 5		20		CH	Silty Clay: dark brown (2.5YN2/01); damp; firm; very low est K; slight hydrogen sulfide like odor; rootlets; medium to high plasticity (Bay Mud)	
				25			Terminate borehole at 20.5'	
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A26

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	7/6/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	20.5 feet
BORING LOCATION	Area 1: North central
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		37 23 16	2			GP	Sandy Gravel: brown (2.5Y5/3); damp; medium dense; fine to coarse sand; subrounded small gravel; high est K (Fill)	
2.5		7 7 9				SW	Sand: grayish brown (2.5Y5/2); damp to moist; medium dense; fine to medium sand; high est K (Fill)	
5.5		3 4 4		5				
6.5		3 4 5						▽ 07/06092 ▼ 07/06/92
		3 4 4		10		CL	Silty Clay: olive brown (2.5Y5/3); moist; firm; fine sand; medium plasticity (Fill)	
15.5		8 10 9	15	15		SW	Well-graded Sand: olive brown (2.5Y5/2); saturated; medium dense; fine to medium sand; HC like odor; minor staining (Fill) — Sheen observed	
		3 3 4		20		CH	Silty Clay: dark brown (2.5YN2/01); damp; firm; very low est K; slight hydrogen sulfide like odor; rootlets (Fill) — Terminated borehole at 20.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A27

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	7/06/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	20.5 feet
BORING LOCATION	Area 1: South west corner
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		22 50				GW	Sandy Gravel: brown (2.5Y4/3); damp; dense; fine to coarse sand; subangular small gravel; high est K (Fill)	
		16 7 7	50				Silty Clay: mottled brown (2.5Y5/1); moist; stiff; <5% fine sand interfingered; very low est K; medium plasticity (Fill)	
2.5								
		4 5 6		5		CL		
5.5							HC-like odor; staining	
6.5		2 2 4	60					
								▽ 07/06/92
								▼ 07/06/92
		2 2 2		10			Silty Sand: olive brown (2.5Y5/3); saturated; very loose; moderately sorted; fine to medium sand (Fill)	
		5 7 9		15		SM		
		2 2 3		20		CH	Silty Clay: dark brown (2.5YN2/01); damp; soft; very low est K; slight hydrogen sulfide-like odor; trace rootlets; medium plasticity (Fill)	
							Terminate borehole at 20.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A28

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	07/06/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	20.5 feet
BORING LOCATION	Area I: South west corner
LOGGED BY	John C Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		17 14 29	0.5				Sand: olive brown (2.5Y5/1); damp; medium dense; <5% silt; fine to medium sand; small angular to subangular gravel; high est K (Fill)	
2.5		6 9 2	0.0					
5.5		3 6 7	0.0	5		SW		
6.5		6 5 4						▽ 07/06/92
		2 2 2	30	10		CL	Silty Clay: dark brown (2.5YN2/01); damp; soft; very low est K; trace rootlets; medium plasticity (Fill)	▼ 07/06/92
		7 9 15	0.0	15		SM	Silty Sand: olive brown (2.5Y5/3); saturated; medium dense; fine to medium sand; moderate est K; trace shell fragments (Fill)	
		2 3 4		20		CH	Silty Clay: dark brown (2.5YN2/01); damp; firm; very low est K; slight hydrogen sulfide like odor; trace rootlets (Fill)	
							Petroleum staining	
							Terminate borehole at 20.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A29

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-802720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	07/06/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	25.5 feet
BORING LOCATION	Area 1: South west corner
LOGGED BY	John C Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
.5		47 27 27	0			GW	Sandy Gravel: reddish brown (slightly discolored); damp; dense; <5% silt; fine to medium sand; small angular to subangular gravel; high est K (Fill)	
2.5		12 9 10						
		8 10 12		5		SW	Sand: brown (2.5Y5/3); moist; medium dense; <5% silt; fine to medium sand; high est K (Fill)	
5.5		1 1 3	16	10		SM	Silty Sand: dark brown (2.5YN2/01); saturated; very loose; fine to medium sand; moderate est K; trace small shell fragments (Fill)	07/06/92 07/06/92
		6 8 12		15				
		2 3 5		20		CH	Silty Clay: dark brown (2.5YN2/01); damp; firm; very low est K; slight hydrogen sulfide-like odor; trace rootlets; medium plasticity (Fill)	
		2 3 5		25			Trace large shell fragments Terminate borehole at 25.5'	
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A30

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	07/07/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	22.0 feet
BORING LOCATION	Area 1: South west corner
LOGGED BY	K. Lyle Dokken
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		20 23 25	1			GW	Well-graded Gravel: brown (5YR4/4); moist; medium dense; fine to coarse gravel; very high est K (Fill)	
2.5		16 16 16					Silty Sand: brown (5YR4/4); moist; medium dense; fine to coarse sand; moderate est K (Fill)	
5.5		6 8 7	1	5				
		6 10 14	58	10		SW	Wet below 9.0'	▽ 07/07/92 ▼ 07/07/92
		2 2 3		15				
		2 3 5		20		CL	Silty Clay: trace large shell fragments	
							Terminate borehole at 22.0'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A31

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	08/19/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	Area 3: Central
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		17 34 22 26 28	<1				Gravelly Sand: reddish brown to gray; moist; dense; fine to coarse sand; subangular gravel <5% debris and silt; moderate est K; minor HC-like staining (Fill)	
2.5		9 3					HC stained	
4.0		3 3 7 8	100	5				▽ 08/19/92
6.0								
		1 2 1	125	10		SM	Silty Sand: brownish gray (minor greenish discoloration); moist to saturated; very loose; fine to medium sand; low est K (Fill)	
		2 3 6	160	15			Saturated	
		1 1 2	250	20		CH	Silty Clay: gray; moist; very soft; very low est K; trace organics; low to medium plasticity	
							Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A32

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	8/19/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	Area 3: East central
LOGGED BY	John Bird
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		55	5			GM	Sandy Gravel: reddish brown; moist; very dense; fine to coarse sand; very high est K (Fill)	
1.5		90						
		17						
2.5		6	8					
		10						
		6	0			SM	Sand: brownish gray; moist; very loose; <5% silt; fine to medium sand; moderate est K (Fill)	
4.0		4						
		3						
		4	0	5			Silty Clay: brownish gray to gray; moist to saturated; very soft; low est K (Fill)	8/19/92
		2						
		2						
		1		10			Minor fine sand lens <1" thick ; trace organics with shell fragments; low plasticity	
		1						
		1				CL		
15.0		1	>1000	15			Increased organics; high carbon content	
		2						
		3						
		1	>1000	20				
		2						
		2					Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A33

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	9/17/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	SWMU 1 - South of Bldg 368
LOGGED BY	Jim Jensen, R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		58 32 55	18			GM	Silty Gravel: yellowish-brown stained black, damp, very dense, moderate est K, HC odor (Fill)	
2.0		10 8 7	17			SM	Silty Sand: gray, damp, loose, fine to medium sand, moderate est K, HC odor, shell fragments (Fill)	
3.5		2 1	18			CL		
5.0		2 4 2 2	35	5		SM	Sandy Clay: medium gray, moist, soft, very low est K, shell fragments, HC odor (Fill)	▽ 9/17/92
							Silty Sand: gray, moist to wet, very loose, fine to medium sand, moderate est K, HC odor (Fill)	
		1 1 1	520			CL	Silty Clay: dark gray, wet, soft, very low est K, HC odor (Fill)	
				10			Gray mottled dark gray, very soft below 8.0'	
		2 4 7	220				Gray, soft below 12.0'	
						SM	Silty Sand: gray, wet, loose, fine to medium sand, moderate est K (fill)	
				15			Fat Clay: medium gray, wet, soft, very low est K, high plasticity, HC odor (Fill)	
		1 2 2	480				Dark gray, dark organic material, HC odor below 17.0' (Bay Mud)	
						CH		
		1 2 2	>1000	20			Medium gray mottled orangish-brown, shell fragments, HC odor below 20.0' below 20.0'	
							Dark organic layer below 21.25'	
							Borehole terminated at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A34

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/18/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	Area 3: Central
LOGGED BY	Jim Jensen R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		24 4 4	0.6			GM	Gravel: gray; medium dense; clay and sand with shells to 1.5'; moderate est K (Fill)	
2.0		3 3 4	0.6				Clay: gray; damp; firm; big burrow fill with silty sand (fine to medium; slight odor); very low est K; trace large shell fragments (Fill)	
3.5		4 2 2	200				Clayey Sand: gray; damp; loose; fine to medium sand; moderate est K; slight odor; abundant shells (Fill)	
5.0		3 2 2	500	5		SC	Slight odor; some iron staining	▽ 09/18/92
							Slight sheen	
		1 2 2	6				Clay: dark gray mottled gray; moist; soft; very low est. K; slight odor; slight iron staining (Fill)	
				10				
		1 1 2	5.8				Black organic laminae	
				15		CL		
		2 1 1	>1000				Moderate odor	
		2 1 3	950	20		CH	Fat Clay: gray; moist; soft; very low est. K; moderate odor; shell fragments near base (Bay Mud)	
							Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A35

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/17/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	20.5 feet
BORING LOCATION	Area 3: North west
LOGGED BY	Jim Jensen R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		32 22 33	0.6			GM	Gravel: reddish brown; slightly damp; dense; fine to coarse, subangular pebbles (Fill)	
2.0		14 15 14	0.6				Clayey Sand: brown (some discoloration); slightly damp; medium dense; fine to medium sand; moderate est K; iron staining in a circular pattern (Fill)	
3.5		2 2 1	2.5 80 92				Gray; moist; very loose; fine to medium sand; slightly silty; moderate est K; slight odor	
5.0		2 2 3	90	5			Slight odor; trace shell fragments	
		1 1 1	58				Slight odor; trace rootlets; trace shell fragments	▽ 09/17/92
		1 1 2	360	10		SC		
		6 14 17	>1000	15				
		6 5 3	90	20		SM	Silty Sand: dark gray to dark brown; wet; loose; poorly sorted; fine to medium sand; moderate est K; slight odor; trace shell fragments; piece of coal (Fill)	
							Terminate borehole at 20.5'	
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A36

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/18/92
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	21.5 feet
BORING LOCATION	Area 3: Central
LOGGED BY	Jim Jensen R.G.
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		4	0.2			CL	Clay: gray; slightly damp; firm; very low est K; some fragments of large shells (Fill)	
2.5		9 14 7	2.2			GM	Gravel: reddish brown; slightly damp; loose; very fine to medium gravel; iron stained sand with patch of brown clay; very low est K (Fill)	
		6 6 2	1.0			SC		
		4 3 1 1 1	>1000	5			Clayey Sand: reddish brown; slightly damp; loose; fine to medium sand; slight odor; some shells (Fill)	▽ 09/18/92
		2 1 2	>1000				Clay: gray; moist; very soft; 1/2" sand filled fractures (wet; fine to medium sand); low est K (Fill)	
							Slight odor; trace of organic material	
		1 1 2	400	10		CL	Very fine silty layer (1/4"); slight odor; trace small shell fragments	
		1 2 2	>1000	15			Fat Clay: gray; moist; soft; very low est. K; moderate odor; black organic laminae; "fresh" organic plant material; large and small rootlets (Bay Mud)	
		2 1 2	>1000	20		CH	Terminate borehole at 21.5'	
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A37

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA			PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger		DATE (s) DRILLED 03/01/94
SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 8 inches	BORING DEPTH 9.5 feet	BORING LOCATION Building 25
LOGGED BY Terry Kinn	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
2.0		43 50	0.0			ML	Clayey Silt: yellowish brown; damp; gravelly; low est K (Fill)	
						GP	Sandy Gravel: yellowish brown; damp; dense; subangular to subrounded gravel; very high est K (Fill)	03/01/94 03/01/94
5.5		8 8 11	0.0	5		SM	Silty Sand: yellowish brown; moist; stiff to very stiff; moderate est K; clam shells in sand	
							Dark greenish gray; medium dense	
		8 13 6	1.0				Peat/organic lens	
				10			Terminate borehole at 9.5'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A38

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	03/01/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	North west corner Building 25
LOGGED BY	Terry Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
						ML	Clayey Silt: brown; damp; gravelly; low est K (Fill)	
1.5		50 6	2.0					
		30 32 19	2.0				Silty Sand: dark greenish gray; moist; dense; moderate est K; abundant shell fragments (Fill)	
4.0							Yellowish brown; moist; medium dense; large gravels; moderate est K	
5.0		10 10 17	320	5		SM		▽ 03/01/94
							Dark greenish gray at 5.5'; abundant shell fragments	
		9 14 10	2.0				1" peat/organic lens	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A39

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	03/01/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SW corner of bldg 13
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
2.0		50/6	0.0			ML	Clayey Silt: brown; damp; gravelly; low est K (Fill)	
							Shell fragments abundant below 3.0'; increasing clay content with depth	
4.0		18 16 27	0.0	5		SM	Silty Sand: dark grenish gray; moist; dense; minor clay; moderate est K (Fill)	
		10 10 11					1' peat/organic lens	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A40

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	03/01/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	W. of bldg 13
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
						ML	Clayey Silt: brown; damp; gravelly; low est K (Fill)	
		50/6				GM	Gravel: light brownish gray; damp; very dense; minor silt and fine sand; coarse gravel; very high est K (Fill)	
3.0		6 12 14				SC	Clayey Sand: brown; damp; very stiff; fine sand; very low est K (Fill)	
				5		SM	Silty Sand: fine; moderate est K	▽ 3/1/94
		9 8 28					Dark greenish gray	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A41

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	03/01/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	NE corner bldg 13
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
						ML	Clayey Silt: brown; damp; gravelly; low est K (Fill)	
2.0 2.5		28 29 30 5	2.0			GM	Silty Gravel: greenish black; damp; hard; minor fine sand; high est K (Fill) Abundant wood chips	
4.5		14 20 28	0.0	5		SM	Silty Sand: yellowish brown; saturated; hard; moderate est K; abundant shell fragments (Fill) Dark greenish gray	3/1/94
		18 20 19					Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A42

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	03/01/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	East of bldg 13
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 6"	
1.5	■	50/4	10			ML	Clayey Silt: brown; damp; gravelly; very low est K (Fill)	
							Grayish black; damp; hard; some gravels	
							Silty Sand: yellowish brown; damp to moist; hard; medium sand; moderate est K (Fill)	
4.5	⊠	31 50 6	4.0	5		SM	Dark greenish gray; wet below 6.0'	▽ 3/1/94
	⊠	29 30 32	<1000				Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A43

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA			PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger		DATE (s) DRILLED 03/02/94
SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 8 inches	BORING DEPTH 9 feet	BORING LOCATION AOC 1 West of UST
LOGGED BY Terrence Kinn	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
1.5		12 28 27				ML	Clayey Silt: brownish gray mottled yellowish brown (oxidized); damp; hard; gravelly; very low est K; slight odor (Fill)	
3.5		21 14 14				SM	Silty Sand: dark greenish gray; moist; medium dense; fine sand; minor gravels; moderate est K; odor; slightly stained (Fill) Stain/sheen on soil (Fill)	
5.0		6 6 8	40 500	5				
8.5		5 5 6	600			ML	Sandy Silt: dark greenish gray; wet; stiff; fine; some clay; low est K; strong odor (Fill) Some gravels present between 8.0 and 9.0' Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A44

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	03/02/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	South of UST / AOC1
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt=3"	
1.5		21 27 29	200			ML	Clayey Silt: brown; damp; hard; gravelly; low est K (Fill)	
		32 42 33					Greenish black; stained	
							Minor gravels	
4.5		20 23 27	20	5		SM	Silty Sand: greenish black; fine sand; moderate est K; strong odor/staining	
		6 7 8					Wet below 9.0'	▽ 3/2/94
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A45

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/2/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	AOC 1 North of UST gas station
LOGGED BY	3/02/94
APPROVED BY	Doug Bleakly, R.G.
NOTES	John Bird

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
2.0		25 19 11 10 8 6	50			ML	Clayey Silt: dark greenish gray; damp; hard; gravelly; low est K (Fill)	
4.0			<1000	5		SM	Silty Sand: dark greenish gray; moist; loose; fine sand; minor clay nodules; moderate est K; very strong odor (Fill)	
8.5		11 18 19	<1000				Wet; medium dense; some gravel between 8.0 and 9.0'	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A46

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/2/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	South of bldg 2 AOC3
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
		50/2				ML	Clayey Silt: yellowish brown; damp; hard; low est K (Fill)	
						CL	Brownish gray below 1.0'	
3.0		20 35	0.0				Silty Clay: grayish black; damp; very low est K; low plasticity (Fill)	
		11 14	80					▽ 3/2/94
5.0		14 13		5		SM	Silty Sand: dark greenish gray; moist; dense; fine sand; moderate est K (Fill) Wet below 4.5'	
		3 3 2	>1000					
						CL	Silty Clay: grayish black; moist; soft; very low est K; strong hydrogen sulfide odor; abundant in organic materials Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A47

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/2/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	South of bldg 2 at AOC3
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
						ML	Clayey Silt: yellowish brown; damp; hard; gravelly; low est K (Fill)	
3.0		35 43 38	2.0				Brownish gray at 1.0'	
						SM	Silty Sand: dark greenish gray; moist; very dense; fine sand; moderate est K (Fill)	
5.0		19 19 19	60	5			Wet below 5.5'	▽ 3/2/94
		3 3 6				CL	Silty Clay: grayish black; moist; firm; very low est K; slight hydrogen sulfide odor; abundant organic material (roots/grasses) (Fill)	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A48

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/2/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	10 feet
BORING LOCATION	West of bldg 3 SWMU 3
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
						ML	Clayey Silt: yellowish brown; damp; hard; gravelly; low est K (Fill)	
3.0		10	0.0			SM	Silty Sand: dark yellowish brown; damp; medium dense; fine sand; moderate est K (Fill)	
3.5		12						
4.5		16	50				Greenish black; moist; soft; loose; shell fragments	
		3						
		3						
		4	0.0	5		CL	Clay: medium plastic clay from 5.0 to 5.5'	3/2/94
						SM	Sand: dark greenish black to dark greenish gray; wet; medium dense; moderate est K (Fill)	
		14						
		17						
		28		10			Terminate borehole at 10.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A49

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA			PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger		DATE (s) DRILLED 3/3/94
SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 8 inches	BORING DEPTH 9 feet	BORING LOCATION West of bldg 3 SWMU 3
LOGGED BY Terrence Kinn	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
						ML	Clayey Silt; yellowish brown; damp; hard; gravelly; low est K (Fill)	
2.5		27 33 32	0.0				Silty Sand; yelowish brown to light yellowish brown; damp; dense; fine sand; moderate est K (Fill)	
4.5		15 9 7	0.0	5		SM		▼ 3/3/94
							Greenish black; wet; stiff; silty fine sand; shell fragments (Fill)	
		13 7 9	0.0					
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A50

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/3/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	SWMU 3 West side of bldg 3
LOGGED BY	Terry Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
						ML	Clayey Silt: yellowish brown; damp; gravelly; low est K (Fill)	
2.5		22 20 14	0.0			SM	Silty Sand: yellowish brown to light yellowish brown; damp; dense; moderate est K (Fill)	
4.0		6 7 4	4.0					
				5		CL	Clay: dark gray; firm; very low est K (Fill)	▽ 3/3/94
						SC	Silty Clay: dark gray; wet; very low est K (Fill)	
		8 12 17	2.0			CL	Clay: dark gray; wet; very stiff; very low est K (Fill)	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A51

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/3/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SWMU 1 SE corner of scrapyard
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		10 13 12				ML	Clayey Silt: dark yellowish brown; damp; hard; low est K	
						ASP	Asphalt 5"	
2.0			42			CL	Silty Clay: greenish black; damp to moist; very stiff; very low est K; some shell fragments (Fill)	
3.5		4 4 4	120			SM	Silty Sand: brown (oxidized); damp; medium dense; silty; moderate est K (Fill)	▽ 3/3/94
5.0		1 2 2	16	5		CL	Silty Clay: greenish black; wet; soft; very low est K (Fill)	
		1 1 2	28				Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A52

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/3/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SWMU 1 scrapyard SE
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ML	Sandy Silt: dark yellowish brown; damp; hard; gravelly; low est K (Fill)	
						ASP	Asphalt 8"	
2.0		8 12 11				CL	Silty Clay: black; damp; very stiff; very low est K; shell fragments (Fill)	
3.5		6 8	20					
4.0		9				SM	Silty Sand: dark greenish gray; saturated; loose; moderate est K; shell fragments (Fill)	
4.5		1 1 1		5				▽ 3/3/94
			300			CL	Silty Clay: black; wet; very soft; very low est K (Fill)	
		1 1 2					Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A53

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/3/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SWMU 1 NE corner scrapyard
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ML	Sandy Silt: brown; damp; hard; gravelly; low est K (Fill)	
2.5		8 8 8	26			CL	Silty Clay: greenish black; damp; stiff; interspersed sand stringers; very low est K; abundant shell fragments (Fill)	
4.5		8 8 4	700	5		SM	Silty Sand: dark greenish gray; saturated; stiff; moderate est K; abundant shell fragments (Fill)	▽ 3/3/94
		1 1 2	0.0			CL	Clay: greenish black; wet; very soft; very low est K (Fill)	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A54

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/3/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	14.0 feet
BORING LOCATION	SWMU 4 gas station between pumps
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 6"	
						ML	Clayey Silt: dark yellowish brown; damp; hard; gravelly; low est K (Fill)	
2.0		21 25 45	100				Clayey Sand: dark greenish gray; damp; medium dense; well sorted; silty; very low est. K; odor; shell fragments (Fill)	
4.5		12 15 14	>1000	5		SC	Decreasing clay content Strong odor	
8.0		7 8 8	160					
				10		CL	Silty Clay: greenish black; wet; soft; very low est K; abundant shell fragments (Fill)	
		3 3 3	40				Silty Clay: greenish black; wet; soft (Fill) Terminate borehole at 14.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A55

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/4/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	9.0 feet
BORING LOCATION	Scrapyard SWMU 1 North central West of ent. gate
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ML	Clayey Silt: yellowish brown; damp; hard; gravelly; low est K (Fill)	
2.5 3.0		16 19 20	0			SM	Silty Sand: dark yellowish brown; medium dense; hard; fine sand; moderate est K; abundant shell fragments (Fill) Thin clay lenses <2" Shell fragments	
4.5		10 7 8	0	5				
8.5		1 1 1	2			CH	Clay: grayish black; saturated; very soft; thin fine sand stringers; very low est K; high plasticity (Fill) Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A56

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/4/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SWMU scrapyard south of bldg 366
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ML	Clayey Silt: brown; damp; hard; gravelly; low est K (Fill)	
3.5		47 17 11	6.0			SM	Silty Sand: greenish black; moist; hard; minor clay layers <3" thick; low est K; shell fragments (Fill)	
4.5		2 2 2	26.0	5		CH	Silty Clay: grayish black; soft; thin sand lenses; very low est K; high plasticity (Fill)	▽ 3/4/94
		1 1 1					Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A57

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/4/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SWMU 1 scrapyard East of bldg 366
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		15 16 13	14			ML	Clayey Silt: yellowish brown; damp; hard; gravelly; low est K (Fill)	
2.0		4 5 4	160			SM	Silty Sand: dark greenish gray; moist; medium dense; clay lenses; moderate est K; shell fragments (Fill)	
3.0		2 3 5	200	5		CL	Silty Clay: brownish gray; moist; firm; thin sand lenses; very low est K; medium plasticity (Fill)	▽ 3/4/94
5.0		1 1 1				CH	Fat Clay: very soft; high plasticity	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A58

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/4/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	10.5 feet
BORING LOCATION	SWMU 1 scrapyard south central end of yard
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.5		13 15 15 10 12 11	0.0			ML	Clayey Silt: yellowish brown; damp; hard; gravelly; low est K (Fill)	
						SM	Silty Sand: dark yellowish brown; damp; medium dense; fine sand; moderate est K (Fill)	
5.0 5.5		28 7 10	2.0	5				
8.0 9.0		1 2 1 1 2 2	10 8.0			CL	Silty Clay: greenish black; moist; very soft; very low est K; medium to low plasticity (Fill)	
				10		CH	Fat Clay: high plasticity	
							Terminate borehole at 10.5'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A59

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/4/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SWMU I scrapyard next to south gate entrance
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
3.0		22 22 22	0.0			ML	Clayey Silt: yellowish brown; damp; hard; gravelly; low est K (Fill) Bluish white, large gravels (crushed rock) from 1.0 to 1.5 feet. Yellowish brown; damp to moist; hard; gravelly silty clay	
5.5		12 11 7	2.0	5				
7.5		6 2 1	100			CL	Silty Clay: dark gray; saturated; firm; intermittent fine sand lenses; very low est K (Fill)	
							Terminate borehole at 9.0'	▽ 3/4/94
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A61

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-07.4
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/07/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	9.0 feet
BORING LOCATION	~ 200'WNW of main entrance to SWMU 1 scrapyard
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		50 40				GC	Clayey Gravel: reddish brown; damp; coarse to medium, subangular gravel to 1"; very high est K (Fill)	
2.0		50	2.0			SW	Gravelly Sand: brown; damp; dense; medium; high est K; shell fragments (Fill)	
3.0			3.0					
		8 8 8	5.5	5		SP	Sand: brown; moist; medium dense; medium; intermittant fine to medium sand lenses; moderate est K; low to moderate plasticity (Fill)	3/7/94
6.0							Gray; wet	
			20.0			CH	Fat Clay: grayish brown; wet; soft; medium, bluish brown sand lenses very low est K; high plasticity (Fill)	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A62

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/07/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	9.0 feet
BORING LOCATION	~ 200' west of main gate SWMU 1 scrapyard
LOGGED BY	Amiee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
2.0		25 25 47 20 43 41	1.0			GW	Sandy Gravel: reddish brown to brown; damp; very dense; medium sand; subrounded gravel to 2"; high est K (Fill)	
4.0		9 9 9	1.0	5		SP	Sand: light brown; dry to wet; very dense; sand fine to medium; moderate est K (Fill)	▽ 3/7/94
6.0		1 2 2	200			CH	Fat Clay: dark bluish gray; wet; very soft; very low est K; high plasticity (Fill)	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A63

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA		PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger	DATE (s) DRILLED 3/07/94

SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 4 inches	BORING DEPTH 9.0 feet	BORING LOCATION 150' WNW of main gate SWMU 1 scrapyard
LOGGED BY Amiee Chow	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
							Asphalt 1"	
2.5		6 12 15	5.0			SC	Clayey Sand: reddish brown; moist to wet; medium dense; medium sand; subrounded gravel to 2.5"; low est K; shell fragments (Fill)	
4.0		7 12 17	1.0				Light brown	
5.5		8 7 4	30.0	5				▽ 3/7/94
		1 1 1	500			CH	Fat Clay (CH): bluish gray; wet; firm; thin fine sand lenses; very low est K; high plasticity (Fill)	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A64

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/07/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	9.0 feet
BORING LOCATION	~ 200' W OF MAIN GATE swmu 1 scrapyard
LOGGED BY	Amiee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						GW	Asphalt 3"	
						GW	Sandy Gravel: reddish brown; poorly sorted; medium sand; subangular gravel to 1"; high est K (Fill)	
2.5		10 13 26	3.4			SC		
4.0		15 23 27					Sandy Clay: reddish brown; damp; stiff; medium sand; low est K; low plasticity (Fill)	
5.5		6 7 4		5		SP	Well-graded Sand: brown; damp; medium dense; medium; moderate est K (Fill)	▽ 3/7/94
		1 1 1	30			CH	Fat Clay: brownish gray; wet; firm; fine sand lenses; very low est. K; shell fragments; high plasticity (Fill)	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A65

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/07/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	4 inches
BORING DEPTH	9 feet
BORING LOCATION	North end of enclosed vehicle storage area
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 2"	
						GP	Gravel	
		43	2.0			SW	Gravelly Sand: reddish brown; dense; medium to coarse sand; subangular gravel to 1.5" high est K (Fill)	
4.0		27						
		27						
		9	10.0	5				▽ 3/7/94
5.5		17					Clayey Sand: brown; moist; medium dense; fine to medium sand; low est K (Fill)	
6.0		13				SC		
							Sand: brown; wet; medium dense; moderate sorting; medium sand; moderate est K (Fill)	
		6	800				Silt nodules and rust colored staining	
		8						
		10					Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A66

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA			PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger		DATE (s) DRILLED 3/8/94
SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 7.25 inches	BORING DEPTH 9.0 feet	BORING LOCATION NE corner of bldg 366 SWMU 1 Scrapyard
LOGGED BY Terry Kinn	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		50/2				ML	Clayey Silt: dark yellowish brown; damp; hard; low est K (Fill)	
3.0		10 14 15				CL	Silty Clay: greenish black; damp; very stiff; very low est K (Fill)	
5.5		2 2 3	540	5		SM	Silty Sand: dark greenish gray; moist; very stiff; fine sand; minor clay lenses/nodules; moderate est K (Fill) Wet below 5.5'	▽ 3/8/94
		1 1 1	3.0			CL	Silty Clay: greenish black; wet; very soft; thin sand stringers/lenses; low est K (Fill) Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A67

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/8/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	9.0 feet
BORING LOCATION	North west corner bldg 365
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						GW	Silty Gravel: light gray; damp; dense; coarse; high est K (Fill)	
		34 20 17				CL	Silty Clay: dark greenish gray; damp; very stiff; very low est K (Fill)	
3.5							Silty Sand: dark greenish gray; moist; hard; minor clay lenses; moderate est K; some shell fragments present	
4.5		8 8 8	34	5		SM		▽ 3/8/94
		3 1 1	660			CL	Clay: black; wet; very soft; minor sand lenses/stringers <.25"	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A68

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/8/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	9.0 feet
BORING LOCATION	North of bldg 366 SWMU 1 scrapyard
LOGGED BY	Terry Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
2.5		15 14 12	1.8			ML	Clayey Silt: brown; damp; hard; gravelly; moderate est K (Fill)	
5.5		4 4 9	100	5		SM	Silty Sand: greenish gray to moderate brown; damp; very stiff; well sorted; fine; moderate est K; dark greenish gray with increased moisture (Fill) Silty clay lens at 4.0' Abundant shell fragments below 4.5'	▽ 3/8/94
		1 1 1	320			CL	Silty Clay: greenish black; wet; very soft; minor sand stringers (<.25" thickness); very low est K; moderate to high plasticity (Fill) Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A69

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	03/08/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	11.5 feet
BORING LOCATION	SW corner scrapyard 80N, 77E of SW corner of y
LOGGED BY	Terry Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.5		20 37 28	1.8			ML	Clayey Silt: yellowish brown; damp; hard; gravelly; low est K (Fill)	
3.5		7 14 15	2.2			CL	Silty Clay: yellowish brown; damp; hard; very low est K; low plasticity (Fill)	
5.5		7 11 12	2.4 4.0	5		SM	Sand: yellowish brown to dark yellowish brown; moist; very stiff; fine sand; minor clay lenses; moderate est K (Fill)	
8.5		3 2 1					Dark greenish gray; silty	▽ 3/8/94
		1 1 2	14.0	10		CH	Fat Clay: greenish black; wet; very soft; minor sand stringers <.25"; very low est K; high plasticity	
							Terminate borehole at 11.5 feet.	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A70

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	3/8/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	11.0 feet
BORING LOCATION	SW corner of scrapyard SWMU 1 38N, 98E of SW c
LOGGED BY	Terry Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
2.0		8 8 9	<1			ML	Clayey Silt: yellowish brown; damp; hard; low est K (Fill)	
4.0		11 14 15	<1			CL	Silty Clay: olive gray; moist; very stiff; minor gravel; very low est K (Fill)	
6.0		7 8 12	<1	5		SM	Silty Sand: yellowish brown; moist; very stiff; fine sand; moderate est K (Fill) Shell fragments Dark greenish gray; increased silt content	
9.0		1 1 3	5.0			CH	Fat Clay (CH): dark greenish gray; wet; very soft; very low est K; medium to high plasticity (Fill)	3/8/94
		1 1 2	2.0	10		SM	Silty Sand: wet	
						CL	Silty Clay: dark greenish gray; very low est K; medium plasticity Terminate borehole at 11.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A71

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/16/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.5 feet
BORING LOCATION	SW corner of scrapyard midway between
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0						SM	Silty Sand: yellowish brown; dry; medium dense; <5% clay; 20% silt; 60% very fine to very coarse sand; 20% fine, sub-rounded gravel to 3/4"; moderate est K; shell fragments (Fill)	
2.5		7 10 9						
				5		CL	Lean Clay: yellowish brown; damp; firm; 50% clay; 40% silt; 10% very fine to fine sand; very low est K; low plasticity (Fill)	
5.5		4 5 7	0.0 2.0			SP	Sand: brown; moist; loose; <5% fines; 100% medium sand; high est K (Fill)	▽ 5/16/94
7.0		3 2 3 1 3 3	2.0			CH	Fat Clay: bluish gray mottled dark gray; wet; soft; 45% clay; 40% silt; 15% very fine to fine sand; very low est K; high plasticity (Fill)	
				10			Terminate borehole at 9.5'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A72

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/16/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	Bet. s15 & s4~30' N of s fenceline
LOGGED BY	Amiee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0	■					SM	Silty Sand: yellowish brown; dry; medium dense; <5% clay; 20% silt; 60% very fine to very coarse sand; 20% fine, sub rounded gravel to 3/4"; moderate est K (Fill)	
2.5	☒	7 9 10	0.0				Reddish brown; damp; 10% clay; 20% silt; 60% very fine to very coarse sand; 20% fine, subrounded gravel to 1/2"	
				5		CL	Lean Clay: dark gray; moist; stiff; 60% clay; 40% silt; <5% very fine sand; very low est K; low plasticity (Fill)	
6.5	☒	8 9 7	0.0			SP	Poorly-graded Sand: brown; moist; loose; <5% fines; 100% medium sand; high est K (Fill)	▽ 5/16/94
	☐	1 1 2					Wet below 7.5'	
						CH	Fat Clay: dark gray; wet; soft; 60% clay; 40% silt; <5% sand; very low est K; high plasticity	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A73

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/16/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	Southern portion of central site 15-20' NE of A58
LOGGED BY	Jeanne Wahler
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		0				GM	Sandy Gravel: reddish brown; dry; medium density; 5% clay; 15% silt; 20% very fine to very course sand; 60% fine, subrounded gravel to 3/4"; moderate est K (Fill)	
3.5		9 9 9				SP	Clean Sand: light brown; dry; medium density; <5% fines; 100% very fine to fine sand; high est K (Fill)	
				5			Damp: medium sand below 3.5'	
6.0		5 4 3					Fat Clay: dark gray; wet; soft; 60% clay; 40% silt; very low est K; high plasticity (Fill)	5/16/94
8.0		1 2 1				CH	Very soft below 7.5'	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A7-4

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA			PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger		DATE (s) DRILLED 5/16/94
SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 8 inches	BORING DEPTH 9.0 feet	BORING LOCATION
LOGGED BY Jeanne Wahler	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0						SM	Silty Sand: brown; dry; medium density; 5% clay; 25% silt; 45% very fine to very coarse sand; 25% fine sub angular gravel to 1/2"; moderate est K (Fill)	
3.5		13 17 19					Damp; 5% clay; 25% silt; 70% very fine to very coarse sand (Fill)	
				5		SP	Clean Sand: light brown; damp; dense; <5% fines; 100% medium sand; high est K (Fill)	5/16/94
		10 9 8					Dark gray; shell fragments below 6.5'	
		2 1 1				CH	Clay: dark gray; wet; soft; 50% clay; 40% silt; 10% very fine to fine sand; very est K; high plasticity (Fill)	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A75

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/16/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	
LOGGED BY	Jeanne Wahler
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
2.0		13 14 14				SM	Silty Sand: brown; dry; medium density; 5% clay; 25% silt; 45% very fine to very course sand; 25% fine, subangular gravel to 1/2"; moderate est K (Fill)	
4.5 5.0 6.0		4 4 6 9 9 9	0.0	5		SP	Silty Sand: brown mottled orangish brown; damp; medium density; 15% clay; 25% silt; 60% very fine to very coarse sand; moderate est K; semi-consolidated (Fill)	
		3 2 2				CH	Sand (SP): clean; brown; damp; moderate density; <5% fines; 100% medium sand; high est K (Fill)	5/16/94
							Wet below 6.0'	
							Dark gray; shell fragments below 6.5'	
				10			Fat Clay: dark gray; wet; soft; 60% clay; 40% silt; <5% sand; very low est K; high plasticity (Fill)	
							Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A76

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA		PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger	DATE (s) DRILLED 5/16/94

SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 8 inches	BORING DEPTH 9.0 feet	BORING LOCATION Center of site btw A61, A62 & S5 scrapyard
LOGGED BY Jeanne Wahler	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
2.0		24 35 35				SM	Poorly-graded Silty Sand: brown; dry; medium density; <5% clay; 10-15% silt; 85-95% very fine to fine sand; <5% fine gravel to 1/8"; moderate to high est K (Fill)	
4.5		11 11 10 3 4 5		5		SP	Mottled orangish brown; very dense; 5% clay; 25% silt; 40% very fine to very course sand; 30% fine subangular, gravel to 1/4"; moderate est K; semi-consolidated (Fill)	5/16/94
						SP	Clean Sand: brown; damp; medium density; <5% fines; 100% medium sand; no gravel; high est K (Fill)	
		1 1 1				CH	Wet below 5.5 feet Dark gray; shell fragments below 6.0'	
				10			Fat Clay: dark gray; wet; very soft; 60% clay; 40% silt; <5% sand; very low est K; high plasticity (Fill) Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A77

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/16/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	Off of SW corner of Bldg 13
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
1.5			1.0			GW	Sandy Gravel: reddish brown; dry; 10% silt; 20% very fine to medium sand; 70% fine, subangular to subrounded gravel; moderate est K (Fill)	
						SC		
						GW		
		9				SM	Clayey Sand: dark brown; moist; dense 25% clay; 75% medium sand; low to moderate est K; wood debris (Fill)	
5.0		16 19	0.5	5				5/16/94
		4 8 11	1.0			SP	Sandy Gravel: dark brown; moist; 15% medium to coarse sand; 85% coarse, subangular gravel; high est K (Fill)	
		4 5 4	1.0				Silty Sand: brown; moist; 30% silt; 70% medium to coarse sand; moderate est K (Fill)	
						CH	Sand: gray; wet; medium dense; moderate sorting; coarse; high est K; shell fragments (Fill)	
				10			Peat: reddish brown; wet; moderate est K	
							Fat Clay: grayish green; wet; firm; low est K (Fill)	
							Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A78

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-802720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/17/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SE corner of bldg 365 N of s10 scrapyard
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5						GW	Sandy gravel: brown; dry; 5% silt; 25% medium to coarse sand; 70% fine, sub-angular gravel; moderate est K (Fill)	
3.0		8 7 5				SP	Sand: gray; moist; medium to coarse; moderate to high est K (Fill)	
5.5		2 2 2		5		CH	Sandy Clay: bluish gray; wet; 5% silt; 85% clay; 10% medium to fine sand; very low est. K (Fill)	
		2 3 2					Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A79

SITE NAME AND LOCATION	FISCO – ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/17/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	8.5 feet
BORING LOCATION	E. side of screening lot & scrapyard
LOGGED BY	
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		6				SM	Silty Sand: brown; dry to damp; medium density; 5% clay; 20% silt; 45% very fine to very coarse sand; 30% fine, subangular gravel to 3/4"; moderate est. K; wood chips; cardboard pieces (Fill)	
2.0		1	0.0					
2.5		1				CH		
		3					Fat Clay: dark gray; damp; stiff; 60% clay; 30% silt; 10% very fine to medium sand; shell fragments; very low est K; high plasticity (Fill)	
4.0		3	0.0					▽ 5/17/94
		2				SW		
		1		5				
		1	0.0					
		1					Clean Sand: gray; moist to wet; very loose 5% fines; 95% fine to medium sand; high est K (Fill)	
		1				CH		
		2					Fat Clay: dark gray; wet; very soft; 60% clay; 40% silt; <5% sand; shell fragments; low est K (Fill)	
		1						
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A80

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/17/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	5.0 feet
BORING LOCATION	Central S side of screening lot & scrapyard
LOGGED BY	Jeanne Wahler
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
2		25 31 18				SM	Silty Sand: reddish brown; damp; dense; 5% clay; 15% silt; 60% very fine to very coarse sand; 20% fine to coarse, subrounded gravel to 1"; moderate est K (Fill)	
2.5						GM		
3.5		8				SM	Silty Gravel: reddish brown; damp; medium dense; 10% clay; 15% silt; 15% very fine to very coarse sand; 60% fine to coarse, sub-angular gravel to 6"; moderate est K (Fill)	
4		10 10 10		5			Silty Sand: brown; moist; medium dense; 20% clay; 25% silt; 35% very fine to very coarse sand; 20% fine, subrounded gravel to 3/4"; moderate est K (Fill)	
				10			Concrete Terminate borehole at 5.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A81

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA		PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger	DATE (s) DRILLED 5/17/94

SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 8 inches	BORING DEPTH 9.0 feet	BORING LOCATION Bet bldg 365 & 366 just E overhang (ctr)
LOGGED BY Aimee Chow	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5		16 26 17				GW	Sandy Gravel: brown; dry; 10% silt; 15% medium to coarse sand; 75% fine to coarse, angular to subangular gravel; moderate est K; HC odor (Fill) Reddish brown.	
3.5 4.5		2 5 9		5		CH	Sandy Clay: gray; damp; very stiff; 80% clay; 20% medium to coarse sand; low est K; shell fragments medium to high plasticity (Fill)	
		2 3 2 2 3 3				SM	Silty Sand: gray; damp; 20% silt; 80% medium to coarse sand; lenses of sandy clay moderate est K (Fill)	5/17/94
						CH	Fat Clay: gray; wet; soft; low est K; high plasticity (Fill) Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A82

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/17/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	20' West of Bldg 386 scrapyard.
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
	☒					GW	Gravelly Sand: brown; damp; 10% silt; 70% medium to coarse sand 20% coarse to fine, subangular gravel; moderate est. K (Fill)	
2.5	■	16				CL	Sandy Clay: brown to dark brown; damp; 80% clay; 20% fine to medium sand; low est K; HC odor; low plasticity (Fill)	
3.5	■	36 35						
4.5	☒	12 11 8		5		SP	Sand: bluish gray; moist; medium dense; low est K; low plasticity (Fill)	
						SM	Silty clay lens at 5': gray; moist to wet; 80% clay; 20% silt	▽ 5/17/94
	☒	0 1 1				CH	Silty Sand: gray; wet; 15% clay; 25% silt; 60% fine to medium sand low to medium est K; high plasticity (Fill)	
				10			Fat Silty Clay: gray; wet; 85% clay; 15% silt; low est K; high plasticity (Fill)	
							Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A83

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/19/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	8.5 feet
BORING LOCATION	80' South of bldg 366 & West ~ 40'
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0						GW	Sandy Gravel: reddish brown; damp to moist; 15% coarse sand; 85% fine to coarse, angular to subangular gravel; moderate est K (Fill)	
						CH		
		5	0.0			SP	Sandy Clay: reddish brown to gray; 80% clay; 20% medium to coarse sand; low est K; shell fragments; low plasticity (Fill)	
3.5		6						
		5					Sand: bluish gray; moist; medium dense; fine to medium; moderate est K (Fill)	
4.5		2						
5.0		2	0.0	5		CH	Silty Clay: gray; wet; firm; 70% clay; 20% silt; 10% fine sand; low est K; high plasticity silty sand lenses (gray; wet; 90% medium to fine sand) shell fragments; (Fill)	▽ 5/19/94
		7						
		10						
			0.0				Terminate borehole at 8.5'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A84

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/18/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	Off of NW corner of bldg 365
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0						GP	Gravel; white; dry; coarse gravel; high est K; unconsolidated (Fill)	
		5 7 6				ML	Sandy Silt; brown; damp; 60% silt; 25% clay; 15% fine sand; low est K; low plasticity (Fill)	
3.5							Gray; moist; 15% clay; 55% silt; 30% fine sand; low est K; shell fragments moderate to high plasticity; silty sand lenses (Fill)	
5.5		3 7 10		5				5/18/94
		2 2 3				CH	Fat Clay; gray; wet; soft; low est K; high plasticity (Fill)	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A85

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/18/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	8.5 feet
BORING LOCATION	~60' East of AST & 120' SW of guard shed
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0	■					SW	Gravelly Sand: reddish brown; dry; 75% fine to very fine sand; 20% fine, angular to subangular gravel; moderate est K; semi-consolidated (Fill)	
3.5	☒	9 17 30				SM	Silty Sand: brown; damp; 5% clay; 15% silt; 80% medium sand; moderate to low est K (Fill)	
5.5	☒	14 9 8		5		SP	Sand: brown; damp; moderate sorting; fine to medium; low to moderate est K (Fill)	▽ 5/18/94
	☐	3 2 1				ML	Clayey sand lens below 4.0 feet: brown; damp to moist; 5% clay; 5% silt; 90% medium sand; low est K (Fill)	
							Sandy Silt: gray; wet; soft; 15% clay; 55% silt; 30% fine to medium sand; moderate est K (Fill)	
				10			Terminate borehole at 8.5'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A86

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/18/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	10.0 feet
BORING LOCATION	146'E of Dyn Corp guard shack 12' SofS scrapyard
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
	☒	0				ASP	Asphalt 4"	
						SW	Gravelly Sand: reddish brown; damp; 10% silt; 75% medium to coarse sand; 15% fine gravel; moderate est K (Fill)	
	☐	12				ML	Sandy Silt: reddish brown to brown; damp to moist; 10% clay; 50% silt; 40% medium sand; low est K (Fill)	
	■	9						
4.5		5				SC	Clayey Sand: gray; moist; 5% clay; 15% silt; 80% medium to coarse sand; low to moderate est K (Fill)	
	☐	4		5		SM	Silty Sand: gray; moist; 5% clay; 10% silt; 85% medium to fine sand; moderate est K (Fill)	
		4						
		5				ML	Clayey Silt: gray; wet; 20% clay; 80% silt; low est K; high plasticity (Fill)	
				10			Terminate borehole at 10.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A87

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/19/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	8.5 feet
BORING LOCATION	~25 W of s19 along road to Dyn Corp main gate
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0						ASP	Asphalt 4"	
						SM	Gravelly Sand: green; damp; 10% silt; 75% medium to coarse sand; 15% fine, subangular gravel; moderate est K (Fill)	
		20 28 14				ML	Sandy Silt: greenish brown; moist; 5% clay; 60% silt; 25% medium to fine sand; 10% fine, subangular to subrounded gravel; low est K (Fill)	
4.5		7 5 4		5		SM	Grayish green; very stiff; 15% clay; 85% silt	▽ 5/19/94
6.5		1 3 2				ML	Silty Sand: gray; wet; medium dense; 20% silt; 80% medium to coarse sand; medium to high est K (Fill)	
						CH	Clayey silt: gray; wet; firm; 15% clay; 85% silt; low est. K; medium plasticity (Fill)	
				10		CL	Fat Clay: bluish gray; wet; soft; low est. K; high plasticity (Fill)	
							Clay: gray; dry; very soft; low est. K; low plasticity (Fill)	
							Sand lense at 8.5': gray; wet; medium to coarse sand	
							Terminate borehole at 8.5'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A88

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/19/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SW corner of bldg 13 30' W; 10' N
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		0				ASP	Asphalt 3"	
			0.0			SM	Gravelly Sand: orangish brown; damp; 15% silt; 70% medium to coarse sand; 15% coarse, subangular to subrounded gravel; moderate est K (Fill)	
						GP		
4.5		8 12 12	0.0	5		SM	Sandy Gravel: brown to dark brown; damp; 5% clay; 35% medium to coarse sand; 60% coarse gravel; moderate est K (Fill)	5/19/94
		2 2 5 2 2 3	0.0				Silty Sand: gray; damp to wet; medium dense; 20% silt; 80% medium to coarse sand; moderate to low est K;	
							Peat layer at 7.5'	
						CH	Clay: gray; damp to moist; firm; low est K	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A89

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/19/94 - 5/24/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	~70 N of SW corner bldg 13
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5						ASP	Asphalt 0.2"	
						GP	Sandy Gravel: dark brown to reddish brown; damp to dry; 30% fine to coarse sand; 70% coarse, angular to subangular gravel; moderate est K; (Fill)	
3.5		17 24 28 9 13 19				SM	Silty Sand: reddish brown; damp; medium dense; 5% clay; 30% silt; 65% medium to coarse sand; low est K; semi-consolidated (Fill)	
5.0		10 7 6 12 12 8		5		SW	Sand: reddish brown and gray; damp to wet; <5% fines; medium dense; medium to coarse sand; moderate est K (Fill)	5/19/94 - 5/24/94
							Wood debris at 7.5 to 8.5'; shell fragments	
							Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A90

SITE NAME AND LOCATION	FISCO – ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/19/94 - 5/20/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	feet
BORING LOCATION	Se corner of electric transformer
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 0.3"	
1.0						SP	Gravelly Sand: dark brown to brown; dry; 80% medium to coarse sand; 20% coarse to fine; subangular gravel; moderate est K (Fill)	
		88 64				GP	Sandy Gravel: dark brown to brown; very dense; 25% coarse sand; 75% coarse, subrounded gravel; very high est K (Fill)	
4.0								
		11 24 27		5		SP	Sand: brown; moist to wet; 100% medium to fine; angular sand; moderate est K (Fill)	
6.5								▽ 5/19/94 – 5/20/94
		9 10 4				SM	Silty sand: gray; wet; 15% silt; 85% medium to fine sand; moderate est K (Fill)	
						CH	Clay: gray with black mottling; firm; 100% clay; low est K, high plasticity (Fill)	
				10			Terminate borehole at 9.5'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A91

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/19/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	8.5 feet
BORING LOCATION	6' E of NE corner bldg 13
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0						ASP	Asphalt 3"	
						GP	Sandy Gravel: reddish brown; damp; 5% silt; 20% medium to coarse sand; 75% fine to coarse, subangular to subrounded gravel; moderate est K (Fill)	
4.0		30 28 25					Gravelly Sand: dark brown; damp to moist; 5% silt; 80% medium sand; 15% fine to coarse gravel; low est K (Fill)	
5.5		12 24 20		5		SP	Brown; damp; dense; moderate sorting; fine to medium; 100% sand; moderate est. K	▽ 5/19/94
		9 19 19					Gray; moist; medium dense; moderate sorting; fine to medium; 100% sand	
							Terminate borehole at 8.5'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A92

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/20/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	S side of bldg 13 40' S of NE corner
LOGGED BY	Amie Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0						ASP	Asphalt 3"	
3.0		30 56 54				SP	Gravelly Sand: reddish brown; dry to damp; 65% fine to medium sand; 35% fine to coarse, subangular gravel; low to moderate est K (Fill)	
5.0 5.5		14 23 21		5		MH	Dark brown to black; damp; 5% silt; 75% medium to coarse sand; 20% subangular to subrounded gravel; moderate est K; low to medium plasticity (Fill)	5/20/94
		10 14 13				SW	Sandy Silt: brown; damp to moist; 5% clay; 75% silt; 20% fine to medium sand; low est K; low plasticity (Fill)	
						SM	Sand: brown; moist to wet; 100% medium sand; low to moderate est K; low to medium plasticity (Fill)	
				10		CL	Silty Sand: gray; wet; 15% silt; 85% fine to medium sand; clay nodules; moderate est K; medium plasticity (Fill) HC odor	
							Silty Clay: gray to dark gray; wet; firm; low est K; low plasticity (Fill) Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A93

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/20/94 - 5/25/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	Mid way along E side of bldg 13
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0						ASP	Asphalt 2"	
						GW	Sandy Gravel: reddish brown; dry to damp; 25% medium to coarse sand; 75% fine to coarse, subangular gravel; high est K; medium plasticity (Fill)	
3.5		27 45 68	36.5 19.5			SM	Brownish yellow; 20% medium to coarse sand; 80% fine, angular gravel; sand lenses	
5.5		10 11 11	349.0	5			Silty Sand: brownish yellow; dry; 25% silt; 65% medium sand; 10% fine, subangular to subrounded gravel; moderate est K; low to medium plasticity (Fill)	▽ 5/20/94 - 5/25/94
			276.0			SP	Moist; very dense; 15% silt; 85% medium sand; sheen observed	
		8 16 12	76.9	10			Sand: greenish gray; wet; <5% fines; 100% medium sand; high est K; sheen observed; medium plasticity (Fill)	
							Terminate borehole at 9.0'	

15 20 25 30 35

CTO 200 | DRILLING LOG | BORING NO. A95

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/23/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	10 inches
BORING DEPTH	8.5 feet
BORING LOCATION	NW corner of bldg 364
LOGGED BY	Jeanne Wahler
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
		17				SM	Silty Sand: brown mottled orange brown; damp; dense; 5% clay; 15% silt; 65% very fine to very coarse sand; 15% fine subangular gravel to 1/2"; moderate est K (Fill)	
2.5		29						
		26						
		9						
3.5		3				CH	Fat Clay: dark brown; moist; stiff; 70% clay; 30% silt; <5% sand; no gravel; no odor; very low est K; high plasticity (Fill)	
		24						
		11						
		14		5		SP	Poorly-graded Sand: brown; moist; medium density; <5% fines (Fill)	▽ 5/23/94
5.5		11						
						CH	Wet below 5.5'	
		1					Fat Clay: gray; wet; very soft; 60% clay; 40% silt; <5% sand; high plasticity (Fill)	
		1					Terminate borehole at 8.5'	
		1						
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A96

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	4.0 feet
BORING LOCATION	50' Of bldg 2 80' W of fire hydrant
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt/roadbase 6"	
1.0						SW	Gravelly Sand: brown to reddish brown; dry to damp; 75% fine to coarse sand; 25% fine, sub angular to angular gravel; moderate est K (Fill)	
2.5		15 23 12 14 23 21				DM	Silty Sand: green; damp; 15% silt; 85% fine to medium sand; low est K (Fill)	5/26/94
				5		DP	Sand: greenish gray; moist to wet; medium dense; 100% medium sand; moderate est K (Fill)	
		2 1 2					Clay lenses below 4.5'	
						CH	Silty Clay: gray mottled black; wet; 60% clay; 40% silt; low est K; organic odor; rust; grass blades; high plasticity (Fill)	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A97

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA			PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger		DATE (s) DRILLED 5/25/94
SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 8 inches	BORING DEPTH 9.0 feet	BORING LOCATION 10 NW of S7
LOGGED BY Phil Cox	APPROVED BY Doug Bleakly, R.G.		NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		0				ASP	Asphalt 3"	
		21				SW	Sand: brownish green; moist; 20% fines; 50% fine to medium sand; 30% fine, sub angular to angular gravel up to 3/4"; moderate est K (Fill)	
3.0		30						
3.5		36						
		11				SM	Sand: dark brownish gray; dense; 15-20% silt; 80% medium sand; <5% gravel; moderate est K (Fill)	
5.0		17		5				
		18					Medium dense; some odor; shell fragments	5/25/94
		8						
		7					Brownish green; wet below 8.0'; slight odor	
		6				CH	Clay: gray; wet; firm; very low est K; high plasticity (Fill)	
		42				SM		
		22				SP	1" peat at 8.8'	
		5				CL	Sand: light brownish green to dark brownish green; very dense (Fill)	
				10			Sandy gravel; medium dense; <5% fines; fine to medium sand; gravel up to 2"	
							Fat Clay: gray to dark gray; very low est K; medium plasticity (Fill)	
							Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A98

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/25/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	20' east of S7
LOGGED BY	Phil Cox
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		0				ASP	Asphalt: aggregate fill; dry; light brown; odor	
		10 11 7	236			SP	Silty Sand: dark brownish green; moist; 20% fines; 80% fine to coarse sand; <5% gravel up to 1"; moderate est K; HC odor; trace amount of shells (Fill)	
4.0		5 8 5	51	5				
5.5							Wet; clean medium sand; HC odor	5/25/94
		36 23 4	12			SM	Silty Sand: 10% silt; 80% fine to coarse sand (Fill)	
						GP CH	Sandy Gravel: wet; dense; <5% fines; 20% fine sand; 80% subangular to subrounded gravel up to 1.5"; (Fill)	
				10			Fat Clay: gray; wet; very stiff; moderate to high plasticity	
							Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A99

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/25/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	Gas sta. ~ 80' east of shack SE of UST
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		0				ASP	Asphalt 2"	
		22 33 22	1.4			GW	Sandy Gravel: brown to dark brown; dry; 25% coarse sand; 75% coarse, subangular gravel; moderate est K (Fill)	
3.0						SM	Silty Sand: dark green; damp; 15% silt; 75% coarse to medium sand; 10% fine, sub-angular gravel; low to moderate est K (Fill)	
		18 11 16	.9	5		SP	Bluish gray; damp; dense; 10% clay; 20% silt; 70% medium, subangular sand; shell fragments; semi-consolidated (Fill)	5/25/94
5.5						SM	Sand: bluish gray; damp; medium dense; <5% fines; 100% sand; moderate est K (Fill)	
		31 24 21					Silty Sand: bluish gray to gray; 20% silt; 75% medium sand; 5% fine, subrounded gravel; low to moderate est K (Fill)	
				10			Gravel content increase at 8.0': 15% silt; 50% medium sand; 25% coarse, subangular to subrounded gravel	
							Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A100

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/25/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9 feet
BORING LOCATION	35' E of SE corner of gas sta shack
LOGGED BY	Amie Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0		0				ASP	Asphalt 2"	
						GW	Sandy Gravel: brown; dry to damp; 10% silt; 30% medium to coarse sand; 60% coarse, subrounded to subangular gravel; moderate est K (Fill)	
4.0		8 12 14	60				Silty Sand: reddish brown to dark brown; dry to damp; 30% silt; 60% medium to coarse sand; 10% fine, subrounded gravel; low est K (Fill)	
6.0		5 5 6	339	5		SM	Silty Sand: bluish gray; damp; medium dense; 25% silt; 70% medium sand; 5% fine subrounded gravel; low est K (Fill)	▽ 5/25/94
		4 2 2	5				Terminate borehole at 9.0'	
				10				
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A101

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/25/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	~20 S & ctr from gas sta shack
LOGGED BY	Amie Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
1.0						ASP	Asphalt 2"	
						SW	Gravelly Sand: yellowish brown; damp; 65% fine to coarse sand; 35% fine, subangular gravel; moderate est K (Fill)	
3.0		15 31 23	131.9			SM	Silty Sand: dark brown; 30% silt; 60% medium to coarse sand; 10% fine, subangular gravel; low est K; HC odor (Fill)	
		5 6 4	28.4	5			Green; damp; medium dense; 5% clay; 15% silt; 80% fine to medium, subangular sand	∇ 5/25/94
							Sweet odor (solvent or diesel?)	
		8 11 10	1.5			SP	Sand: greenish gray; wet; <5% fines; 100% fine sand; moderate est K; unconsolidated;	
							Fat Clay lens at 8.0': gray; wet; very low est K; high plasticity	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A102

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	~40 N & 20' E of MW 3 scrapyard (near ramp)
LOGGED BY	Aimee Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
0.5						ASP	Asphalt 0.3"	
2.0		51 20 24				GW	Sandy Gravel: reddish brown; damp; 10% silt 25% fine to coarse sand; 65% fine to coarse, angular to subangular gravel; moderate est K (Fill)	
						SP	Black; damp; 15% silt; 30% medium to coarse sand; 55% fine, subangular gravel; low to moderate est K	
4.5		12 21 16 6 17	2.0 108	5			Shell fragments at 2.5'	
						SM	Sand: brown; damp; dense; 100% fine to medium sand; moderate est K (Fill)	5/26/94
7.0		15 4 2 2	6			CH	Silty Sand: gray; damp; medium dense; 15% silt; 85 to 100% medium sand; moderate est K; HC odor; sheen observed (Fill)	
				10			Fat Silty Clay: gray; wet; soft; 55% clay; 45% silt; low est K; high plasticity (Fill)	
							Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A103

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	10.0 feet
BORING LOCATION	South of pump islands on W end of gas sta.
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						CON	Concrete 8"	
2.5		16 15 14	20			SM	Silty Sand: reddish brown; damp; dense; 5% clay; 20% silt; 50% fine to coarse sand; 25% angular to subangular gravel <1"; low to moderate est K (Fill)	
4.0		14 15 14	>1000 >1000				Poorly-graded Sand: dark greenish gray; moist; dense; <5% fines; 100% very fine sand; moderate to high est K; strong HCl odor (Fill)	
6.0		4 4 4		5			Abundance of shell fragments; strong HCl odor	5/26/94
		6 8 9					Soil becoming very moist; strong HCl odor; some interbedded clay	
			>1000	10		CH	Fat Clay: dark greenish gray; saturated; soft; 60% clay; 40% silt; low est K; some organic material present (Fill)	
							Terminate borehole at 10.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A104

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	9.5 feet
BORING LOCATION	North of pump island west side
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						CON	Concrete 8"	
3.0		7 13 19	650			SP	Poorly-graded Sand: dark greenish gray; moist; dense; <5% fines; 100% very fine to fine sand; moderate to high est K strong HCl odor (Fill)	
4.5		3 4 7	>1000	5		CH	Shell fragments present	
6.0		4 5 7	>1000			SP	Fat Clay: greenish gray; very moist; soft; 50%-60% clay; 40%-50% silt; low est K; high plasticity (Fill)	5/26/94
						CH		
		1 1 1	700			SP	Poorly-graded Sand: dark greenish gray; very moist; dense; <5% fines; 100% very fine to fine sand; moderate to high est K (Fill)	
						CH	Fat Clay from 6.0 to 6.5'	
				10			Poorly-graded Sand: wet; slight HCl odor (Fill)	
							Fat Clay: dark greenish gray mottled grayish black; saturated; soft; 60% clay; 40% silt; high plasticity; low est K; moderate odor; abundance of organic material (Fill)	
							Terminate borehole at 9.5'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A105

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	05/26/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	~15' w & 5' S of SW corner gas sta shack
LOGGED BY	Amie Chow
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						CON	Concrete 8"	
1.5		22 55 28	38			SM	Silty Sand: gravel; brownish yellow; dry; 30% silt; 55% fine to coarse sand; 15% fine, angular gravel; moderate est K (Fill)	
3.5							Brown; damp; dense; 20% silt; 65% medium sand; 15% coarse, subangular gravel; low est K (Fill)	
		5 8 7		5			Dark greenish gray; damp; 20% silt; 80% medium sand; low est K; semi-consolidated (Fill)	▽ 5/26/94
6.5								
		7 6 3	103			SP	Sand: gray; wet; loose; <5% fines; 100% medium sand; moderate est K (Fill)	
						CH	Fat Silty Clay: gray; wet; 60% clay; 40% silt; low est K; high plasticity (Fill)	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A106

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	5/27/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	7.25 inches
BORING DEPTH	9.5 feet
BORING LOCATION	East side gas sta bldg next to vent pipe
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						SM	Silty Sand: brownish gray; damp; very dense; 5% clay; 25% silt; 50% very fine to coarse sand; 20% subangular to subrounded gravels up to 3/4"; moderate est K; strong HC odor (Fill)	
3.0	☒	10 11 12	150			SC	Clayey Sand: brownish black; moist; dense; 15% clay; 5% silt; 80% very fine to medium sand; 10% angular to subrounded gravels up to 2"; moderate to low est K; strong HC odor (Fill)	
4.5	☒	8 8 9	163	5			Less gravels observed	
6.0	☒	6 8 9	348			CH	Fat Clay: brownish gray to dark greenish gray; very moist; soft; 60% clay; 40% silt; low est K (Fill)	▽ 5/27/94
	☒	4 3 2	325			SC	Clayey Sand: brownish black; very moist to saturated; loose; 30% clay; 20% silt; 50% very fine to medium sand; <5% gravel; low to moderate est K; very strong HC odor (Fill)	
	☒	2 2 3	22	10			Slight HC odor	
							Terminate borehole at 9.5'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A107

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	06/01/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	Radiological area
LOGGED BY	Jeanne Wahler
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		13 18 21				SM	Poorly-graded Sand: brown; damp; medium density; 5% clay; 15% silt; 65% very fine to very coarse sand; 15% fine gravel to 1/2"; moderate est K (Fill)	
2.5		7 13 8				SP	Poorly-graded Sand: brown; damp to moist; medium brown; <5% fine; 100% very fine to medium sand; high est K (Fill)	▽ 6/1/94
4.0		3 6 6		5			Wet below 4.0'	
							Gray; loose; shell fragments below 5.0'	
		1 1 1				SM	Silty Sand: gray; wet; loose; 5% clay; 15% silt; 80% very fine to medium sand; moderate est K (Fill)	
				10		CH	Fat Clay: gray mottled black; wet; very soft; 60% clay; 40% silt; <5% sand; very low est K; high plasticity (Fill)	
							Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A108

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	8/31/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	SWMU 1 - South Central portion
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
		16 50/5				SM	Silty Sand: brown; damp; 30% silt; 50% very fine to tine sand; 20% fine to medium subangular gravel; moderate est K; semi-consolidated (Fill)	
		7				ASP	Asphalt 8" thick	
3.5		12 15				SM	Silty Sand: yellowish brown; damp to moist; medium dense; 20% clay; 20% silt; 60% fine to medium sand; moderate est K (Fill)	
5.5		7 11 10	23	5		SP	Poorly-graded Sand: yellowish brown; damp to moist; medium dense; moderate est K; shell fragments (Fill)	
6.5		4 6 6	50			SC	Clayey Sand: olive gray to black; wet; firm; 10% clay; 90% fine to medium sand; moderate est K; HC odor; HC staining (Fill)	▽ 8/31/94
		2 3 3	70	10			Terminate boring at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A109

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	08/31/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	NE of MW3 SLSA / SWMU 1
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						SM	Silty Sand: brown; damp 30% silt; 50% very fine to fine sand; 20% fine to medium, angular to subangular gravel; well graded; moderate est K (Fill)	
3.5		7 8	5.0			SP	Poorly-graded Sand: yellowish brown; damp; medium density; 15% silt; 5% clay; 80% fine to medium sand; moderate est K; Fe oxide layers throughout; abundant shell fragments (Fill)	
5.0		7 4 9	9.0	5			Increased moisture with depth.	
6.5		10 5 5					Strong HCl and HC odors below 6.0'	
		7 2 3 3	5.0 20				Olive gray; wet between 6.5 and 7.0'	
						CH	Fat Clay: brownish black; saturated; firm; 70% clay; 30% silt; very low est. k; high plasticity; moderate to strong HC odor (Fill)	
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A110

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	08/31/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	8.0 feet
BORING LOCATION	NE of MW3 SLSA /SMWU 1
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						SM	Silty Sand: yellowish brown; damp; 30% silt; 50% very fine to fine sand; 20% subangular gravel; moderate est K (Fill)	
3.0		21 7 8	3.0			CH	Fat Silty Clay: brownish gray; damp; stiff; 50% clay; 30% silt; 20% fine to coarse sand; low est K; medium plasticity (Fill)	
							Dense layer of crushed shell fragments at 2.5' (~3" thick) (Fill)	
6.0		4 4 3 2 2 2	3.0 3.0 4.0	5		SC	Clayey Sand: dark yellowish brown; damp to moist; loose; 15% clay; 5% silt; 80% sand; moderate to high est K (Fill)	
						CH	Fat Clay: brownish black; moist; firm; 60% clay; 30% silt; 10% fine to medium sand (sand mostly present in thin lenses <.25"thick); low est K; high plasticity (Fill)	
				10			Wet below 7.0'	
							Terminate borehole at 8.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200	DRILLING LOG	BORING NO. A111

SITE NAME AND LOCATION FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA		PROJECT NO. 1625-074
DRILLING CONTRACTOR AND LICENSE NO. Turner Explorations, Inc. C57-602720	DRILLING METHOD Hollow-stem Auger	DATE (s) DRILLED 09/02/94
SAMPLER TYPE AND SIZE 2.5-inch CA Modified Split Spoon	BORING DIAMETER 8 inches / BORING DEPTH 18.5 feet	BORING LOCATION SWMU 1 South Central
LOGGED BY Terrence Kinn	APPROVED BY Doug Bleakly, R.G.	NOTES

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ML	Sandy Silt: yellowish brown; damp; 5% clay 65% silt; 20% very fine to medium sand; 10% subrounded to subangular gravel; moderate to low est K (Fill)	
		15 18 25 9 15 8 6 6 5 3	21	5		SP	Poorly-graded Sand: light to moderate yellowish brown; damp; dense; 100% very fine to medium sand; moderate to high est K (Fill) Brownish gray; very moist; minor clay lens (<3" thick); wet below 8.0'	
		3 2 3 3 4 2 3 5 2 2 3	2.5	10		CH	Fat Clay: brownish black; soft; wet; 55% clay; 45% silt; low est K; high plasticity (Fill) Strong odors; minor staining; chips of tarpitch-type material present	
		14 21 22 4 8 9 5	20	15		SM	Silty Sand: brownish gray; wet; medium density (Fill)	
		5 6 2 3 3				CH	Fat Clay: brownish green to brownish black; soft; wet; 65% clay; 35% silt; very low est K; odorous; minor staining high plasticity; grass/organic material present (Fill) Terminate borehole at 18.5'	
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A112

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1825-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/02/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	8.0 feet
BORING LOCATION	SWMU 1 South Central
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION (USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ML	Well-graded Silty Sand: yellowish brown; damp; very dense; 55% silt; 5% clay; 25% very fine to medium sand; 15% angular to subangular gravel up to 1.5" low est K (Fill)	
3.5		27 38 34	6.3			CH	Fat Sandy Clay: olive gray; damp; firm; 60% clay; 20% silt; 20% fine to medium sand; very low est K; moderate to high plasticity; abundance of shell fragments (Fill)	
5.5 6.0 7.0		25 50 25 28 14 13 8 5	11.8 75	5		SP	Poorly-graded Sand: yellowish to dark yellowish brown; damp; very hard; 100% fine to medium sand; moderate to high est K (Fill)	
						CH	Olive black below 6.5'; wet; strong HCl odors; staining observed minor debris (glass and shells)	
				10			Fat Clay: olive gray; wet; soft; 70% clay; 30% silt; very low est K; high plasticity; grasses present in clay; odor (Fill)	
							Terminate borehole at 8.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A113

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/02/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	8.0 feet
BORING LOCATION	Ward 2 South Central
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ML	Silty Sand: yellowish brown; damp; very dense; 55-60% silt; 25% fine to medium sand; 15-20% gravel; 5% clay; low est K; low plasticity (Fill)	
						GM	Gravelly Sand: silt; light brown; damp; dense; <5% clay; 10% silt; 20% fine to medium sand; 70% angular to subangular gravel; moderate est K (Fill)	
						CH	Fat Sandy Clay: olive gray; damp; firm; 60% clay; 20% silt; 20% fine to medium sand; moderate to high plasticity; low est K; abundance of shell fragments in the upper layer of clay (Fill)	
7.5		14 22 15	6.7	5		SP	Poorly-graded Sand: moderate to dark brown; damp; dense; 100% fine to medium sand; moderate to high est K (Fill)	
				10			Olive grey below 7.5'; very moist to wet; abundance of shell fragments (Fill)	
							Terminate borehole at 8.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A114

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/06/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	Ground A/AOC 2
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 3"	
2.5		49 49 48	30			SM	Silty Sand: yellowish brown; damp; 5-10% clay; 25% silt; 60% very fine to medium sand; 10-15% subangular to angular gravel; well graded moderate to low est K (Fill)	
3.5		27 35 30	24.0			SP	Olive gray to grayish black; moist; hard; <5% clay; 15% silt; 80% very fine to medium sand; 5% subrounded to subangular gravel; moderate to low est K; shell fragments present (Fill)	
5.0		16 16 14	20	5				
		5 4 5	24			CH	Poorly-graded Sand: olive to grayish black; damp; hard; 95% very fine to fine sand; 5% silt; moderate to high est K; some shell fragments (Fill)	
							Wet to saturated below 5.5'	
				10			Slight HCl odor.	
							Fat Clay: olive gray to dark gray; wet; soft; 70% clay; 30% silt; very low est K; high plasticity; abundance of wood fragments in the soil; trace of grasses (Fill)	
							Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

CTO 200 | DRILLING LOG | BORING NO. A115

SITE NAME AND LOCATION	FISCO - ALAMEDA FACILITY / ALAMEDA ANNEX SITE, CALIFORNIA
PROJECT NO.	1625-074
DRILLING CONTRACTOR AND LICENSE NO.	Turner Explorations, Inc. C57-602720
DRILLING METHOD	Hollow-stem Auger
DATE (s) DRILLED	09/06/94
SAMPLER TYPE AND SIZE	2.5-inch CA Modified Split Spoon
BORING DIAMETER	8 inches
BORING DEPTH	9.0 feet
BORING LOCATION	Swell 1 South Central
LOGGED BY	Terrence Kinn
APPROVED BY	Doug Bleakly, R.G.
NOTES	

SAMPLE ID AND TIME	SAMPLING INTERVAL	BLOWS/6 in	FIELD READINGS (ppm)	DEPTH (ft)	GRAPHIC LOG	USCS SYMBOL	CLASSIFICATION AND DESCRIPTION USCS classification, color, moisture, density/consistency, percentage of clay, silt, sand and gravel, grain size and shape, estimated permeability (k), odor, staining, misc. materials present, plasticity, consolidation (formation name)	DRILLING NOTES water levels, with date/time, character of drilling, etc.
						ASP	Asphalt 2"	
						SM	Silty Sand: yellowish brown; damp; 5-10% clay; 30% silt; 55% very fine to fine sand; 10-15% subrounded to subangular gravel; low to moderate est K (Fill)	
		20	13.0					
4.0		22				CL	Clay: dark yellowish brown; damp; hard; 40% clay; 30% silt; 30% fine to medium sand; very low est K; moderate plasticity; shell fragments (Fill)	
		23	22.0					
		22		5				
5.5		22				SP	Poorly-graded Sand: dark yellowish brown; damp; very dense; 100% very fine to medium sand; moderate to high plasticity (Fill)	
		23						
		4						
7.0		5	17.0					
		6						
		4				CH	Fat Sandy Clay: olive gray; wet; firm; 50% clay; 30% silt; 10% fine to medium sand; very low est K; high plasticity; slight HCl odor; minor shells present (Fill)	
		3						
		2	15.0					
				10			Terminate borehole at 9.0'	
				15				
				20				
				25				
				30				
				35				

ATTACHMENT C5

ADDITIONAL BORING LOGS FOR FISCA WAREHOUSE AREA

MW-11 Area

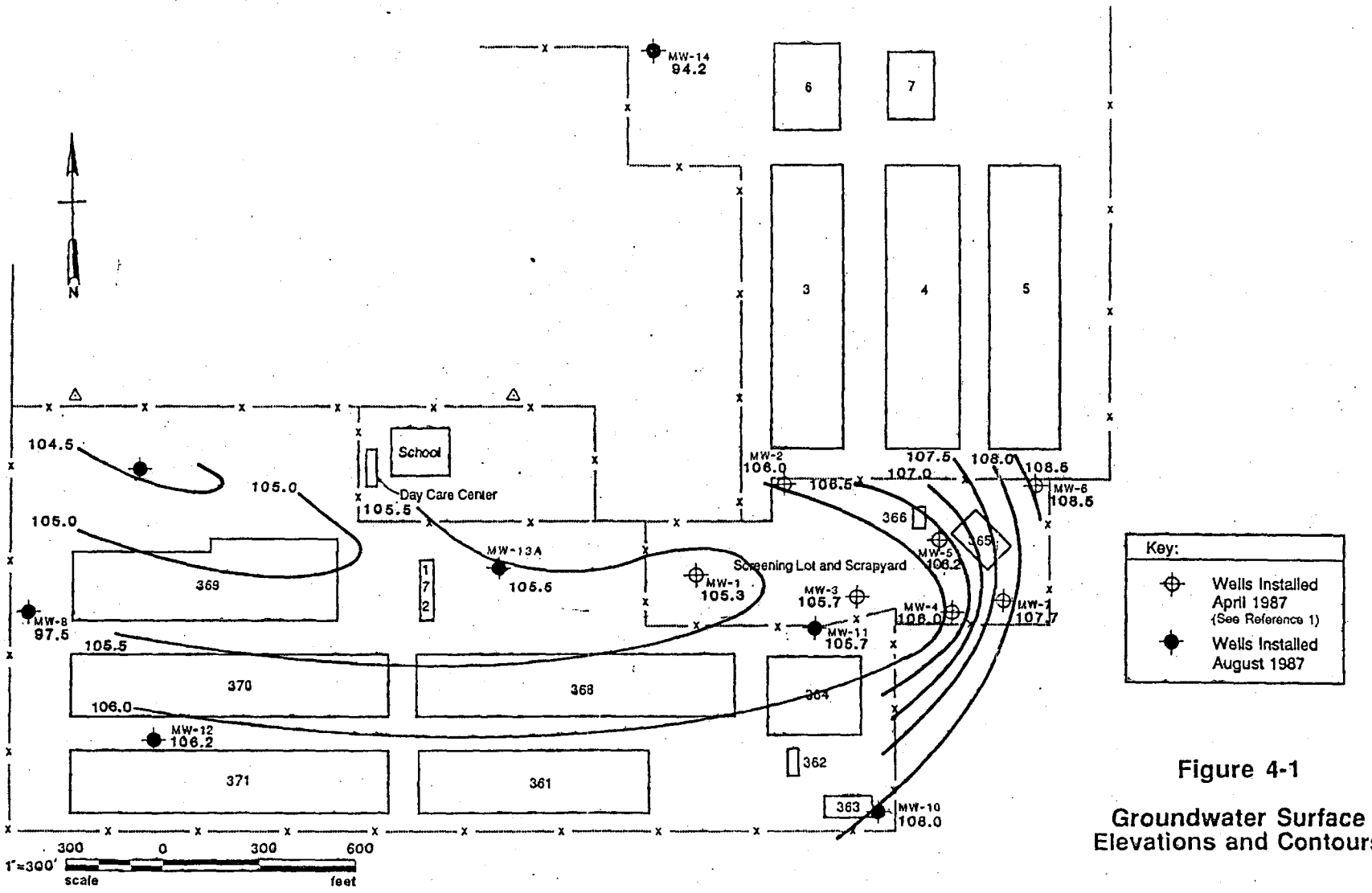


Figure 4-1

Groundwater Surface Elevations and Contours

ERM-West 8/87

Job #400.30

Environmental Resources Management

Drilling Log

Project: Warehouse Area Owner: USN

Location: Supply Annex, Alameda W.O. Number: 40033

Boring Number: MW-8 Total Depth: 16' Diameter: 6" x 2"

Surface Elevation: 109.1' Water Level: Initial: 7.5' 24-hrs.:

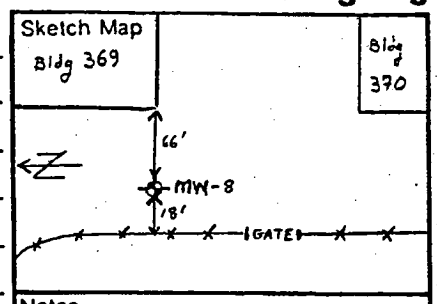
Screen: Dia. 2" Length: 5' Slot Size: .02"

Casing: Dia. 2" Length: 10' Type: PVC

Drilling Company: Enexco Drilling Method: hollow stem auger

Driller: Rudy Log By: CMH Date Drilled: 8-3-87

Sketch Map



Notes

Depth (Feet)	Graphic Log	Recovery	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				gravel, gravel sized asphalt pieces, serpentine chunks, 0" - 10"
1				clayey sandy silt, yellow brown, dry, slightly plastic
2			B-8 2.5-3	
3				serpentine gravel
4				
5				gravel mixed with yellow brown sandy silt and gray clay
6				
7				
8				clay, dark gray, moist, soft, micaceous
9				
10				clay, gray, very moist, soft, micaceous
11				
12				
13				
14				
15				
16				

Environmental Resources Management

Drilling Log

Project: Warehouse Area Owner: USN

Location: Supply Annex, Alameda W.O. Number: 40033

Boring Number: MW-9 Total Depth: 15.5' Diameter: 6" x 2"

Surface Elevation: 109.1' Water Level: Initial: 8' 24-hrs.:

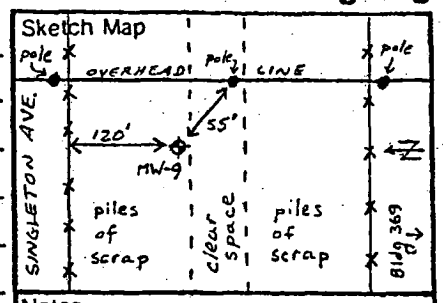
Screen: Dia. 2" Length: 5' Slot Size: .02"

Casing: Dia. 2" Length: 10' Type: PVC

Drilling Company: Enexco Drilling Method: hollow stem auger

Driller: Bill Log By: CMH Date Drilled: 8-3-87

Sketch Map



Notes

Depth (Feet)	Graphic Log	Recovery	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				0" - 4" ashpalt
				gravel, coarse sand, brown clayey silt
1				gray silty clay, dry, slightly stiff, micaceous, slightly plastic grading to black immediately
2				petroleum distillate odor just above concrete slab
				concrete slab, 4" thick, top at 28"
3			B-9 3.5-4	gray green silty clay, barely moist, soft, micaceous, plastic, petroleum odor
4				
5				
6				
7				
8				
9				olive gray silty clay, fat, saturated, plastic, soft, micaceous, no odor
10				
11				
12				

Environmental Resources Management

Drilling Log

Project Warehouse Area Owner USN

Location Supply Annex, Alameda W.O. Number 40033

Boring Number MW-9 Total Depth 15.5' Diameter 6" x 2"

Surface Elevation 109.1' Water Level: Initial 8' 24-hrs.

Screen: Dia. 2" Length 5' Slot Size .02"

Casing: Dia. 2" Length 10' Type PVC

Drilling Company Enexco Drilling Method hollow stem auger

Driller Bill Log By CMH Date Drilled 8-3-87

Sketch Map

Notes

Depth (Feet)	Graphic Log	Recovery	Sample Number	Description/Soil Classification (Color, Texture, Structures)
13				
14				
15				petroleum odor
16				very strong petroleum distillate odor while pulling augers

Environmental Resources Management

Drilling Log

Project: Warehouse Area Owner: USN

Location: Supply Annex, Alameda W.O. Number: 40033

Boring Number: MW-10 Total Depth: 15.5' Diameter: 6" x 2"

Surface Elevation: 113.8' Water Level: Initial: 5' 24-hrs.:

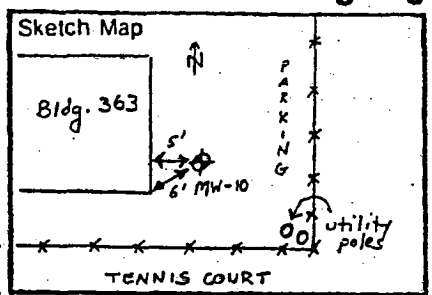
Screen: Dia. 2" Length: 5' Slot Size: .02"

Casing: Dia. 2" Length: 10' Type: PVC

Drilling Company: Enexco Drilling Method: hollow stem auger

Driller: Bill Log By: CMH Date Drilled: 8-24-87

Sketch Map



Notes

Depth (Feet)	Graphic Log	Recovery	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				asphalt
1				sandy clay, mottled brown and gray; sand portion is coarse; gravel, some cobble-sized pieces immediately under asphalt; slightly moist, moderately stiff
2				
3			B-10 3.3.5	
4				silty clay, blue gray, stiff, slightly moist, shell fragments (<1mm), (no mica)
5				
6				silty clay, blue gray, very moist, very soft, very plastic, very sticky, no shell fragments, no mica
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				blue-gray clay and gray-black peat, strong rotting eggs odor

Environmental Resources Management

Drilling Log

Project: Warehouse Area Owner: USN

Location: Supply Annex, Alameda W.O. Number: 40033

Boring Number: MW-11 Total Depth: 15.5' Diameter: 6" x 2"

Surface Elevation: 114.6' Water Level: Initial: 7' 24-hrs.:

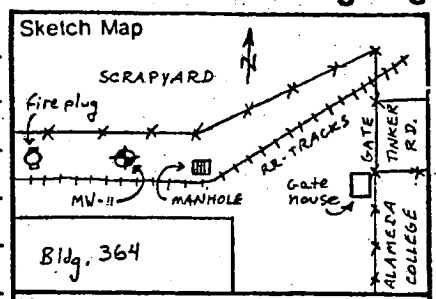
Screen: Dia. 2" Length 5' Slot Size .02"

Casing: Dia. 2" Length 10' Type PVC

Drilling Company: Enexco Drilling Method: hollow stem auger

Driller: Rudy Log By: CMH Date Drilled: 8-4-87

Sketch Map



Notes

Depth (Feet)	Graphic Log	Recovery	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				asphalt, 4"
1				brown sandy clay, slightly plastic, dry, medium to coarse grained, some gravel immediately under asphalt
2			B-11 2-2.5 & 2.5-3	
3				
4				
5				more brown clayey sand, medium grained, dry
6				
7				
8				saturated brown clayey sand
9				blue-gray sandy clay, saturated, moderately plastic, soft, slightly sticky
10				
11				
12				
13				
14				
15				
16				faint creosote-like smell
				strong H_2S smell noted before grouting

Environmental Resources Management

Drilling Log

Project: Warehouse Area Owner: USN

Location: Supply Annex, Alameda W.O. Number: 40033

Boring Number: MW-12 Total Depth: 15.5' Diameter: 6" x 2"

Surface Elevation: 111.6' Water Level: Initial: 7.5' 24-hrs.:

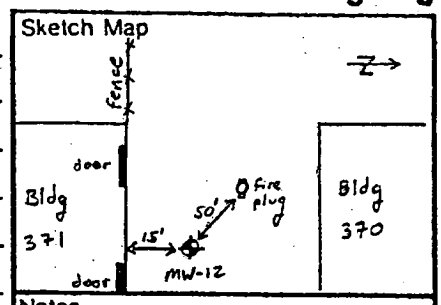
Screen: Dia. 2" Length: 5' Slot Size: .02"

Casing: Dia. 2" Length: 10' Type: PVC

Drilling Company: Enexco Drilling Method: hollow stem aguer

Driller: Rudy Log By: CMH Date Drilled: 8-4-87

Sketch Map



Notes

Depth (Feet)	Graphic Log	Recovery	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				6" concrete slab
1				gray-black silty clay, some gravel and brown/red sand, dry
2				sand, brown, dry, dead roots, gravel, gravel-sized chunks
3			B-12 4-4.5	silty sandy clay; gray-black, dry, moderately stiff, slightly plastic, some gravel
4				
5				
6				
7				
8				clay, dark gray, moist, soft, slight petroleum distillate odor
9				
10				
11				
12				
13				soft and very moist, still has odor
14				
15				color change to gray-black with streaks of black peat and black clay, rotton egg odor
16				

Environmental Resources Management

Drilling Log

Project: Warehouse Area Owner: USN

Location: Supply Annex, Alameda W.O. Number: 40033

Boring Number: MW-13 Total Depth: 20.5' Diameter: 6" x 2"

Surface Elevation: N/A Water Level: Initial: 12.5' 24-hrs.:

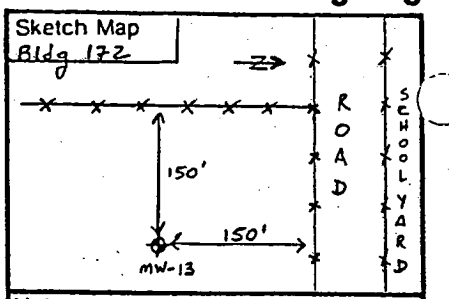
Screen: Dia.: N/A Length: N/A Slot Size: N/A

Casing: Dia.: N/A Length: N/A Type: N/A

Drilling Company: Enexco Drilling Method: hollow stem auger

Driller: Rudy Log By: CMH Date Drilled: 8-5-87

Sketch Map



Notes

Depth (Feet)	Graphic Log	Recovery	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				gravel (paving surface of storage yard)
1				brown silty clayey sand, dry, much gravel
2			B-13 2-2.5	
3				
4				brown silty clayey sand, dry, fine to coarse and silty clay, blue-gray, slightly moist, plastic, slightly stiff, faint sweet odor
5				
6				
7				very stiff silty clay, brown-gray, very little extremely coarse sand, slightly moist
8				
9				
10				sand portion increasing
11				
12				
13				gray sandy clay, much very fine to fine sand, saturated, soft, strong odor at 12.5' to 15'
14				
15				
16				peat, brown streaked with gray clay, very strong rotten egg odor
17				
18				more of the same gray sandy clay (same as 12.5' - 15' interval)
19				
20				creosote-like odor
				augers won't stay unplugged - casing cannot be installed; formation collapsed to 12.5' upon pulling augers. Hole abandoned and backfilled with bentonite

Environmental Resources Management

Drilling Log

Project: Warehouse Area Owner: USN

Location: Supply Annex; Alameda W.O. Number: 40033

Boring Number: MW-13A Total Depth: 20.5' Diameter: 6" x 2"

Surface Elevation: 113.1' Water Level: Initial: 12' 24-hrs.:

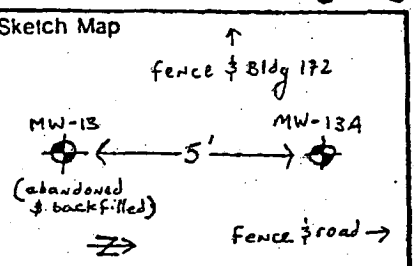
Screen: Dia.: 2" Length: 5' Slot Size: .02"

Casing: Dia.: 2" Length: 10' Type: PVC

Drilling Company: Enexco Drilling Method: hollow stem auger

Driller: Rudy Log By: CMH Date Drilled: 8-5-87

Sketch Map



Notes

Depth (Feet)	Graphic Log	Recovery	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				paving gravel
1				brown silty clayey sand, dry, gravel
2				
3				
4				brownish-gray silty very-sandy clay, slightly moist, slightly stiff, sand portion is coarse, faint odor of -?-
5				
6				silty clay, brown gray (more brown than above unit), rare coarse sand, slightly moist
7				
8				
9				
10				
11				
12				
13				gray, sandy clay, much fine to very fine sand and silt, saturated with interlaminated gray clayey sand
14				
15				
16				
17				gray-brown peat and gray clay mixed together, saturated, moderately stiff
18				
19				
20				
21				mild creosote-like smell at 12' getting stronger towards bottom of hole; smell at hole bottom very rotten. (rotten egg smell upon pulling augers)

Environmental Resources Management

Drilling Log

Project: Warehouse Area Owner: USN

Location: Supply Annex, Alameda W.O. Number: 40033

Boring Number: MW-14 Total Depth: 25.5' Diameter: 6" x 2"

Surface Elevation: 110.2' Water Level: Initial: 10' 24-hrs.:

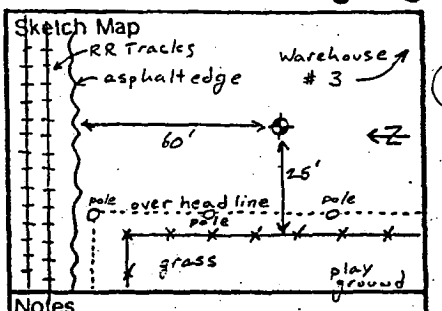
Screen: Dia. 2" Length: 5' Slot Size: .02"

Casing: Dia. 2" Length: 10' Type: PVC

Drilling Company: Enexco Drilling Method: hollow stem auger

Driller: Rudy Log By: CMH Date Drilled: 8-5-87

Sketch Map



Notes

Depth (Feet)	Graphic Log	Recovery	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				asphalt, 4"
1				brown sand, fine to coarse, dry, slightly stiff, some small gravel
2			B-14	brown clayey sand, fine to coarse, dry, slightly stiff
3			2.5-3	
4				
5				clayey sand, dark gray, fine to medium, dry, soft
6				brown-gray sand, silty, soft, slightly moist (sand is fine to med.
7				sandy silt, med. blue-gray, moist (sand is fine to medium)
8				silty clay, dark blue-gray, plastic, soft, very moist
9				
10				
11				clay, dark blue-gray, plastic, soft sticky, fat, saturated
12				
13				
14				
15				
16				increasing portion of fine sand
17				
18				
19				
20				
21				decreasing moisture content to very moist/moist
22				
23				
24				
25				

(2) MAY 88
PHASE II
WAREHOUSE COPY
1988

DEPARTMENT OF THE NAVY
WESTERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CONTRACT N62474-85-D-5627

SITE INVESTIGATION AT THE WAREHOUSE AREA - PHASE II

ERM-West

TABLE 3-1
SOIL SAMPLING SITES AND DATA

SAMPLE LOCATION	INTERVAL	SOIL DESCRIPTION	COMMENTS
SB-1	0'-0.5'	Serpentine gravel & brown sand	20' northeast from the 4 cover rectangular sewer manhole (labeled IJJ on the public works utility map)
	1'-1.5'	Brown sandy clay	
	4.5'-5'	Brown grey sandy clay, saturated	
SB-2	0'-0.5'	Serpentine gravel, gravel-sized asphalt, brown coarse sand	280' south of northern scrapyard fence, 5' east of western scrapyard fence
	1'-1.5'	Brown sand, semi-consolidated	
	4'-4.5'	Brown med. sand to brown clayey sand	
SB-3	0'-0.5'	Brown clayey sand, serpentine gravel	140' south of northern fence, 100' west of western scrapyard fence, 145' north of asphalt edge
	1'-1.5'	Brown clayey sand	
	4.5'-5'	Fine sand, slight clay content, slightly moist	
SB-4	0.5'-1'	Gravel, brown sandy clay, shell fragments	Top 6" concrete. 50' east of fence, 15' north of building 371
	1.5'-2'	Blue-grey clay, brown coarse sand, shell fragments	
	4.5'-5'	Blue-grey clay, moist, stiff	
SB-5	0'-0.5'	Brown silty clay, livegrass, roots	20' west of tennis court fence, in Navy housing area
	1'-1.5'	Dark brown clay, stiff & gravel	
	4.5'-5'	Red silty clay, coarse sand, and small gravel at 4.5'	
		Blue grey clay, stiff at 5'	

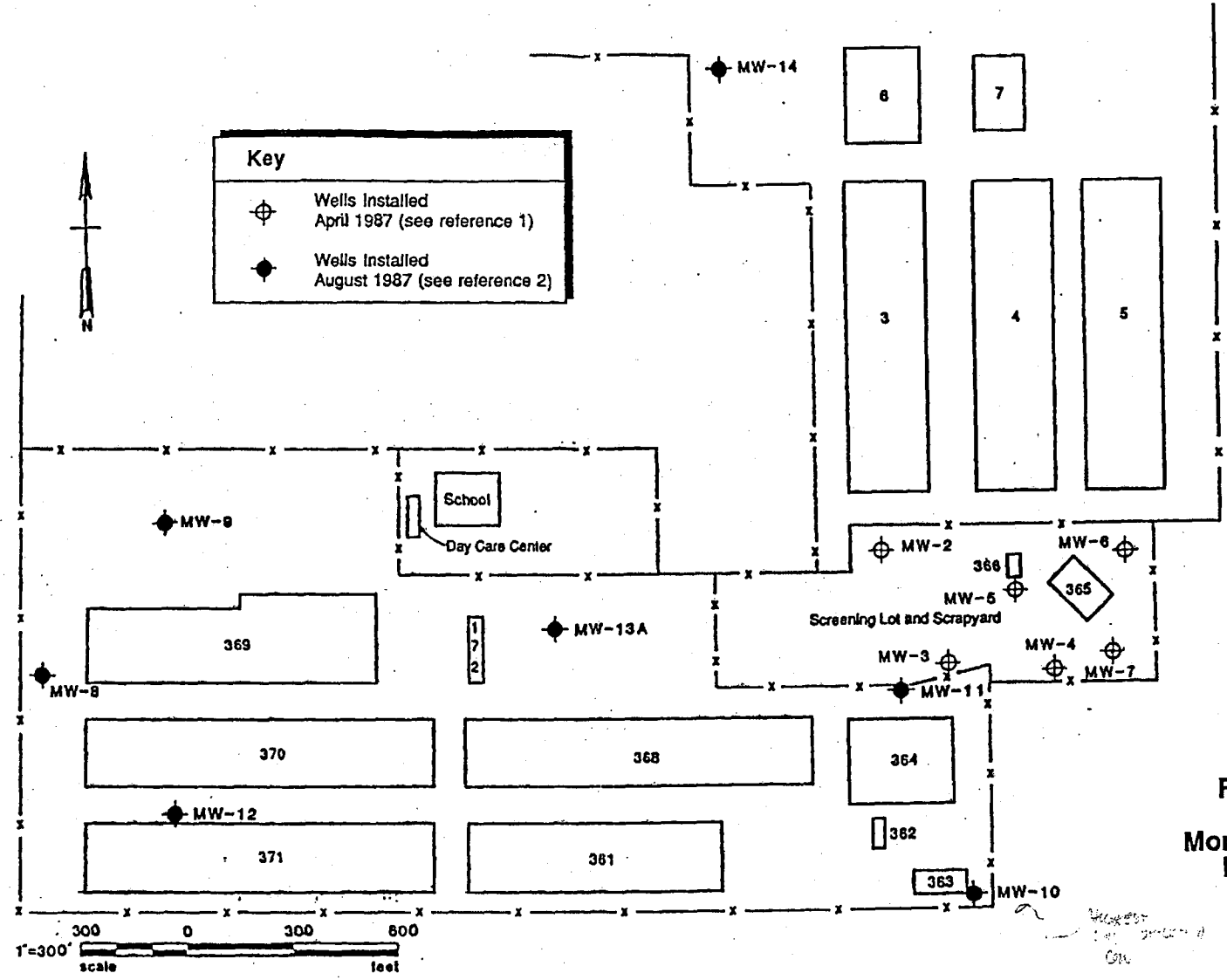


Figure 3-2

Monitoring Well Locations

ERM-West 3/88
Job #400.62

ATTACHMENT D

HISTORICAL MAPS AND PHOTOGRAPH

LIST OF FIGURES

Figure

D-1 1903 Bathymetry for Alameda Point

D-2 1906 Historic Map

D-3 1915 Historic Map

D-4 1919 Historic Map

D-5 1927 Historic Map

D-6 1930 Historic Map

D-7 1930 Oblique Aerial Photograph

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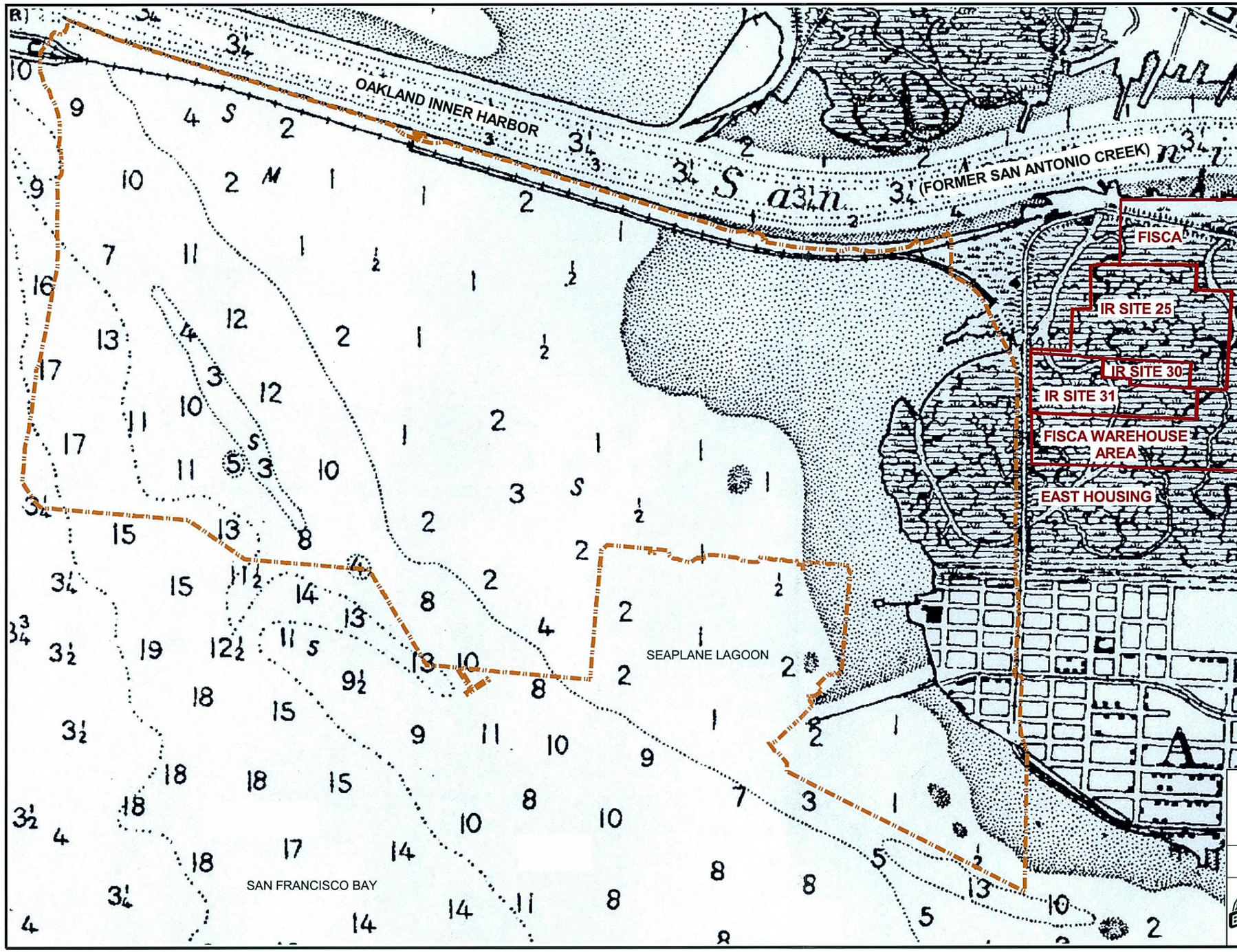


LEGEND

- NAVY BASE BOUNDARY
- HISTORIC ESTUARY
- TIDAL ZONE
- 5 — DEPTH OF BAY IN FATHOMS (ONE FATHOM EQUALS 6 FEET)

NOTE:

IR – INSTALLATION RESTORATION (PROGRAM)

SOURCE:

UNITED STATES COAST GEODETIC SURVEY 1903

N

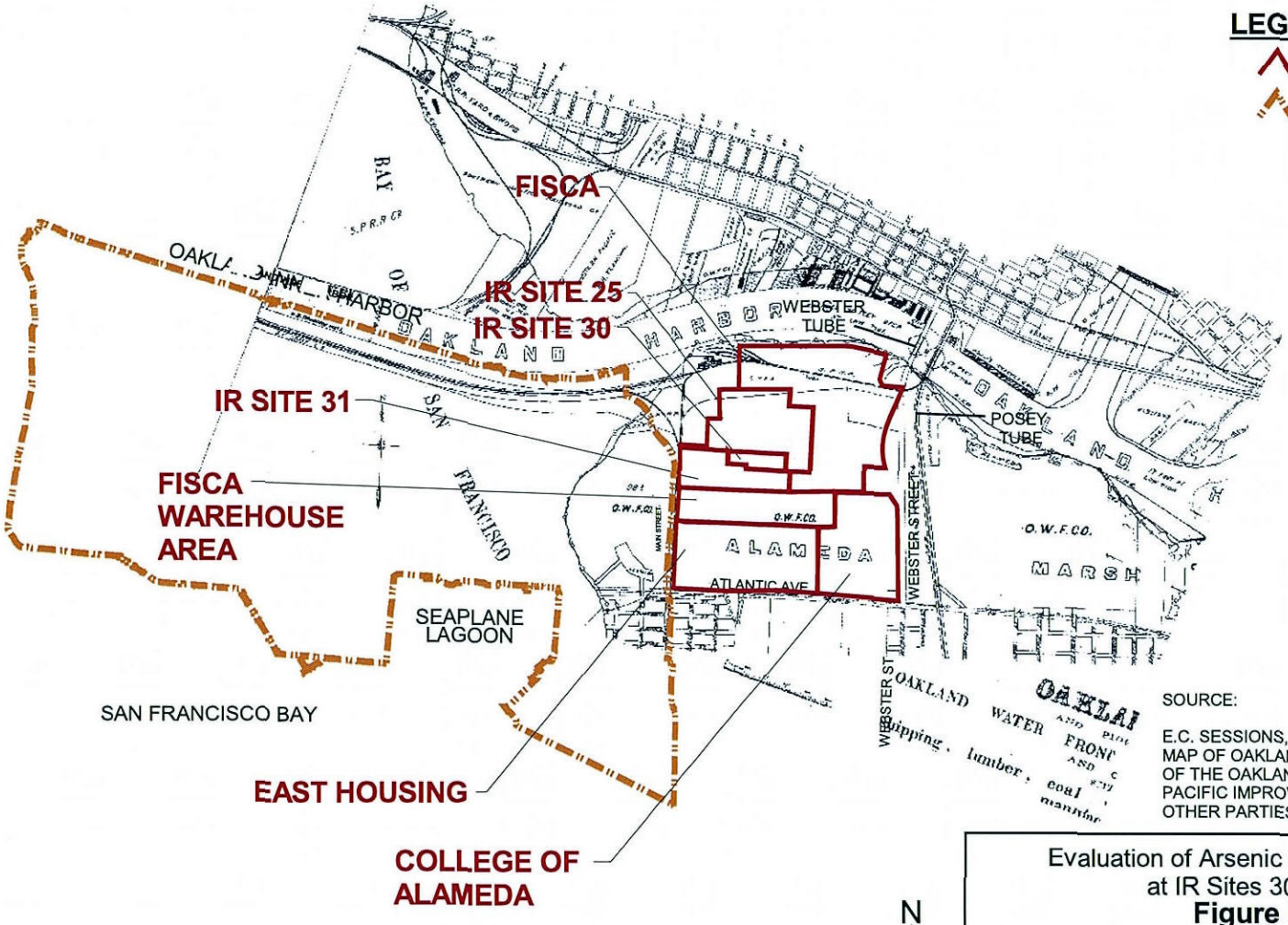
1200 0 1200 Feet

Evaluation of Arsenic and Other Metals
at IR Sites 30 and 31
Figure D-1
1903 Bathymetry for Alameda Point

Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/5/07
File No.: 089L15562
Job No.: 23818-089
Rev No.: C



LEGEND

SITE BOUNDARIES

ALAMEDA POINT

SOURCE:

E.C. SESSIONS, 1906
MAP OF OAKLAND HARBOR AND PROPERTIES OF THE OAKLAND WATER FRONT CO., PACIFIC IMPROVEMENT CO., AND OTHER PARTIES

Evaluation of Arsenic and Other Metals at IR Sites 30 and 31

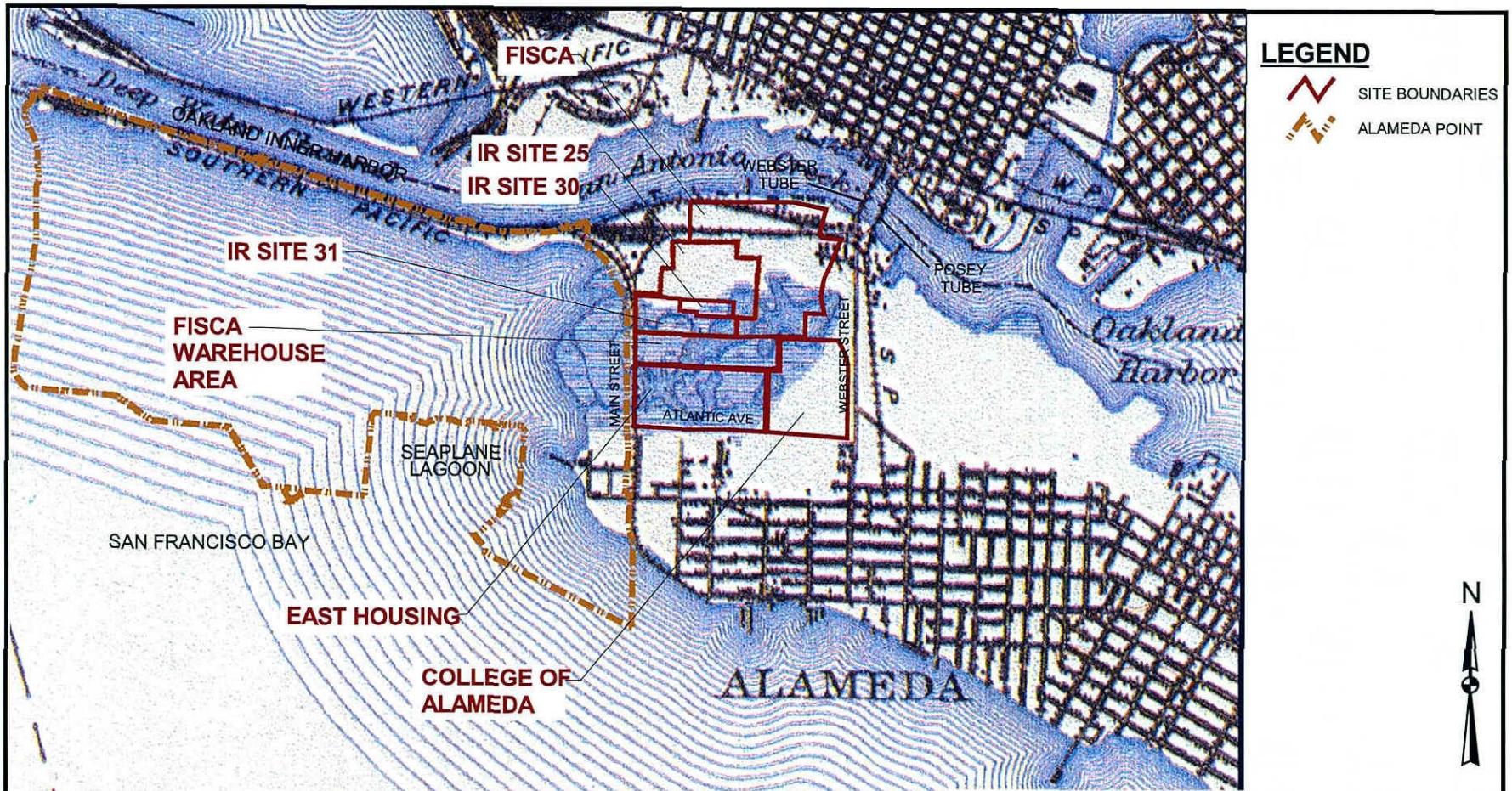
Figure D-2

1906 Historic Map

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/5/07
File No.: 089E15572
Job No.: 23818-089
Rev No.: C



SOURCE:

1915 QUADRANGLE MAP UNITED STATES GEOLOGIC SURVEY

3000 0 3000 Feet

Evaluation of Arsenic and Other Metals at IR Sites 30 and 31

Figure D-3

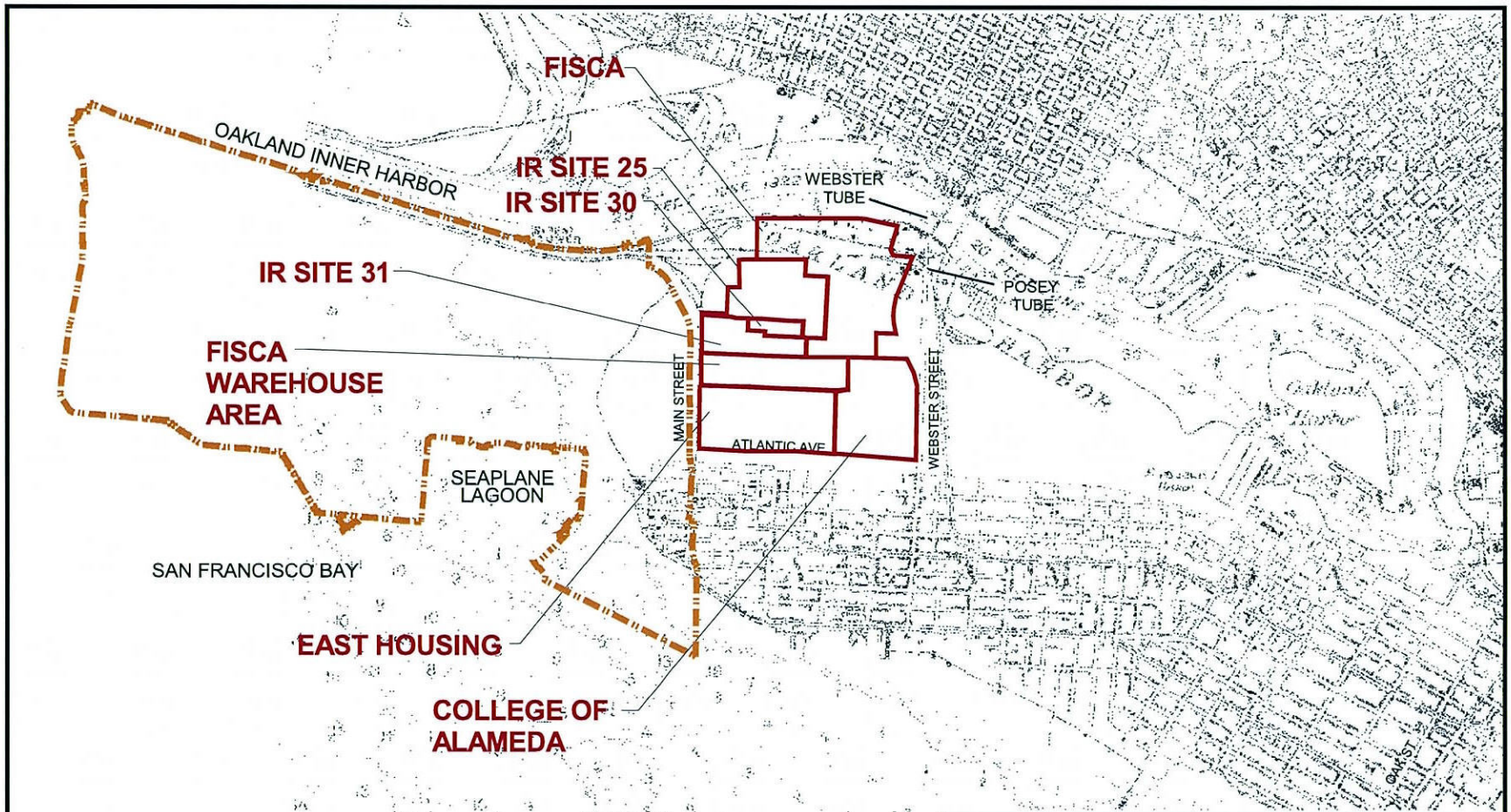
1915 Historic Map

Alameda Point, Alameda, California

Bechtel Environmental, Inc.

CLEAN 3 Program

Date: 6/5/07
File No.: 089E15569
Job No.: 23818-089
Rev No.: C



Evaluation of Arsenic and Other Metals
at IR Sites 30 and 31

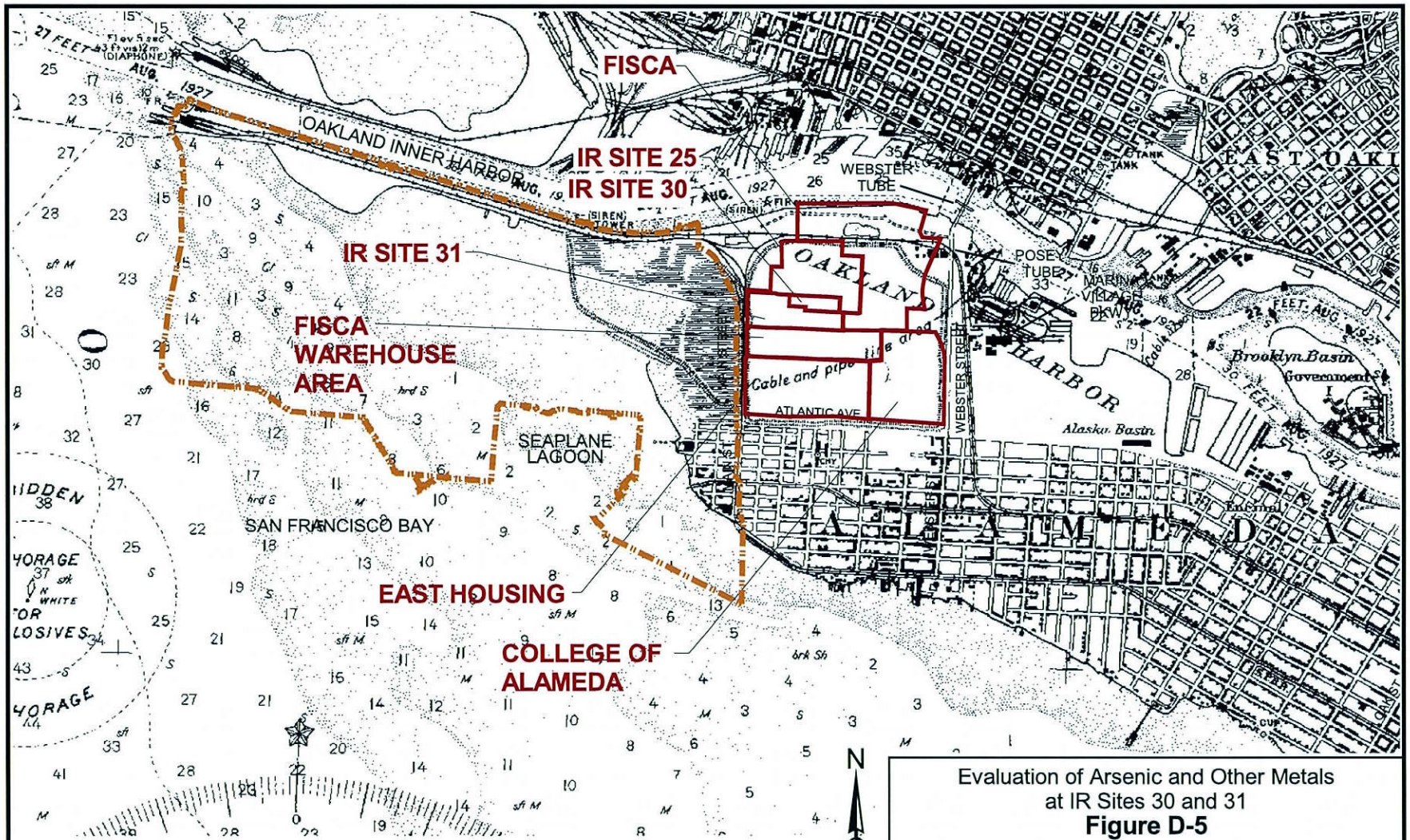
Figure D-4

1919 Historic Map

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/5/07
File No.: 089E15568
Job No.: 23818-089
Rev No.: C



LEGEND

SITE BOUNDARIES

ALAMEDA POINT

SOURCE:

UNITED STATES COAST GEODETIC SURVEY 1927

Evaluation of Arsenic and Other Metals at IR Sites 30 and 31

Figure D-5

1927 Historic Map

Alameda Point, Alameda, California

Bechtel Environmental, Inc.

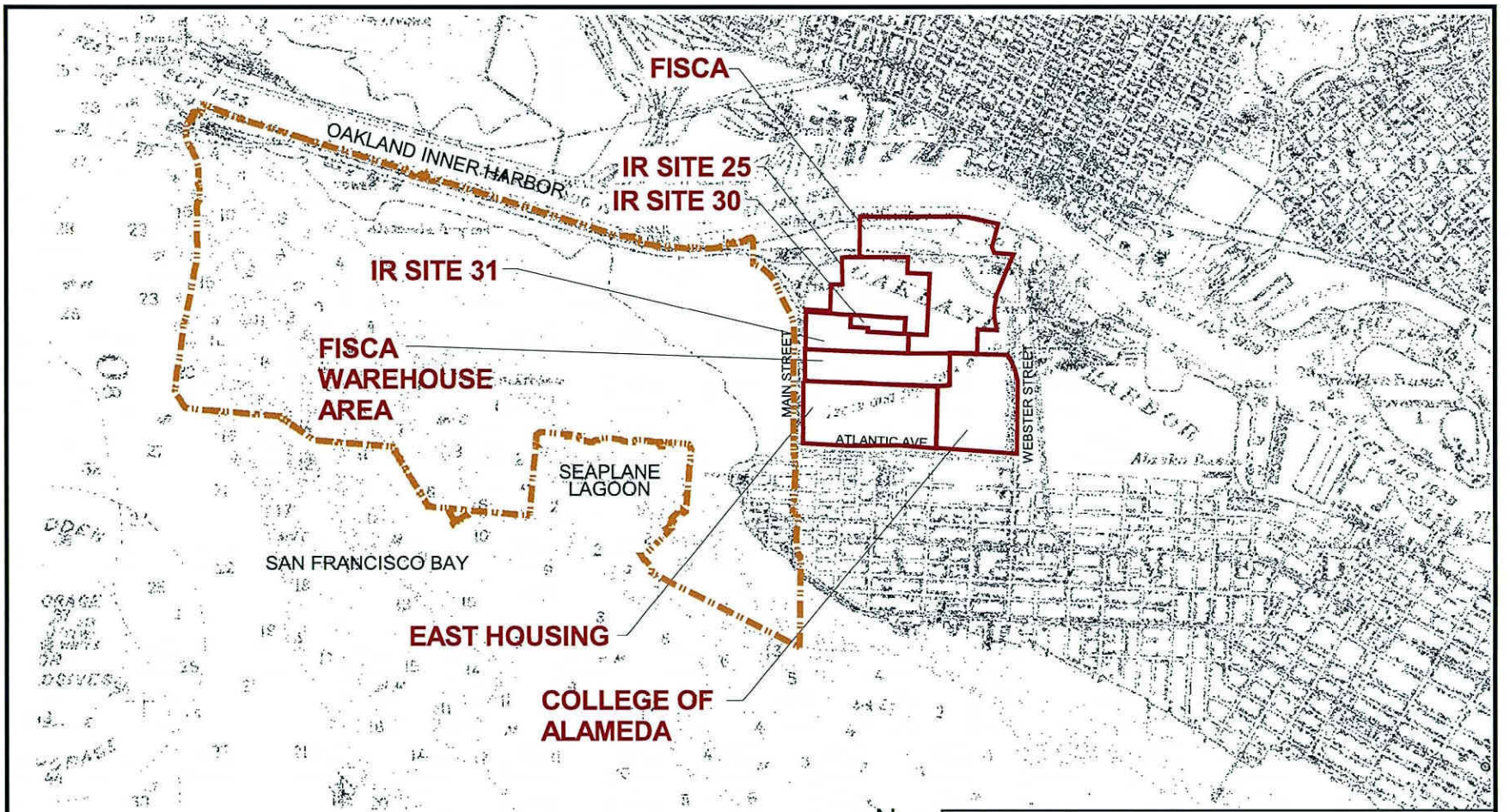
CLEAN 3 Program

Date: 6/5/07

File No.: 089E15566

Job No.: 23818-089

Rev No.: C



LEGEND

SITE BOUNDARIES

ALAMEDA POINT

SOURCE:

UNITED STATES COAST GEODETIC SURVEY 1930

3000 0 3000 Feet

N

Evaluation of Arsenic and Other Metals
at IR Sites 30 and 31

Figure D-6

1930 Historic Map

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/5/07
File No.: 089E15567
Job No.: 23818-089
Rev No.: C

A-21

Evaluation of Arsenic and Other Metals
at IR Sites 30 and 31

Figure D-7

1930 Oblique Aerial Photograph

Alameda Point, Alameda, California

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 6/5/07
File No.: 089E15570
Job No.: 23818-089
Rev No.: B

APPENDIX B

POST-REMOVAL EXPOSURE POINT CONCENTRATIONS IN SOIL

Table B-1
Post-Removal Exposure Point Concentrations in Soil

Chemical	Post-Removal Exposure Point Concentration* (µg/kg)
Volatile Organic Compounds	
acenaphthene	2.58E+02
acenaphthylene	2.78E+02
acetone	6.51E+01
anthracene	3.15E+02
benzene	1.66E+00
benzo(g,h,i)perylene	7.72E+02
bromoform	1.35E+01
bromomethane	5.60E+00
2-butanone	1.50E+01
chloroform	2.01E+00
chloromethane	1.13E+02
2-chlorophenol	3.70E+01
dibenzofuran	1.70E+02
cis-1,2-dichloroethene	2.20E+00
fluorene	2.28E+02
methylene chloride	4.10E+00
2-methylnaphthalene	2.27E+02
4-methyl-2-pentanone	5.40E+00
naphthalene	1.96E+02
phenanthrene	5.10E+02
pyrene	1.65E+03
1,1,2,2-tetrachloroethane	1.78E+01
tetrachloroethene	4.70E+00
toluene	3.40E+00
1,2,3-trichlorobenzene	1.70E+00
1,2,4-trichlorobenzene	1.50E+00
Semivolatile Organic Compounds	
benz(a)anthracene	6.10E+02
benzo(b)fluoranthene	5.47E+02
benzo(k)fluoranthene	4.30E+02
benzo(a)pyrene	7.35E+02
bis(2-ethylhexyl)phthalate	8.81E+02
butyl benzyl phthalate	7.50E+02
4-chloro-3-methylphenol	4.00E+01
chrysene	6.28E+02
dibenz(a,h)anthracene	2.59E+02
di-n-butyl phthalate	0.00E+00
diethyl phthalate	6.20E+02
2,4-dinitrotoluene	1.90E+01
di-n-octyl phthalate	0.00E+00
fluoranthene	1.57E+03
indeno(1,2,3-cd)pyrene	7.24E+02
4-nitrophenol	2.40E+01
pentachlorophenol	5.80E+01
phenol	5.80E+01
Pesticides/Polychlorinated Biphenyls	
aldrin	8.80E-01
Aroclor 1254	0.00E+00

Table B-1
Post-Removal Exposure Point Concentrations in Soil

Chemical	Post-Removal Exposure Point Concentration* (µg/kg)
Pesticides/Polychlorinated Biphenyls (continued)	
alpha-BHC	9.60E-01
beta-BHC	6.60E-01
delta-BHC	4.80E-01
gamma-BHC (lindane)	2.30E+00
alpha-chlordane	2.40E+00
gamma-chlordane	3.10E+00
4,4-DDD	1.70E+01
4,4-DDE	3.20E+00
4,4-DDT	3.40E+00
dieldrin	6.30E-01
endosulfan I	5.40E-01
endosulfan II	9.30E+00
endosulfan sulfate	7.60E-01
endrin	2.30E+00
endrin aldehyde	2.30E+00
endrin ketone	1.80E+00
heptachlor	9.50E-01
heptachlor epoxide	3.20E-01
Metals	
aluminum	1.76E+07
antimony	5.48E+02
arsenic	1.65E+04
barium	9.65E+04
beryllium	6.43E+02
cadmium	3.58E+02
chromium	5.13E+04
cobalt	1.52E+04
copper	5.58E+04
iron	4.03E+07
lead	3.09E+04
manganese	9.05E+05
mercury	2.70E+02
molybdenum	4.65E+03
nickel	4.74E+04
selenium	1.21E+03
silver	1.13E+02
thallium	1.30E+03
vanadium	7.27E+04
zinc	1.39E+05

Note:
* surface to water table (5 foot depth)

Acronyms/Abbreviations:
bgs – below ground surface
BHC – benzenehexachloride
DDD – dichlorodiphenyldichloroethane
DDE – dichlorodiphenyldichloroethene
DDT – dichlorodiphenyltrichloroethane
µg/kg – microgram per kilogram

APPENDIX C

RESPONSE TO AGENCY COMMENTS

RESPONSE TO COMMENTS* ON
DRAFT REMEDIAL INVESTIGATION ADDENDUM
FOR IR SITE 30
ALAMEDA POINT, ALAMEDA, CALIFORNIA
DATED NOVEMBER 2007
CTO-0080

Comments from U.S. EPA, A. Cook, 2/21/2008

GENERAL COMMENTS	RESPONSE TO GENERAL COMMENTS
General Comment (from letter). Our major concern with the RI Addendum is that the risks presented for soil are not reflective of current conditions at the site and do not factor in the mitigation resulting from the Navy's removal actions of 2004. We therefore request that the risk for soil at the site, including the calculations for risk from lead, be re-calculated to reflect the current, post-removal status of the site. It is important that not only the RI Addendum, but also the Proposed Plan and Record of Decision contain numbers for risk that are current.	**Response to General Comment (from letter).** Post-removal total cancer risks and risks without arsenic have been calculated, as presented in Table 2-1 (attached). This post-removal action risk table replaces Table 2-1 in the Draft RI Addendum, which presented the risks in the original Final RI Report. The post-removal action risk calculations in Table 2-1 can be verified using the revised exposure point concentrations in Appendix B (attached) and the risk assessment methodology presented in the RI. Draft RI Addendum Section 2.6, paragraphs 3 through 5 have been revised as follows (revisions in bold): **"The Final RI Report (BEI 2005b) presents the complete risk assessment for IR Site 30. These risks are based on evaluation of RI and historical analytical data.** For the current use exposure scenario, the total cancer risk for the children and staff at the Woodstock Child Development Center and the Island High School are within the risk management range of 10^{-4} to 10^{-6}, assuming no domestic potable water use **(BEI 2005b)**. These findings were also verified using the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) school site model (OEHHA 2004). For the occupational and construction scenarios, the total cancer risks **also** are within the risk management range. **Since the 2004 TCRA conducted after the RI sampling included removal of soil in the vicinity of sample C072S068 (from a depth of 0 to 0.5 foot bgs in boring C3S030B068), post-removal exposure point concentrations (EPCs) and risks were calculated as part of this addendum. The primary impact of the removal of sample C072S068 was on the EPC for lead, and there was little effect on the risks. The pre-removal action residential risks (with removal of arsenic and COPCs detected in less than 2% of the samples) are 4 x 10^{-5} and 7 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively, which are comparable to the post-removal risks without arsenic (4 x 10^{-5} and 6 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively). For lead, although the pre-**

Comments from U.S. EPA, A. Cook, 2/21/2008

GENERAL COMMENTS	RESPONSE TO GENERAL COMMENTS
	removal action EPC presented in the Final RI Report (BEI 2005b) is above the site-specific residential soil PRG, **the post-removal EPC is below the site-specific residential soil PRG. Post-removal EPCs are provided in Appendix B.** **Table 2-1 presents the post-removal total risks (without sample C072S068 from a depth of 0 to 0.5 foot bgs from boring C3S030B068) and post-removal risks without this sample and without arsenic. No other metals or infrequently detected analytes were removed for this calculation. Vapor intrusion to indoor air represents a one-story building.** **As specified in the Final RI Report, arsenic was the primary risk driver for all scenarios. Statistical evaluation conducted after issuance of the Final RI Report has shown that arsenic concentrations are ambient and not the result of a release associated with Navy activities (CDM, 2007). Therefore, arsenic was removed from the risk calculation. Risks for residential, modified residential for children at the child development center, occupational, and construction scenarios are in the risk management range. The residential risks are 4×10^{-5} and 6×10^{-5} using EPA and Cal/EPA toxicity factors, respectively. As shown in Table 2-1, the risks for children at the child development center are 8×10^{-6} and 2×10^{-5} using EPA and Cal/EPA toxicity factors, respectively."**
General Comment 1. Please remove the use of the phrase "PRC pink background data" throughout the document and replace it with simply "pink background data". It is not necessary or customary to designate a data set by the contractor who performed the work for the Navy.	**Response to General Comment 1.** The phrase "PRC pink background data" was replaced in the main text and figures with "pink background data" as requested. Appendix A is a copy of the final evaluation issued in August 2007 and is included in the RI addendum for ease of reference. Since this final document already has been issued, it cannot be revised. Page 1-1, paragraph 1 has been clarified to add prior to the last sentence: **"For ease of reference, the *Final Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31*, issued in August 2007 and included in the Final**

Comments from U.S. EPA, A. Cook, 2/21/2008

GENERAL COMMENTS	RESPONSE TO GENERAL COMMENTS
	Soil RI Report for IR Site 31, is provided in Appendix A of this RI Addendum." For clarification in Section 3.0, paragraph 1, the last sentence was replaced with the following: **"For ease of reference, the *Final Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31*, issued in August 2007 and included in the Final Soil RI Report for IR Site 31, is provided in Appendix A of this RI Addendum."**
General Comment 2. Please revise the risk assessment to reflect current conditions at the site, i.e. one that does not include the data from the areas that were subject to removal actions such as the 5 ft x 5 ft x 2 ft soil removal around boring C3S030B068. This location contained the highest, and in some cases the only detectable, concentration of contaminants and the removal of the soil here dramatically reduces the site risk. To give a complete picture for anyone reading the RI addendum and the subsequent ROD it is critical that the risk be representative of current site conditions.	**Response to General Comment 2.** To address this comment, post-removal cancer risks were calculated with the sample in the removal action area removed, as presented in Table 2-1 (attached). This post-removal action table replaces Table 2-1 in the Draft RI Addendum, which presented the risks in the original Final RI Report. The post-removal action risk calculations in Table 2-1 can be verified using the revised exposure point concentrations in Appendix B (attached) and the risk assessment methodology presented in the RI. Draft RI Addendum Section 2.6, paragraphs 3 through 5 have been revised as follows (revisions in bold): **"The Final RI Report (BEI 2005b) presents the complete risk assessment for IR Site 30. These risks are based on evaluation of RI and historical analytical data.** For the current use exposure scenario, the total cancer risk for the children and staff at the Woodstock Child Development Center and the Island High School are within the risk management range of 10^{-4} to 10^{-6}, assuming no domestic potable water use **(BEI 2005b)**. These findings were also verified using the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) school site model (OEHHA 2004). For the occupational and construction scenarios, the total cancer risks **also** are within the risk management range.

Comments from U.S. EPA, A. Cook, 2/21/2008

GENERAL COMMENTS	RESPONSE TO GENERAL COMMENTS
	Since the 2004 TCRA conducted after the RI sampling included removal of soil in the vicinity of sample C072S068 (from a depth of 0 to 0.5 foot bgs in boring C3S030B068), post-removal exposure point concentrations (EPCs) and risks were calculated as part of this addendum. The primary impact of the removal of sample C072S068 was on the EPC for lead, and there was little effect on the risks. The pre-removal action residential risks (with removal of arsenic and COPCs detected in less than 2% of the samples) are 4 x 10^{-5} and 7 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively, which are comparable to the post-removal risks without arsenic (4 x 10^{-5} and 6 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively). For lead, although the pre-removal action EPC presented in the Final RI Report (BEI 2005b) is above the site-specific residential soil PRG, **the post-removal EPC is below the site-specific residential soil PRG. Post-removal EPCs are provided in Appendix B.** **Table 2-1 presents the post-removal total risks (without sample C072S068 from a depth of 0 to 0.5 foot bgs from boring C3S030B068) and post-removal risks without this sample and without arsenic. No other metals or infrequently detected analytes were removed for this calculation. Vapor intrusion to indoor air represents a one-story building.** **As specified in the Final RI Report, arsenic was the primary risk driver for all scenarios. Statistical evaluation conducted after issuance of the Final RI Report has shown that arsenic concentrations are ambient and not the result of a release associated with Navy activities (CDM, 2007). Therefore, arsenic was removed from the risk calculation. Risks for residential, modified residential for children at the child development center, occupational, and construction scenarios are in the risk management range. The residential risks are 4 x 10^{-5} and 6 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively. As shown in Table 2-1, the risks for children at the child development center are 8 x 10^{-6} and 2 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively."**

RESPONSE TO COMMENTS* ON
DRAFT REMEDIAL INVESTIGATION ADDENDUM
FOR IR SITE 30
ALAMEDA POINT, ALAMEDA, CALIFORNIA
DATED NOVEMBER 2007
CTO-0080

Comments from U.S. EPA, A. Cook, 2/21/2008

SPECIFIC COMMENTS	RESPONSE TO SPECIFIC COMMENTS
Specific Comment 1. **Section 2.2, Page 2-2, last paragraph on page:** Please specify the depth to which soil was removed as part of the removal action (e.g. between 2 ft and 5 ft).	**Response to Specific Comment 1.** Section 2.2, paragraph 3, sentence 1 was incorrect and was revised to delete "the removal of shallow soil and". The depth of the soil removal is presented in the next paragraph of Section 2.2.
Specific Comment 2. **Section 2.2, Page 2-3, end of last paragraph of section:** Were confirmation samples taken post removal action activities and, if so, what were the results? Please present this information here.	**Response to Specific Comment 2.** The depth of the soil removal was based on the sample results from the 2-4 feet depth interval in RI boring C3S030B068. No confirmation samples were collected after the soil removal.
Specific Comment 3. **Section 2.3.1, Page 2-3, second paragraph, last sentence:** Please replace the word "likely" with the word "possibly" since it is difficult to know from where any gravel may have been imported.	**Response to Specific Comment 3.** The sentence was changed as requested.
Specific Comment 4. **Section 2.5.1, Soil, Page 2-5:** The text states "the Alameda Point background population for the central portion of Alameda Point (pink area) is not representative of background concentrations in the fill material at IR Site 30" and that the Alameda Point (pink area) background concentrations were "subsequently determined not to be applicable at IR Site 30". We think that this wording is too strong and suggest a more accurate wording would be that "The Navy believes that the pink background data set is not representative of or applicable to Site 30."	**Response to Specific Comment 4.** The first quote is only partially presented in this comment. The sentence in the addendum is from the Final RI Report and states "it is likely that the Alameda Point background population for the central portion of Alameda Point (pink area) is not representative of background concentrations in the fill material at IR Site 30." This RI Report sentence is further supported by post-RI work. The referenced "subsequently determined not to be applicable at IR Site 30" was deleted and additional detail was added prior to the last sentence of this paragraph as follows. **"Based on evaluation of iron and manganese concentrations, fill history, and lithology, the Alameda Point pink background data set does not appear to be applicable to IR Site 30 (CDM, 2007)."**

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Comments from U.S. EPA, A. Cook, 2/21/2008

SPECIFIC COMMENTS	RESPONSE TO SPECIFIC COMMENTS
Specific Comment 5. **Figure 2-4, Soil Sampling Locations:** In the center of the figure, to the east of Island High School in a 2004 Time Critical Removal Action area, there is a purple circle marker with a black dot in the center, which is not identified or defined in the figure legend. Please identify and define the marker in the figure legend.	**Response to Specific Comment 5.** The purple circle marker represents soil sampling locations for the RI (BEI 2005b). Seven additional soil sampling locations were inadvertently omitted on this map and were added to revised Figure 2-4 (attached) to represent the RI soil sampling locations. Identification of the TCRA soil removal area also was added to Figure 2-4.
Specific Comment 6. **Section 2.6, Page 2-6, first bullet "Residential":** Suggest being more specific with regard to inhalation of vapors and stating "inhalation of vapors from soil and groundwater in indoor and outdoor air, and…" Suggest the same changes for the "occupational" and "construction" bullets.	**Response to Specific Comment 6.** The following changes were made to all three bullets in Section 2.6 (revisions in bold): "inhalation of vapors **from soil and groundwater** in indoor and outdoor air,.."
Specific Comment 7. **Section 2.6, Page 2-6, paragraph after bullets, third sentence**: Suggest adding the phrase to the sentence as follows: "This summary does not discuss risks with potable groundwater use because the groundwater is not currently being used at the site; it is being addressed in the OU 5/IR02 groundwater remedial action; and water supplies for the school…"	**Response to Specific Comment 7.** The sentence has been changed as requested.
Specific Comment 8. **Section 2.6, Page 2-7, paragraphs at the top of the page:** As discussed in General Comment #2, it is essential to include the risk for lead and for the other contaminants post removal actions to give an accurate representation of current conditions at the site. Please revise these paragraphs to reflect the post removal/current risk.	**Response to Specific Comment 8.** Draft RI Addendum Section 2.6, paragraphs 3 through 5 have been revised as follows (revisions in bold): **"The Final RI Report (BEI 2005b) presents the complete risk assessment for IR Site 30. These risks are based on evaluation of RI and historical analytical data.** For the current use exposure scenario, the total cancer risk for the children and staff at the Woodstock Child Development Center and the Island High School are within the risk management range of 10^{-4} to 10^{-6}, assuming no domestic potable water use **(BEI 2005b)**. These findings were also verified using the California Environmental Protection Agency (Cal/EPA)

Comments from U.S. EPA, A. Cook, 2/21/2008

SPECIFIC COMMENTS	RESPONSE TO SPECIFIC COMMENTS
	Office of Environmental Health Hazard Assessment (OEHHA) school site model (OEHHA 2004). For the occupational and construction scenarios, the total cancer risks also are within the risk management range. **Since the 2004 TCRA conducted after the RI sampling included removal of soil in the vicinity of sample C072S068 (from a depth of 0 to 0.5 foot bgs in boring C3S030B068), post-removal exposure point concentrations (EPCs) and risks were calculated as part of this addendum. The primary impact of the removal of sample C072S068 was on the EPC for lead, and there was little effect on the risks. The pre-removal action residential risks (with removal of arsenic and COPCs detected in less than 2% of the samples) are 4 x 10^{-5} and 7 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively, which are comparable to the post-removal risks without arsenic (4 x 10^{-5} and 6 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively). For lead, although the pre-removal action EPC presented in the Final RI Report (BEI 2005b)** is above the site-specific residential soil PRG, **the post-removal EPC is below the site-specific residential soil PRG. Post-removal EPCs are provided in Appendix B.** **Table 2-1 presents the post-removal total risks (without sample C072S068 from a depth of 0 to 0.5 foot bgs from boring C3S030B068) and post-removal risks without this sample and without arsenic. No other metals or infrequently detected analytes were removed for this calculation. Vapor intrusion to indoor air represents a one-story building.** **As specified in the Final RI Report, arsenic was the primary risk driver for all scenarios. Statistical evaluation conducted after issuance of the Final RI Report has shown that arsenic concentrations are ambient and not the result of a release associated with Navy activities (CDM, 2007). Therefore, arsenic was removed from the risk calculation. Risks for residential, modified residential for children at the child development center, occupational, and construction scenarios are in the risk management range. The residential risks are 4 x 10^{-5} and 6 x 10^{-5}**

Comments from U.S. EPA, A. Cook, 2/21/2008

SPECIFIC COMMENTS	RESPONSE TO SPECIFIC COMMENTS
	using EPA and Cal/EPA toxicity factors, respectively. As shown in Table 2-1, the risks for children at the child development center are 8 x 10^{-6} and 2 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively."
Specific Comment 9. **Section 3, Page 3-1, second to last sentence:** Both Site 30 and Site 31 were subject to DRMO activities in the past and EPA would prefer to see the phrase "unaffected by Navy activities" removed from this sentence.	**Response to Specific Comment 9.** This sentence was revised (revisions in bold). "This finding is based on arsenic concentrations meeting the DTSC criteria for ambient conditions (DTSC 1997) and is supported by the presence of similar concentrations of arsenic at adjacent locations, **as well as nearby East Housing, which was not** affected by Navy activities."
Specific Comment 10. **Section 3.2, first sentence:** Please revise to reflect that both Site 30 and Site 31 were subject to DRMO activities in the past. Storage of parts and scrap is not the same utilization as housing and therefore deserves mention here.	**Response to Specific Comment 10.** Section 3.2 is "Arsenic at Adjacent Locations". It is possible that sentence 1 was misunderstood. The site that the first sentence refers to as not associated with Navy industrial activities is East Housing, as clarified in the second sentence. No changes were made to sentence 1.
Specific Comment 11. Section 3.5, Lithology, Page 3-5; Section 3.6.4, Fill History and Lithologic Evaluation, Page 3-4; Appendix A, Executive Summary, Page ES-4, Lithology, Page ES-4; Appendix A, Section 5.2 Lithology, Pages 7 and 8; and Appendix A, Section 5.3, Physical Soil Characteristics, Pages 8 through 12. Since IR Site 30 (and IR Site 31) were used by DRMO, it is possible that the gravel was placed in this area to prepare it for use as a storage yard. This would account for the difference in the relative percentages of sand, gravel, and fines at IR Site 25 and would also explain why gravel is found in the top four feet. The fact that Site 30 and 31 were used by DRMO should be included here.	**Response to Specific Comment 11.** A correlation cannot be made between the fill material that contains a high gravel content and DRMO activities. The gravel laden fill material is throughout the East Housing area and portions of the College of Alameda, where no DRMO activities occurred. As shown on Figure 3 of Appendix A, the high gravel content fill material from the 1927 fill event covers a much larger area then the area used for DRMO activities. The site description is presented in detail in the Final RI Report (BEI, 2005b) and was not repeated in its entirety in the RI Addendum. Briefly, it is not believed that IR Site 30 was used by DRMO. A review of aerial photographs in the Final Site 30 RI Report Appendix A shows that Site 30 property

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DRAFT REMEDIAL INVESTIGATION ADDENDUM
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Comments from U.S. EPA, A. Cook, 2/21/2008

SPECIFIC COMMENTS	RESPONSE TO SPECIFIC COMMENTS
	remained housing from 1947 through 1953, while warehouses were built to the south by 1953. Acquisition records show that the Navy did not acquire the Site 30 property at the same time as the property to the south that was used for warehouses. By 1959, Site 30 was paved, but records indicate that this area was acquired separately by Alameda Point for parking/storage purposes.
Specific Comment 12. **Table 2-1:** Please revise this table to reflect risk post removal action. The table as it stands now does not reflect current conditions at the site.	**Response to Specific Comment 12.** Table 2-1 was revised to show post-removal risks.

Note:
* These responses may identify proposed changes to the subject document text, tables, and/or figures. The changes, as presented herein, have not undergone formal technical editing. The specific wording that appears in the next release of the document may differ slightly from that presented in these responses to comments, since the proposed changes will be technically edited as part of the overall document revision process. The edited version of the document will be reviewed by Bechtel Environmental, Inc., to ensure that there are no substantive differences that would warrant further Navy and/or agency review and concurrence.

RESPONSE TO COMMENTS ON
RESPONSES* FOR DRAFT REMEDIAL INVESTIGATION ADDENDUM
FOR IR SITE 30
ALAMEDA POINT, ALAMEDA, CALIFORNIA
DATED NOVEMBER 2007
CTO-0080

Comments from U.S. EPA, A. Cook, 5/19/2008

RTC SPECIFIC COMMENTS	RESPONSE TO RTC SPECIFIC COMMENTS
RTC Specific Comment 1. What are the reasons for the 'Child at the Child Development Center' risk being lower than the residential risk?	**Response to Specific Comment 1.** The risk for the 'Child at the Child Development Center' is lower than the residential risk for the following reasons: 1. Exposure for a child is only 6 years as opposed to 30 years for a resident (child and adult) 2. The risk is 25% lower due to fewer days of exposure during the school year 3. The risk does not include ingestion of homegrown produce.
RTC Specific Comment 2. What are the primary contributors to post-removal risk from direct contact with soil?	**Response to Specific Comment 2.** The large number of remaining chemicals of potential concern (COPCs), including metals, pesticides, and PAHs, are the primary contributors to post-removal risk from direct contact with soil.
RTC Specific Comment 3. Add post-removal total risk and clarify what is included in the indoor air risk.	**Response to Specific Comment 3.** Table 2-1 (attached) has been revised to add post-removal total risk. The indoor air pathway on Table 2-1 has been clarified by adding that this pathway includes vapors from soil and groundwater. The text in the draft RI addendum and the response to comments on the draft report have been revised. Draft RI Addendum Section 2.6, paragraphs 3 through 5 have been revised as follows (revisions in bold): **"The Final RI Report (BEI 2005b) presents the complete risk assessment for IR Site 30. These risks are based on evaluation of RI and historical analytical data.** For the current use exposure scenario, the total cancer risk for the children and staff at the Woodstock Child Development Center and the Island High School are within the risk management range of 10^{-4} to 10^{-6}, assuming no domestic potable water use **(BEI 2005b)**. These findings were also verified using the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) school site model (OEHHA 2004). For the occupational and construction scenarios, the

Comments from U.S. EPA, A. Cook, 5/19/2008

RTC SPECIFIC COMMENTS	RESPONSE TO RTC SPECIFIC COMMENTS
	total cancer risks also are within the risk management range. **Since the 2004 TCRA conducted after the RI sampling included removal of soil in the vicinity of sample C072S068 (from a depth of 0 to 0.5 foot bgs in boring C3S030B068), post-removal exposure point concentrations (EPCs) and risks were calculated as part of this addendum. The primary impact of the removal of sample C072S068 was on the EPC for lead, and there was little effect on the risks. The pre-removal action residential risks (with removal of arsenic and COPCs detected in less than 2% of the samples) are 4 x 10^{-5} and 7 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively, which are comparable to the post-removal risks without arsenic (4 x 10^{-5} and 6 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively). For lead, although the pre-removal action** EPC **presented in the Final RI Report (BEI 2005b)** is above the site-specific residential soil PRG, **the post-removal EPC is below the site-specific residential soil PRG. Post-removal EPCs are provided in Appendix B.** **Table 2-1 presents the post-removal total risks (without sample C072S068 from a depth of 0 to 0.5 foot bgs from boring C3S030B068) and post-removal risks without this sample and without arsenic. No other metals or infrequently detected analytes were removed for this calculation. Vapor intrusion to indoor air represents a one-story building.** **As specified in the Final RI Report, arsenic was the primary risk driver for all scenarios. Statistical evaluation conducted after issuance of the Final RI Report has shown that arsenic concentrations are ambient and not the result of a release associated with Navy activities (CDM, 2007). Therefore, arsenic was removed from the risk calculation. Risks for residential, modified residential for children at the child development center, occupational, and construction scenarios are in the risk management range. The residential risks are 4 x 10^{-5} and 6 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively. As shown in Table 2-1, the risks for children at the child development center are 8 x**

RESPONSE TO COMMENTS ON
RESPONSES* FOR DRAFT REMEDIAL INVESTIGATION ADDENDUM
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CTO-0080

Comments from U.S. EPA, A. Cook, 5/19/2008

RTC SPECIFIC COMMENTS	RESPONSE TO RTC SPECIFIC COMMENTS
	10^{-6} and 2 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively."

Note:
* These responses may identify proposed changes to the subject document text, tables, and/or figures. The changes, as presented herein, have not undergone formal technical editing. The specific wording that appears in the next release of the document may differ slightly from that presented in these responses to comments, since the proposed changes will be technically edited as part of the overall document revision process. The edited version of the document will be reviewed by Bechtel Environmental, Inc., to ensure that there are no substantive differences that would warrant further Navy and/or agency review and concurrence.

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CTO-0080

Comments from DTSC, J. Polisini, 2/15/2008

GENERAL COMMENTS	RESPONSE TO GENERAL COMMENTS
General Comment (from letter). Please note that DTSC has recently learned estimates of exposure via inhalation of indoor air using the Johnson and Ettinger model at Alameda Point have been performed assuming the building dimensions of a two story condominium rather than the default one story residential building typically evaluated as the residential default. Please evaluate exposure to indoor air for the residential use scenario using the default Johnson and Ettinger single story residence dimensions, to avoid unnecessary restrictions	**Response to General Comment (from letter).** Table 2-1 (attached) post-removal action risk calculations reflect a residential inhalation pathway for vapors from soil and groundwater for a one-story residence. This applies to both the hypothetical Residential pathway and the Child at Child Development Center pathway. For ease of reference, the comment and response to U.S. EPA's general risk comment follows, including the revised risk assessment text. U.S. EPA General Comment (first, from letter): *Our major concern with the RI Addendum is that the risks presented for soil are not reflective of current conditions at the site and do not factor in the mitigation resulting from the Navy's removal actions of 2004. We therefore request that the risk for soil at the site, including the calculations for risk from lead, be re-calculated to reflect the current, post-removal status of the site. It is important that not only the RI Addendum, but also the Proposed Plan and Record of Decision contain numbers for risk that are current.* Post-removal total cancer risks and risks without arsenic have been calculated, as presented in Table 2-1 (attached). This post-removal action risk table replaces Table 2-1 in the Draft RI Addendum, which presented the risks in the original Final RI Report. The post-removal action risk calculations in Table 2-1 can be verified using the revised exposure point concentrations in Appendix B (attached) and the risk assessment methodology presented in the RI. Draft RI Addendum Section 2.6, paragraphs 3 through 5 have been revised as follows (revisions in bold): **"The Final RI Report (BEI 2005b) presents the complete risk assessment for IR Site 30. These risks are based on evaluation of RI and historical analytical data.** For the current use exposure scenario, the total cancer risk for the children and staff at the Woodstock Child Development Center and the Island High School are within the risk management range of 10^{-4} to 10^{-6}, assuming no domestic potable water use **(BEI 2005b)**. These findings were also verified using the California Environmental Protection Agency (Cal/EPA)

Comments from DTSC, J. Polisini, 2/15/2008

GENERAL COMMENTS	RESPONSE TO GENERAL COMMENTS
	Office of Environmental Health Hazard Assessment (OEHHA) school site model (OEHHA 2004). For the occupational and construction scenarios, the total cancer risks also are within the risk management range. **Since the 2004 TCRA conducted after the RI sampling included removal of soil in the vicinity of sample C072S068 (from a depth of 0 to 0.5 foot bgs in boring C3S030B068), post-removal exposure point concentrations (EPCs) and risks were calculated as part of this addendum. The primary impact of the removal of sample C072S068 was on the EPC for lead, and there was little effect on the risks. The pre-removal action residential risks (with removal of arsenic and COPCs detected in less than 2% of the samples) are 4 x 10^{-5} and 7 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively, which are comparable to the post-removal risks without arsenic (4 x 10^{-5} and 6 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively). For lead, although the pre-removal action EPC presented in the Final RI Report (BEI 2005b)** is above the site-specific residential soil PRG, **the post-removal EPC is below the site-specific residential soil PRG. Post-removal EPCs are provided in Appendix B.** **Table 2-1 presents the post-removal total risks (without sample C072S068 from a depth of 0 to 0.5 foot bgs from boring C3S030B068) and post-removal risks without this sample and without arsenic. No other metals or infrequently detected analytes were removed for this calculation. Vapor intrusion to indoor air represents a one-story building.** **As specified in the Final RI Report, arsenic was the primary risk driver for all scenarios. Statistical evaluation conducted after issuance of the Final RI Report has shown that arsenic concentrations are ambient and not the result of a release associated with Navy activities (CDM, 2007). Therefore, arsenic was removed from the risk calculation. Risks for residential, modified residential for children at the child development center, occupational, and construction scenarios are in the risk management range. The residential risks are 4 x 10^{-5} and 6 x 10^{-5}**

Comments from DTSC, J. Polisini, 2/15/2008

GENERAL COMMENTS	RESPONSE TO GENERAL COMMENTS
	using EPA and Cal/EPA toxicity factors, respectively. As shown in Table 2-1, the risks for children at the child development center are 8 x 10^{-6} and 2 x 10^{-5} using EPA and Cal/EPA toxicity factors, respectively."
General Comment. This review is restricted to Draft RI Addendum and Attachment A, *Supporting Information for Statistical Analysis*, and does not address Appendix A, *Final Evaluation of Arsenic and other Metals in Soil at IR Sites 30 and 31, Alameda Point, Alameda, California* (dated August, 2007). HERD previously reviewed the material contained in Appendix A.	**Response to General Comment.** No response required.

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Comments from DTSC, J. Polisini, 2/15/2008

SPECIFIC COMMENTS	RESPONSE TO SPECIFIC COMMENTS
Specific Comment 1. HERD defers to the DTSC Geological Services Unit (GSU), or a DTSC geologist, for review of the proposal that lithographic comparison of IR Site 30 indicates a higher gravel content and distinctive yellow coloration when compared to the 'pink' ambient area (PRC, 1997) located to the west of Main Street (Executive Summary, page ES-1; Section 3.5, page 3-3; Section 3.6.4, page 3-4).	**Response to Specific Comment 1.** No response required.
Specific Comment 2. Estimates of Human Health risk and/or hazard presented in this document (Table 2-1) include risk and/or hazard associated with direct exposure to groundwater as groundwater at IR Site 30 is being addressed as part of the Operable Unit (OU) 5/IR-02 remedial action (Section 1.2, page 1-1). Exposure via inhalation of indoor air and outdoor air is included in the risk and/or hazard estimates. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	**Response to Specific Comment 2.** No response required.
Specific Comment 3. HERD recently determined that some, if not all, of the estimates of exposure via inhalation of indoor air using the Johnson and Ettinger model at NAS Alameda have been performed assuming the building dimensions of a two story condominium rather than the default one story residential building typically evaluated as the residential default. Unless some Institutional Control (IC) is placed on residential construction, HERD recommends that the evaluation of exposure to indoor air for the residential use scenario (Section 2.6, page 2-6) be performed using the default Johnson and Ettinger single story residence dimensions.	**Response to Specific Comment 3.** Table 2-1 (attached) post-removal action risk calculations reflect a residential inhalation pathway for vapors from soil and groundwater for a one-story residence. This applies to both the hypothetical Residential pathway and the Child at Child Development Center pathway.

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Comments from DTSC, J. Polisini, 2/15/2008

SPECIFIC COMMENTS	RESPONSE TO SPECIFIC COMMENTS
Specific Comment 4. HERD concurs with the ecological conclusion that: 1) the current presence of hardscape; 2) lack of significant habitat; and, 3) TCRA removal of IR Site 30 elevated soil concentrations limits exposure for ecological receptors to an insignificant level (Section 2.7, page 2-7). This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	**Response to Specific Comment 4.** No response required.
Specific Comment 5. The statement is made that statistical evaluations, conducted during the individual RIs for IR Sites 25, IR Site 30 and IR Site 31, showed that most metals including common rock-forming metals, such as iron, are present at higher concentrations than those in the NAS Alameda 'pink' background (Section 3, page 3-1). While HERD does not disagree, please list in the text the other 'common rock forming metals' in addition to iron for which this statement is true.	**Response to Specific Comment 5.** Aluminum and manganese have been added to the sentence after the reference to iron.
Specific Comment 6. HERD verified (Figure 1) the statement that iron and manganese concentrations in IR Site 30 soils are higher than the NAS Alameda 'pink' ambient (Section 3.3, page 3-2; second bulleted item). This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	**Response to Specific Comment 6.** No response required.
Specific Comment 7. Cumulative frequency plots are presented for IR Site 30 arsenic and IR Site 31 arsenic separately (Appendix A, Figure 2). The issue addressed is whether IR Site 30, IR Site 31 and the East Housing Area represent a cohesive soil-type, partially reflected in arsenic concentration. What is needed is a cumulative frequency plot of arsenic concentrations for IR Site 30, IR Site 31 and East Housing Area which displays evidence that the soil arsenic concentration is representative of a single population similar to the IR Site 30 and IR Site 31 arsenic plot prepared by HERD (Figure 2).	**Response to Specific Comment 7.** Cumulative frequency plots of arsenic concentrations for IR Site 30, IR Site 31 and East Housing Area are attached to this RTC. These figures indicate that the arsenic data are consistent with one population. However, please note that the conclusion that arsenic at IR Site 30 is ambient is based on IR Site 30 meeting DTSC criteria for ambient populations. Because the *Final Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31* in Appendix A was issued in August 2007, no changes were made to Appendix A.

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Comments from DTSC, J. Polisini, 2/15/2008

SPECIFIC COMMENTS	RESPONSE TO SPECIFIC COMMENTS
Specific Comment 8. Evaluation of the cumulative frequency plots (Section A2, page A-4) indicates that iron and lead in IR Site 31 soil appear to have multiple populations. The cumulative frequency plot of the NAS Alameda 'pink' ambient data set for iron is provided to demonstrate that the 'pink' ambient iron concentration also indicates multiple populations. Please also provide a cumulative frequency plot of 'pink' ambient soil lead concentrations in addition to 'pink' ambient soil iron concentrations.	**Response to Specific Comment 8.** A cumulative frequency plot of 'pink' ambient soil lead concentrations is attached to this RTC. Because the *Final Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31* in Appendix A was issued in August 2007, no changes were made to Appendix A.
Specific Comment 9. Individual Value Plots (IVPs) for arsenic are referenced as Figure A-2 (Section A3.1, page A-6). This figure (Figure A-2) actually presents box and whisker plots for arsenic at IR Site 30, IR Site 31 and the East Housing Area later discussed (Section A3.2, page A-6). Please include the IVPs as a figure separate from the box and whisker plots.	**Response to Specific Comment 9.** IVP plots for IR Sites 30 and 31 and East Housing data are attached to this RTC. Because the *Final Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31* in Appendix A was issued in August 2007, no changes were made to Appendix A..
Specific Comment 10. The results of the Gehan Test are referenced as Table A-4 (Section A3.4, page A-8). This table (Table A-4) presents the results of the distributional testing of IR Site 31 inorganic elements and the Shapiro-Wilkes statistic associated with this test. Please present the results of the Gehan Test and amend the text for accuracy.	**Response to Specific Comment 10.** The results of the Gehan test are included in a table attached to this RTC. Because the *Final Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31* in Appendix A was issued in August 2007, no changes were made to Appendix A.

Note:
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Comments from DTSC, D. Lofstrom, 5/19/2008

RTC SPECIFIC COMMENTS	RESPONSE TO RTC SPECIFIC COMMENTS
RTC Specific Comment 1. The material requested by HERD (DTSC, Polisini, Specific Comments 7, 8, 9 and 10), could be provided as an attachment in the Draft Final IR 30 RI without revising the "Final Evaluation of Arsenic and Other metals in Soil at IR Sites 30 and 31." After all, the intent of the comment was use the additional material to more fully support the Navy argument for elevated arsenic at IR 30, IR 31 and East Housing Area.	**Response to Specific Comment 1.** DTSC, Polisini, Specific Comments 7, 8, 9 and 10 requested the following: Specific Comment 7 – cumulative probability plot of arsenic data for IR Sites 30 and 31 and East Housing. Specific Comment 8 – cumulative probability plot of lead data from the pink background data set. Specific Comment 9 – individual value plots for arsenic for IR Sites 30 and 31 and East Housing Specific Comment 10 – table showing results of the Gehan Test These figures and table are attached as part of the response to comments. The response to comments on the draft report have been revised. To clarify for Specific Comment 7, this figure indicates that the arsenic data are consistent with one population. However, please note that the conclusion that arsenic at IR Site 30 is ambient is based on IR Site 30 meeting DTSC criteria for ambient populations. Because the *Final Evaluation of Arsenic and Other Metals in Soil at IR Sites 30 and 31* in Appendix A was issued in August 2007, no changes were made to Appendix A. The plots were added to the Draft Final RI Addendum in Appendix C as part of the Response to Comments.

Note:
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Table 2-1
Post-Removal Human Health Risk Assessment for IR Site 30[a]

Exposure Scenario	TOTAL RME CANCER RISK		RME CANCER RISK WITHOUT ARSENIC[b]	
	U.S. EPA	Cal/EPA	U.S. EPA	Cal/EPA
RESIDENTIAL (adult and child)				
Direct contact with soil[c]	6E-05	3E-04	2E-05	3E-05
Indoor air (vapors from soil and groundwater)	3E-06	2E-05	3E-06	2E-05
Outdoor air[d]	4E-07	8E-07	4E-07	8E-07
Ingestion of homegrown produce	5E-05	1E-04	2E-05	1E-05
TOTAL (without residential use of groundwater)	**1E-04**	**5E-04**	**4E-05**	**6E-05**
CHILD AT CHILD DEVELOPMENT CENTER				
Direct contact with soil[b]	4E-05	1E-04	7E-06	1E-05
Indoor air (vapors from soil and groundwater)	7E-07	6E-06	7E-07	6E-06
Outdoor air[d]	7E-08	2E-07	7E-08	2E-07
TOTAL (without residential use of groundwater)	**4E-05**	**1E-04**	**8E-06**	**2E-05**
OCCUPATIONAL				
Direct contact with soil[c]	1E-05	6E-05	6E-06	9E-06
Indoor air (vapors from soil and groundwater)	9E-08	4E-07	9E-08	4E-07
Outdoor air[d]	6E-08	1E-07	5E-08	1E-07
TOTAL	**1E-05**	**6E-05**	**6E-06**	**9E-06**
CONSTRUCTION				
Direct contact with soil[c]	1E-06	5E-06	5E-07	7E-07
Outdoor air[d]	1E-06	1E-06	9E-07	1E-06
TOTAL	**2E-06**	**6E-06**	**1E-06**	**2E-06**

Notes:

[a] the risks have been revised to exclude Sample C072S068 from boring C3S030B068 that was removed during a post-RI removal action conducted by the Navy; vapor intrusion to indoor air has been revised to represent a one-story residence

[b] statistical analysis presented in Appendix A shows that arsenic concentrations are ambient

[c] direct contact with soil includes ingestion and dermal contact

[d] outdoor air includes inhalation of vapors from soil and groundwater and inhalation of particulates from soil

Acronyms/Abbreviations:

Cal/EPA – California Environmental Protection Agency
IR – Installation Restoration (Program)
RI – remedial investigation
RME – reasonable maximum exposure
U.S. EPA – United States Environmental Protection Agency

Table B-1
Post-Removal Exposure Point Concentrations in Soil

Chemical	Post-Removal Exposure Point Concentration[a], µg/kg
Volatile Organic Compounds	
acenaphthene	2.58E+02
acenaphthylene	2.78E+02
acetone	6.51E+01
anthracene	3.15E+02
benzene	1.66E+00
benzo(g,h,i)perylene	7.72E+02
bromoform	1.35E+01
bromomethane	5.60E+00
2-butanone	1.50E+01
chloroform	2.01E+00
chloromethane	1.13E+02
2-chlorophenol	3.70E+01
dibenzofuran	1.70E+02
cis-1,2-dichloroethene	2.20E+00
fluorene	2.28E+02
methylene chloride	4.10E+00
2-methylnaphthalene	2.27E+02
4-methyl-2-pentanone	5.40E+00
naphthalene	1.96E+02
phenanthrene	5.10E+02
pyrene	1.65E+03
1,1,2,2-tetrachloroethane	1.78E+01
tetrachloroethene	4.70E+00
toluene	3.40E+00
1,2,3-trichlorobenzene	1.70E+00
1,2,4-trichlorobenzene	1.50E+00
Semivolatile Organic Compounds	
benz(a)anthracene	6.10E+02
benzo(b)fluoranthene	5.47E+02
benzo(k)fluoranthene	4.30E+02
benzo(a)pyrene	7.35E+02
bis(2-ethylhexyl)phthalate	8.81E+02
butyl benzyl phthalate	7.50E+02
4-chloro-3-methylphenol	4.00E+01
chrysene	6.28E+02
dibenz(a,h)anthracene	2.59E+02
di-n-butyl phthalate	0.00E+00
diethyl phthalate	6.20E+02
2,4-dinitrotoluene	1.90E+01
di-n-octyl phthalate	0.00E+00
fluoranthene	1.57E+03
indeno(1,2,3-cd)pyrene	7.24E+02
4-nitrophenol	2.40E+01
pentachlorophenol	5.80E+01
phenol	5.80E+01

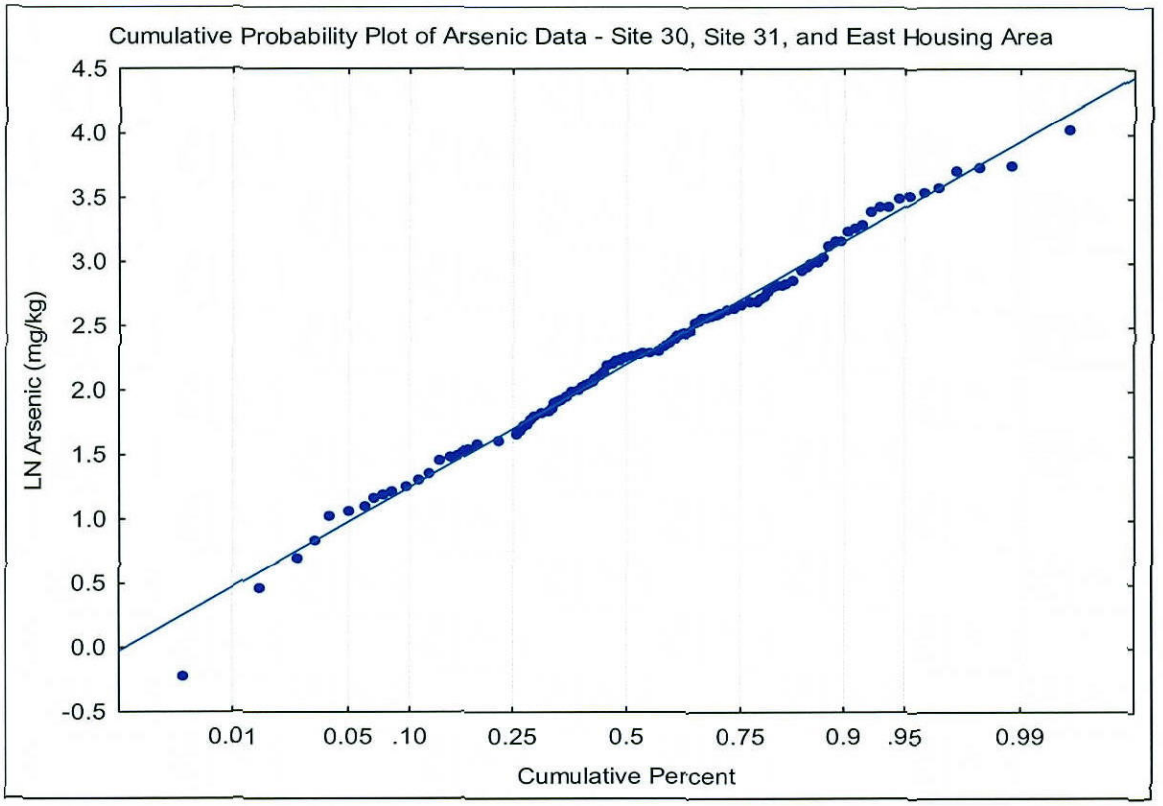
Table B-1
Post-Removal Exposure Point Concentrations in Soil

Chemical	Post-Removal Exposure Point Concentration[a], µg/kg
Pesticides/Polychlorinated Biphenyls	
aldrin	8.80E-01
Aroclor 1254	0.00E+00
alpha-BHC	9.60E-01
beta-BHC	6.60E-01
delta-BHC	4.80E-01
gamma-BHC (lindane)	2.30E+00
alpha-chlordane	2.40E+00
gamma-chlordane	3.10E+00
4,4-DDD	1.70E+01
4,4-DDE	3.20E+00
4,4-DDT	3.40E+00
dieldrin	6.30E-01
endosulfan I	5.40E-01
endosulfan II	9.30E+00
endosulfan sulfate	7.60E-01
endrin	2.30E+00
endrin aldehyde	2.30E+00
endrin ketone	1.80E+00
heptachlor	9.50E-01
heptachlor epoxide	3.20E-01
Metals	
aluminum	1.76E+07
antimony	5.48E+02
arsenic	1.65E+04
barium	9.65E+04
beryllium	6.43E+02
cadmium	3.58E+02
chromium	5.13E+04
cobalt	1.52E+04
copper	5.58E+04
iron	4.03E+07
lead	3.09E+04
manganese	9.05E+05
mercury	2.70E+02
molybdenum	4.65E+03
nickel	4.74E+04
selenium	1.21E+03
silver	1.13E+02
thallium	1.30E+03
vanadium	7.27E+04
zinc	1.39E+05

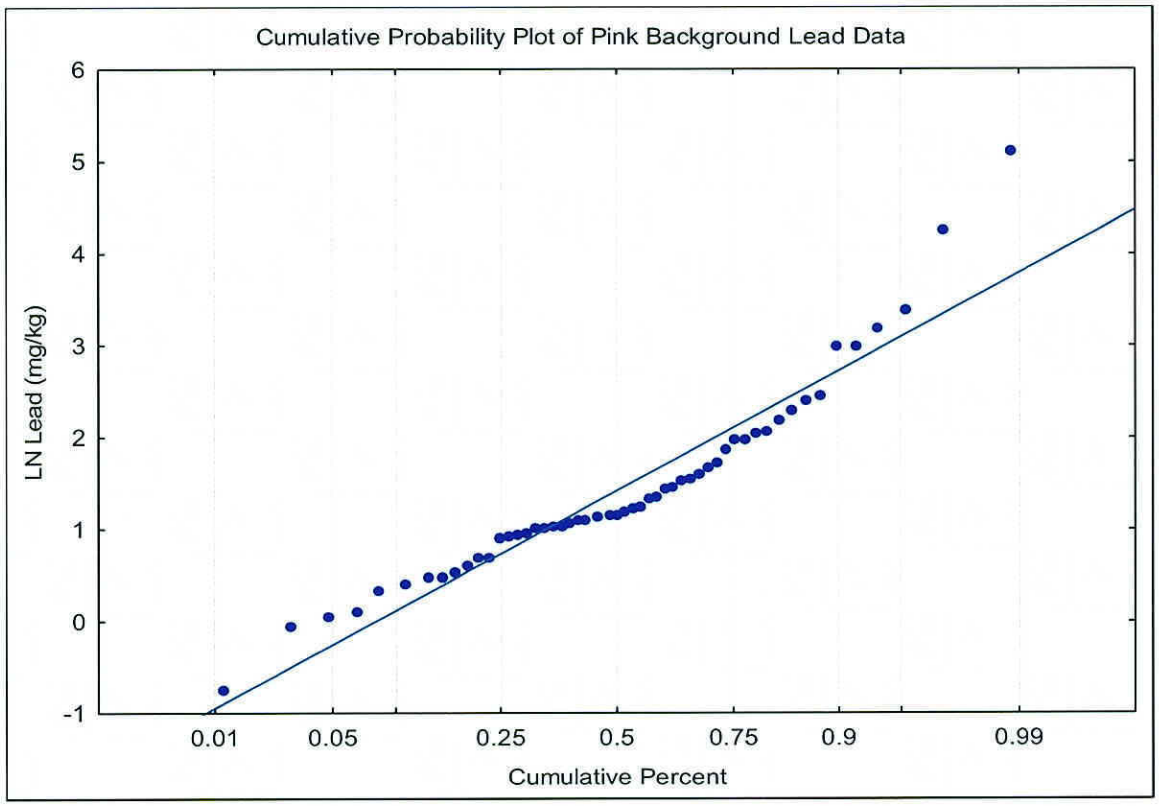
Note:
a - surface to water table (5 foot-depth)

Acronyms/Abbreviations:
bgs – below ground surface
BHC – benzenehexachloride
DDD – dichlorodiphenyldichloroethane
DDE – dichlorodiphenyldichloroethene
DDT – dichlorodiphenyltrichloroethane
µg/kg – microgram per kilogram
UCL – upper confidence limit

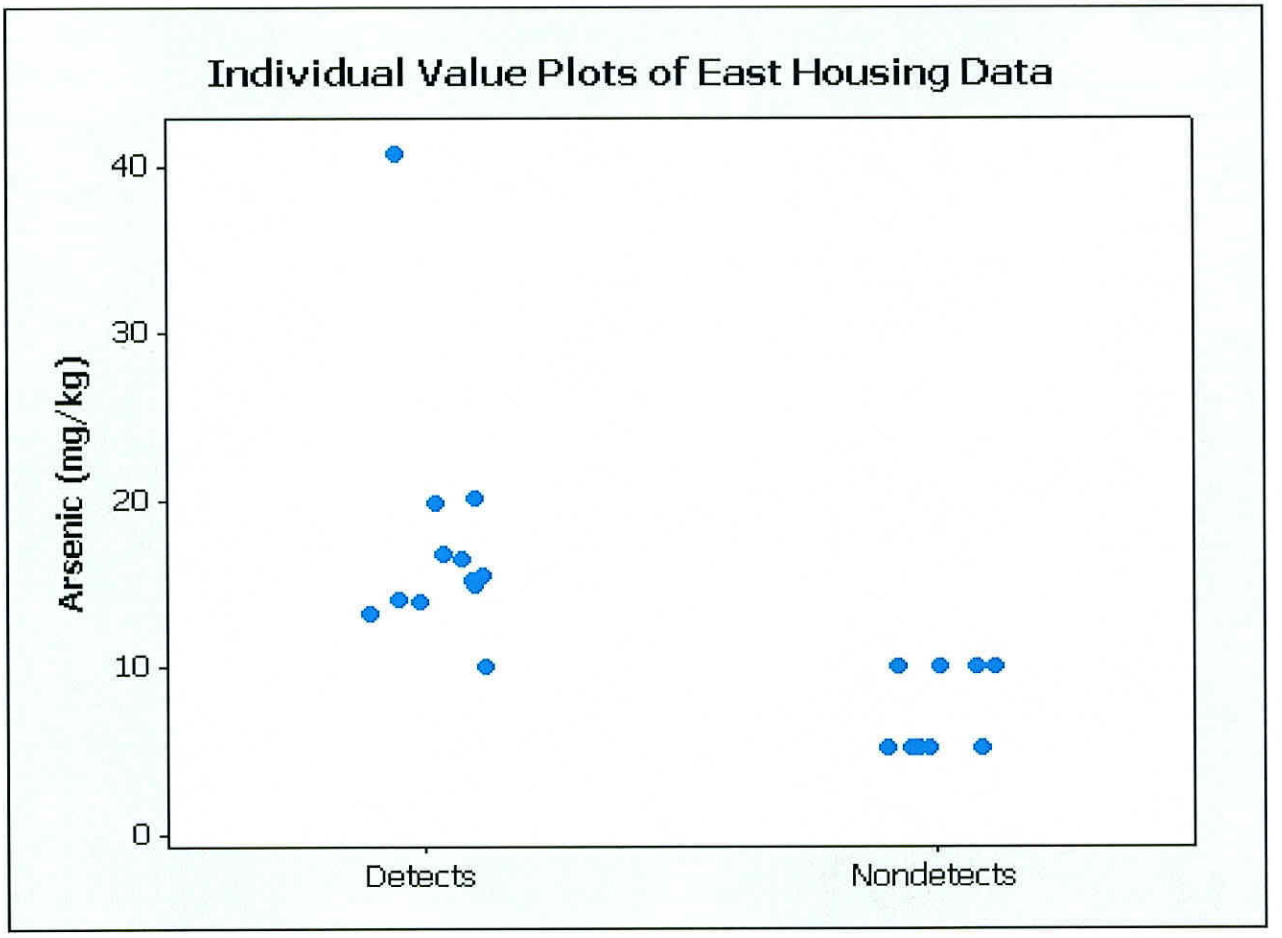
Response to DTSC Comment 7
Cumulative Probability Plot of Arsenic Data from IR Sites 30 and 31 and East Housing



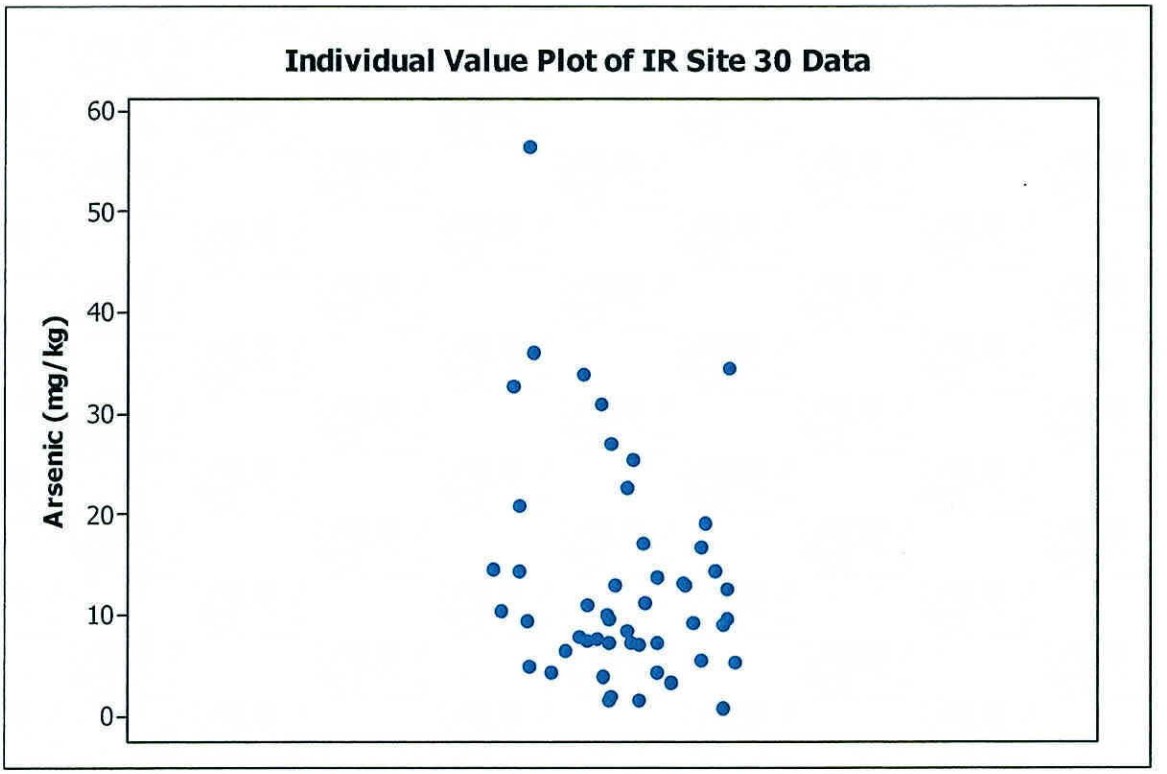
Response to DTSC Comment 8
Cumulative Probability Plot for Lead in Alameda Point Pink Background

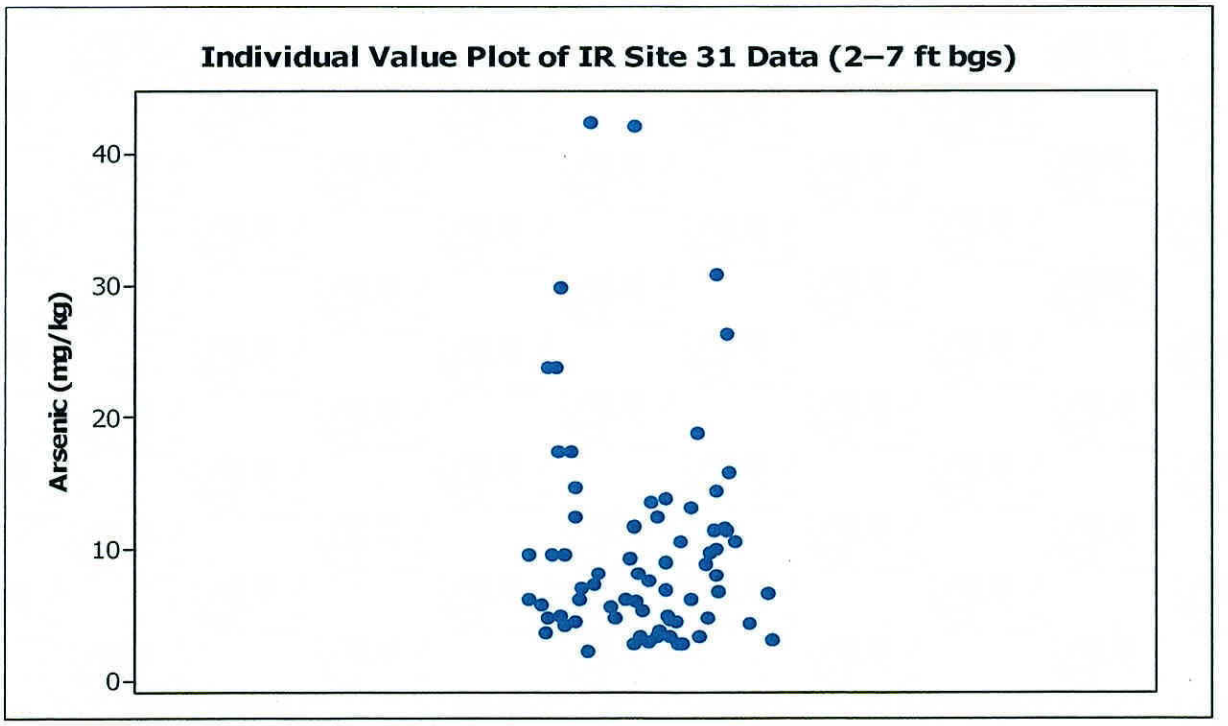


Response to DTSC Comment 9
Individual Value Plots for East Housing, IR Site 30 and IR Site 31



Response to DTSC Comment 9 (con't)
Individual Value Plots for East Housing, IR Site 30 and IR Site 31





All values are detects. Horizontal offset was applied so that data points would not overlap.

Response to DTSC Comment 10
Results of Two-Sample Comparisons for Arsenic

Hypothesis Test	IR Site Data	Background Data	Test Statistic	Critical Value	Conclusion*
Wilcoxon Rank Sum	Site 30	East Housing	-0.706	1.645	Site ≤ Background
Wilcoxon Rank Sum	Site 30	East Housing - Maximum Value Removed	-0.416	1.645	Site ≤ Background
Wilcoxon Rank Sum	Site 31	East Housing	-2.415	1.645	Site ≤ Background
Wilcoxon Rank Sum	Site 31	East Housing - Maximum Value Removed	-2.167	1.645	Site ≤ Background
Gehan	Site 30	East Housing	-0.771	1.645	Site ≤ Background
Gehan	Site 30	East Housing - Maximum Value Removed	-0.459	1.645	Site ≤ Background
Gehan	Site 31	East Housing	-2.145	1.645	Site ≤ Background
Gehan	Site 31	East Housing - Maximum Value Removed	-1.867	1.645	Site ≤ Background
Two-Sample t-test	Site 30	East Housing	-0.635	1.668	Site ≤ Background
Two-Sample t-test	Site 31	East Housing	-2.077	1.662	Site ≤ Background

Note:
* null hypothesis: site ≤ background;
accept null hypothesis if test statistic < critical value;
reject null hypothesis if test statistic ≥ critical value;
IR Site 31 data are from 2–7 feet bgs

Acronyms/Abbreviations:
bgs – below ground surface
IR – Installation Restoration (Program)