ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

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

November 13, 2012

Mr. Kirk Hutchison
Hutch's Car Wash
6355 McCarran Boulevard
Reno, NV 89509
(sent via electronic mail to skeekirk@aol.com)

Robert L Webster Trust
Sixty 31st Avenue
San Mateo, CA 94403-3404

Ophelia Bohannon Trust
Ophelia Bohannon
Address Unknown

Subject: Closure Transmittal; Fuel Leak Case No. RO0000451 and Geotracker Global ID T0600102285; Hutch's Car Wash, 17945 Hesperian Boulevard, San Lorenzo, CA 94580

Dear Messrs. Hutchison and Webster, and Ms. Bohannon:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- A non-standard TPHg response in the grab groundwater samples collected proximal to the former UST system can imply residual non-target contaminants may remain in-place; this was not clarified.
- Limited residual hydrocarbon contamination remains present in soil and in groundwater beneath the site and in vicinity of the former USTs.
- Product lines were pressure washed, but remain in-place.
- MTBE was the only fuel oxygenate analyzed in soil in proximity to the USTs. MTBE, DIPE, ETBE, TAME, TBA, EDB, and EDC were analyzed for in soil downgradient of the UST locations.
- Groundwater samples from deeper water-bearing zones contained detectable contaminant concentrations up to 430 µg/l TPHd, 59 µg/l MTBE, and 28 µg/l TAME. The concentrations of TPHd were generally noted to be a higher boiling point than diesel, and were generally separated vertically by non-detectable concentrations at a shallower level.
- Site wells were not surveyed to Geotracker standards prior to closure.
- Case closure for this fuel leak site is granted for the current commercial land use only. If a change in land use to any residential or other conservative land use scenario occurs at this site, Alameda County Environmental Health (ACEH) must be notified as required by Government Code Section 65850.2.2. ACEH will re-evaluate the case upon receipt of approved development/construction plans.
- Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.

If you have any questions, please call Mark Detterman at (510) 567-6876. Thank you.

Sincerely,

Donna L. Drogos, P.E.
Division Chief

Enclosures:
1. Remedial Action Completion Certificate
2. Case Closure Summary

cc: Ms. Cherie McCaulou (w/enc.), SF- Regional Water Quality Control Board, 1515 Clay Street, Suite 1400, Oakland, CA 94612, (sent via electronic mail to CMacaulou@waterboards.ca.gov)

Donna Drogos, (sent via electronic mail to donna.drogos@acgov.org)
Mark Detterman (sent via electronic mail to mark.detterman@acgov.org)
Electronic File, GeoTracker

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
OFFICE OF THE DIRECTOR
1131 HARBOR BAY PARKWAY
ALAMEDA, CA 94502
(510) 567-6777
FAX (510) 337-9135

REMEDIAL ACTION COMPLETION CERTIFICATION

November 13, 2012

Mr. Kirk Hutchison
Hutch's Car Wash
6355 McCarran Boulevard
Reno, NV 89509
(sent via electronic mail to skeekirk@aol.com)

Robert L Webster Trust
Sixty 31st Avenue
San Mateo, CA 94403-3404

Ophelia Bohannon Trust
Ophelia Bohannon
Address Unknown

Subject: Case Closure for Fuel Leak Case No. RO0000451 and Geotracker Global ID T0600102285; Hutch's Car Wash, 17945 Hesperian Boulevard, San Lorenzo, CA 94580

Dear Messrs. Hutchison and Webster, and Ms. Bohannon:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

Claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to Section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code. Please contact our office if you have any questions regarding this matter.

Sincerely,

Ariu Levi
Director

CASE CLOSURE SUMMARY
LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM

I. AGENCY INFORMATION

Date: July 25, 2012

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6876
Responsible Staff Person: Mark Detterman	Title: Senior Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: Hutch's Car Wash		
Site Facility Address: 17945 Hesperian Blvd., San Lorenzo, CA 94580		
RB Case No.: 01-2480	STID No.: 730	LOP Case No.: RO0000451
URF Filing Date: 12/15/98	Geotracker ID: T0600102285	APN: 412-0071-003-25

Responsible Parties	Addresses	Phone Numbers
Kirk Hutchison	Hutch's Car Wash 6355 McCarran Blvd Reno, NV 89509	---
Ophelia Bohannon	Ophelia Bohannon Trust Unknown Address	---

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
----	10,000	Unleaded Gasoline	In Place*	1/21/1999
----	5,000	Super Unleaded Gasoline	In Place*	1/21/1999
----	5,000	Super Unleaded Gasoline	In Place*	1/21/1999
Piping			In Place*	Prior to 1/21/1999

* Placed back in-service for re-use as water holding tanks for car wash system after the tanks and piping were pressure washed, the rinsate removed, and the interior lining video inspected.

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Unknown; suspected to be tank overfill (USTs lined for service for car wash).		
Site characterization complete? Yes	Date Approved By Oversight Agency: -----	
Monitoring wells installed? Yes	Number: 3	Proper screened interval? Yes
Highest GW Depth: 13.24 ft bgs	Lowest GW Depth: 16.06 ft bgs	Flow Direction: West to northwest, occasionally west southwest
Most Sensitive Current Use: Potential drinking water source.		

Summary of Production Wells in Vicinity: There are four known irrigation wells within an approximately ¼-mile radius of the site. There are also two known domestic wells within that radius. The exact location of one of the domestic and one of the irrigation wells cannot be precisely determined; however, available data indicates these wells are at Kennedy Park on Hesperian Blvd, and are thus cross-gradient to the site. All of the other irrigation and domestic wells are either upgradient or cross-gradient of the site. The closest of these wells appears to be at a distance of 1,000 feet cross-gradient. Therefore, these wells do not appear to be receptors for this site due to distance and location.

Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest SW Name: Sulfur Creek; 3,400 feet south
Off-Site Beneficial Use Impacts (Addresses/Locations): None identified.	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	2- 5,000 gallon 1-10,000 gallon	The tanks were closed in place for re-use as water holding tanks for the Hutch's Car Wash car wash system.	1/21/1999
Piping	NA	Pressure washed; In place	1/21/1999
Tank Rinsate	300 gallons	Disposed of at Alviso Independent Oil facility; 50020 Archer Street, Alviso, CA 95002	1/21/1999
Soil	---	---	---
Groundwater	---	---	---

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP
(Please see Attachments 1 through 6 for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	2.4*	2.4	4,100 **	98
TPH (Diesel)	<1.0	<1.0	430	430
TPH (Motor Oil)	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed
Oil and Grease	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed
Benzene	<0.62*	<0.62	260	< 0.50
Toluene	<0.62*	<0.62	620	< 0.50
Ethylbenzene	0.011*	0.011	3,000	< 0.50
Xylenes	0.028*	0.028	7,100	< 0.50
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	6.0 ***	6.0 ***	Not Analyzed	Not Analyzed
MTBE	200 [1] *	200 [2]	4,400 [3]	75 [4]
Other (8240/8270)	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed

* Soil with the highest PID results in source area soil bores were not submitted for analysis.

** A non-standard response for the TPHg analysis for grab groundwater samples BH-C, BH-D, and BH-E was reported by the laboratory. Ultimately these were quantified to be up to <25,000 µg/l TPHg; however, if quantified as TPHg, a concentration up to 200,000 µg/l TPHg may have been present in these grab groundwater samples.

*** 6 mg/kg lead; Cd, Cr, Ni, & Zn not analyzed.

1 MTBE was the only oxygenate analyzed during the September 1999 soil (and groundwater) investigation; analysis was conducted by EPA Method 8020 and was not confirmed by EPA Method 8260. 200 mg/kg MTBE; TAME, DIPE, ETBE, TBA, EDB, and 1,2-DCA not analyzed.

2 MTBE, TAME, DIPE, ETBE, TBA, EDB, and 1,2-DCA all nondetectable at < 0.0050 mg/kg (July 2010 downgradient investigation).

3 4,400 µg/l MTBE, 28 µg/l TAME, 14 µg/l TBA, DIPE, ETBE, EDB, and 1,2-DCA not analyzed.

4 75 µg/l MTBE, 19 µg/l TAME, 14 µg/l TBA, DIPE and ETBE < 0.50 µg/l.

Site History and Description of Corrective Actions:

The site property is currently Hutch's Car Wash on the west side of Hesperian Boulevard in San Lorenzo. The site is surrounded to the north, east, and south by commercial properties, with residential properties adjacent to the western boundary of the site. Sediments on the site consist of clayey to sandy silt to an approximate depth of 7.5 to 10 feet below grade surface (bgs), and then silty sand or sandy silt, with some clayey silt to approximately 27 feet bgs.

On December 1, 1998, soil borings BH-A and BH-H were installed at the site to prepare for the in-place closure of the USTs as fuel storage systems, and conversion to use as water holding tanks for a car wash system (after a video inspection of the interior lining of the USTs). BH-A and BH-B were drilled adjacent to the dispensers and one soil sample was collected from a depth of 4 feet below grade surface (bgs) from each boring. Soil borings BH-C through BH-H were advanced adjacent to the USTs and one soil sample was collected at a depth of 15.5 feet bgs, and one grab groundwater sample was collected from each boring. Concentrations up to 1.7 mg/kg TPHg, 0.011 mg/kg ethylbenzene, and 0.028 mg/kg total xylenes were documented in soil; however, elevated PID readings were also present in the source area, and soil samples from these depths were not selected for laboratory analysis (see BH-E at 8 feet bgs). MTBE was detected in five of the eight soil borings at concentrations up to 3.0 mg/kg. Grab groundwater concentrations from bores BH-C to BH-H documented concentrations in groundwater up to 1,900 µg/l TPHg, 260 µg/l benzene, 4,400 µg/l MTBE, and as well as other fuel related volatile organics. A non-standard response for the TPHg analysis for grab groundwater samples BH-C, BH-D, and BH-E was encountered. Ultimately these were quantified to be up to <25,000 µg/l TPHg; however, if quantified as TPHg, a concentration up to 200,000 µg/l TPHg may have been present in the grab groundwater samples. Lead was not detected in the soil samples.

On January 21, 1999, the 10,000 gallon unleaded gasoline and two 5,000 gallon super unleaded gasoline underground storage tanks (USTs) were closed in place for re-use as water holding tanks for the car wash system at the site.

On September 29, 1999, wells MW-1 through MW-3 were installed. Two soil samples were analyzed from each boring. Concentrations up to 24 mg/kg TPHg and 200 mg/kg MTBE were present in soil; BTEX was not detected at standard limits of detection. Lead was detected at up to 6.0 mg/kg. Concentrations up to of 1,500 µg/l TPHg, 3.3 µg/l benzene, 2.3 µg/l toluene, 27 µg/l ethylbenzene, 72 µg/l total xylenes, and 120 µg/l MTBE were subsequently detected in groundwater.

A preferential pathway and area well survey was conducted in early 2010. Along the western boundary of the property, in the downgradient direction, a storm sewer with a culvert depth of approximately 2.2 feet bgs was located. All other potential conduits are located either upgradient (east) or at a distance of approximately 175 feet downgradient from the UST locations, and are not therefore considered to be preferential pathways of concern.

On July 20 and 21, 2010, soil bores BH-I through BH-L were installed as a downgradient transect with a spacing of 30 feet along the western edge of the property. All analyzed soil samples contained non-detectable levels of all fuel hydrocarbon constituents. Additionally, all photoionization detector readings from the soil borings were below detectable levels. Grab groundwater samples were collected between 16 and 40 feet bgs. Shallow groundwater was nondetectable for all analytes at standards limits of reporting. Groundwater samples from deeper water-bearing zones contained detectable contaminant concentrations up to 430 µg/l TPHd, 59 µg/l MTBE, and 28 µg/l TAME. The concentrations of TPHd were generally noted to be a higher boiling point than diesel, and were generally separated vertically by non-detectable concentrations at a shallower level.

On September 13, 2011 soil vapor survey was conducted due to the presence of elevated PID readings in early soil bores. Soil vapor points SVS-1 through SVS-3 were installed to a depth of five feet bgs. Analytical concentrations up to 4,700 $\mu g/m^3$ TPHg, 6.7 $\mu g/m^3$ benzene, 51 $\mu g/m^3$ toluene, 5.8 $\mu g/m^3$ ethylbenzene, and 39 $\mu g/m^3$ total xylenes were documented. All petroleum hydrocarbons in soil vapor were below environmental screening levels (ESLs) and California Human Health Screening Levels (CHHSLs) for both residential and commercial properties.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
Site Management Requirements: Case closure for this fuel leak site is granted for the current commercial land use only. If a change in land use to any residential or other conservative land use scenario occurs at this site, Alameda County Environmental Health (ACEH) must be notified as required by Government Code Section 65850.2.2. ACEH will re-evaluate the case upon receipt of approved development/construction plans. Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.		
Should corrective action be reviewed if land use changes? Yes		
Was a deed restriction or deed notification filed? No		Date Recorded: ----
Monitoring Wells Decommissioned: No	Number Decommissioned: 0	Number Retained: 3
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: None		

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

- A non-standard TPHg response in the grab groundwater samples collected proximal to the former UST system can imply residual non-target contaminants may remain in-place; this was not clarified.
- Limited residual hydrocarbon contamination remains present in soil and in groundwater beneath the site and in vicinity of the former USTs.
- Product lines were pressure washed, but remain in-place.
- MTBE was the only fuel oxygenate analyzed in soil in proximity to the USTs. MTBE, DIPE, ETBE, TAME, TBA, EDB, and EDC were analyzed for in soil downgradient of the UST locations.
- Groundwater samples from deeper water-bearing zones contained detectable contaminant concentrations up to 430 µg/l TPHd, 59 µg/l MTBE, and 28 µg/l TAME. The concentrations of TPHd were generally noted to be a higher boiling point than diesel, and were generally separated vertically by non-detectable concentrations at a shallower level.
- Site wells were not surveyed to Geotracker standards prior to closure.

Conclusion:

Alameda County Environmental Health staff believe that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment under the current commercial land use based upon the information available in our files to date. No further investigation or cleanup for the fuel leak case is necessary unless a change in land use to any residential or other conservative land use scenario occurs at the site. ACEH staff recommend closure for this site.

Detterman, Mark, Env. Health

From: MCcaulou, Cherie@Waterboards [Cherie.MCcaulou@waterboards.ca.gov]
Sent: Monday, July 30, 2012 6:19 PM
To: Detterman, Mark, Env. Health
Subject: RE: Case Closure Summary for Hutch's Car Wash (RO 451)

Mark – I received your notification and recommendation for case closure of Case No. RO452. We have no comments. Thank you.

From: Mark Env. Health Detterman [mailto:Mark.Detterman@acgov.org]
Sent: Monday, July 30, 2012 4:10 PM
To: MCcaulou, Cherie@Waterboards
Subject: Case Closure Summary for Hutch's Car Wash (RO 451)

Hi Cherie,

Attached is the closure summary for RO0000451 for Hutch's Car Wash located at 17945 Hesperian Blvd, San Lorenzo in order to comply with the RWQCBs 30-day review period. If no comments from the RWQCB are received within the 30-day review period, ACEH will proceed with case closure.

Please let me know if you have questions.
Thanks,

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502
Direct: 510.567.6876
Fax: 510.337.9335
Email: mark.detterman@acgov.org

PDF copies of case files can be downloaded at:

http://www.acgov.org/aceh/lop/ust.htm

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Mark Detterman, P.G., C.E.G.	Title: Senior Hazardous Materials Specialist
Signature: Mark E.	Date: 7/27/12
Approved by: Donna L. Drogos, P.E.	Title: Division Chief
Signature:	Date: 07/27/12

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
Notification Date: 7/30/12	

VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: 10/8/2012	Date of Well Decommissioning Report: 10/31/2012	
All Monitoring Wells Decommissioned: (Yes) No	Number Decommissioned: 3	Number Retained: 0
Reason Wells Retained: NA		
Additional requirements for submittal of groundwater data from retained wells: NA		
ACEH Concurrence - Signature: Mark E.		Date: 11/9/12

Attachments:

1. Site Vicinity Maps (2 pp)
2. Site Plans (2 pp)
3. Soil Analytical Data (3 pp)
4. Groundwater Elevation and Analytical Data (6 pp)
5. Soil Vapor Analytical Data (1 pp)
6. Boring Logs (19 pp)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.

ATTACHMENT 1

NORTH

SITE LOCATION MAP

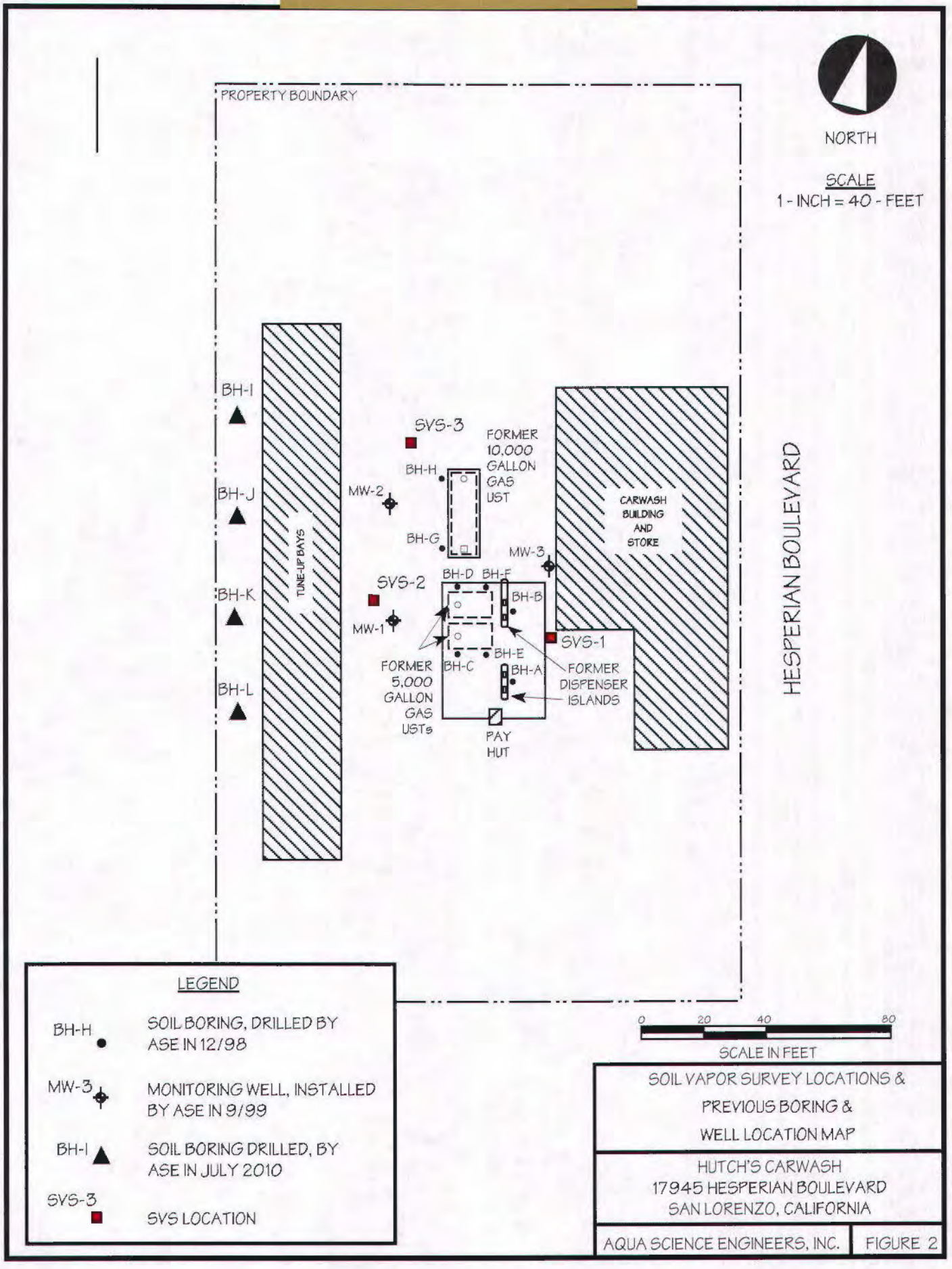
HUTCH'S CARWASH
17945 HESPERIAN BOULEVARD
SAN LORENZO, CA

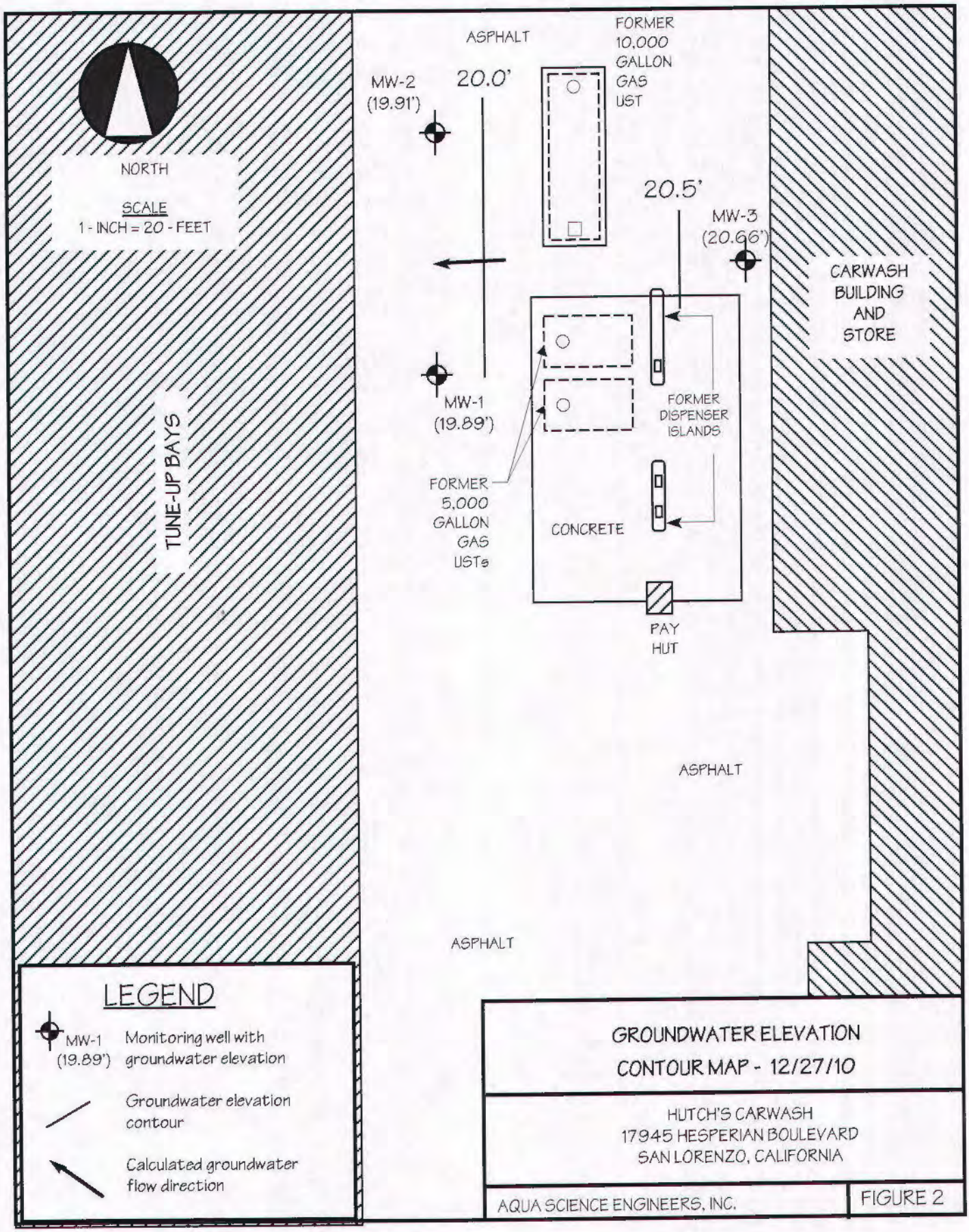
AQUA SCIENCE ENGINEERS, INC. | Figure 1

To see all the details that are visible on the screen, use the "Print" link next to the map.

Google

ATTACHMENT 2




NORTH
SCALE
1 - INCH = 20 - FEET
ASPHALT
FORMER
10,000
GALLON
GAS
UST
MW-2
(19.91')
20.0'
20.5'
MW-3
(20.66')
CARWASH
BUILDING
AND
STORE
TUNE-UP BAYS
MW-1
(19.89')
FORMER
DISPENSER
ISLANDS
FORMER
5,000
GALLON
GAS
USTs
CONCRETE
PAY
HUT
ASPHALT
ASPHALT
LEGEND
MW-1
(19.89')
Monitoring well with
groundwater elevation
Groundwater elevation
contour
Calculated groundwater
flow direction
GROUNDWATER ELEVATION
CONTOUR MAP - 12/27/10
HUTCH'S CARWASH
17945 HESPERIAN BOULEVARD
SAN LORENZO, CALIFORNIA
AQUA SCIENCE ENGINEERS, INC.
FIGURE 2

ATTACHMENT 3

TABLE ONE

Hutch's Carwash, 17945 Hesperian Boulevard, San Lorenzo, CA

Summary of Chemical Analysis of **Soil** Samples

TPH-G, Benzene, Toluene, Ethylbenzene, Total Xylenes, and MTBE

All results are in **parts per million**

SAMPLE NAME, DEPTH	TPH GAS	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE
BH-A, 4.0'	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	**0.091**
BH-B, 4.0'	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-C, 15.5'	< 10	< 0.62	< 0.62	< 0.62	< 0.62	**3.0**
BH-D, 15.5'	< 10	< 0.62	< 0.62	< 0.62	< 0.62	**1.3**
BH-E, 15.5'	**1.7**	< 0.005	< 0.005	**0.011**	**0.028**	**0.26**
BH-F, 15.5'	< 10	< 0.62	< 0.62	< 0.62	< 0.62	**0.97**
BH-G, 15.5'	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-H, 11.5'	< 10	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62
EPA METHOD	8015M	8020	8020	8020	8020	8020

NOTES:

Detectable concentrations are in **bold.**

Non-detectable concentrations are noted by the less than sign (<) followed by the laboratory detection limit.

TABLE ONE
Summary of Chemical Analysis of **SOIL** Samples
All results are in **parts per million**

Boring	Depth Sampled	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	Total Lead
MW-1	10.5'	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	**2 0 0**	< 5.0
	15.0'	**2 4**	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	**5 . 0**
MW-2	11.0'	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	**0 . 0 1 1**	< 5.0
	15.0'	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	**0 . 0 7 0**	< 5.0
MW-3	10.5'	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 5.0
	15.0'	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	**6 . 0**

Notes:
Detectable concentrations are in **bold**.

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

6.0 MONITORING WELL CONSTRUCTION, DEVELOPMENT AND SAMPLING

6.1 Monitoring Well Construction

Groundwater monitoring wells MW-1, MW-2 and MW-3 were constructed in borings MW-1, MW-2 and MW-3, respectively. The wells are constructed with 2-inch diameter, 0.020-inch factory slotted, flush-threaded, schedule 40 PVC well screen and blank casing. The wells are screened between 10-feet bgs and 27-feet bgs to monitor the first water bearing zone encountered. Lonestar #3 Monterey sand occupies the annular space between the borehole and the casing from the bottom of the boring to approximately 2-feet above the well screen. A 1-foot thick hydrated bentonite layer separates the sand from the overlying cement surface seal. The wellhead is secured with a locking wellplug beneath an at-grade, traffic-rated vault.

6.2 Monitoring Well Development

On October 4, 1999, ASE associate geologist Ian Reed developed the three monitoring wells using multiple episodes of surge-block agitation and bailer and pump evacuation. Over ten well casing volumes of water were

TABLE THREE

Summary of Analytical Results of Soil Samples
Petroleum Hydrocarbons, Fuel Oxygenates and Lead Scavengers
Hutch's Carwash, 17945 Hesperian Blvd, San Lorenzo, California
Results are in parts per million (ppm)

Boring	Sample Depth (ft)	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	DIPE	ETBE	TBA	EDB	1,2-DCA
BH-I	14.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	39.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
BH-J	14.0	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	34.0	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
BH-K	13.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	39.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
BH-L	14.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	39.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050

Notes:

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

Detectable concentrations in **BOLD**

ATTACHMENT 4

TABLE TWO

Hutch's Carwash, 17945 Hesperian Boulevard, San Lorenzo, CA

Summary of Chemical Analysis of **Grab Groundwater** Samples

TPH-G, Benzene, Toluene, Ethylbenzene, Total Xylenes, and MTBE

All results are in **parts per billion**

SAMPLE NAME	TPH GAS	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE
BH-C WATER	< 10,000*	110	260	1,500	2,700	4,400
BH-D WATER	< 5,000*	59	120	210	230	4,200
BH-E WATER	< 25,000*	260	620	3,000	7,100	< 2,500
BH-F WATER	1,100	42	< 10	< 10	< 10	880
BH-G WATER	55	< 0.5	0.64	0.63	1.9	18
BH-H WATER	1,900	15	< 10	< 10	< 10	3,400
EPA METHOD	8015M	8020	8020	8020	8020	8020

NOTES:

Detectable concentrations are in **bold.**

Non-detectable concentrations are noted by the less than sign (<) followed by the laboratory detection limit.

* The analytical results for these samples indicate that the hydrocarbon found in the Gasoline Range is uncharacteristic of the Gasoline Profile. If quantified using the Gasoline Response Factor, the concentrations would equal 65,000, 39,000, and 200,000 ug/L for BH-C, BH-D, and BH-E respectively.

TABLE FOUR

Summary of Analytical Results of Groundwater Samples
Petroleum Hydrocarbons, Fuel Oxygenates and Lead Scavengers
Hutch's Carwash, 17945 Hesperian Blvd, San Lorenzo, California
Results are in parts per billion (ppb)

Boring	Sample Depth (ft)	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	DIPE	ETBE	TBA	EDB	1,2-DCA
BH-I	16-20	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
	25-29	< 50	130	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
BH-J	25-30	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	1.6	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
	31-35	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	1.4	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
BH-K	20-25	< 50	170*	< 0.50	< 0.50	< 0.50	< 0.50	59	28	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
	26-28	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
BH-L	20-24	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
	25-28	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
	38-40	< 50	430*	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
ESL (DW)		100	100	1.0	40	30	20	5	NE	NE	NE	12	0.05	0.5
ESL (NDW)		210	210	46.0	130	130	100	1800	NE	NE	NE	18000	150	200

Notes:

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

Detectable concentrations in **BOLD**

* = Hydrocarbons are higher-boiling than typical diesel fuel.

ESL = Environmental Screening Levels presented in the "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) dated May 2008 for site where groundwater is a current or potential source of drinking water (DW) or not a potenital source of drinking water (NDW).

TABLE TWO

Summary of Analytical Results for GROUNDWATER Samples

Hutch's Carwash

17945 Hesperian Blvd., San Lorenzo, CA

All results are in parts per billion (ppb)

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
MW-1									
10/6/99	1,500	3.3	2.3	27	72	120	---	---	---
1/13/00	1,500	15	19	19	33	650	---	---	---
4/12/00	1,700	18	13	45	79	2,600	---	---	---
7/19/00	2,200	31	< 5.0	81	100	2,000	---	---	---
10/25/00	3,300	20	< 5.0	98	9.4	3,300	---	---	---
1/16/01	4,100	34	14	60	120	1,300	---	---	---
4/4/01	2,900	14	< 0.5	34	32	2,000	---	---	---
7/6/01	1,300	4.4	< 0.5	12	13	700	---	---	---
10/1/01	1,100	4.1	< 0.5	18	19	520	---	---	---
1/7/02	1,400	34	< 0.5	13	15	1,300	---	---	---
4/2/02	1,900	30	6.7	24	30	1,000	---	---	---
7/9/02	1,500	26	< 5.0	12	8.6	820	---	---	---
10/1/02	830	3.6	< 2.5	7.4	2.9	520	---	---	---
1/24/03	1,300	6.2	< 5.0	12	< 5.0	680	---	---	---
7/25/03	520	15	< 1.0	11	1.0	250	---	---	---
1/16/04	540	3.9	< 2.5	8.3	3.1	290	---	---	---
7/14/04	220	< 1.0	< 1.0	8.1	< 1.0	140	---	---	---
1/29/05	160	1.0	< 0.5	2.5	< 1.0	60	---	---	---
7/22/05	380	2.5	< 1.0	9.1	< 2.0	210	---	---	---
1/25/06	250	1.2	< 1.0	3.3	< 2.0	220	---	---	---
6/10/06	< 100	< 1.0	< 1.0	1.3	< 2.0	180	---	---	---
1/26/07	< 50	< 0.5	< 0.5	< 0.5	< 1.0	18	---	---	---
7/5/07	< 50	< 0.5	< 0.5	< 0.5	< 1.0	37	---	---	---
1/30/08	< 200	< 2.0	< 2.0	< 2.0	< 4.0	290	---	---	---
1/27/09	140	< 0.5	< 0.5	< 0.5	< 0.5	170	---	---	---
12/8/09	170	< 0.5	< 0.5	< 0.5	< 0.5	150	---	---	---
5/20/10	69	< 0.5	< 0.5	< 0.5	< 0.5	33	---	---	---
12/27/10	98	< 0.50	< 0.50	< 0.50	< 0.50	75	19	14	< 0.50

TABLE TWO

Summary of Analytical Results for GROUNDWATER Samples

Hutch's Carwash

17945 Hesperian Blvd., San Lorenzo, CA

All results are in parts per billion (ppb)

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
MW-2									
10/6/99	< 50	< 0.5	< 0.5	< 0.5	< 0.5	18	---	---	---
1/13/00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	16	---	---	---
4/12/00	< 100	< 1.0	< 1.0	< 1.0	< 1.0	240	---	---	---
7/19/00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
10/25/00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	6	---	---	---
1/16/01	< 50	< 0.5	< 0.5	< 0.5	< 0.5	8	---	---	---
4/4/01	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
7/6/01	< 50	< 0.5	< 0.5	< 0.5	< 0.5	6	---	---	---
10/1/01	< 50	< 0.5	< 0.5	< 0.5	< 0.5	21	---	---	---
1/7/02	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
4/2/02	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
7/9/02	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
12/27/10	**< 50**	**< 0.50**	**< 0.50**	**< 0.50**	**< 0.50**	**< 0.50**	**< 0.50**	**< 5.0**	**< 0.50**
MW-3									
10/6/99	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
1/13/00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
4/12/00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
7/19/00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
10/25/00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	---	---	---
12/27/10	**< 50**	**< 0.50**	**< 0.50**	**< 0.50**	**< 0.50**	**< 0.50**	**< 0.50**	**< 5.0**	**< 0.50**
ESL (DW)	100	1	40	30	20	5	NE	12	Varies
ESL (NDW)	210	46	130	43	100	1,800	NE	18,000	Varies

Notes:

* EPA Method 8020/EPA Method 8260 (MTBE confirmation)

** Hydrocarbon reported in the gasoline range does not match the laboratory gasoline standard

*** Sample contains a discrete peak in addition to gasoline

ESL = Environmental screening level presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (May 2008)" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region.

DW = Groundwater is considered a current or potential source of drinking water
NDW = Groundwater is not considered a current or potential source of drinking water

Most current data is in **Bold**

Non-detectable concentrations noted by the less than sign (<) followed by the laboratory reporting limit

NE = Not established

TABLE ONE

Groundwater Elevation Data

Hutch's Carwash

17945 Hesperian Blvd., San Lorenzo, CA

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	10/6/99	35.00	15.58	19.42
	1/13/00		15.58	19.42
	4/12/00		14.75	20.25
	7/19/00		15.29	19.71
	10/25/00		15.56	19.44
	1/16/01		15.22	19.78
	4/4/01		15.05	19.95
	7/6/01		15.49	19.51
	10/1/01		15.78	19.22
	1/7/02		13.83	21.17
	4/2/02		14.83	20.17
	7/9/02		15.41	19.59
	10/1/02		15.70	19.3
	1/24/03		14.69	20.31
	7/25/03		15.41	19.59
	1/16/04		14.73	20.27
	7/14/04		15.54	19.46
	1/29/05		14.38	20.62
	7/22/05		15.23	19.77
	1/25/06		14.00	21.00
	6/10/06		15.13	19.87
	1/26/07		15.30	19.70
	7/5/07		15.46	19.54
	1/30/08		14.32	20.68
	1/27/09		15.43	19.57
	12/8/09		15.57	19.43
	5/21/10		15.06	19.94
	12/27/10		**15.11**	**19.89**
MW-2	10/6/99	35.21	15.84	19.37
	1/13/00		15.78	19.43
	4/12/00		14.94	20.27
	7/19/00		15.54	19.67
	10/25/00		15.81	19.4
	1/16/01		15.50	19.71
	4/4/01		15.28	19.93
	7/6/01		15.73	19.48
	10/1/01		16.06	19.15
	1/7/02		14.08	21.13
	4/2/02		15.04	20.17
	7/9/02		15.66	19.55
	10/1/02		15.96	19.25
	1/24/03		14.90	20.31
	7/25/03		15.68	19.53
	1/16/04		14.93	20.28
	7/14/04		15.81	19.40
	1/29/05		14.90	20.31
	7/22/05		15.46	19.75
	1/25/06		14.16	21.05
	6/10/06		15.40	19.81
	1/26/07		15.55	19.66
	7/5/07		15.72	19.49
	1/30/08		14.51	20.70
	1/27/09		15.67	19.54
	12/8/09		15.85	19.36
	5/21/10		15.29	19.92
	12/27/10		**15.30**	**19.91**

TABLE ONE

Groundwater Elevation Data

Hutch's Carwash

17945 Hesperian Blvd., San Lorenzo, CA

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-3	10/6/99	34.47	14.98	19.49
	1/13/00		14.98	19.49
	4/12/00		14.09	20.38
	7/19/00		14.70	19.77
	10/25/00		14.98	19.49
	1/16/01		14.58	19.89
	4/4/01		14.43	20.04
	7/6/01		14.85	19.62
	10/1/01		15.21	19.26
	1/7/02		13.24	21.23
	4/2/02		14.20	20.27
	7/9/02		14.81	19.66
	10/1/02		15.12	19.35
	1/24/03		14.05	20.42
	7/25/03		14.82	19.65
	1/16/04		14.08	20.39
	7/14/04		14.94	19.53
	1/29/05		14.03	20.44
	7/22/05		14.59	19.88
	1/25/06		13.31	21.16
	6/10/06		14.53	19.94
	1/26/07		14.69	19.78
	7/5/07		14.88	19.59
	1/30/08		13.64	20.83
	1/27/09		14.83	19.64
	12/8/09		14.98	19.49
	5/21/10		14.44	20.03
	12/27/10		**13.81**	**20.66**

TABLE THREE

Summary of Analytical Results of Soil Vapor Samples
Petroleum Hydrocarbons, Atmospheric Gases and Helium
Hutch's Carwash, 17945 Hesperian Blvd, San Lorenzo, California

Sample Location	Sample Depth (ft)	Date Sampled	TPH Gasoline (ug/m3)	Benzene (ug/m3)	Toluene (ug/m3)	Ethyl Benzene (ug/m3)	m,p-Xylenes (ug/m3)	o' Xylenes (ug/m3)	Oxygen (%)	Nitrogen (%)	Carbon Dioxide (%)	Methane (%)	Helium (%)
SVS-1	5	9/13/11	**2,700**	**6.6**	**12**	**< 5.2**	**6.6**	**< 5.2**	**21**	**78**	**0.058**	**0.0091**	**1.3**
SVS-2	5	9/13/11	**3,800**	**6.6**	**16**	**< 5.2**	**13**	**< 5.2**	**5.6**	**90**	**4.5**	**0.039**	**< 0.12**
SVS-3	5	9/13/11	**4,700**	**6.7**	**51**	**5.8**	**28**	**11**	**19**	**80**	**0.39**	**0.0014**	**< 0.12**
ESL (Residential)			10000	84	63000	980	21000	21000	NE	NE	NE	NE	NE
ESL (Commercial)			29000	280	180000	3,300	58000	58000	NE	NE	NE	NE	NE
CHHSL (Residentail)			NE	36.2	135000	NE	317000	315000	NE	NE	NE	NE	NE
CHHSL (Commercial)			NE	122	378000	NE	887000	879000	NE	NE	NE	NE	NE

Notes:

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

Detectable concentrations in **BOLD**

ESL = Environmental Screening Levels presented in the "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) dated May 2008.

CHHSL = California Human Health Screening Level for shallow soil gas (vapor intrusion) presented in "Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties" dated January 2005.

Note that m-xylene and p-xylene have different CHHSLs. The lowest one is listed in the table.

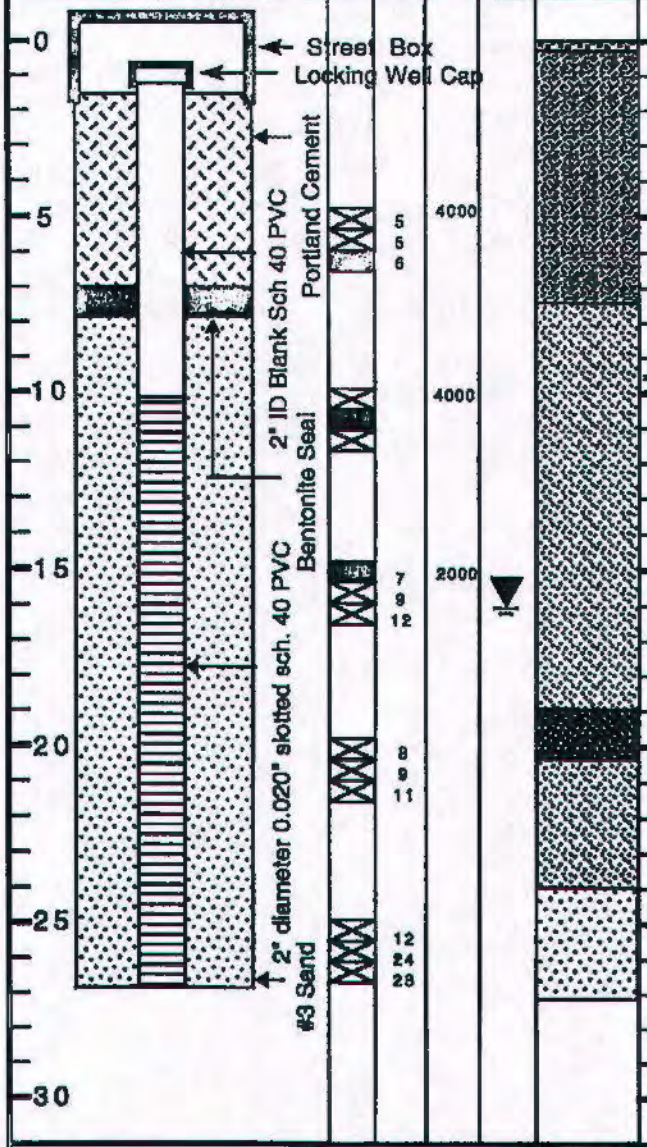
NE = Not established

ATTACHMENT 5

ATTACHMENT 6

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		MONITORING WELL: MW-1
Project Name: Hutch's Car Wash	Project Location: San Lorenzo, CA	Page 1 of 1
Driller: West Hazmat Drilling	Type of Rig: Hollow-Stem Auger	Size of Drill: 8.0" Diameter
Logged By: Robert Kitay	Date Drilled: September 29, 1999	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 16'	Total Depth of Well Completed: 27.0'
Static Depth of Water in Well: 16'	Well Screen Type and Diameter: 0.020" slotted, 2" sch. PVC
Total Depth of Boring: 27.0'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2.0" I.D. Split Barrell

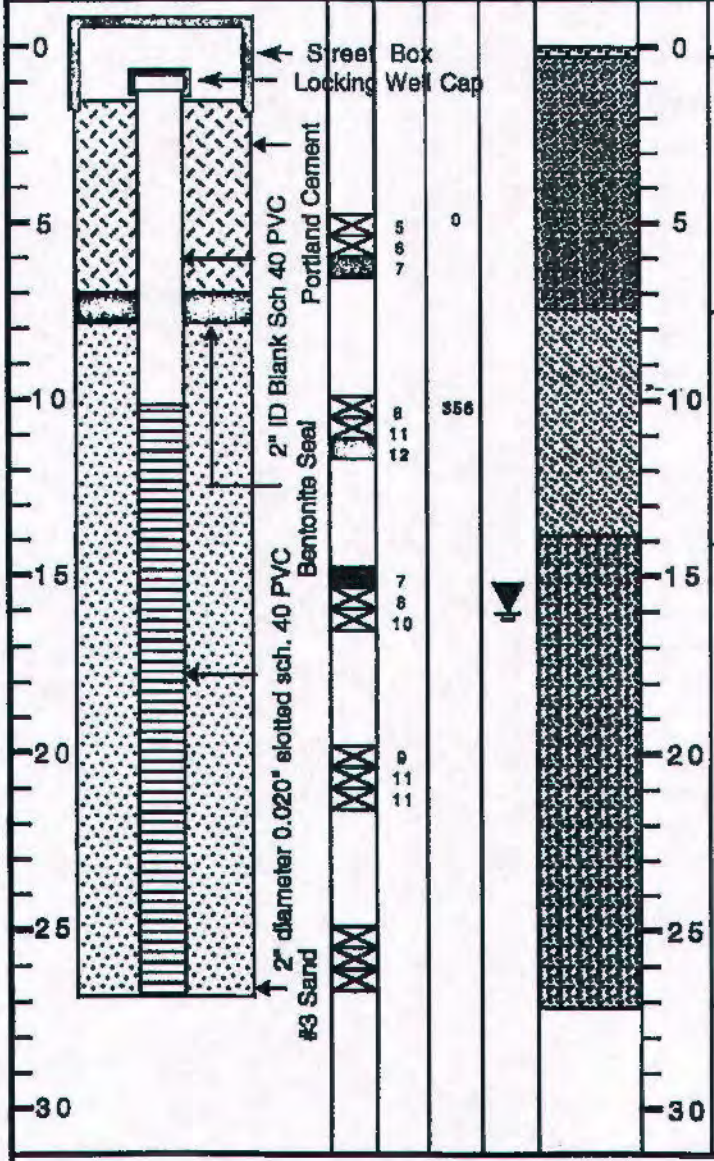


DESCRIPTION OF LITHOLOGY
standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
Asphalt
Clayey SILT (ML); dark yellow brown; medium stiff; dry; 85% silt; 10% clay; 5% fine sand; low plasticity; low estimated K; no odor
Silty SAND (SM); olive brown; medium dense; damp; 90% fine sand; 10% silt; non-plastic; medium estimated K; slight hydrocarbon odor
moist at 15'
Silty CLAY (CH); olive brown; stiff; wet; 80% clay; 20% silt; high plasticity; very low estimated K; strong hydrocarbon odor
Silty SAND (SM); olive; medium dense; wet; 85% fine sand; 15% silt; non-plastic; medium estimated k; strong hydrocarbon odor
SAND (SW); olive; dense; wet; 90% fine to coarse sand; 5% sub-rounded gravel to 0.2" diameter; 5% silt; non-plastic; high estimated k; strong hydrocarbon odor
End of boring at 27.0'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		MONITORING WELL: MW-2
Project Name: Hutch's Car Wash	Project Location: San Lorenzo, CA	Page 1 of 1
Driller: West Hazmat Drilling	Type of Rig: Hollow-Stem Auger	Size of Drill: 8.0" Diameter
Logged By: Robert Kitay	Date Drilled: September 29, 1999	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 16'	Total Depth of Well Completed: 27.0'
Static Depth of Water in Well: 16'	Well Screen Type and Diameter: 0.020" slotted, 2" sch. PVC
Total Depth of Boring: 27.0'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2.0" I.D. Split Barrell



DESCRIPTION OF LITHOLOGY

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

Asphalt

Clayey SILT (ML); dark yellow brown; medium stiff; dry; 85% silt; 10% clay; 5% fine sand; low plasticity; low estimated K; no odor

Silty SAND (SM); yellow brown; medium dense; damp; 90% fine sand; 10% silt; non-plastic; medium estimated K; slight hydrocarbon odor

Sandy SILT (ML); yellow brown; medium stiff; moist; 80% silt; 15% fine sand; 5% clay; low plasticity; low estimated K; slight hydrocarbon odor

olive; wet; 50-60% silt; 35-45% fine sand; 5% clay; slight hydrocarbon odor

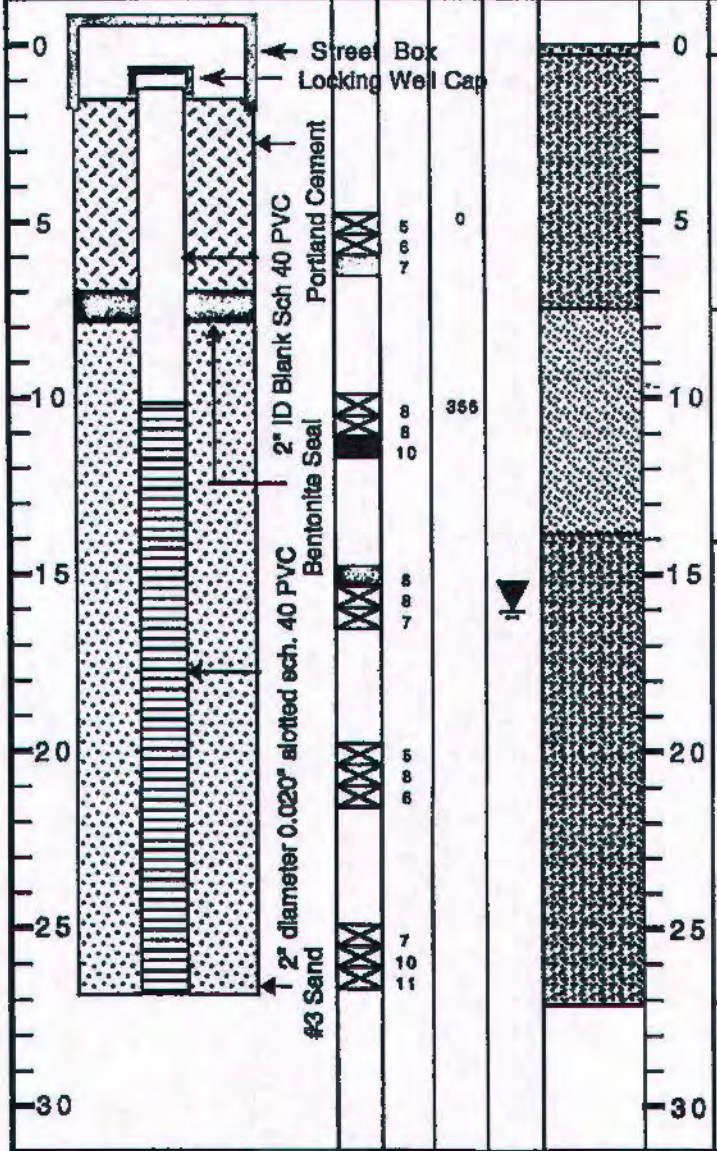
sand stringers at 25'

End of boring at 27.0'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		MONITORING WELL: MW-3
Project Name: Hutch's Car Wash	Project Location: San Lorenzo, CA	Page 1 of 1
Driller: West Hazmat Drilling	Type of Rig: Hollow-Stem Auger	Size of Drill: 8.0" Diameter
Logged By: Robert Kitay	Date Drilled: September 29, 1999	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 16'	Total Depth of Well Completed: 27.0'
	Well Screen Type and Diameter: 0.020" slotted, 2" sch. PVC
Static Depth of Water in Well: 16'	Well Screen Slot Size: 0.020"
Total Depth of Boring: 27.0'	Type and Size of Soil Sampler: 2.0" I.D. Split Barrell

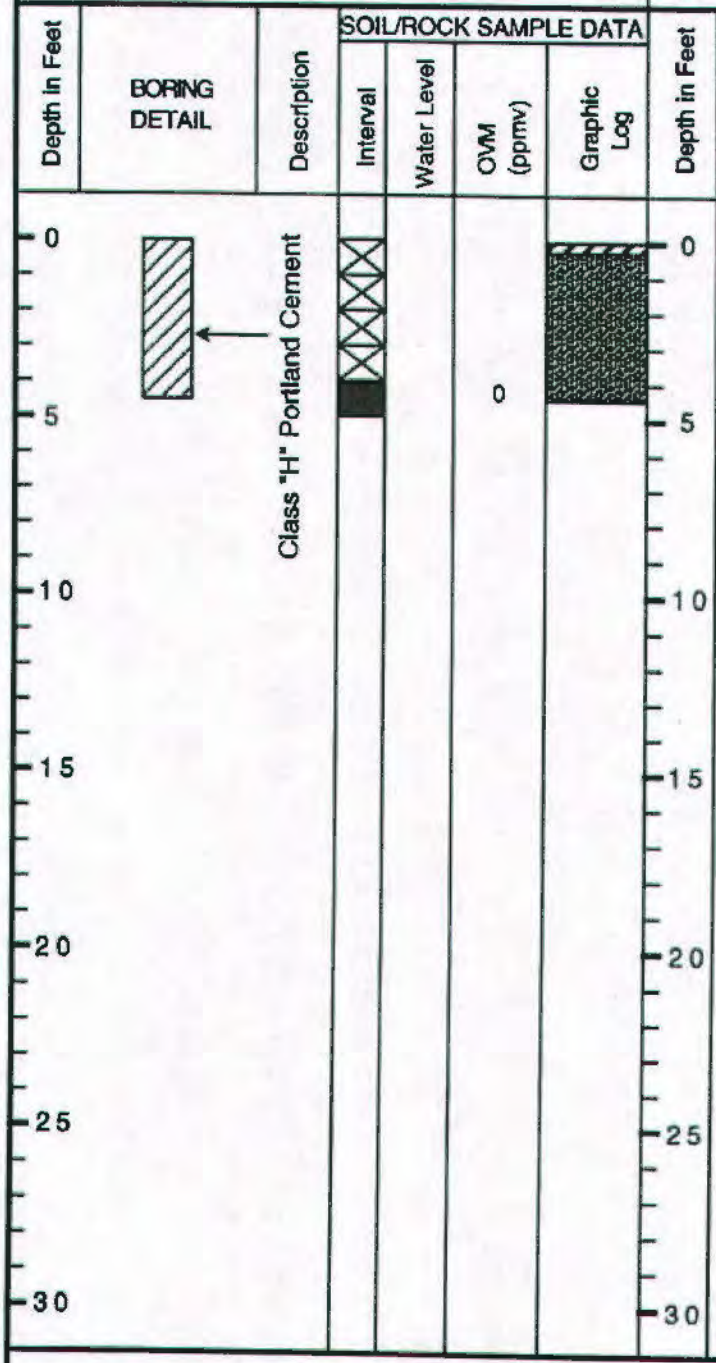


DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
Asphalt
Sandy SILT (ML); dark yellow brown; medium stiff; damp; 55% silt; 40% fine sand; 5% clay; low plasticity; low estimated K; no odor
Silty SAND (SM); yellow brown; medium dense; damp; 60% fine sand; 35% silt; 5% clay; non-plastic; low estimated K; no odor
Sandy SILT (ML); yellow brown; medium stiff; damp; 65% silt; 30% fine sand; 5% clay; low plasticity; low estimated K; slight no odor moist at 15'
End of boring at 27.0'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND COMPLETION DETAILS		Boring BH-A
Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd., San Lorenzo, CA	Page 1 of 1
Driller: Gregg Drilling	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter Direct Push
Logged By: Robert E. Kitay, R.G.	Date Drilled: December 1, 1998	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: Not encountered	Total Depth of Well Completed: NA
Static Depth of Water in Boring: Unknown	Well Screen Type and Diameter: NA
Total Depth of Boring: 4.5'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler



Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
0	Clayey SILT (ML); yellow brown; medium stiff; damp; 85% silt; 10% clay; 5% fine sand; low plasticity; low estimated K; no odor olive brown below 2.5'
5	End of boring at 4.5'

AQUA SCIENCE ENGINEERS, INC.

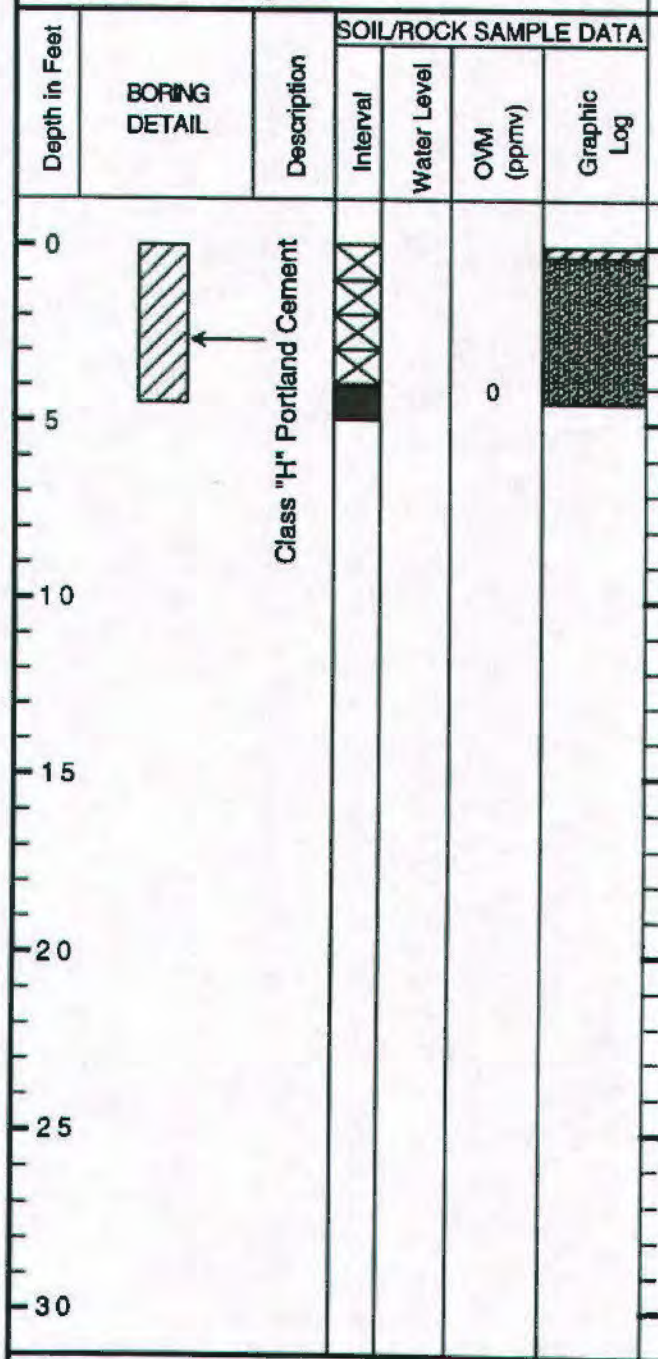
SOIL BORING LOG AND COMPLETION DETAILS

Boring BH-B

Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd., San Lorenzo, CA	Page 1 of 1
Driller: Gregg Drilling	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter Direct Push
Logged By: Robert E. Kitay, R.G.	Date Drilled: December 1, 1998	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: Not encountered	Total Depth of Well Completed: NA
Static Depth of Water in Boring: Unknown	Well Screen Type and Diameter: NA
Total Depth of Boring: 4.5'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler



Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
	Clayey SILT (ML); yellow brown; medium stiff; damp; 85% silt; 10% clay; 5% fine sand; low plasticity; low estimated K; no odor
5	End of boring at 4.5'

AQUA SCIENCE ENGINEERS, INC.

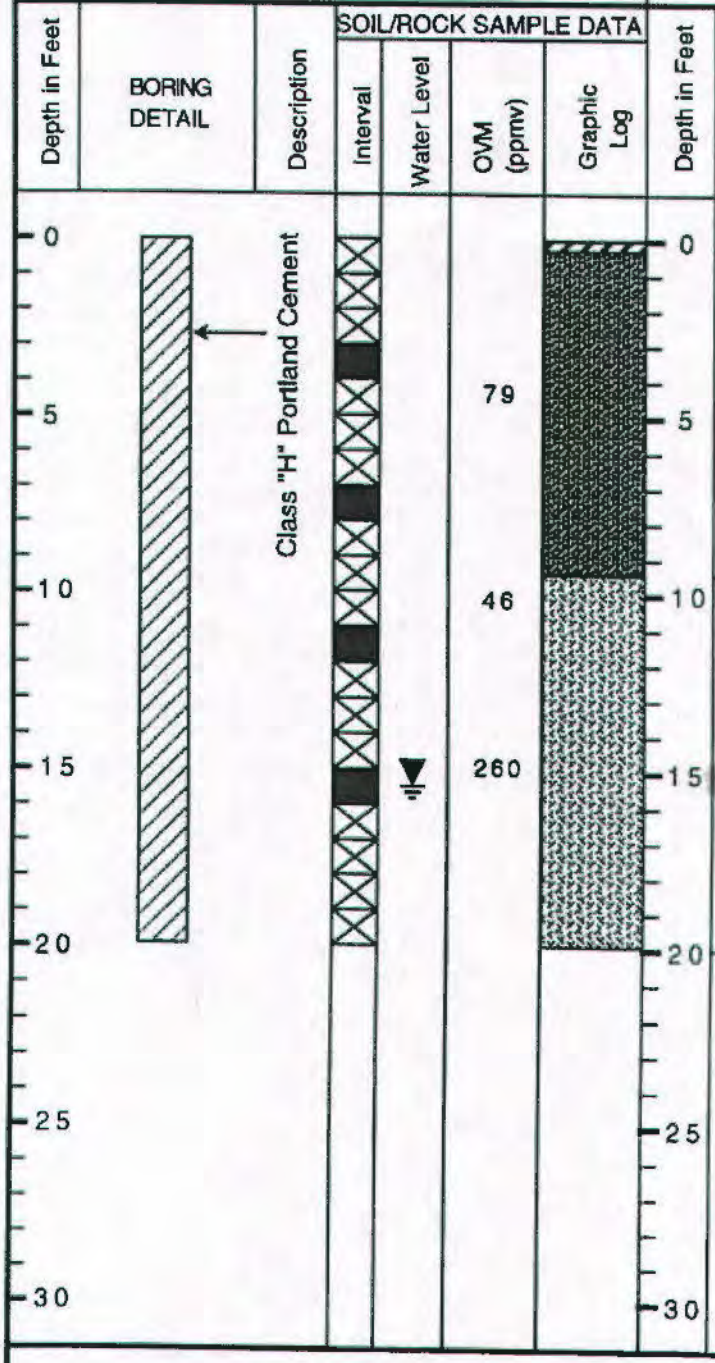
SOIL BORING LOG AND COMPLETION DETAILS

Boring BH-C

Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd., San Lorenzo, CA	Page 1 of 1
Driller: Gregg Drilling	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter Direct Push
Logged By: Robert E. Kitay, R.G.	Date Drilled: December 1, 1998	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 15.5'	Total Depth of Well Completed: NA
Static Depth of Water in Boring: Unknown	Well Screen Type and Diameter: NA
Total Depth of Boring: 20'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler



Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
	Clayey SILT (ML); yellow brown; medium stiff; damp; 85% silt; 10% clay; 5% fine sand; low plasticity; low estimated K; slight hydrocarbon odor
10	Silty SAND (SP); olive; medium dense; damp; 90% fine sand; 10% silt; non-plastic; medium estimated K; slight hydrocarbon odor
15	moderate hydrocarbon odor at 15' wet at 15.5'
20	End of boring at 20'
25	
30	

AQUA SCIENCE ENGINEERS, INC.

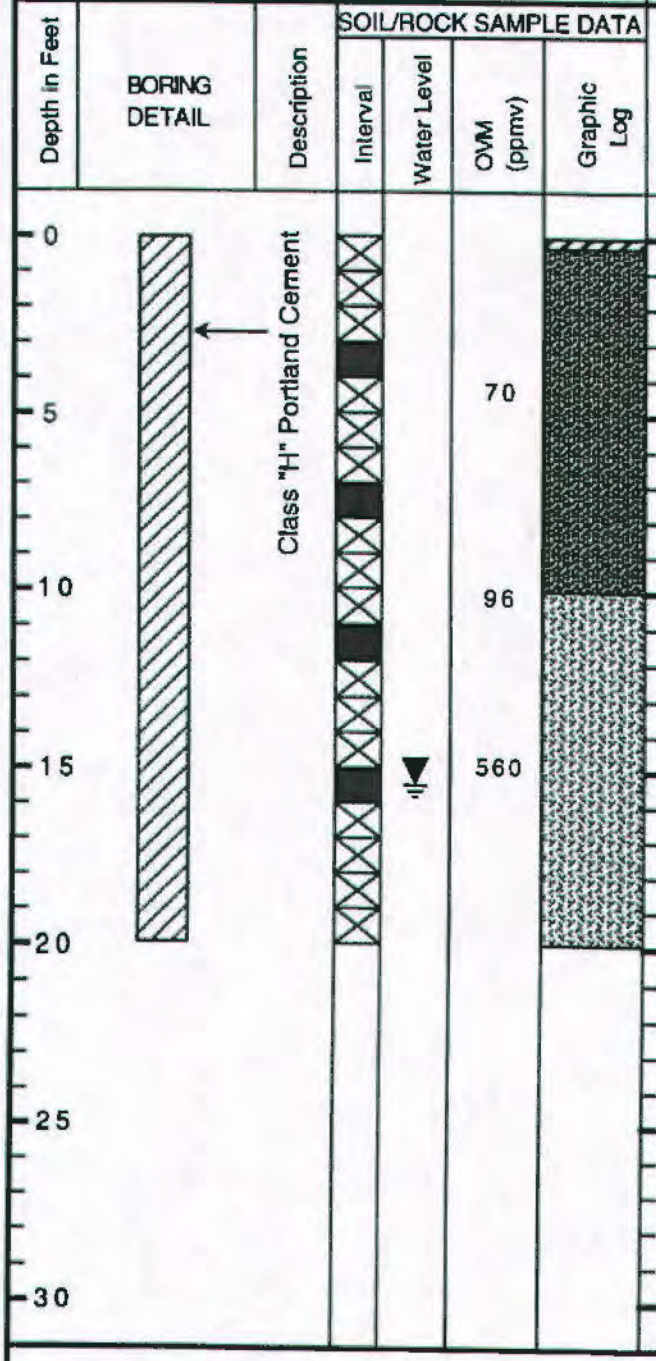
SOIL BORING LOG AND COMPLETION DETAILS

Boring BH-D

Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd., San Lorenzo, CA	Page 1 of 1
Driller: Gregg Drilling	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter Direct Push
Logged By: Robert E. Kitay, R.G.	Date Drilled: December 1, 1998	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 16'	Total Depth of Well Completed: NA
Static Depth of Water in Boring: Unknown	Well Screen Type and Diameter: NA
Total Depth of Boring: 20'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler



Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
0	Clayey SILT (ML); yellow brown; medium stiff; damp; 85% silt; 10% clay; 5% fine sand; low plasticity; low estimated K; slight hydrocarbon odor
10	Silty SAND (SP); olive; medium dense; damp; 90% fine sand; 10% silt; non-plastic; medium estimated K; moderate hydrocarbon odor wet at 16'; sheen on water surface
20	End of boring at 20'
25	
30	

AQUA SCIENCE ENGINEERS, INC.

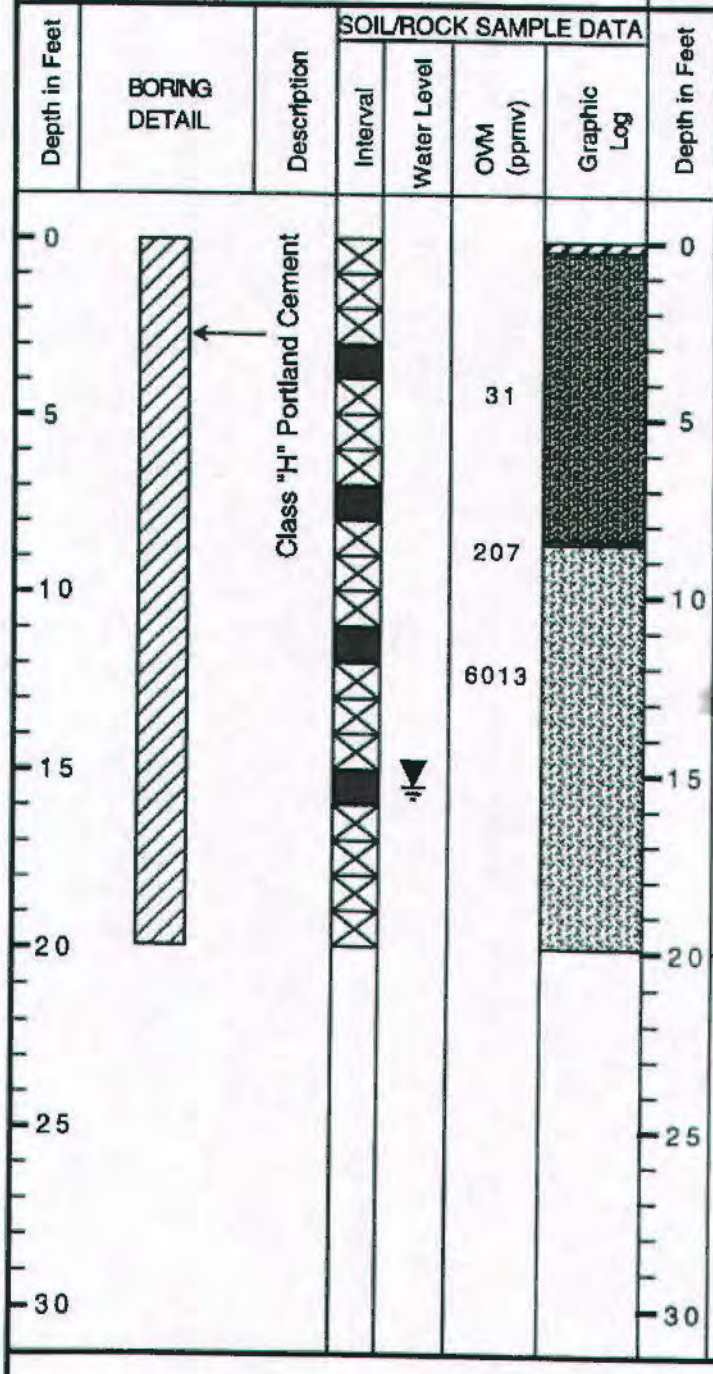
SOIL BORING LOG AND COMPLETION DETAILS

Boring BH-E

Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd., San Lorenzo, CA	Page 1 of 1
Driller: Gregg Drilling	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter Direct Push
Logged By: Robert E. Kitay, R.G.	Date Drilled: December 1, 1998	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 16'	Total Depth of Well Completed: NA
Static Depth of Water in Boring: Unknown	Well Screen Type and Diameter: NA
Total Depth of Boring: 20'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler



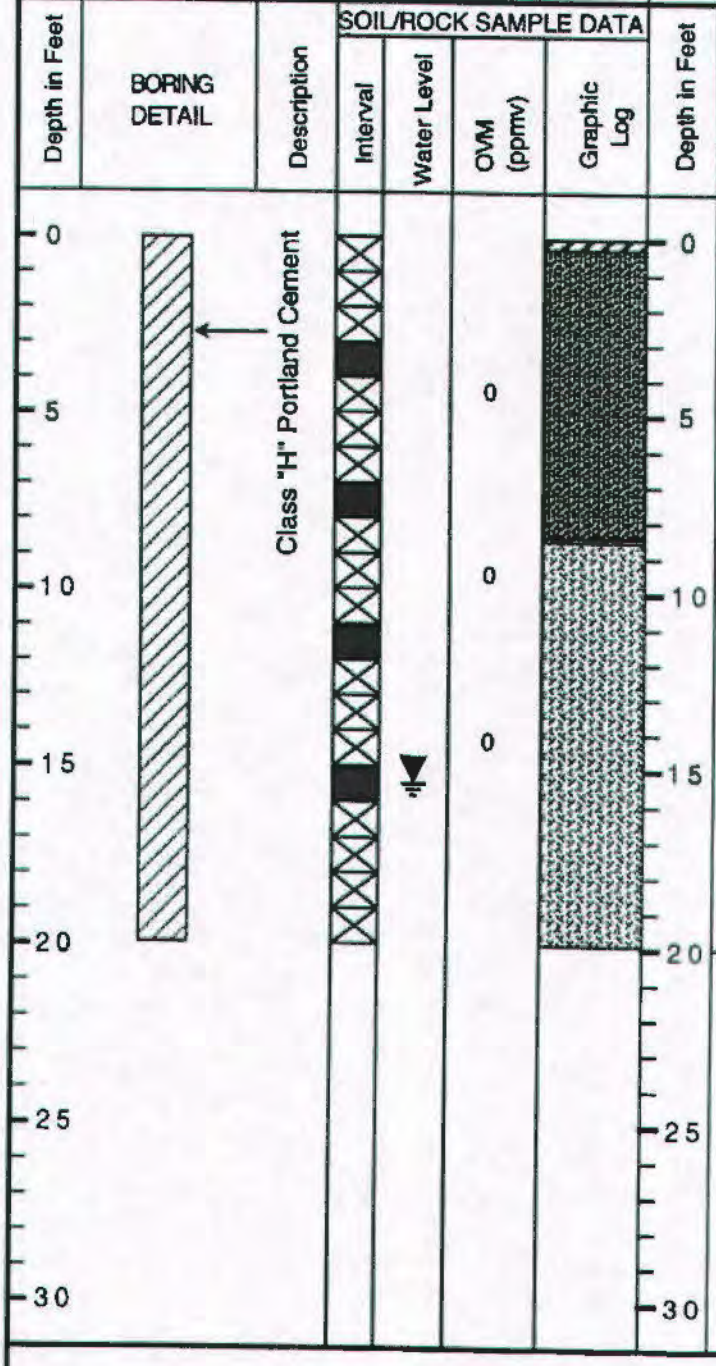
Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
	Clayey SILT (ML); dark yellow brown; medium stiff; damp; 85% silt; 10% clay; 5% fine sand; low plasticity; low estimated K; slight hydrocarbon odor
10	Silty SAND (SP); olive brown; medium dense; damp; 90% fine sand; 10% silt; non-plastic; medium estimated K; moderate hydrocarbon odor strong hydrocarbon odor wet at 16'
20	End of boring at 20'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND COMPLETION DETAILS		Boring BH-F
Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd., San Lorenzo, CA	Page 1 of 1
Driller: Gregg Drilling	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter Direct Push
Logged By: Robert E. Kitay, R.G.	Date Drilled: December 1, 1998	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 16'	Total Depth of Well Completed: NA
Static Depth of Water in Boring: Unknown	Well Screen Type and Diameter: NA
Total Depth of Boring: 20'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler



DESCRIPTION OF LITHOLOGY

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

Concrete

Clayey SILT (ML); dark yellow brown; medium stiff; damp; 85% silt; 10% clay; 5% fine sand; low plasticity; low estimated K; no odor

Silty SAND (SP); olive brown; medium dense; damp; 90% fine sand; 10% silt; non-plastic; medium estimated K; no hydrocarbon odor

wet at 16'

End of boring at 20'

AQUA SCIENCE ENGINEERS, INC.

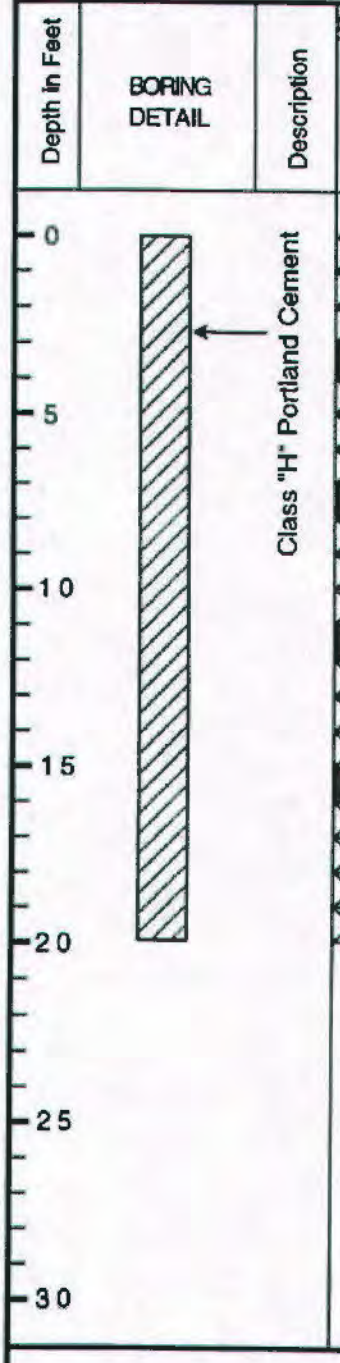
SOIL BORING LOG AND COMPLETION DETAILS

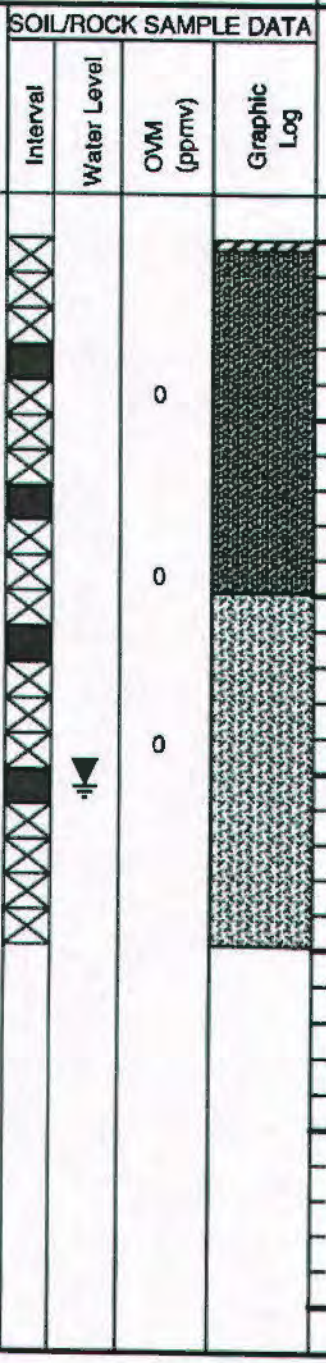
Boring BH-G

Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd., San Lorenzo, CA	Page 1 of 1
Driller: Gregg Drilling	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter Direct Push
Logged By: Robert E. Kitay, R.G.	Date Drilled: December 1, 1998	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 16'	Total Depth of Well Completed: NA
Static Depth of Water in Boring: Unknown	Well Screen Type and Diameter: NA
Total Depth of Boring: 20'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler





DESCRIPTION OF LITHOLOGY

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

Asphalt

Clayey SILT (ML); yellow brown; medium stiff; damp; 80% silt; 20% clay; low plasticity; low estimated K; no odor

Silty SAND (SP); olive; medium dense; damp; 90% fine sand; 10% silt; non-plastic; medium estimated K; no odor

wet at 16'

End of boring at 20'

AQUA SCIENCE ENGINEERS, INC.

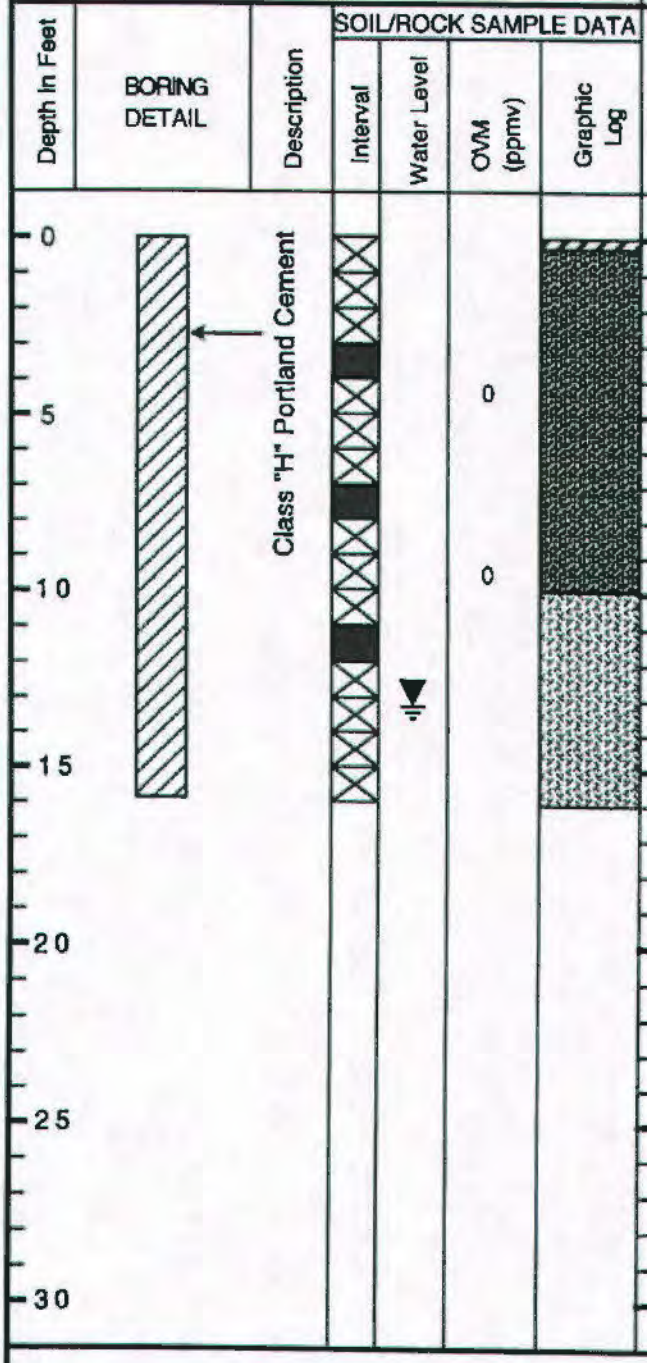
SOIL BORING LOG AND COMPLETION DETAILS

Boring BH-H

Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd., San Lorenzo, CA	Page 1 of 1
Driller: Gregg Drilling	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter Direct Push
Logged By: Robert E. Kitay, R.G.	Date Drilled: December 1, 1998	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 13.5'	Total Depth of Well Completed: NA
Static Depth of Water in Boring: Unknown	Well Screen Type and Diameter: NA
Total Depth of Boring: 16'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macrocore Sampler

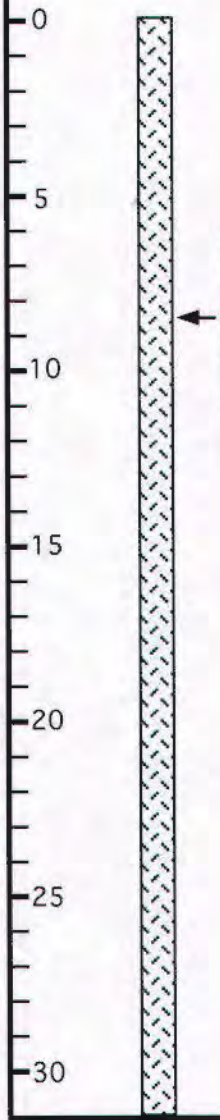


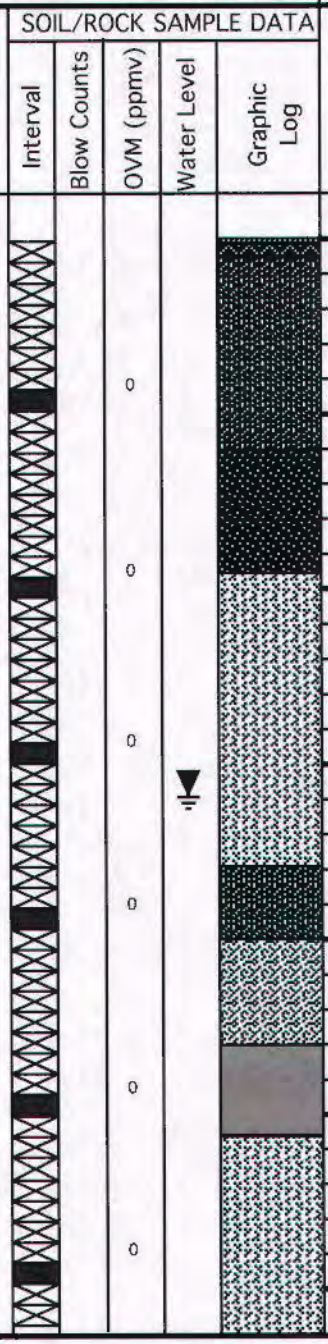
Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Asphalt
	Clayey SILT (ML); yellow brown; medium stiff; damp; 80% silt; 20% clay; low plasticity; low estimated K; no odor
10	Silty SAND (SP); olive; medium dense; damp; 90% fine sand; 10% silt; non-plastic; medium estimated K; no odor wet at 13.5'
15	End of boring at 16'
20	
25	
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		BORING: BH-I
Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd, San Lorenzo, CA	Page 1 of 2
Driller: Vironex	Type of Rig: Geoprobe 6600	Size of Drill: 2.0" Diameter
Logged By: Robert E. Kitay, P.G.	Date Drilled: July 20, 2010	Checked By: Robert E. Kitay, P.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 16'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 40'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler





DESCRIPTION OF LITHOLOGY

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

Asphalt

Silty CLAY (CH); black; stiff; dry; 85% clay; 15% silt; high plasticity; very low estimated K; no odor

Clayey SILT (ML); dark yellow brown; stiff; dry; 80% silt; 20% clay; moderate plasticity; low estimated K; no odor

Silty SAND (SM); yellow brown; medium dense; dry; 70% fine sand; 25% silt; 5% clay; medium estimated K; no odor
90% fine sand; 10% silt at 10'

Clayey SILT (ML); yellow brown; stiff; wet; 60% silt; 30% clay; 10% fine sand; high plasticity; low estimated K; no odor

Sandy SILT (ML); yellow brown; soft; wet; 75-80% silt; 20-25% fine sand; non-plastic; low estimated K; no odor

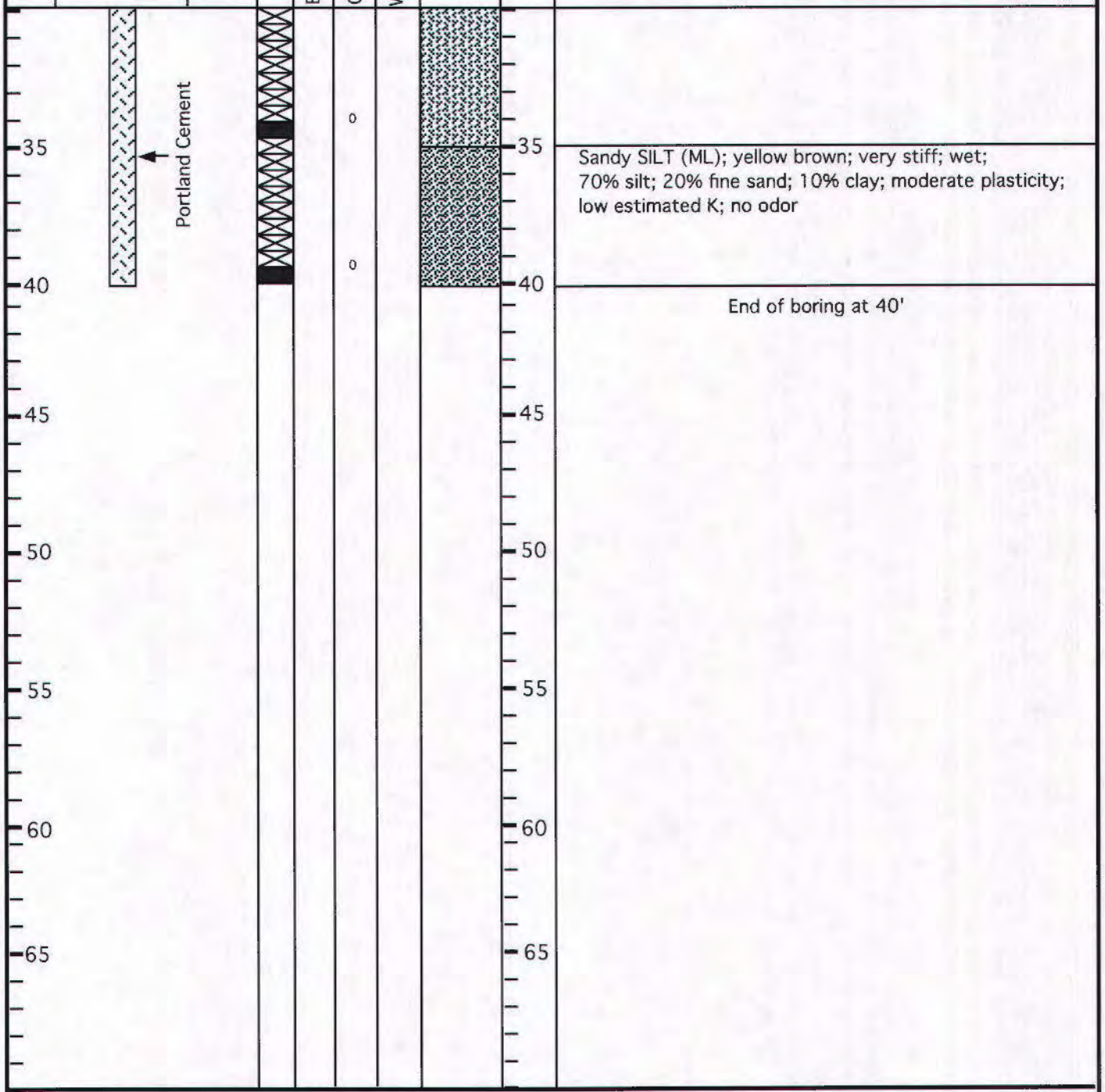
Sandy CLAY (CH); dark yellow brown; very stiff; dry; 70% clay; 20% fine sand; 10% silt; high plasticity; very low estimated K; no odor

Silty SAND (SM); yellow brown; loose; wet; 80-85% fine sand; 15-20% silt; non-plastic; high estimated K; no odor

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS	BORING: BH-I

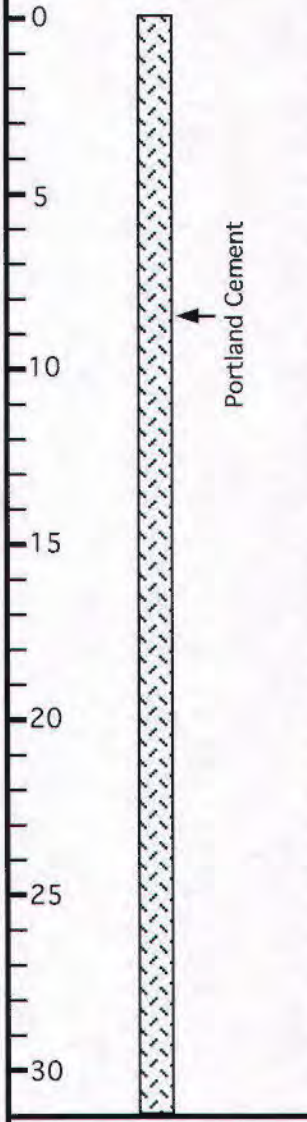
Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd, San Lorenzo, CA	Page 2 of 2

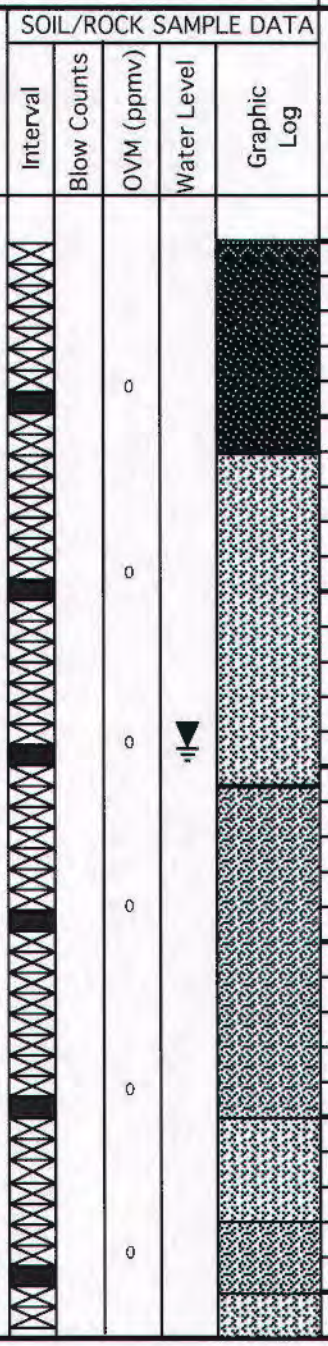


AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		BORING: BH-J
Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd, San Lorenzo, CA	Page 1 of 2
Driller: Vironex	Type of Rig: Geoprobe 6600	Size of Drill: 2.0" Diameter
Logged By: Robert E. Kitay, P.G.	Date Drilled: July 20, 2010	Checked By: Robert E. Kitay, P.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 14.5'	Total Depth of Well Completed: NA
	Well Screen Type and Diameter: NA
Static Depth of Water in Well: NA	Well Screen Slot Size: NA
Total Depth of Boring: 34.5'	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler





DESCRIPTION OF LITHOLOGY

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

Asphalt

Clayey SILT (ML); black; medium stiff; dry; 80% silt; 20% clay; moderate plasticity; low estimated K; no odor

red brown; 90% silt; 10% clay at 4'

Silty SAND (SM); yellow brown; medium dense; dry; 60% fine sand; 40% silt; non-plastic; low estimated K; no odor

moist at 12.5'

wet at 14.5'

Sandy SILT (ML); yellow brown; medium stiff; wet; 70-80% silt; 20-30% fine sand; trace clay; non-plastic; low estimated K; no odor

< Water sample attempt from 10-20' - No water after 1 hr >

< Water sample attempt from 20-25' - No water after 15 min >

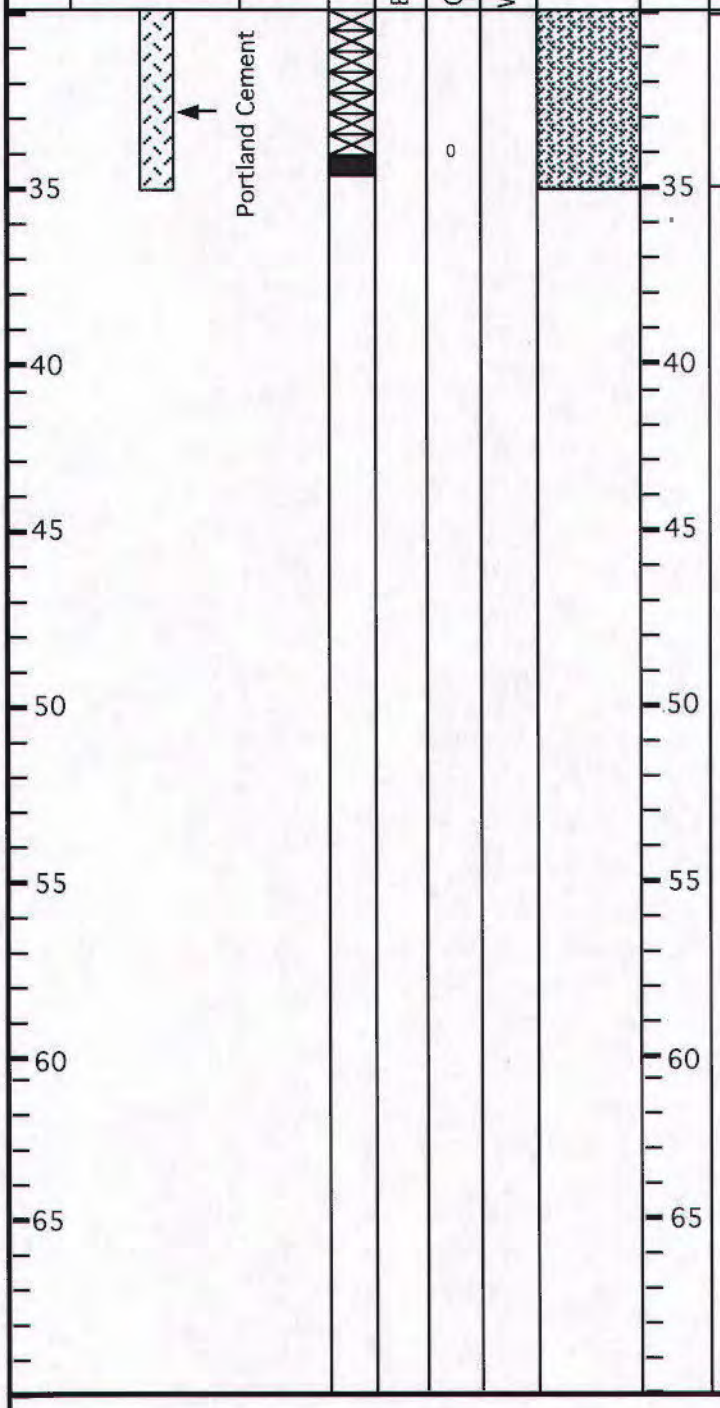
Silty SAND (SM); yellow brown; medium dense; wet; 60% fine sand; 40% silt; trace clay; low plasticity; low estimated K; no odor

Sandy SILT (ML); yellow brown; stiff; wet; 70% silt; 20% fine sand; 10% clay; low plasticity; low estimated K; no odor

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS	BORING: BH-J

Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd, San Lorenzo, CA	Page 2 of 2



DESCRIPTION OF LITHOLOGY

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

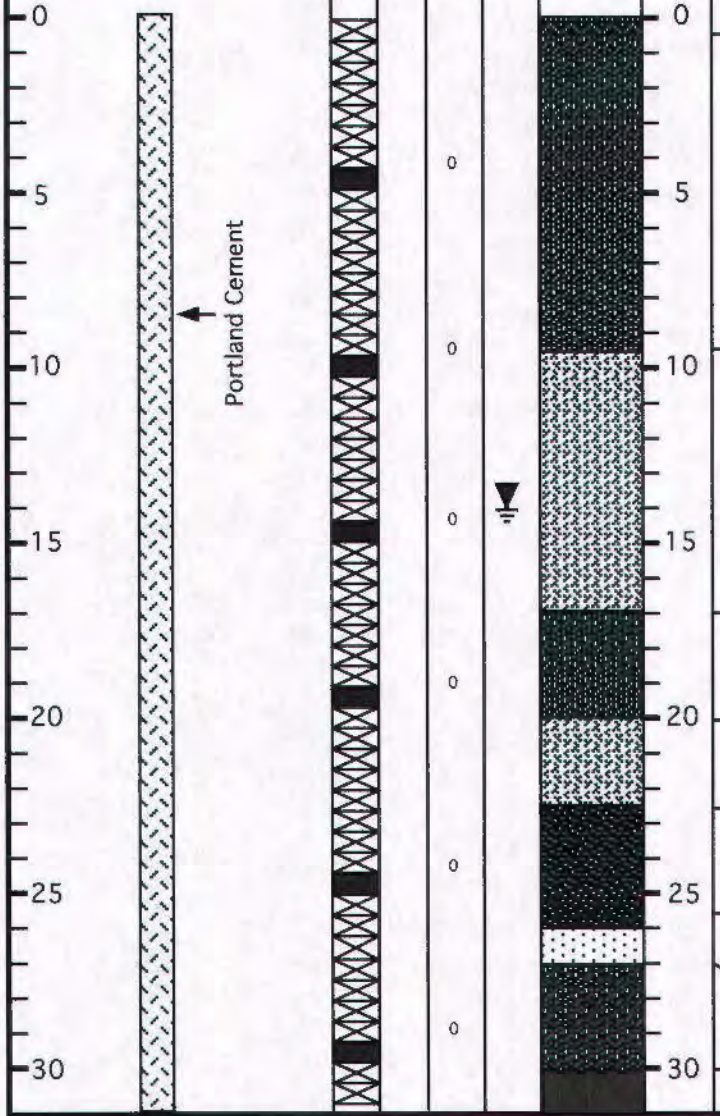
Silty SAND (SM); yellow brown; dense; wet; 60-70% fine sand; 30-40% silt; non-plastic; medium estimated K; no odor

Refusual - End of boring at 34.5'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		BORING: BH-K
Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd, San Lorenzo, CA	Page 1 of 2
Driller: Vironex	Type of Rig: Geoprobe 6600	Size of Drill: 2.0" Diameter
Logged By: Robert E. Kitay, P.G.	Date Drilled: July 20, 2010	Checked By: Robert E. Kitay, P.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 14'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 40'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

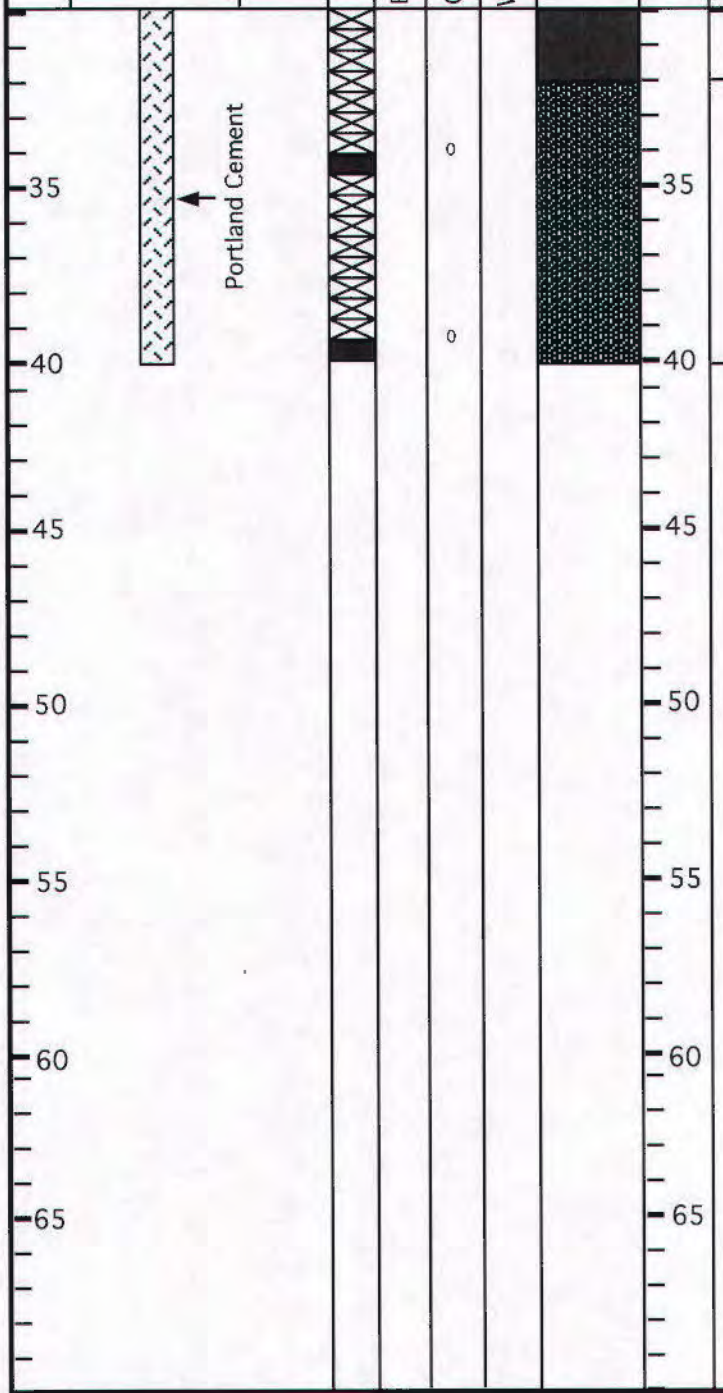


DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
Asphalt
Clayey SILT (ML); black; medium stiff; dry; 80% silt; 20% clay; low plasticity; low estimated K; no odor
Silty SAND (SM); yellow brown; medium dense; dry; 90% fine sand; 10% silt; medium estimated K; no odor
wet at 14'
Clayey SILT (MH); yellow brown; stiff; wet; 60% silt; 30% clay; 10% fine sand; high plasticity; low estimated K; no odor
Silty SAND (SM); yellow brown; soft; wet; 90% fine sand; 10% silt; non-plastic; medium estimated K; no odor
Silty CLAY (CH); yellow brown; stiff; wet; 70% clay; 30% silt; high plasticity; very low estimated K; no odor
SAND (SP); grey; loose; wet; 100% fine to medium sand; non-plastic; high estimated K; no odor
Clayey SILT (MH); yellow brown; stiff;moist; 65% silt; 30% clay; 5% fine sand; high plasticity; low estimated K; no odor

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS	BORING: BH-K

Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd, San Lorenzo, CA	Page 2 of 2



DESCRIPTION OF LITHOLOGY

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

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

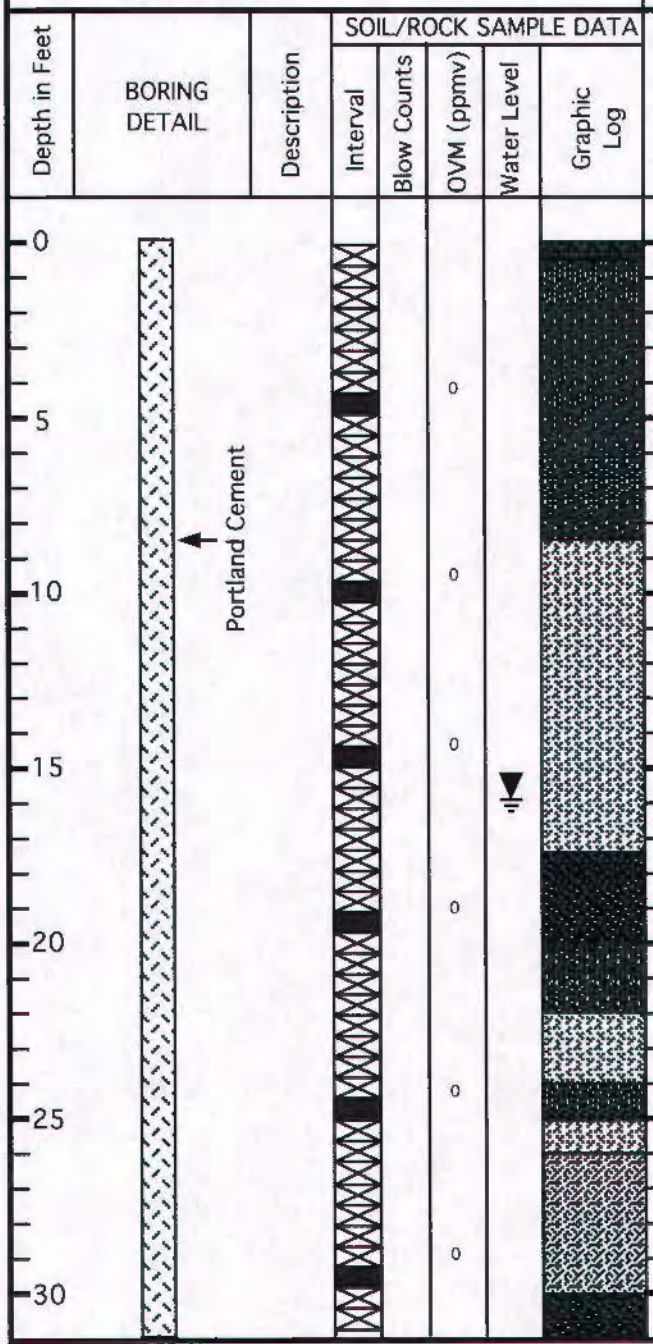
Clayey SILT (MH); yellow brown; stiff; damp; 70% silt; 25% clay; 5% fine sand; high plasticity; very low estimated K; no odor (minor caliche)

End of boring at 40'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		BORING: BH-L
Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd, San Lorenzo, CA	Page 1 of 2
Driller: Vironex	Type of Rig: Geoprobe 6600	Size of Drill: 2.0" Diameter
Logged By: Robert E. Kitay, P.G.	Date Drilled: July 21, 2010	Checked By: Robert E. Kitay, P.G.

WATER AND WELL DATA	Total Depth of Well Completed: NA
Depth of Water First Encountered: 14'	Well Screen Type and Diameter: NA
Static Depth of Water in Well: NA	Well Screen Slot Size: NA
Total Depth of Boring: 40'	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

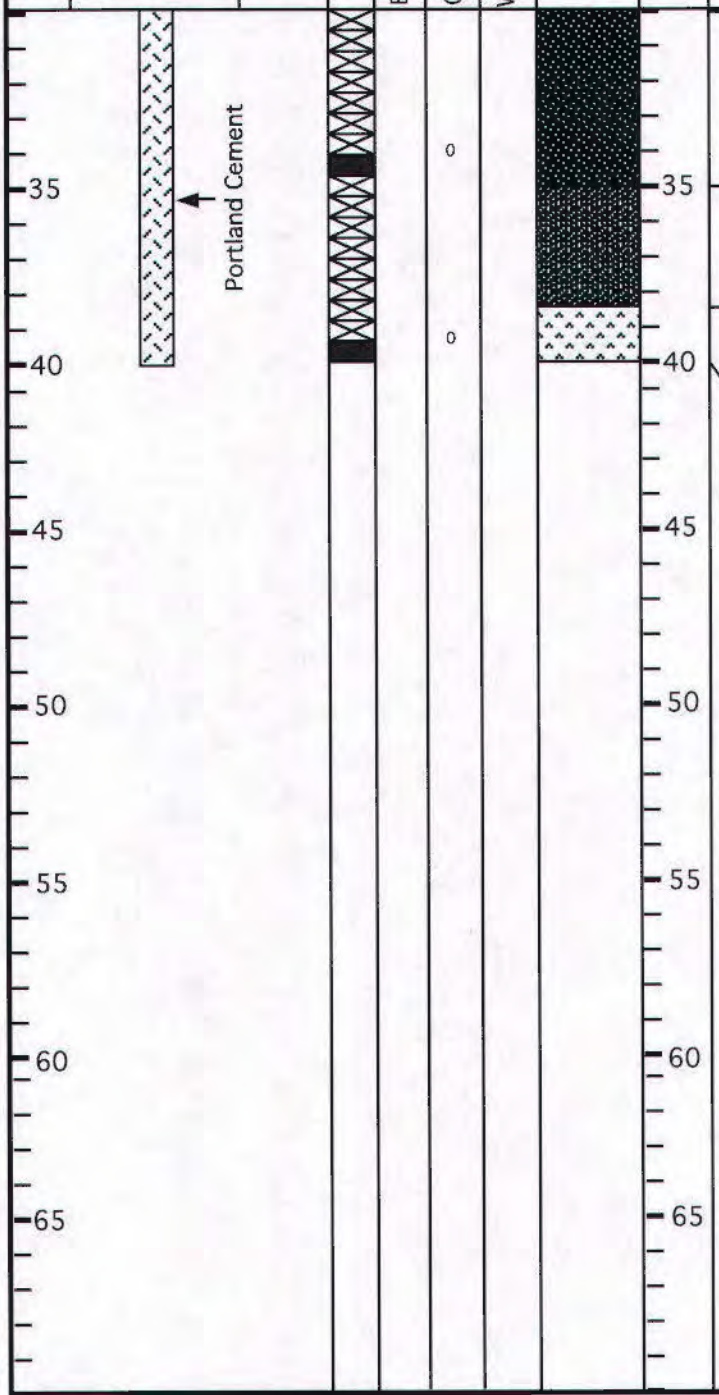


DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
Asphalt
Clayey SILT (ML); yellow brown; medium stiff; dry; 85% silt; 15% clay; low plasticity; low estimated K; no odor
Silty SAND (SM); yellow brown; medium dense; dry; 80% fine sand; 20% silt; non-plastic; medium estimated K; no odor moist at 13' wet at 16'
Silty CLAY (CH); dark yellow brown; very stiff; moist; 90% clay; 10% silt; high plast.; very low estimated K; no odor
Clayey SILT (MH); yellow brown; medium stiff; wet; 70% silt; 20% clay; 10% fine sand; moderate plasticity; low estimated K; no odor
Silty SAND (SM); yellow brown; loose; wet; 70% fine sand; 30% silt; non-plastic; medium estimated K; no odor
Silty CLAY (CH); yellow brown; very stiff; damp; 90% clay; 10% silt; high plasticity; very low estimated K; no odor
Silty SAND (SM); yellow brown; loose; wet; 70% fine to medium sand; 20% silt; 10% gravel; non-plastic; medium estimated K; no odor
Sandy SILT (ML); yellow brown; medium stiff; wet; 70% silt; 20% fine sand; 10% clay; low plasticity; low estimated K; no odor

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS	BORING: BH-L

Project Name: Hutch's Carwash	Project Location: 17945 Hesperian Blvd, San Lorenzo, CA	Page 2 of 2



DESCRIPTION OF LITHOLOGY

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

Silty CLAY (CH); yellow brown; very stiff; damp; 70% clay; 30% silt; high plasticity; very low estimated K; no odor

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

Sandy GRAVEL (GW); grey; dense; wet; 80% gravel to 1" diameter; 20% fine to medium sand; high estimated K; no odor

End of boring at 40'

AQUA SCIENCE ENGINEERS, INC.