

RECEIVED

By Alameda County Environmental Health 8:59 am, Nov 16, 2015

2101 Williams Associates, LLC

2228 Livingston Street
Oakland, CA 94606
Telephone (510) 261-5500

May 26, 2015

Mr. Mark Detterman
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

SUBJECT: SUBSURFACE INVESTIGATION WORK PLAN CERTIFICATION
County Case # RO 2468
Former James River Corporation Site
2101 Williams Street
San Leandro, CA

Dear Mr. Detterman:

You will find enclosed one copy of the following document prepared by P&D Environmental, Inc. for the subject site.

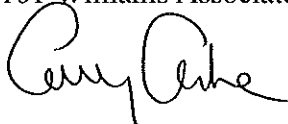
- Subsurface Investigation Work Plan dated May 26, 2015.

I declare under penalty of perjury that the contents and conclusions in the document are true and correct to the best of my knowledge.

Please don't hesitate to call me if you have any questions.

Sincerely,

2101 Williams Associates, LLC



Carey Andre

0660.L8

P&D ENVIRONMENTAL, INC.

55 Santa Clara Avenue, Suite 240

Oakland, CA 94610

(510) 658-6916

May 26, 2015

Work Plan 0660.W3

Mr. Mark Detterman

Alameda County Department of Environmental Health

1131 Harbor Parkway, Suite 250

Alameda, CA 94502

SUBJECT: SUBSURFACE INVESTIGATION WORK PLAN

County Case # RO 2468

James River Corporation

2101 Williams Street

San Leandro, California

Dear Mr. Detterman:

P&D Environmental, Inc. (P&D) has prepared this work plan to evaluate the presence of tetrachloroethene (PCE) beneath the subject site building. This work plan has been requested by the Alameda County Department of Environmental Health (ACDEH) to evaluate data gaps that need to be addressed for the non-fuel release case associated with the site for case closure consideration. The objective of the investigation is to develop multiple lines of evidence to:

- Evaluate whether elevated PCE concentrations that have been documented upgradient of the site are a source for elevated sub-slab soil gas PCE concentrations detected at the subject site, and
- Evaluate whether elevated sub-slab soil gas PCE concentrations are originating from an onsite source.

A Site Location Map is attached with this work plan as Figure 1; a Site Vicinity Aerial Photograph showing the site, nearby sites, and historical groundwater sample results for the Shallow A-Zone water-bearing unit is attached as Figure 2; sub-slab PCE soil gas sample results for the subject site are shown in Figure 3; and a Site Aerial Photograph showing proposed groundwater sample collection locations is attached as Figure 4. All work will be performed under the direct supervision of an appropriately licensed California professional.

BACKGROUND

The presence of a PCE groundwater plume has been well-documented at the adjacent upgradient property at 2075 Williams Street and is recognized by the San Francisco Bay Regional Water Quality Control Board to originate from some unknown upgradient location.

Available historical onsite boring logs, borehole geophysical logs, and CPT logs are provided in Appendix A. Updated summary tables of offsite (primarily for 2075 Williams Street) and onsite boring logs with identification of the depths of sand and gravel intervals is provided as Appendix B. Figures showing onsite and offsite upgradient geophysical resistivity profiles are provided as Appendix C. A map showing the locations of geologic cross sections for the 1964 Williams Street trichloroethene (TCE) investigation that is located immediately to the north and across Williams Street from the subject site and the associated geologic cross sections are provided as Appendix D.

The subject site and area hydrogeology have been discussed in detail in the June 30, 2014 Draft Site Conceptual Model for the subject site. The water-bearing zones are comprised of discontinuous fine- to coarse-grained sand and gravel bodies separated by silt and clay as follows:

- A-Zone - extending from approximately 10 to 43 feet below the ground surface (bgs) with two subunits identified as the “Shallow A-Zone” and “Deeper A-Zone.”
 - Shallow A-Zone – typically approximately two feet thick and occurring between the depths of 10 and 20 feet bgs,
 - Deeper A-Zone – typically varying in thickness from approximately two to eight feet and occurring between the depths of 23 and 43 feet bgs.
- B-Zone – typically extending from approximately 50 to 60 feet bgs.

The A-Zone and the B-Zone are identified at the 1964 Williams Street property as separated by a continuous aquitard.

Historical PCE concentrations detected in sub-slab soil gas are shown in Figure 3.

SCOPE OF WORK

To develop multiple lines of evidence to evaluate the source for elevated sub-slab soil gas PCE concentrations detected at the subject site, P&D proposes to perform the following activities.

- Prepare a health and safety plan, mark proposed drilling locations with white paint, notify Underground Service Alert for underground utility location, evaluate proposed drilling locations for underground utilities using a private utility locator, and obtain a drilling permit.
- Oversee drilling at 6 locations designated as M1 through M6 using a MiHpt probe which combines a Membrane Interface Probe (MIP), a Hydraulic Profiling Tool (HPT), and an Electrical Conductivity Probe (EC) to a depth of 40 feet bgs.
- Evaluate the presence and nature of sub-slab baserock beneath the building floor slab at each proposed drilling location.

- Continuously core adjacent to one of the proposed drilling locations to a depth of 40 feet bgs to visually confirm the MiHpt data.
- Oversee collection of depth-discrete groundwater samples at two different depths at each of locations M1 through M6 using Geoprobe Hydropunch methods.
- Arrange for sample analysis.
- Prepare a subsurface investigation report.

Each of these is discussed below.

Health and Safety Plan, Underground Utility Clearance, and Permitting

A health and safety plan will be prepared for the scope of work identified in this work plan. The drilling locations will be marked with white paint and Underground Service Alert will be notified for underground utility location. In addition, a private utility locator will evaluate all drilling locations for the presence of underground utilities. A permit will be obtained from the Alameda County Public Works Agency (ACPWA) for drilling. Notification of the scheduled drilling dates will be provided to the ACPWA and the ACDEH prior to drilling.

MiHpt Profiling

A MiHpt probe will be pushed beginning directly beneath the floor slab to a depth of 40 feet bgs at each of locations M1 through M6 shown on Figure 4. The MiHpt probe will be advanced at a rate of approximately one foot per minute and will provide the following information:

- Organic vapor concentrations with a sensitivity of approximately 0.2 ppmv (approximately 1,350 micrograms per cubic meter PCE) using the following detectors:
 - Flame Ionization Detector (FID)
 - Photoionization Detector (PID)
 - Electron Capture Detector (ECD)
 - Halogen Specific Detector (XSD)
- Hydraulic Profiling Tool (HPT) will be used to measure the pressure required to inject a flow of water at a rate of approximately 250 milliliters per minute into the borehole wall adjacent to the probe.
- Electrical Conductivity (EC) will be measured using a dipole array.

The MIP information will be used to evaluate whether PCE soil gas concentrations increase or decrease with depth in the vadose zone, in addition to identifying the presence of elevated PCE soil gas concentrations in the vadose zone and the presence of PCE in groundwater. The HPT and EC information will be used for identification of permeable zones (presumably the Shallow and Deeper A-Zone water-bearing units if they are present) and the depth to first-encountered groundwater. The HPT data, in conjunction with the EC

and MIP data, will be used for identification of water-bearing zones that show evidence of the presence of Volatile Organic Compounds (VOCs), and for identification of groundwater sample collection depths.

All drilling equipment will be cleaned by steam cleaning or washing with an Alconox solution followed by a clean water rinse prior to use in each borehole. Following completion of logging activities, the probes will be withdrawn from the boreholes and the boreholes will be filled with neat cement grout. All soil and water generated during subsurface investigation will be stored in 55-gallon drums at the site and labeled pending characterization and proper disposal.

Sub-Slab Baserock Evaluation

The presence and nature of sub-slab baserock will be evaluated at each of the M-Series locations inside of the building following completion of the MiHpt probe investigation (see Figure 4). The information will be used for evaluation of the uniformity of sub-slab conditions for sub-slab soil gas movement.

Continuous Coring

One borehole will be continuously cored to a depth of 40 feet bgs with Geoprobe dual tube direct push drilling methods at a location adjacent to one of the MiHpt boreholes for purposes of visually confirming the HPT and EC data. The soil from the boring will be logged in the field in accordance with standard geologic field techniques and the Unified Soil Classification System. All soil from the borehole will be evaluated with a Photoionization Detector (PID) equipped with a 10.6 eV bulb and calibrated using a 100 ppm isobutylene standard.

All drilling equipment will be cleaned by steam cleaning or washing with an Alconox solution followed by a clean water rinse prior to use in the borehole. Following completion of logging activities, the borehole will be filled with neat cement grout using the dual tube as a tremie pipe. All soil and water generated during subsurface investigation will be stored in 55-gallon drums at the site and labeled pending characterization and proper disposal.

Depth-Discrete Groundwater Sample Collection

Groundwater quality data from the first-encountered water-bearing zone will be used to quantify PCE concentrations in groundwater. The information will also be used for calculation of theoretical PCE soil gas concentrations in the vadose zone using Henry's Law for comparison of calculated PCE soil gas concentrations with sub-slab soil gas concentrations.

Following review of the MiHpt data, groundwater samples will be collected at locations M1 through M6 using a Geoprobe Hydropunch. The same borehole will be used for collection of Hydropunch samples at different depths. After pushing the Hydropunch rods

to the desired sample collection depth the interior of the Hydropunch rods will be evaluated with an electric water level indicator to verify that groundwater has not leaked into the Hydropunch rods. The Hydropunch exterior rod will then be retracted to expose a 4-foot long section of Hydropunch screen. A groundwater sample will be collected from each Hydropunch using polyethylene tubing and a peristaltic pump. The groundwater samples will be transferred to 40-millileter VOA bottles, all of which will be supplied by the laboratory and contain hydrochloric acid preservative. The sample bottles will be labeled and placed in a cooler with ice pending delivery to the laboratory. One trip blank will accompany the sample containers from and to the laboratory. One duplicate groundwater sample will be collected for analysis. Chain of custody procedures will be observed for all sample handling.

All drilling equipment will be cleaned by steam cleaning or washing with an Alconox solution followed by a clean water rinse prior to use in each borehole. All sampling tubing will consist of new, unused material. Following completion of sampling activities, the Hydropunch rods will be withdrawn from the boreholes and the boreholes will be filled with neat cement grout. All soil and water generated during subsurface investigation will be stored in 55-gallon drums at the site and labeled pending characterization and proper disposal.

Sample Analysis

All of the groundwater grab samples will be analyzed at McCampbell Analytical, Inc. of Pittsburg California for VOCs using EPA Method 8260B.

Report Preparation

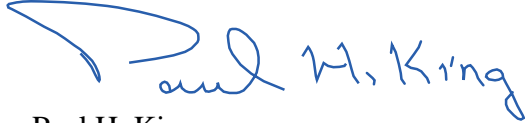
Upon receipt of the laboratory analytical results, a report will be prepared. The report will document the results of the sample collection procedures and sample results. The report will include maps showing the sample collection locations, tables summarizing the sample results, recommendations based on the results, and the stamp of an appropriately registered professional. A copy of the report and associated laboratory information will be uploaded to the County ftp site and to GeoTracker.

May 26, 2015
Work Plan 0660.W3

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.



Paul H. King
Professional Geologist #5901
Expires: 12/31/15



Attachments:

Figure 1 - Site Location Map

Figure 2 - Site Vicinity Aerial Photograph Showing Nearby Sites and Historical Shallow A-Zone PCE Groundwater Sample Results

Figure 3 - Site Aerial Photograph Showing Vapor Pin Locations and PCE Sub-Slab Soil Gas Concentrations

Figure 4 - Site Aerial Photograph Showing Proposed Groundwater Sample Collection Locations

Appendix A - Historical Site Boring Logs, Borehole Geophysical Logs, and CPT Logs

Appendix B - Summary Tables of Onsite and Selected Offsite Boring Log Sand and Gravel Depth Intervals

Appendix C - Historical Onsite and Offsite Geophysical Resistivity Profiles

Appendix D - 1964 Williams Street Geologic Cross Sections

Cc: Ms. Carey Andre, 2101 Williams Associates LLC

PHK/sjc
0660.W3

FIGURES

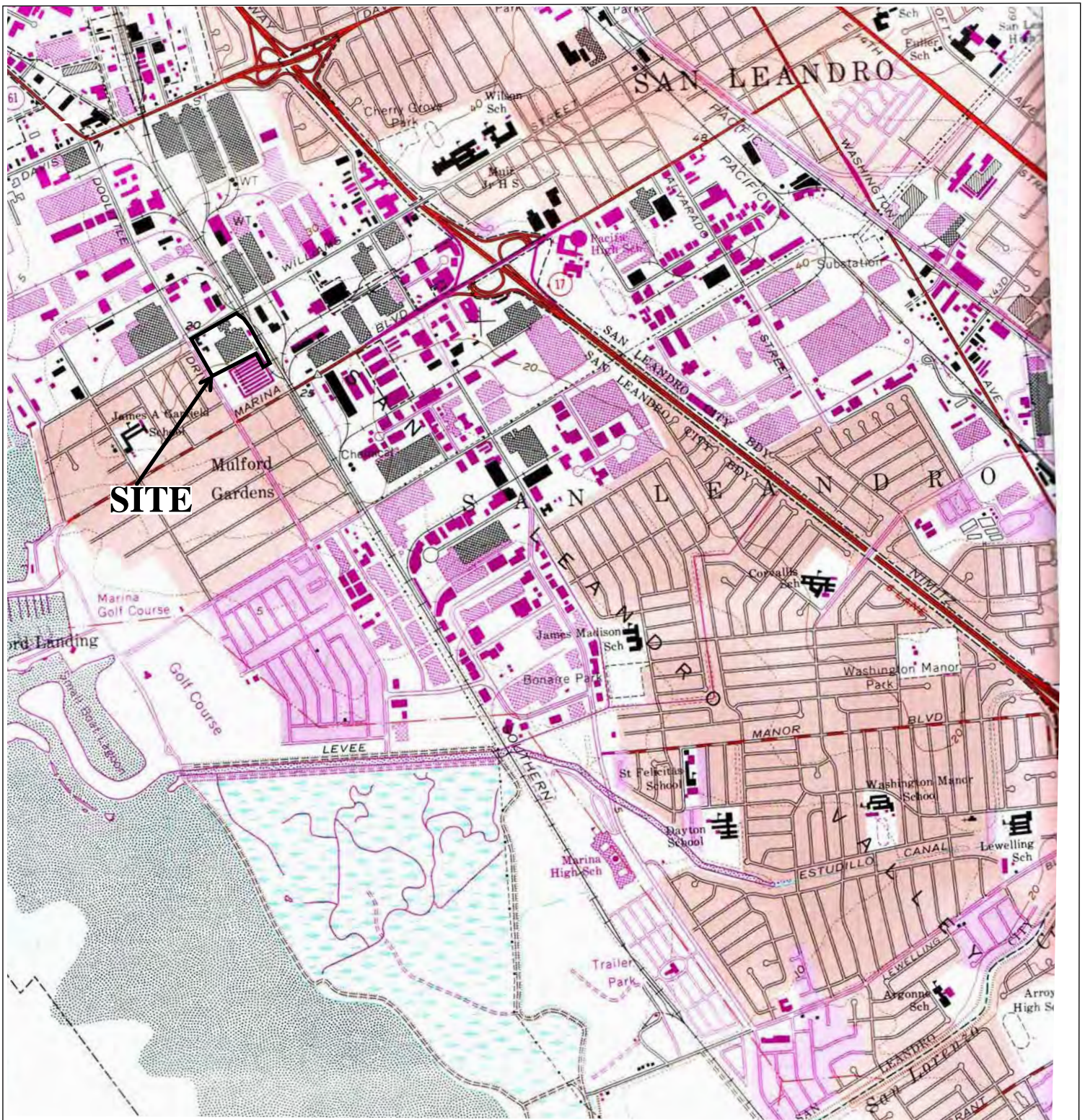


Figure 1
 Site Location Map
 2101 Williams Street
 San Leandro, California

Base Map From:
 US Geological Survey San Leandro,
 California, 7.5-Minute Quadrangles
 Map Edited 1980

P&D Environmental, Inc.
 55 Santa Clara Avenue
 Oakland, CA 94610

0 1000 2000
 Approximate Scale in Feet



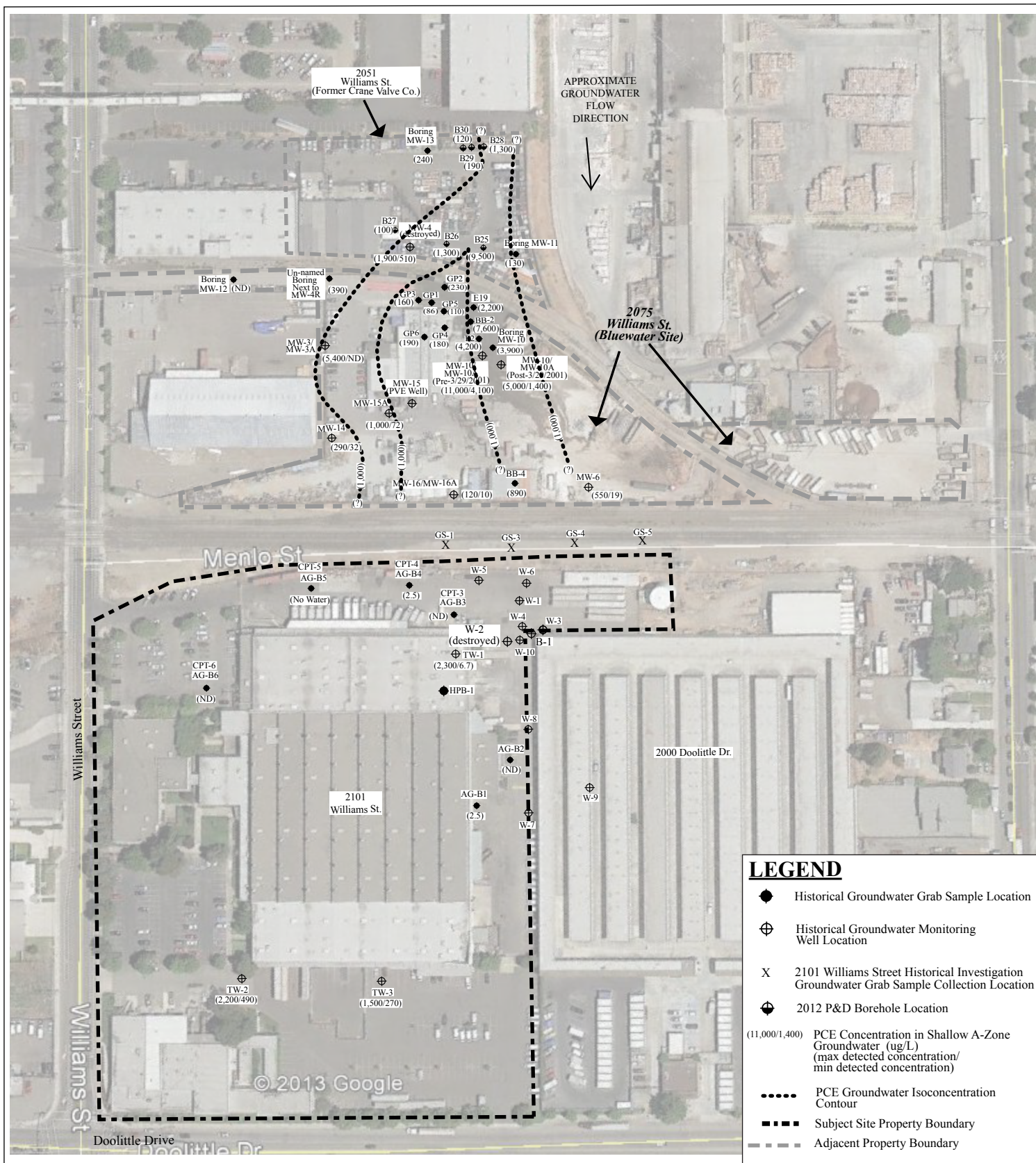


Figure 2
 Site Vicinity Aerial Photograph Showing PCE Concentrations in Shallow A-Zone Groundwater
 2101 Williams Street
 San Leandro, California

Base Map from:
 Google Earth, image dated August 28, 2012

P&D Environmental, Inc.
 55 Santa Clara Avenue
 Oakland, CA 94610

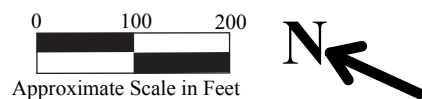
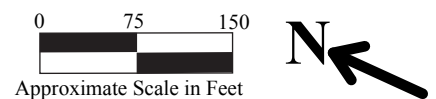




Figure 3
 Site Plan Aerial Photograph Showing Vapor Pin Locations and PCE Sub-Slab Soil Gas Concentrations
 2101 Williams Street
 San Leandro, California

Base Map from:
 Google Earth, image dated August 28, 2012

P&D Environmental, Inc.
 55 Santa Clara Avenue
 Oakland, CA 94610





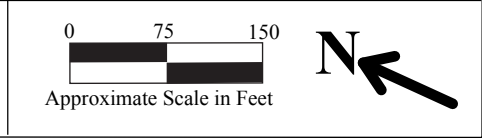
LEGEND

- Historical Groundwater Grab Sample Location
- ⊕ Historical Groundwater Monitoring Well Location
- ⊠ Vapor Pin Location
- ▲ Proposed Groundwater Sample Collection Location
- Subject Site Property Boundary

Figure 4
 Site Plan Aerial Photograph Showing Proposed Groundwater Sample Collection Locations
 2101 Williams Street
 San Leandro, California

Base Map from:
 Google Earth, image dated August 28, 2012

P&D Environmental, Inc.
 55 Santa Clara Avenue
 Oakland, CA 94610



APPENDIX A

Historical Site Boring Logs, Borehole Geophysical Logs, and CPT Logs

Jr

Harding Lawson Associates

HLA 1986

A Report Prepared for

Crown Zellerbach Flexible Packaging Division
2101 Williams Street
San Leandro, California 94577

At County website
SWI-R-1986-04-11

HYDROGEOLOGIC INVESTIGATION
FLEXIBLE PACKAGING DIVISION FACILITY
SAN LEANDRO, CALIFORNIA

HLA Job No. 1199,012.02

by

Sarah E. Prowell
Sarah E. Prowell
Hydrogeologist

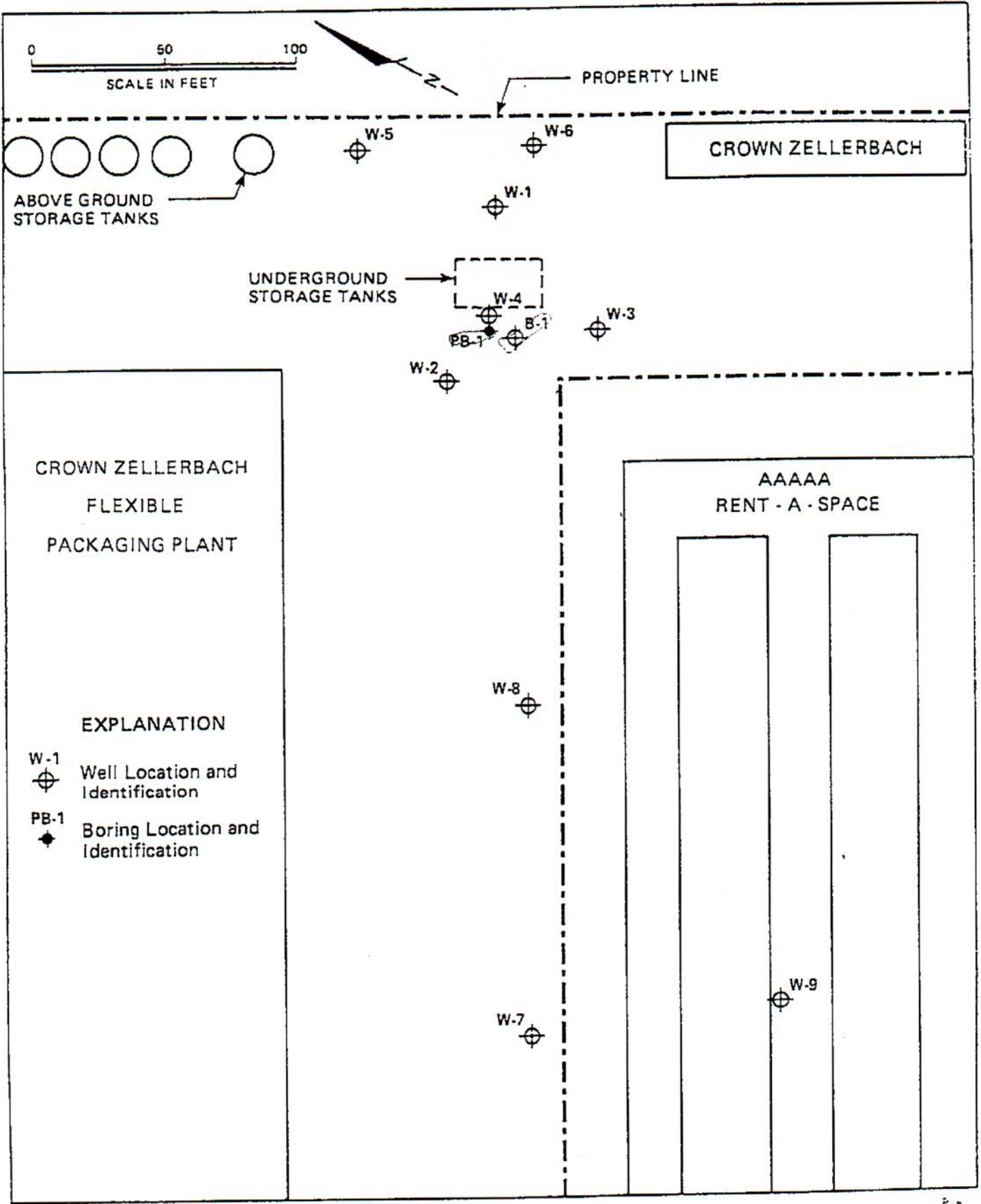
James D. Wilson
James D. Wilson
Associate Hydrogeologist

Boring Logs

with geophysical logs { Well 7
Well 8
Well 9
Boring PB-1
Also log B-1

Harding Lawson Associates
7655 Redwood Boulevard, P.O. Box 578
Novato, California 94948
415/892-0821

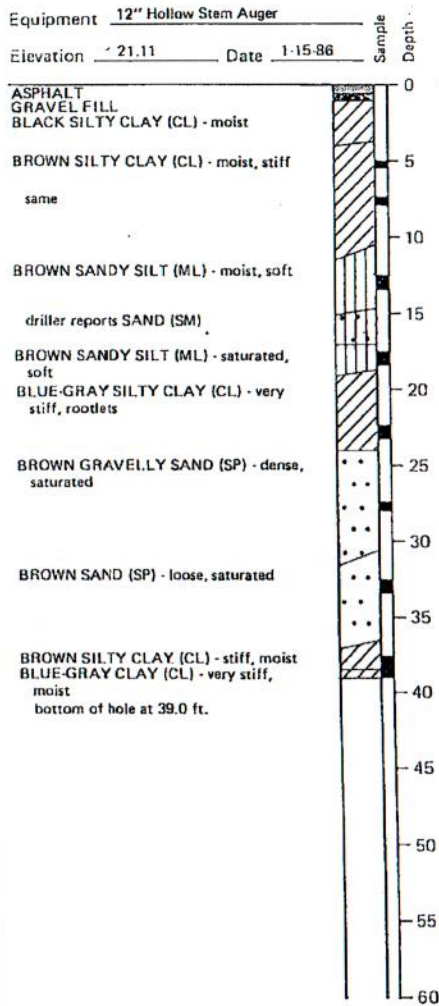
April 10, 1986



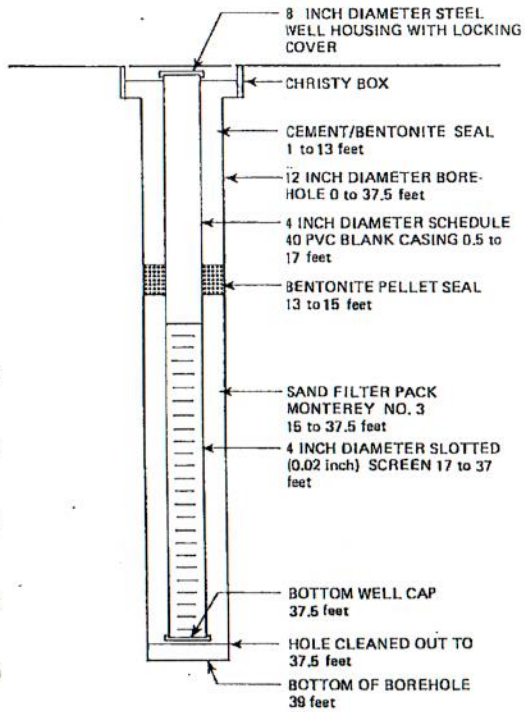
Harding Lawson Associates
 Engineers Geologists
 & Geophysicists

Well and Boring Location Map
 Crown Zellerbach
 San Leandro, California

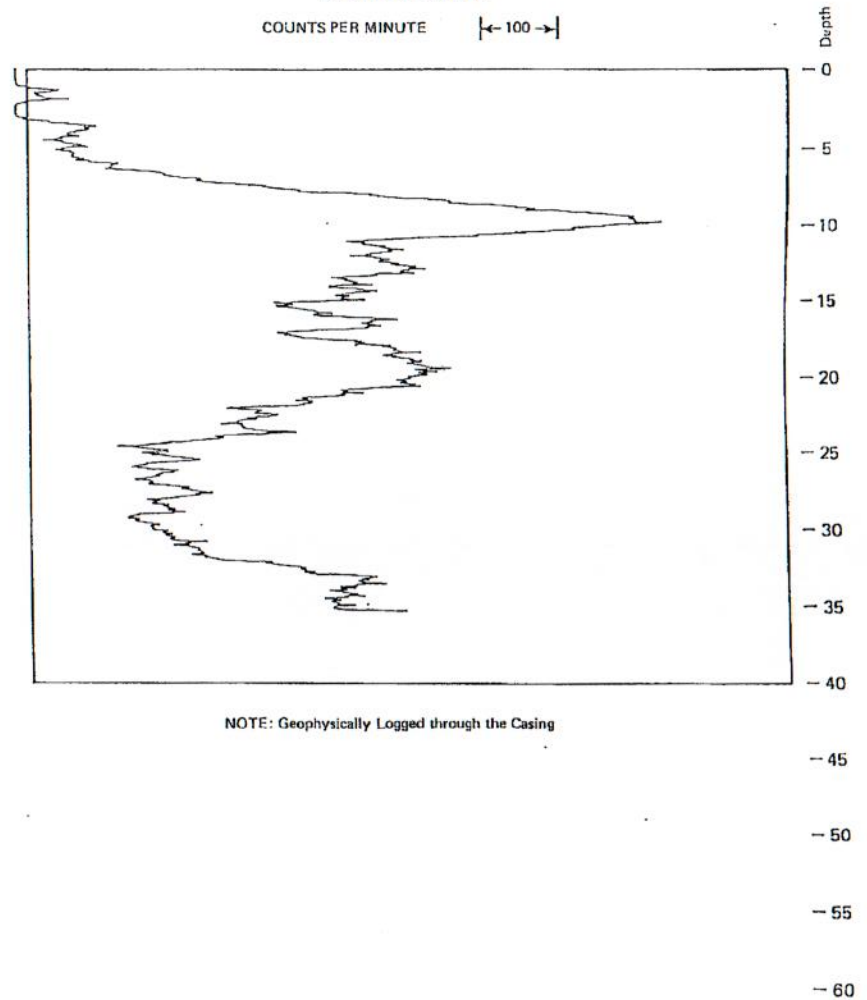
P. 2



WELL COMPLETION DETAIL



NATURAL GAMMA
 COUNTS PER MINUTE



NOTE: Geophysically Logged through the Casing

Equipment 12" Hollow Stem Auger
 Elevation 21.07 Date 1-18-86

ASPHALT GRAVEL FILL
 BROWN SILTY CLAY (CL) - soft, moist

same

BROWN SILTY CLAY (CL) - very soft, moist, rootlets

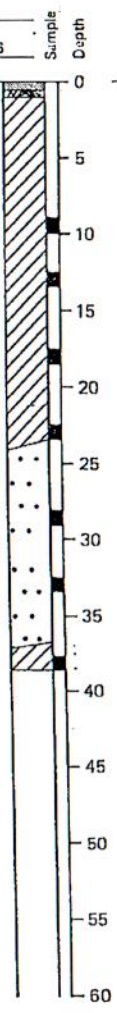
BLACK SILTY CLAY (CL) - medium stiff, saturated

GRAY-BROWN SANDY CLAY (CL) trace gravel, soft, saturated

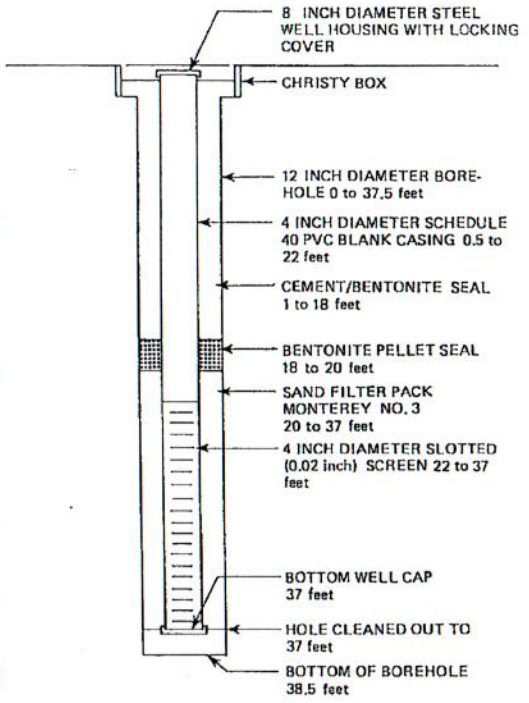
GRAY GRAVELLY SAND (SP) - loose, saturated

GRAY SAND (SP) - medium - grained loose, saturated

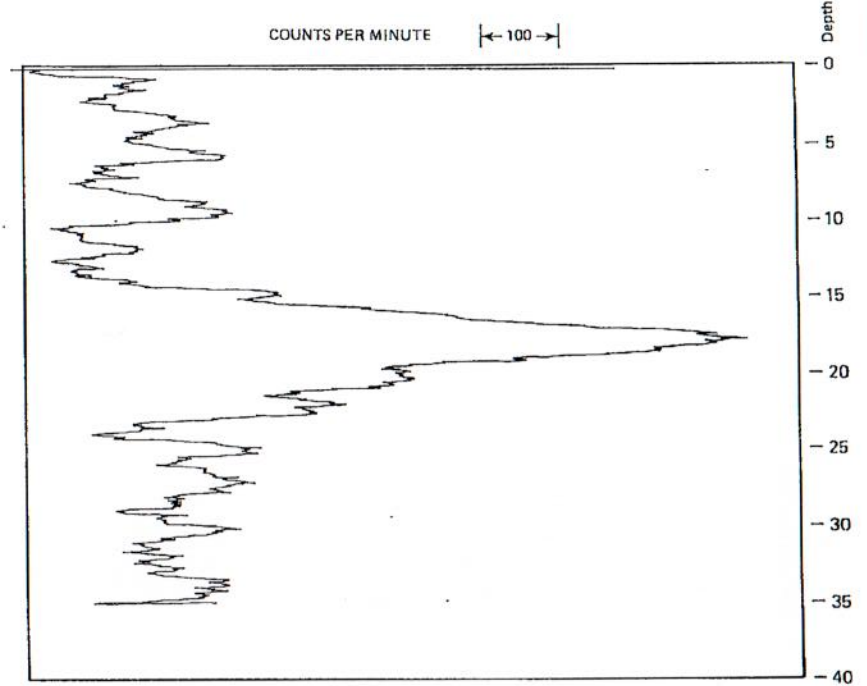
BROWN SILTY CLAY (CL) - stiff, saturated
 bottom of hole at 38.5 ft.



WELL COMPLETION DETAIL



NATURAL GAMMA



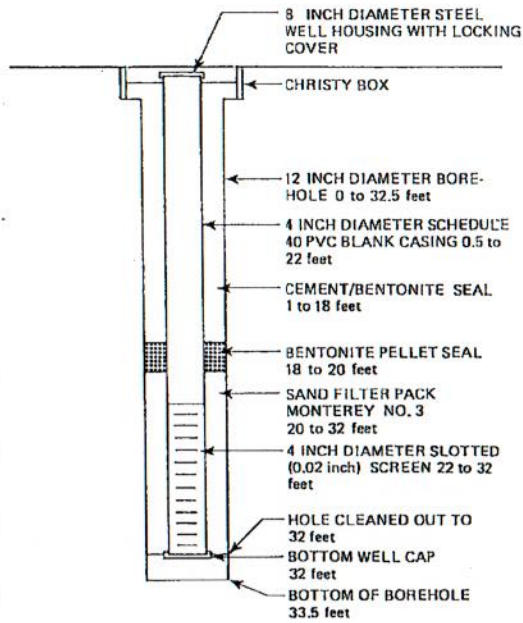
NOTE: Geophysically Logged through the Casing

Harding Lawson Associates Engineers, Geologists & Geophysicists		Log and Well Completion Detail for Well 8 Crown Zellerbach San Leandro, California		PLATE 4
DRAWN PM	JOB NUMBER 1199.012.02	APPROVED 	DATE 3/86	REVISED

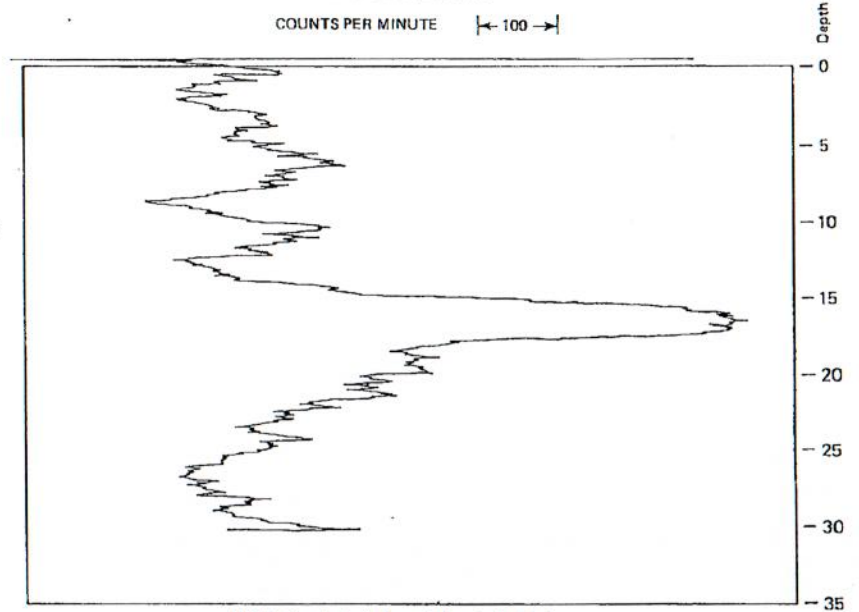
Equipment 12" Hollow Stem Auger
 Elevation 20.82 Date 1-17-86

Sample Depth
 0
 CONCRETE
 GRAVEL FILL
 BLACK SILTY CLAY (CL)
 5
 BROWN SILTY CLAY (CL) - moist, stiff
 same
 10
 same
 15
 BROWN CLAY (CH) - saturated, soft
 20
 GRAY SILTY CLAY (CL) - stiff, saturated
 BROWN GRAVELLY SAND (SP) - loose, saturated
 25
 30
 BROWN SILTY CLAY (CL) - soft, saturated
 bottom of hole at 33.5 ft.
 35
 40
 45
 50
 55
 60

WELL COMPLETION DETAIL



NATURAL GAMMA



NOTE: Geophysically Logged through the Casing



Harding Lawson Associates
 Engineers, Geologists
 & Geophysicists

Log and Well Completion Detail for Well 9
 Crown Zellerbach
 San Leandro, California

PLATE
5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
PM	1199,012.02	JGW	3/86		

Equipment 7-7/8" Rotary Wash
 Elevation 21.5 ± Date 1-27-86

ASPHALT
 BROWN SILTY CLAY (CL)

driller reported SAND (SM?)
 DARK BROWN SILTY CLAY (CL)

GRAVELLY SAND (SP)

BROWN SILTY CLAY (CL)

GRAVELLY SAND (SP)

driller reported CLAY (CL?)

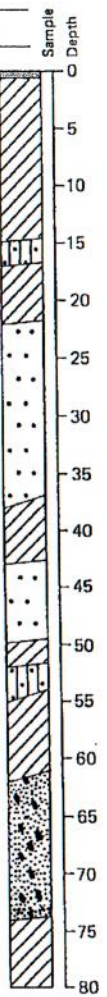
BROWN SILTY SAND (SM)

GRAY SILTY CLAY (CL)

SANDY GRAVEL (GP)

GREEN SANDY CLAY (CL)

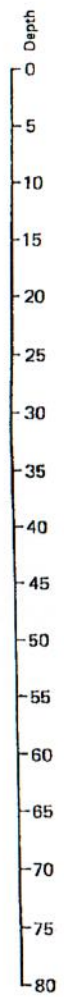
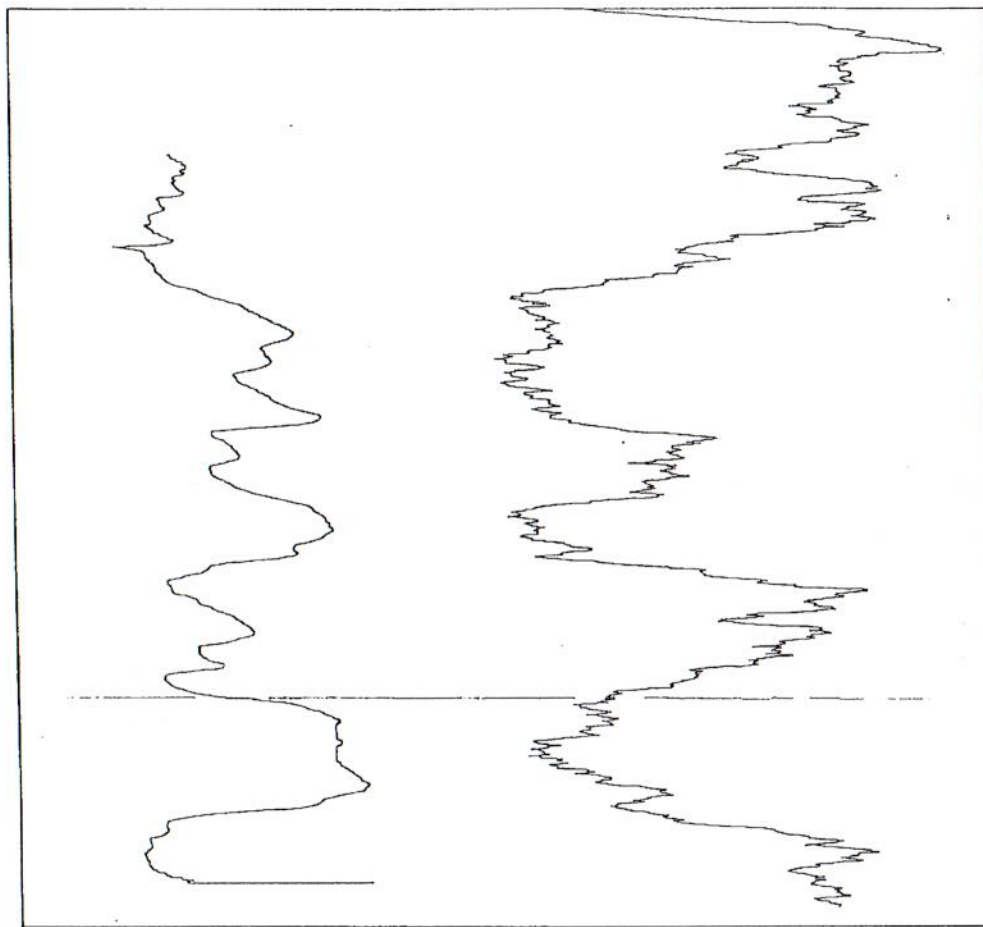
bottom of hole at 80.0 ft.



ELECTRICAL RESISTIVITY

NATURAL GAMMA

COUNTS PER MINUTE |←100→|



Equipment 14" and 7-7/8" Rotary Wash

Elevation 21.52 Date 1-28/31-86

WELL COMPLETION DETAIL

ASPHALT
GREEN-GRAY SILTY CLAY (CL)

DARK BROWN SILTY CLAY (CL)

GRAVELLY SAND (SP)

SANDY GRAVEL (GP)

BROWN SILTY SANDY CLAY (CL)

GRAVELLY SAND (SP) - medium -
coarse grained, angular

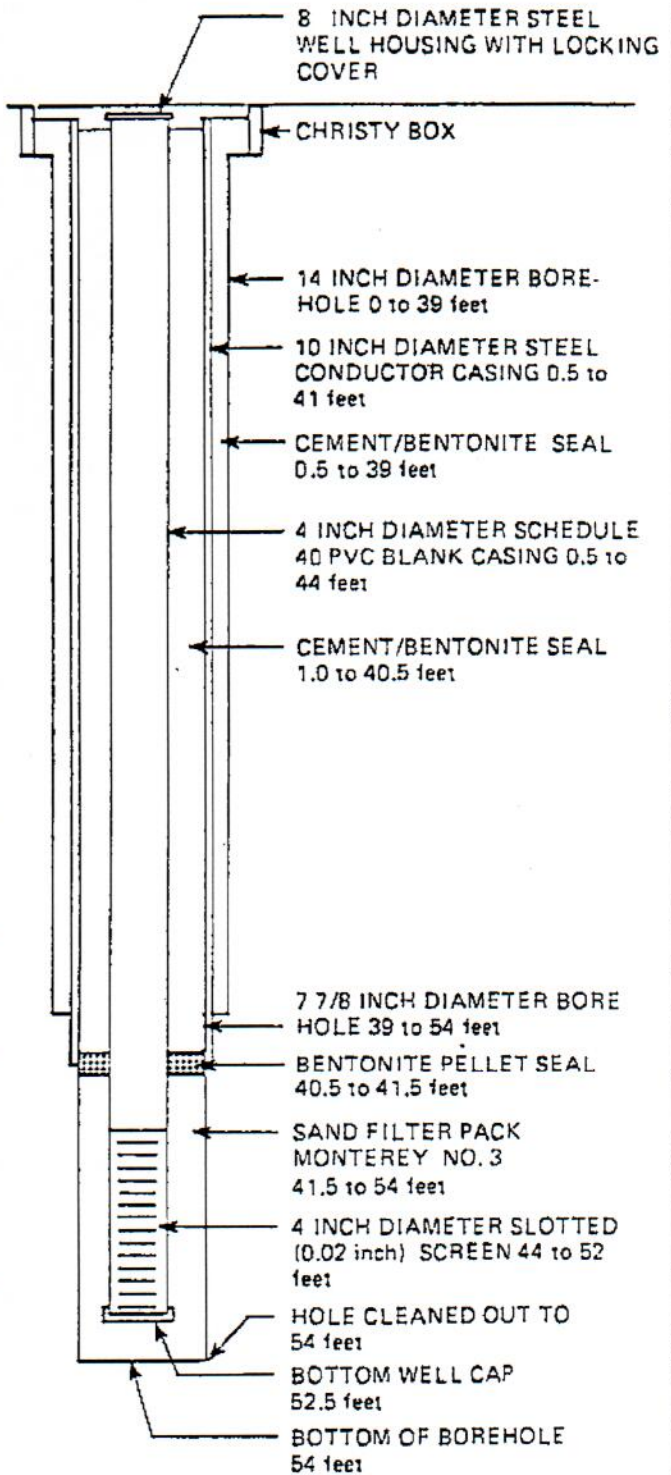
BROWN SANDY SILT (ML)

GRAY SILTY CLAY (CL)

bottom of hole at 54.0 ft.

Sample
Depth

0
5
10
15
20
25
30
35
40
45
50
55
60



Harding Lawson Associates
Engineers Geologists
& Geophysicists

Log and Well Completion Detail for Well B-1
Crown Zellerbach
San Leandro, California

7

DPAA:
PM

JOB NUMBER
1199,012.02

APPROVED
JDW

DATE
3/86

REVISION

DATE



Brown and Caldwell
Consultants

3480 Buskirk Avenue
Pleasant Hill, CA 94523-4342
P.O. Box 8045
Walnut Creek, CA 94596-1220
(415) 937-9010
FAX (415) 937-9026

92 APR -3 PM 1:28

At County website
WP-R-1992-04-06

April 6, 1992

Mr. Robert Weston
Alameda County Department of
Health Services
Hazardous Materials Program
80 Swan Way, Suite 200
Oakland, California 94621

W-2 log
Note: Drilled w. WSA

11-6238-01/5

Subject: Proposed Abandonment of Monitoring Well W-2

Dear Mr. Weston:

Per our phone conversation of March 31, 1992, we are submitting this letter proposing the abandonment of Monitoring Well W-2 at the James River Corporation, Flexible Packaging Group Facility, located at 2101 Williams Street in San Leandro, California. A copy of the Harding Lawson Associates' as-built diagram for the well is enclosed with this letter. Our reasons for well abandonment are discussed below.

Since February 1990, Monitoring Well W-2 has contained an obstruction at a depth of approximately 14 feet below the ground surface. The exact cause of the obstruction is unknown. Several attempts to remove the obstruction have been made by Brown and Caldwell (BC) personnel, but have failed. During the past 2 years, groundwater levels in the well have been lower than the obstruction preventing collection of water level measurements and water quality samples. In February 1992, the groundwater level had risen to slightly above the obstruction, however, the volume of water present was inadequate for the collection of a representative sample. We believe the destruction of this well will not affect the quality of the data being collected at this site because of the proximity of Monitoring Well W-2 to other groundwater monitoring wells (i.e., W-4) completed in the same saturated interval.

Well abandonment will be performed under BC's supervision by a State of California C-57 licensed drilling subcontractor, in accordance with state well-abandonment requirements. Well abandonment will consist of completing a Zone 7 Water Agency Well Abandonment Permit, the removal of all well materials, pressure grouting the borehole with an impermeable material compatible with site geologic conditions, and preparation of a well abandonment

Hollow Stem Auger

98.26 ft.

Date 11-16-83

Sample Depth (ft)

WELL COMPLETION DETAILS

ASPHALT BASECOURSE

BLACK SILTY CLAY (CL) - stiff, moist, no chemical odor

GREEN - GRAY SILTY CLAY (CL) stiff, moist, slight chemical odor

BLUE - GRAY SILTY SAND (SM) medium dense, saturated, slight chemical odor

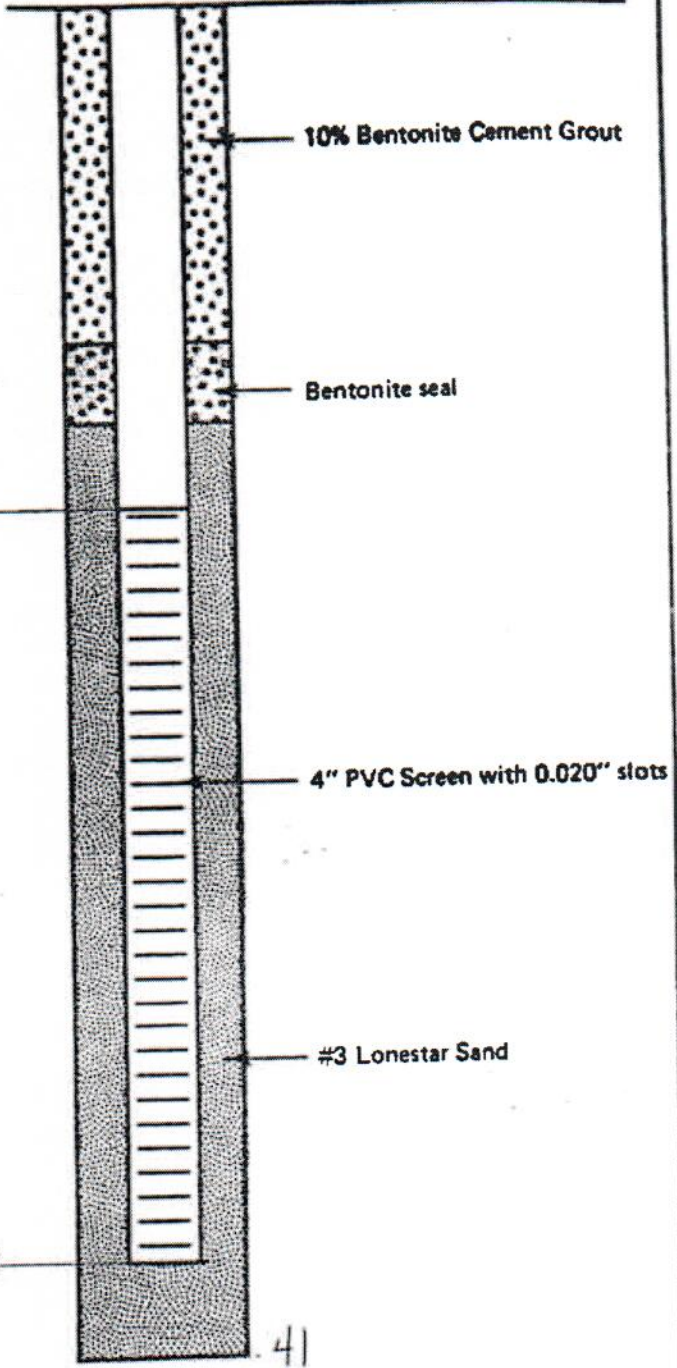
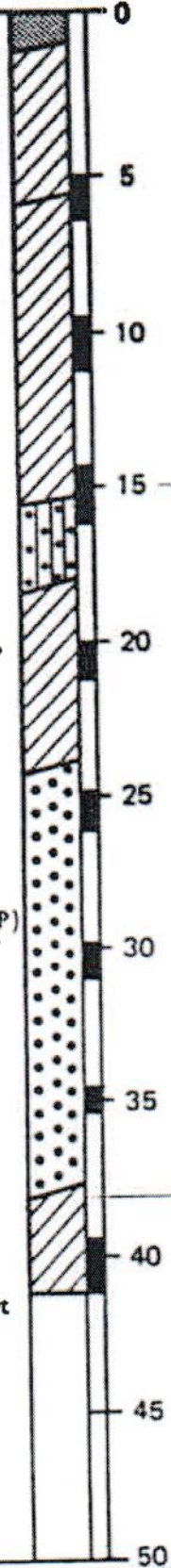
BLACK SILTY CLAY (CL) - very stiff, moist, strong chemical odor

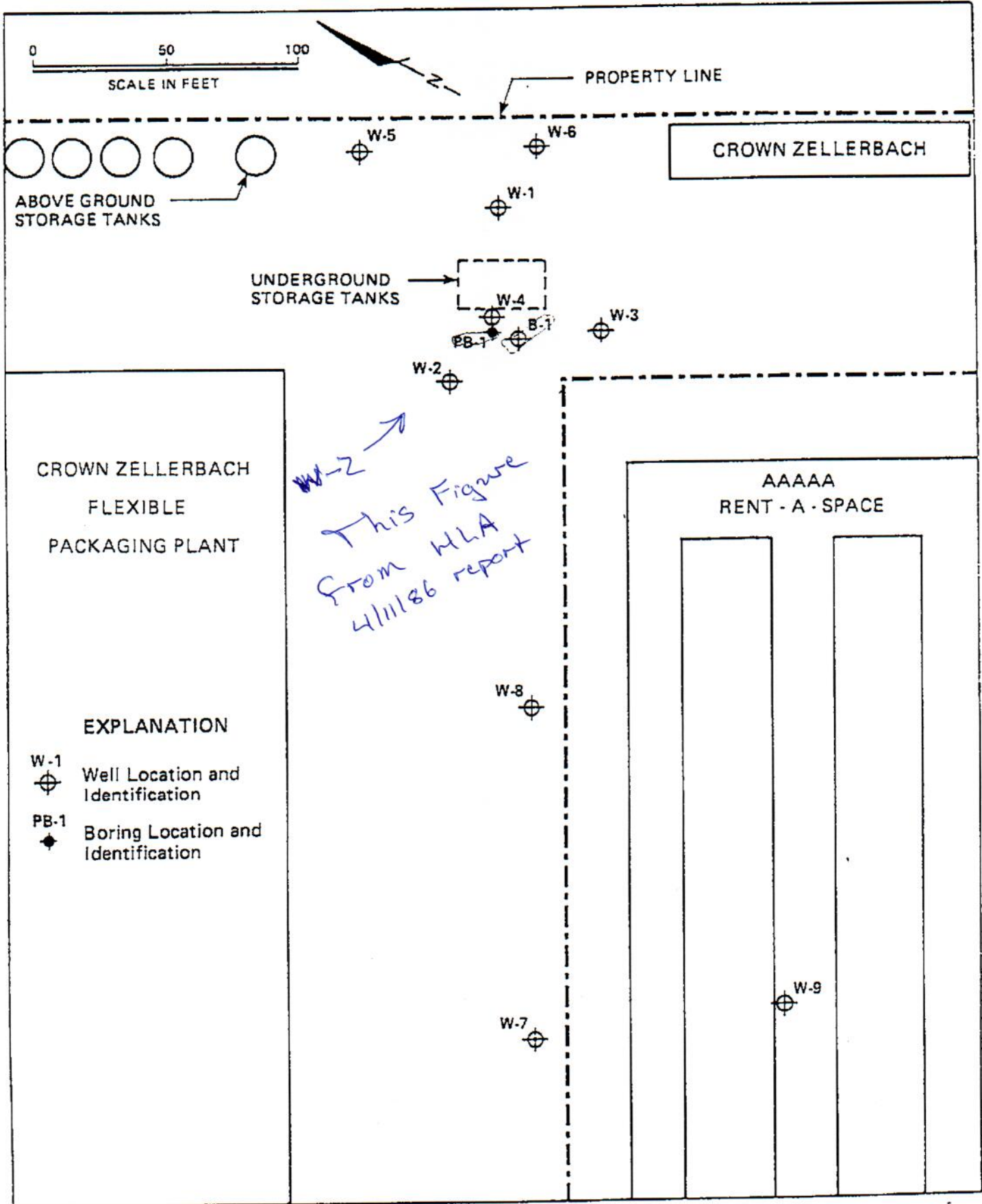
BLUE - GRAY GRAVELLY SAND (SP) dense, saturated, slight chemical odor

color change to gray

BROWN SILTY CLAY (CL) - very stiff, moist, slight chemical odor

BOH at 41 feet





Harding Lawson Associates
Engineers Geologists
& Geophysicists

Well and Boring Location Map
Crown Zellerbach
San Leandro, California

P. 1
2

DRAWN
PM

JOB NUMBER
01199.012.02

APPROVED
[Signature]

DATE
3/86

REVISED

DATE

Harding Lawson Associates

ALCO
HAZMAT
24 MAR 11 PM 2:30



At County website
SWE-R-1994-03-08

March 8, 1994

26560 1

Ms. Madhulla Logan
Alameda County Health Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

- Bailer Vault Invest
- Boring Log HPB-1

Note: Boring drilled
w. HSA and sampled
only at 5-ft. intervals.
=> could have missed
Shallow A Zone.

Sampling Results
Cardboard Bailer Vault Groundwater Sampling
and Hydropunch Investigation
James River Corporation
San Leandro, California

Dear Ms. Logan:

This letter report presents the results of Harding Lawson Associates' (HLA) cardboard bailer vault (vault) groundwater sampling and hydropunch investigation at James River Corporation's Flexible Packaging Plant at 2101 Williams Street, San Leandro, California. The sampling work and hydropunch investigation at the vault was authorized by the James River Corporation (James River) through Change Order No. 1 dated February 2, 1994.

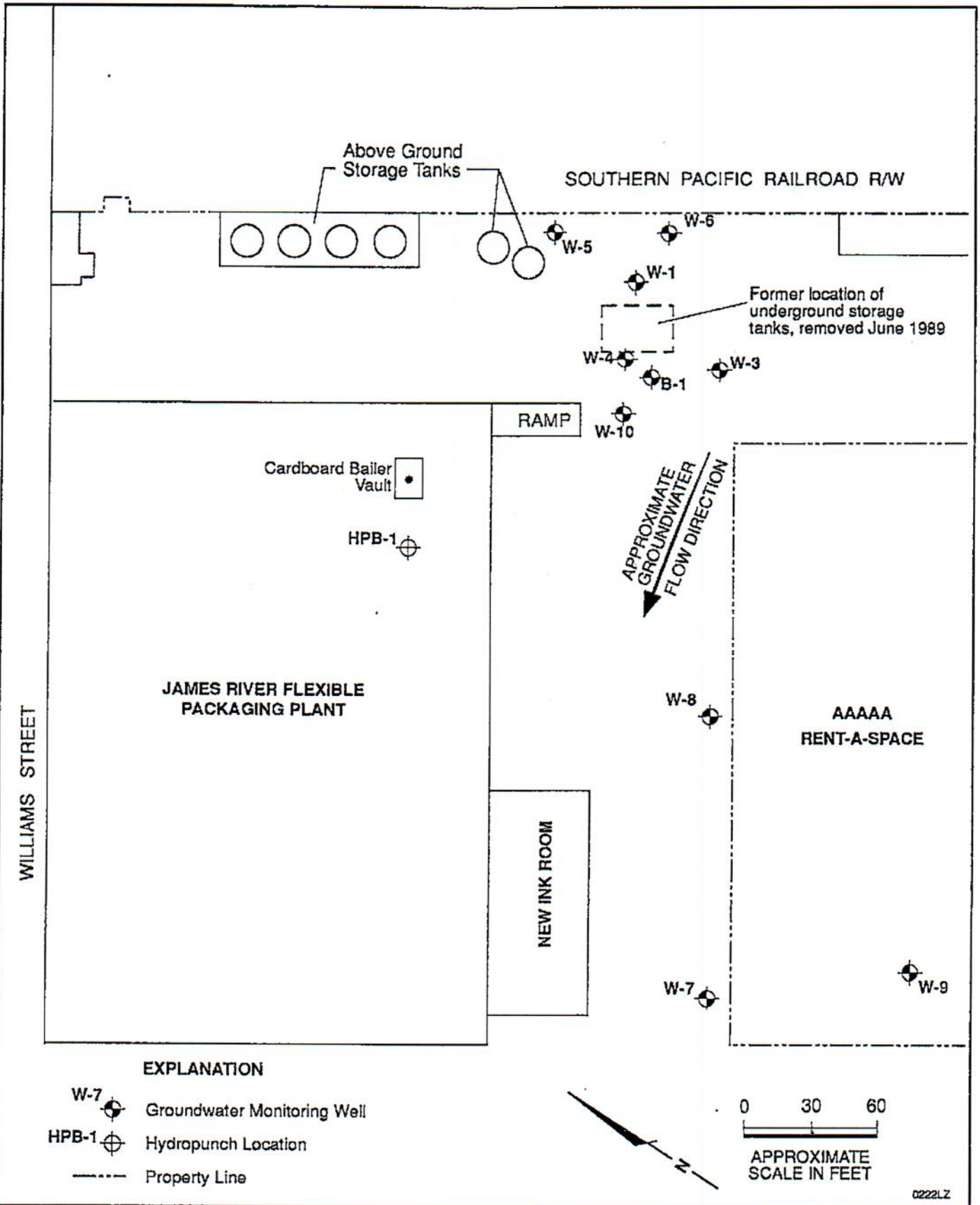
Bailer
Vault
Dimensions

CARDBOARD BAILER VAULT SAMPLING

The cardboard bailer vault at the James River facility is located inside the southeastern portion of the plant (Plate 1). The concrete vault previously housed a hydraulically powered cardboard bailing mechanism that was decommissioned. At the bottom of the 14 feet long, 10 feet wide, and 20 feet deep vault is a 2½-foot diameter ram housing for the bailing mechanism. The depth of the ram housing is approximately 14 feet below the bottom of the vault and is steel lined. At the time of HLA's initial site visit on December 8, 1993, the groundwater level inside the ram housing was approximately four feet below the floor of the vault, or approximately 10 feet below the existing water table.

After the cardboard bailer was removed, James River personnel pumped approximately 1,700 gallons from the housing and stored the water in 55-gallon drums. On December 21, 1993, HLA obtained a sample of the groundwater from inside the ram housing with a clear lucite bailer. Approximately 0.4 foot of free product was observed floating on top of the groundwater. HLA collected groundwater from the ram housing with a clean stainless steel bailer and decanted the water into three one-liter amber bottles. In addition, a sample of lubricant used for the bailing mechanism was obtained from James River and submitted for analysis.

The samples collected on December 21, 1993, were analyzed by EPA Test Methods 5520 B (total oil and grease), 5520 B/F (non-polar oil and grease), and 8015 modified (total petroleum hydrocarbons).



0222LZ



Harding Lawson Associates
 Engineering and
 Environmental Services

Site Plan
 James River Corporation
 2101 Williams Street
 San Leandro, California

PLATE

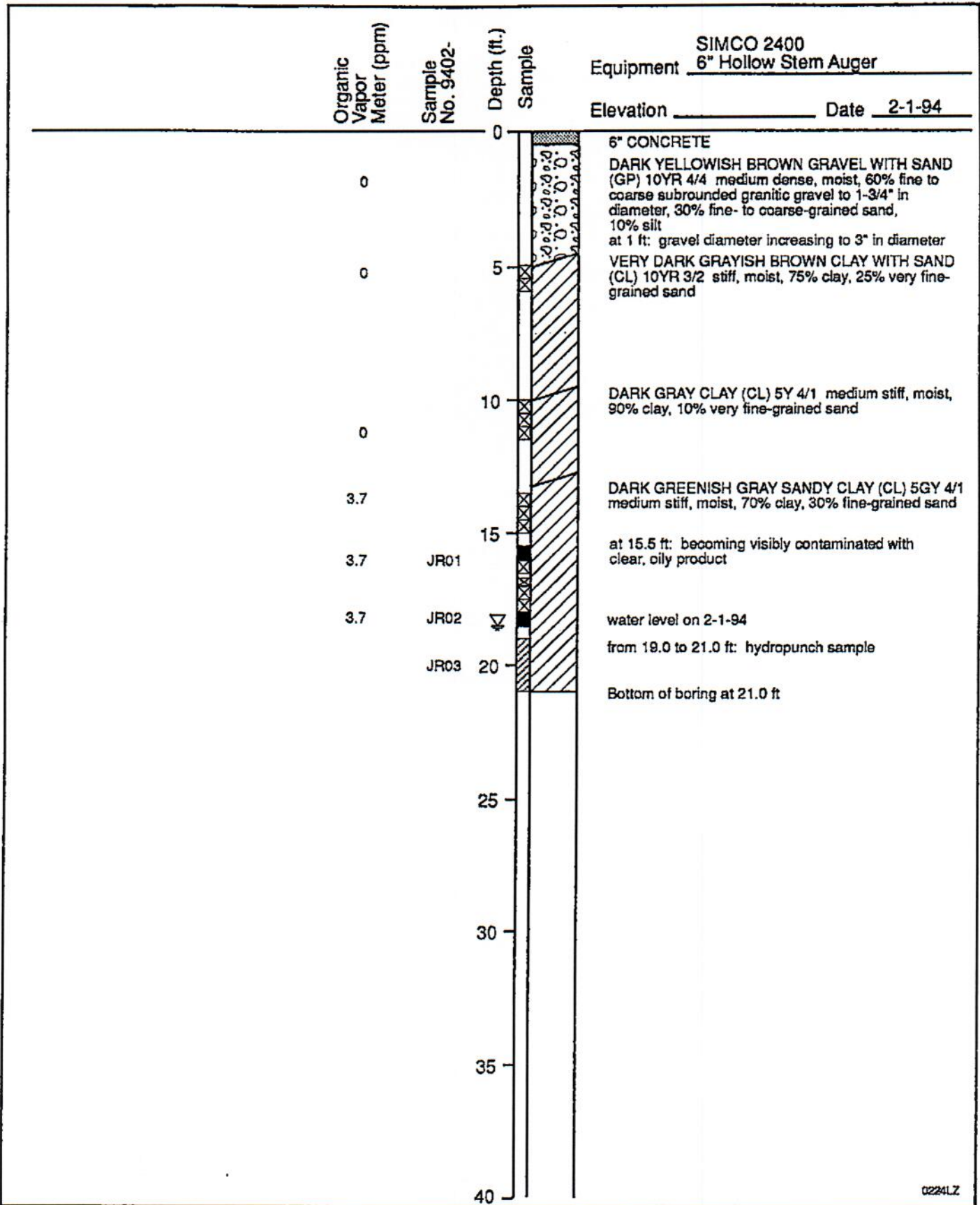
1

DRAWN: DJPc
 JOB NUMBER: 26560 1

APPROVED: *[Signature]*

DATE: 2/94

REVISED DATE



0224LZ



Harding Lawson Associates
Engineering and
Environmental Services

Log of Boring HPB-1
James River Corporation
2101 Williams Street
San Leandro, California

PLATE

3

DRAWN: LZc
JOB NUMBER: 26560 1

APPROVED: *TBS*

DATE: 2/94

REVISED DATE

At County website
SWI-R-1996-02-19

DATE: 02/19/96
TIME: 10:00 AM

Boring logs
for
TW-1
TW-2
TW-3

**Report of Preliminary Site Assessment
James River Flexible Packaging Facility
San Leandro, California**

Prepared for:
James River Corporation
2101 Williams Street
San Leandro, CA 94577-3200

Prepared by:
Environmental Science & Engineering, Inc.
Concord, CA

February 19, 1996

ESE Project No. 6595207

Note:
Wells TW-2
and TW-3
are only
20 ft deep
and may not
extend to
Deeper A Zone
if it is
present at
their locations.

Note: Boreholes
drilled w. WSA, sampled
at 5 ft intervals
(see boring logs), so
shallow A Zone could
have been missed.

1.0 Introduction

This report presents the results of site assessment activities performed by Environmental Science & Engineering, Inc. (ESE) for the James River Flexible Packaging Facility (James River Facility) during the month of December 1995 and January 1996 (Figure 1 - Location Map). ESE submitted a workplan dated November 21, 1995 to James River and the Alameda County Health Care Services Agency (HCSA), which was subsequently approved in a letter dated December 22, 1995. The workplan described the tasks to be performed during this site assessment (ESE, 1995).

1.1 Scope of Work

The primary objectives of the site investigation were to delineate the extent of free-phase floating product and dissolved-phase product in soil and ground water in the vicinity of a vault previously containing a hydraulically powered cardboard baler (baler) (Figure 2 - Site Map).

The following sections summarize the site setting, site history, field methodologies for soil sampling, well installation and ground water sampling, and the reported analytical results for soil and ground water samples collected during this site assessment. This report also discusses the findings obtained from this investigation, presents conclusions, and provides recommendations for future site activities.

1.2 Background

1.2.1 Site Setting

The site and vicinity are at an approximate elevation of 25 feet above mean sea level (MSL) on the tidal plain bounding the eastern edge of San Francisco Bay. Surface topography is relatively flat. The site vicinity is underlain by Holocene estuarine deposits (locally known as Bay Mud), consisting primarily of dark, plastic clays and silty clays rich in organic material, with some local lenses of well-sorted fine-grained sands and shelly and peaty layers (Helley and others, 1979). The site, situated at the southeast corner of Doolittle Street and Williams Street, is located in an industrial area. Site features, including locations of the monitoring wells, are depicted in Figure 2. Regional ground water flow in the area is to the west and southwest towards the San Francisco Bay.

1.2.2 Site History

In December 1993 James River decommissioned a baler located inside the southeastern portion of the plant. The former baler was contained within a 14 feet long, ten feet wide, and twenty feet

Baler
Vault
Info
↓

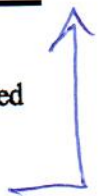
deep concrete vault. At approximately 14 feet below the bottom of the vault was a 2 1/2-foot diameter steel-lined hydraulic ram. On December 8, 1993, the ground water level was measured inside the ram housing at approximately four feet below the floor of the baler vault, or approximately ten feet below the existing water table.

Upon removal of the baler, James River personnel pumped approximately 1,700 gallons of water from the baler housing and stored in 55-gallon drums. On December 21, 1993, Harding Lawson Associates (HLA) noted approximately 0.4 feet of free product floating on top of the ground water. HLA obtained a ground water and free-phase product sample from inside the baler ram housing and submitted the ground water sample for chemical analysis. In addition, a sample of lubricant used for the bailing mechanism was obtained from James River and submitted for chemical analysis. All collected samples were transported under chain-of-custody to NET Pacific (NET) Laboratory of Santa Rosa, California.

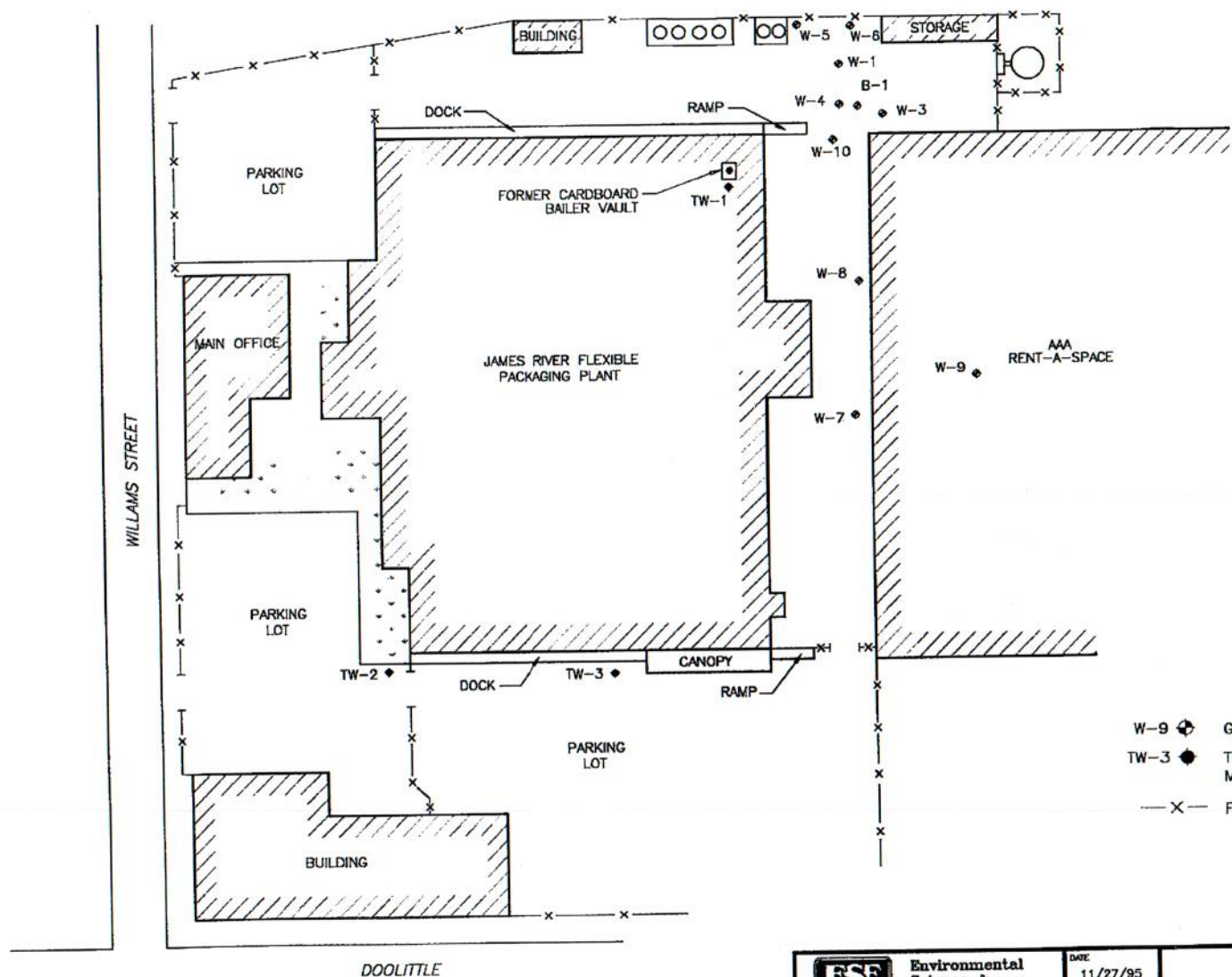
The samples collected by HLA on December 21, 1993, were analyzed for total oil and grease (TOG) using EPA Method 5520 B, non-polar oil and grease (NPOG) using EPA Method 5520 B/F, and total petroleum hydrocarbons as motor oil (TPH-MO) using EPA Method 8015M (modified per CA LUFT). The ground water sample was reported as containing 210 milligrams per liter (mg/L) of TPH-MO. Chemical analysis of the floating product collected from the ram housing detected 310,000 mg/L of TOG and 228,000 mg/L of NPOG. Analysis of the lubricant sample obtained from James River detected 704,000 mg/L of TOG and 633,000 mg/L of NPOG. The chromatogram patterns obtained for the James River lubricant sample and the free-phase product sample collected from the ram housing were found to have similar patterns to the laboratory standard for motor oil.

Based on the laboratory results for the floating product and ground water, it was decided that a soil boring would be drilled approximately 20 feet down-gradient of the vault and a hydropunch would be completed to obtain a ground water sample. Upon removal of the baler mechanism, the vault was backfilled with concrete to match the existing grade.

On February 1, 1994, HLA completed the hydropunch investigation by drilling a 20-foot deep boring below the building floor surface, collecting two soil samples near the water table, and collecting a ground water sample with a hydropunch. At approximately 15.5 feet below the building floor surface, free product was encountered. The two soil samples and one ground water sample were submitted to NET for chemical analysis for TPH-MO. The soil samples collected from 15.5 to 16.0 and 18.0 to 18.5 feet below the building floor detected 5,700 mg/kg and 3,100 mg/kg TPH-MO, respectively. The ground water sample collected was reported as containing 110 mg/L TPH-MO.

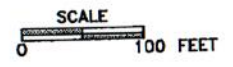


*vault
filled
w.
concrete*



LEGEND

- W-9 GROUND WATER MONITORING WELL
- TW-3 TEMPORARY GROUND WATER MONITORING WELL
- X — FENCE



	Environmental Science & Engineering, Inc. 4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DATE 11/27/95 REVISED 1/19/96 CAD FILE 65520712	SITE MAP JAMES RIVER CORPORATION 2101 WILLIAMS STREET SAN LEANDRO, CALIFORNIA	FIGURE NO. 2 PROJ. NO. 65-95-207

TABLE 1
SUMMARY OF GROUND WATER ELEVATION DATA
JANUARY 11, 1996
JAMES RIVER FLEXIBLE PRODUCT FACILITY
SAN LEANDRO, CALIFORNIA

Monitoring Well ID	Depth to Water (feet)	Depth to Product (feet)	Top of Casing Elevation (feet MSL*)	Product Thickness (feet)	Ground Water Elevation (feet MSL*)
W-1	11.12	--	24.34	--	13.22
W-3	11.36	--	24.49	--	13.13
W-4	11.5	--	24.62	--	13.12
W-5	12.17	--	25.39	--	13.22
W-6	11.48	--	24.72	--	13.24
W-7	11.6	--	24.04	--	12.44
W-8	11.01	--	23.83	--	12.82
W-10	11.67	--	24.77	--	13.1
B-1	11.12	--	24.25	--	13.13
TW-1	15.73	15.68	28.61	0.05	12.88
TW-2	15.29	--	25.79	--	10.5
TW-3	13.82	--	25.29	--	11.47

Notes:

- * Elevation based on an arbitrary datum of 25 feet above Mean Sea Level (MSL) at southwest corner of aboveground storage tank pad.



**Environmental
Science &
Engineering, Inc.**

BORING LOG AND WELL COMPLETION SUMMARY

TW-1

WELL COMPLETION

Completion Depth: 20 Feet

Size/Type	From	To
Casing: 6" Diam. Sch. 40 PVC	0 Feet	5.0 Feet
Screen: 0.01" Sch 40 PVC	5.0 Feet	25 Feet
Filter: #2/12 Sand	3.0 Feet	25 Feet
Seal: Bentonite	2.0 Feet	3.0 Feet

Project Name: James River Corp.
Location: 2101 Williams Street
San Leandro, CA

Project No: 65-85-207

Page 1 of 1

Driller: EGI
Method: Hollow Stem Auger
Hole Diameter: 8 inches
Ref. Elevations:
Logged By: Eric W. Garcia

Total Depth: 25.0 Feet

Dates:
Start: 12/27/85
Finish: 12/27/85

Well Cap or Box:

Depth (ft)	Lithologic Description	USC	Graphic Log			Vapor ppm	Remarks <small>Water, drilling/completion, summary, sample type</small>
			Sample Blows	Lithology	Well Installation		
0	CONCRETE FLOOR						
	FOUNDATION BASE FILL						
	RUBBLE						
6	SANDY SILT: black; >70% clay and silt, slight plasticity; <30% fine sand, sub-angular, moderately well sorted; moist; few 1/32" rootlet traces, open; few charcoal chips; hydraulic fluid odor.	ML				6.8	
10	SANDY CLAY: light brown; >60% clay and silt, high plasticity; 20% sand, medium to fine grained, sub-angular; moist; abundant 1/16" rootlet and rootlet traces, open; few charcoal chips; hydraulic fluid odor.	CL/CH				10.2	
15	Same as above.					12.0	
20	Same as above, wet.						▼ Saturation @ approx. 20 feet bgs.
25							
30							
35							



**Environmental
Science &
Engineering, Inc.**
A GILCORP Company

BORING LOG AND WELL COMPLETION SUMMARY

TW-2

WELL COMPLETION

Completion Depth: 20 Feet

Size/Type	From	To
Casing: 4" Diam. Sch. 40 PVC	0 Feet	5.0 Feet
Screen: 0.01" Sch 40 PVC	5.0 Feet	20 Feet
Filter: #2/16 Sand	3.0 Feet	20 Feet
Seal: Bentonite	2.0 Feet	3.0 Feet

Well Cap or Box:

Project Name: James River Corp.
Location: 2101 Williams Street
San Leandro, CA

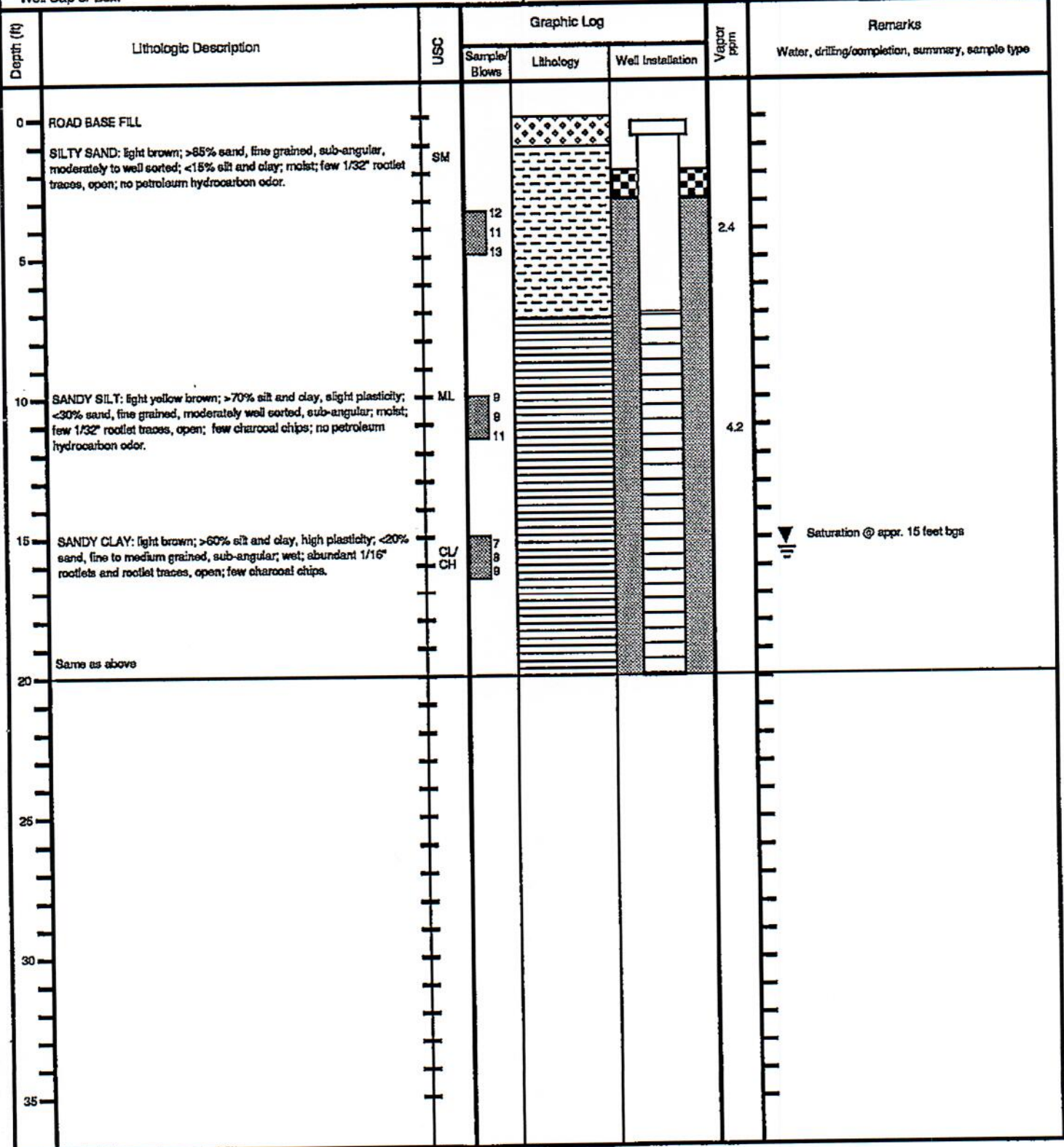
Project No: 85-85-207

Driller: EGI
Method: Hollow Stem Auger
Hole Diameter: 8 inches
Ref. Elevations:
Logged By: Eric W. Garcia

Total Depth: 20.0 Feet

Page 1 of 1

Dates:
Start: 12/27/85
Finish: 12/27/85





**Environmental
Science &
Engineering, Inc.**

BORING LOG AND WELL COMPLETION SUMMARY

TW-3

WELL COMPLETION

Completion Depth: 20 Feet

Size/Type	From	To
Casing: 4" Diam. Sch. 40 PVC	0 Feet	5.0 Feet
Screen: 0.01" Sch 40 PVC	5.0 Feet	20 Feet
Filter: #2/12 Sand	3.0 Feet	20 Feet
Seal: Bentonite	2.0 Feet	3.0 Feet

Well Cap or Box:

Project Name: James River Corp.
Location: 2101 Williams Street
San Leandro, CA

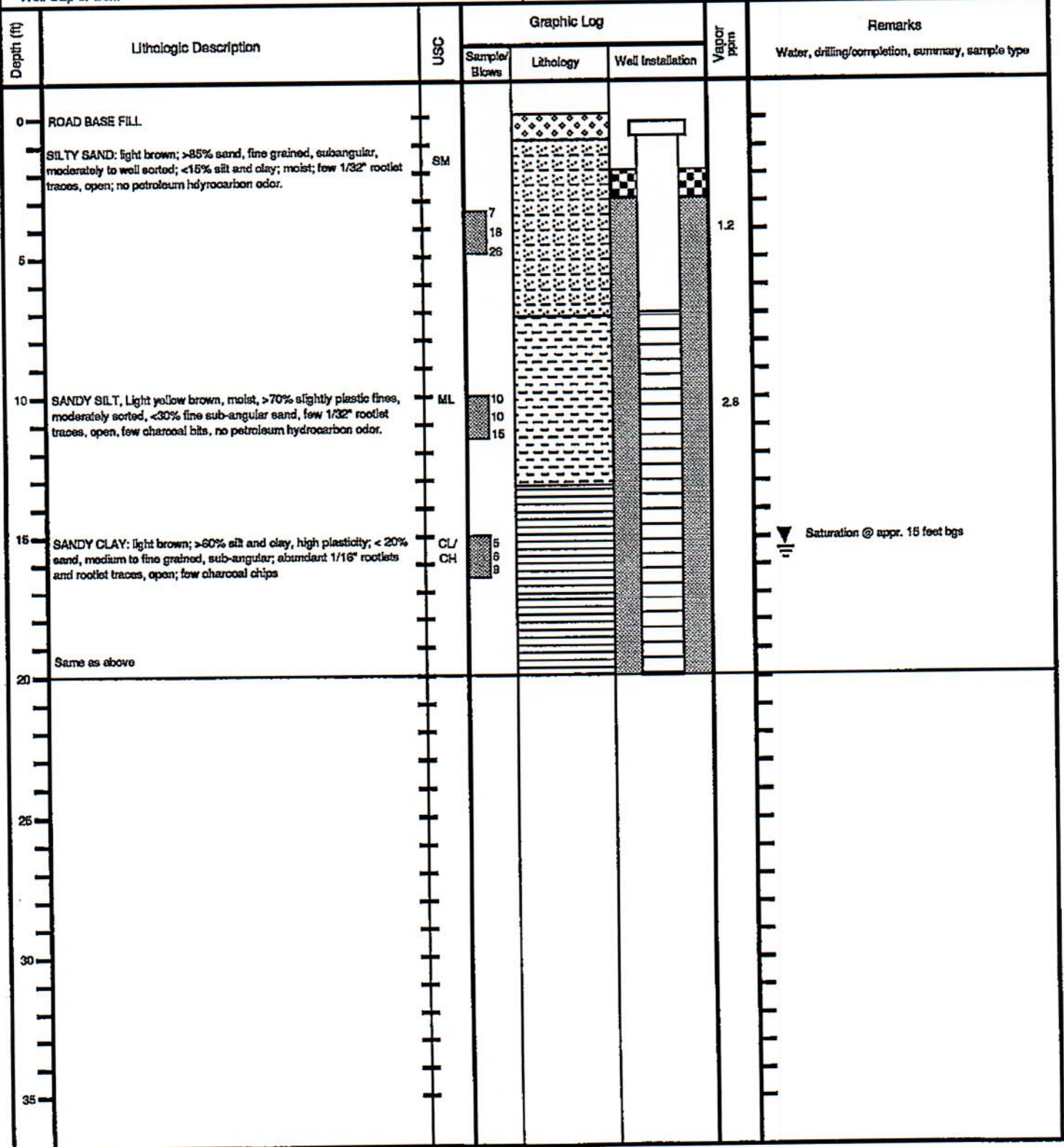
Project No: 65-85-207

Driller: EGI
Method: Hollow Stem Auger
Hole Diameter: 8 inches
Ref. Elevations:
Logged By: Eric W. Garcia

Total Depth: 20.0 Feet

Page 1 of 1

Dates:
Start: 12/27/85
Finish: 12/27/85



**SOIL AND GROUNDWATER INVESTIGATION
ACEH REQUEST FOR DATA GAP INFORMATION
FORMER PRINTPACK FACILITY
2101 Williams Street
San Leandro, California 94577
RWQCB SLIC Case RO0002468
Geotracker Global ID T06019771096**

Prepared For:

2101 Williams Associates, LLC
c/o Jones Development Company, LLC
Attention: Carey Andre
2228 Livingston Street
Oakland, California 94606

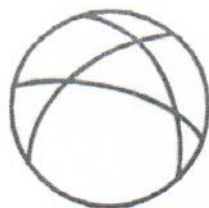
Prepared By:

Anton Geological
P. O. Box 370
Elk, California 95432-0370
(707) 877-3278

Project No. 012-003.01

April 2, 2013

At County website
SWI-R-2013-04-02



**ANTON
GEOLOGICAL**



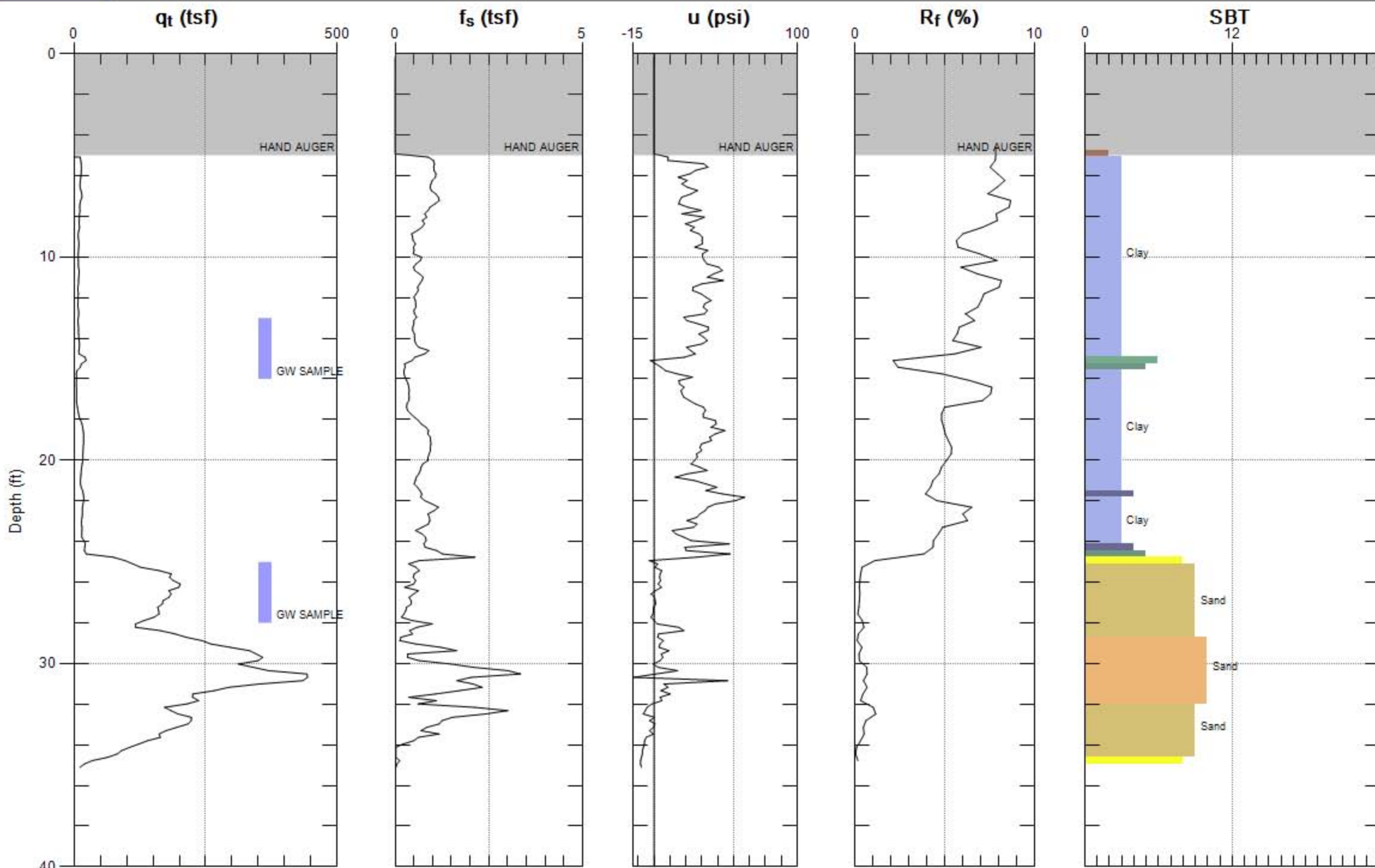
ANTON GEOLOGICAL

Site: 2101 WILLAMS ST.

Engineer: K.ANTON

Sounding: CPT-3

Date: 2/6/2013 11:03



Max. Depth: 35.105 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



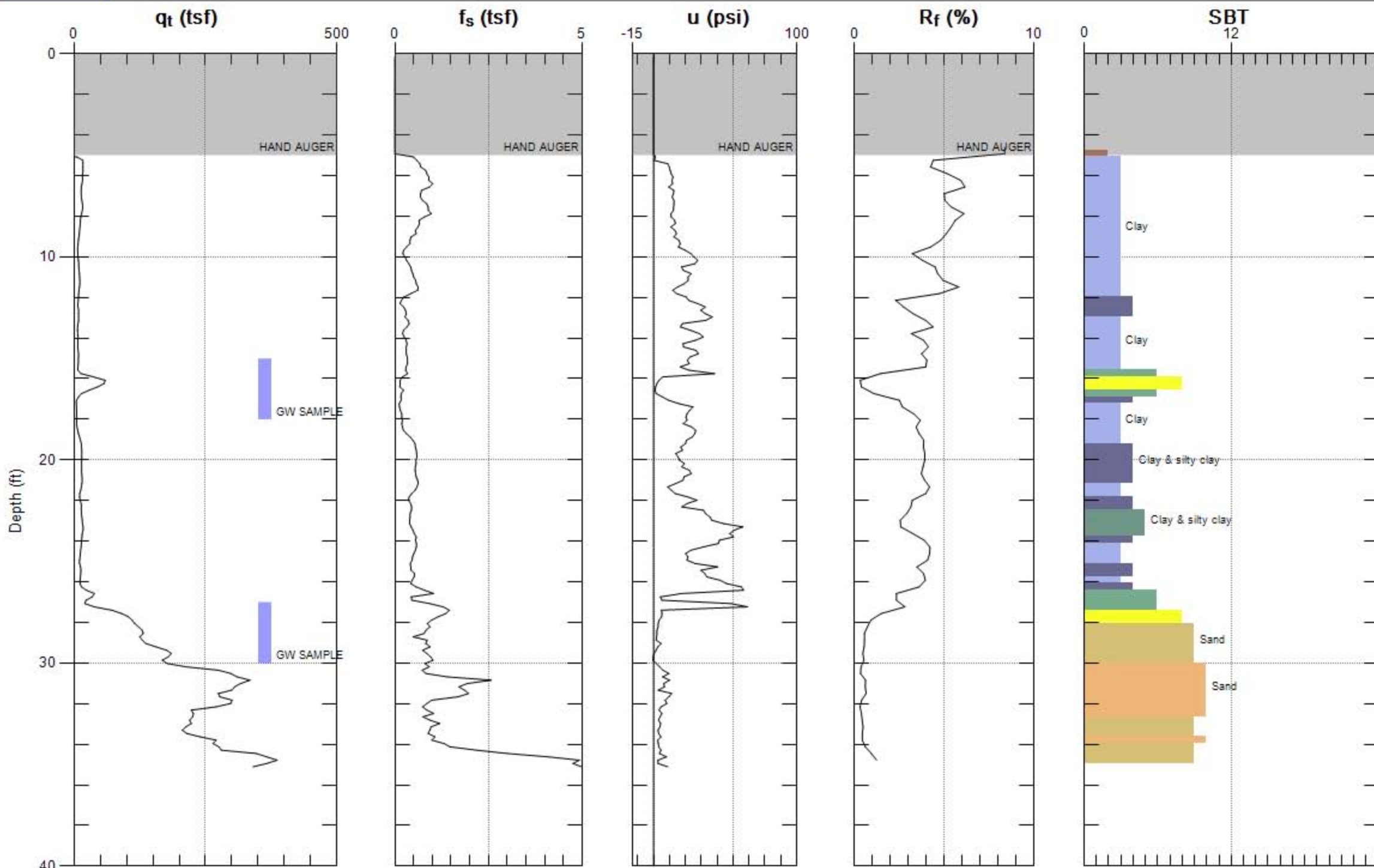
ANTON GEOLOGICAL

Site: 2101 WILLAMS ST.

Engineer: K.ANTON

Sounding: CPT-4

Date: 2/6/2013 01:31



Max. Depth: 35.105 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



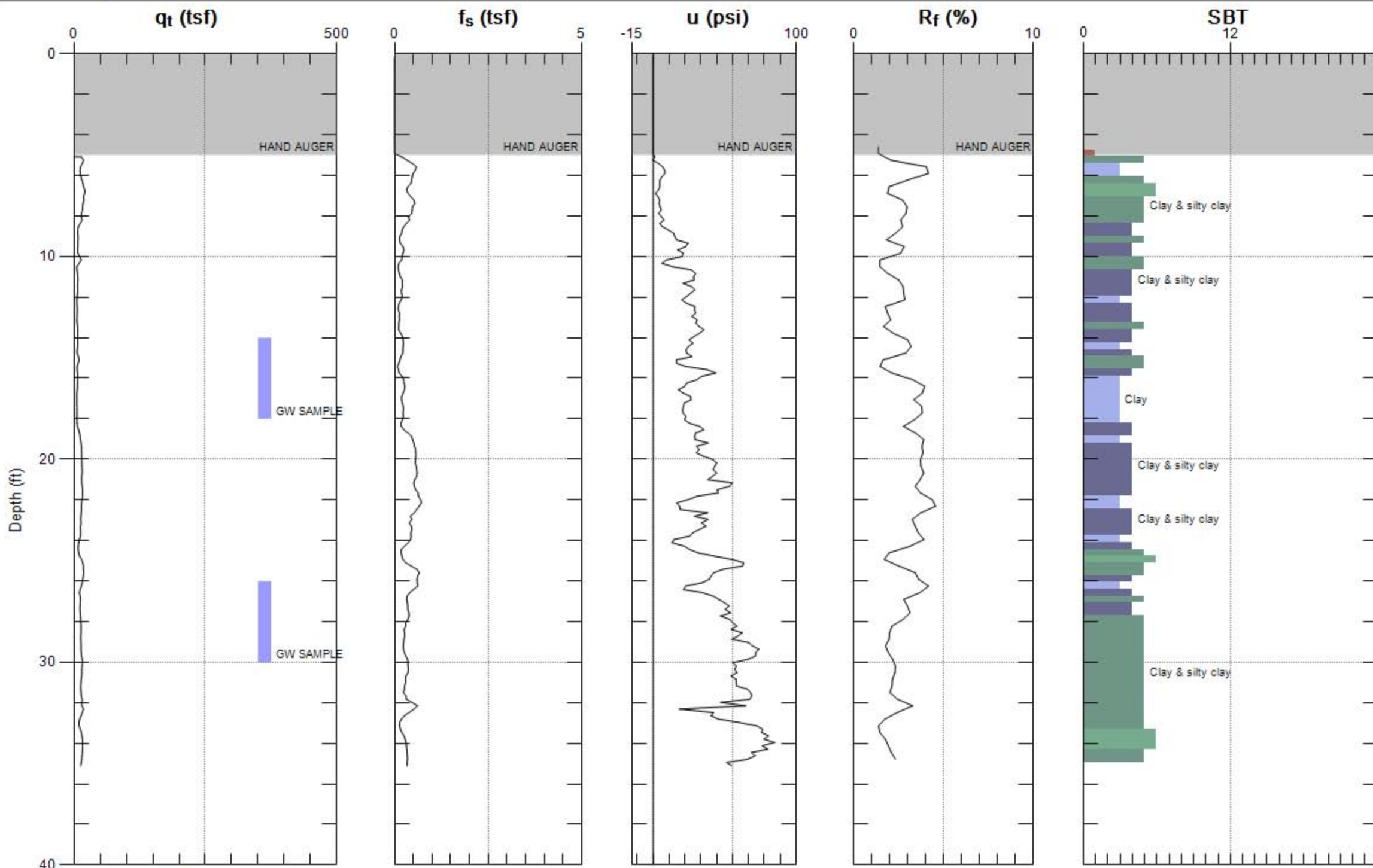
ANTON GEOLOGICAL

Site: 2101 WILLAMS ST.

Engineer: K.ANTON

Sounding: CPT-5

Date: 2/6/2013 03:03



Max. Depth: 35.105 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



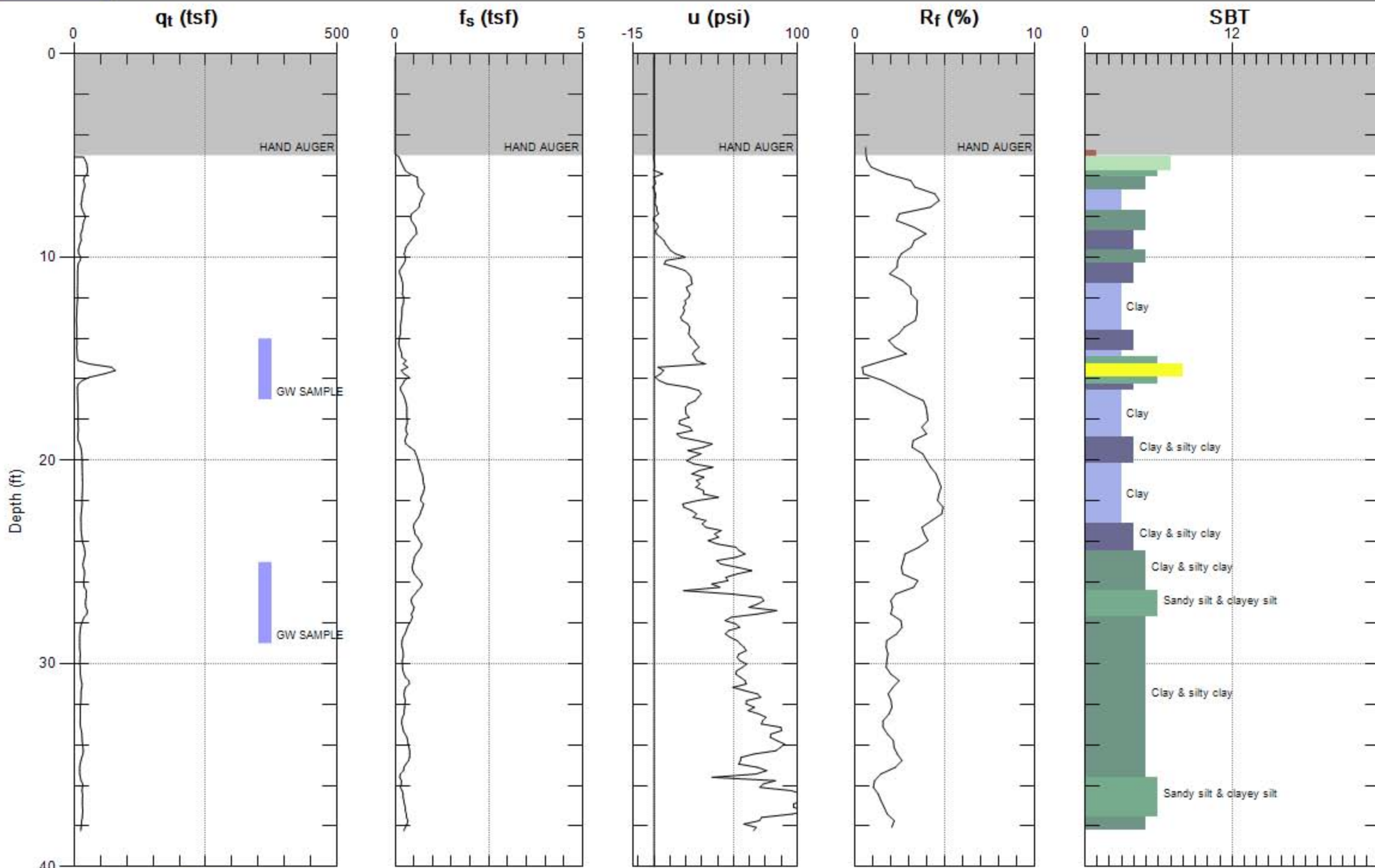
ANTON GEOLOGICAL

Site: 2101 WILLAMS ST.

Engineer: K.ANTON

Sounding: CPT-6

Date: 2/6/2013 04:55



Max. Depth: 38.222 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



ANTON GEOLOGICAL

Western US Environmental and Geological Consulting Services
P.O. Box 370, Elk, California 95432 Tel: 707-877-3278 Internet: www.anton geological.com

FIELD BOREHOLE LOG

BOREHOLE NO.: **AG-B1**

TOTAL DEPTH: **20'**

PROJECT INFORMATION

PROJECT: **2101 Williams Street**
SITE LOCATION: **2010 Williams Street**
JOB NO.: **012-003.01**
LOGGED BY: **Kenneth Anton**
PERMIT NUMBER: **W2013-0073**
DATE DRILLED: **February 7, 2013**

DRILLING INFORMATION

DRILLING CO.: **Gregg Drilling & Testing**
DRILLER:
RIG TYPE: **DP11 Geoprobe**
METHOD OF DRILLING: **continuous core**
SAMPLING METHODS: **direct push**
WEATHER: **overcast, light rain**

☒ Water level during drilling ☒ Water level after drilling

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE ID	PID ppm	BORING COMPLETION	COMPLETION DESCRIPTION
0		AC	Asphalt: Asphalt and gravel base				
0 - 16		ML	ML: Dark gray to medium brown clayey silt - turns brown at five feet, increasing clay content with depth, mottled at 10 feet, slightly moist to dry, no odor		0		
16 - 18		CL	CL: Brown sandy clay - some small dark pebbles, saturated below 16 feet, no odor				
18 - 20		CL	CL: Dark gray to black silty clay - relatively stiff, slightly moist, no odor				
				AG-B1@13'	0		



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P.O. Box 370, Elk, California 95432 Tel: 707-877-3278 Internet: www.anton geological.com

FIELD BOREHOLE LOG

BOREHOLE NO.: **AG-B2**

TOTAL DEPTH: **20'**

PROJECT INFORMATION

PROJECT: **2101 Williams Street**
SITE LOCATION: **2010 Williams Street**
JOB NO.: **012-003.01**
LOGGED BY: **Kenneth Anton**
PERMIT NUMBER: **W2013-0073**
DATE DRILLED: **February 7, 2013**

DRILLING INFORMATION

DRILLING CO.: **Gregg Drilling & Testing**
DRILLER:
RIG TYPE: **DP11 Geoprobe**
METHOD OF DRILLING: **continuous core**
SAMPLING METHODS: **direct push**
WEATHER: **overcast, light rain**

☒ Water level during drilling ☒ Water level after drilling

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE ID	PID ppm	BORING COMPLETION	COMPLETION DESCRIPTION
0		AC	Asphalt: Asphalt and gravel base				
0 - 13		ML	ML: Gray to medium gray clayey silt - decreasing clay content with tdepth, slightly most to dry, no odor		0		
13 - 20		CL	CL: Brown sandy clay - saturated below 15 feet, no odor	AG-B2@14'	0		Cement grout

NOTES: Immediately adjacent to former ink room excavation

APPENDIX B

Summary Tables of Onsite and Selected Offsite Boring Log Sand and Gravel Depth Intervals

Table B1
Summary of Water-Bearing Zone Information
(2075 Williams Street)

Field Date	Drilling Location	Drilling Depth (Feet bgs)	Drilling Interval (Feet bgs)	Depth of Sand or Gravel			Notes
				Shallow A-Zone	Deeper A-Zone	B-Zone	
BORING LOGS							
2/5/1997	MW-1	25		X			No coarse-grained materials identified on boring log.
	MW-2	25		X			No coarse-grained materials identified on boring log.
	MW-4	28	10.0-19.5	X			Located on Crane Valve Co. site. Monitoring well that was destroyed after two sampling events.
	B-5	21	11.0-16.0	X			
11/5/1998	MW-10	49	28.0-39.0		X		Soil boring (not a well).
	MW-11	50	27.0-38.5		X		Located on Crane Valve Co. site. Soil boring (not a well).
	MW-12	17	00.0-17.0	X			Located on Crane Valve, Co. site. Soil boring (not a well). No coarse-grained materials identified on boring log.
	MW-13	18					
9/26/2006	MW-4R	50	19.0-22.0	X			Multiple designations of SANDY SILT (SM) on boring log interpreted as fine-grained Bottom of borehole may be in top of B-Zone. Well constructed to 47 ft bgs
			48.5-50.0			X	
9/25-26/2006	SB10/16	60	19.5-20.0	X			This zone is 1 to 2 feet deeper and thinner than the typical Shallow A-Zone interpreted elsewhere at this site. 0.25 ft recovery from 35.0 to 40.0 and no recovery from 40.0 to 45.0 ft. bgs. Adjacent MIP EC and ECD logs (E18, E20) show that the Deeper A-Zone ends at about 40 ft bgs, with silt and clay from approx 40 to approx 47 ft bgs and the B-Zone extends from approx 47 to 55 ft bgs.
			28.5-55.0			X	
	SB15/10	60	19.5-20.0	X			This zone is 1 to 2 feet deeper and thinner than the typical Shallow A-Zone interpreted elsewhere at this site and could be a lense.
			32.5-43.0			X	
SB16/15	40	17.0-17.5	X			2.5 ft. recovery from 15.0 to 20.0 ft. bgs, this could be a thicker zone, or this might be a lense	
		29.0-40.0			X		
12/1 & 12/6/2010	GP1	20	15.0-16.0	X			Boring log shows void from 12.0-15.0 ft bgs and 16.0-19.0 ft bgs.
	GP2	36	15.5-16.0	X			Boring log shows void from 11.0-15.0 ft bgs and 16.0-18.0 ft bgs. No Deeper A-Zone present.
	GP3	20	17.0-17.5	X			
	GP4	20	14.5-17.0	X			Gravelly sand also identified from 18.5 ft bgs to total depth explored Boring log shows void from 15.0-18.5 ft bgs.
	GP5	20	18.0-20.0	X			
8/2/10 - 8/4/10	E1	30	16.0-18.0	X			Top of Deeper A-Zone
	E2	30	17.0-19.0	X			
	E3	31	15.0-18.0	X			
	E4	31	28.0-?			X	
			15.0-18.0	X			
	E5	31	27.0-?			X	
			17.0-19.0	X			
	E6	10	29.0-?			X	
	E7	15					Not deep enough for identification of water-bearing zones.
	E8	10					Not deep enough for identification of water-bearing zones.
	E9	61	16.0-18.0	X			
			27.0-40.0			X	
	E11	32	47.0-57.0				X
			15.0-16.5	X			
	E15	31	26.0-?			X	
			14.0-17.0	X			
	E16	60	26.0-?			X	
			15.5-17.0	X			
E18	60	26.0-37.0			X		
		49.0-59.0				X	
E20	61	15.0-17.0	X				
		27.0-38.0			X		
E24	31	46.0-54.0				X	
		16.0-18.0	X				
E24	31	26.0-38.0			X		
		45.0-57.0				X	
E24	31	15.0-17.0	X				
		27.0-?			X		
NARRATIVE DESCRIPTIONS							
	MW-3	Approx 27		X			Silty clay. Gradual downward increase in sand content within the silty clay.
	MW-4	Approx 27	10-20	X			Silty clay. Coarse, angular sand lense was identified from 10 to 20 ft bgs.
	MW-6	Approx 27	27-28		X		Silty clay. A fine-grained sand lense was noted from 27 to 28 ft bgs.
	MW-14	50					0 to 9 silty clay, 9 to 50 sandy clay to clayey sand. No coarse-grained zones identified.
	MW-15	60	42-59			X	0 to 9 silty clay, 9-42 sandy clay, 42-59 sand, 60 clayey sand (this is a PVE well).
	18 unnamed PVE wells	41	26 to 42		X		The top of a sand layer was encountered at depths ranging from 26 to 42 ft bgs with 31 ft bgs the most common depth (for the 18 unnamed PVE wells installed in a perimeter around the building. MW-15 is a 19th PVE well with a different subsurface conditions and different construction).
	MW-3A	Unknown					Top of sand layer is 56 ft. bgs (possible B-Zone). Gaged well depth = 60 ft bgs.
Pre-3/29/2001	MW10A	Unknown			X		Top of sand layer is 28 ft bgs (interpreted as Deeper A-Zone). Gaged well depth = 42 ft bgs.
	MW-16A	Unknown			X		Top of sand layer is 33 ft bgs (interpreted as Deeper A-Zone). Gaged well depth = 38 ft bgs.

Table B2
 Summary of Water-Bearing Zone Information
 (Investigations For Subject Site)

			Depth of				
			Sand or				
	Drilling	Drilling	Gravel				
	Location	Depth	Interval	Shallow	Deeper		
Field Date	Designation	(Feet bgs)	(Feet bgs)	A-Zone	A-Zone	B-Zone	Notes
2101 WILLIAMS STREET SITE INVESTIGATION							
11/16/1983	W-2	41.0	15-18	X			
			24-37		X		
1/28-31/1986	B-1		24-31		X		
			31-37		X		
			44-50			X	
11/15/1986	W-7	39.0	15-18	X			
			24-36		X		
11/16/1986	W-8	38.5	13-15	X			Although the graphic log does not show coarse-grained materials, the natural gamma log does. The borehole was drilled with a hollow stem auger collecting soil samples at 5-foot intervals, and it is possible that the sand layer was between soil samples.
			23-37		X		
11/17/1986	W-9	33.5	12-14	X			Although the graphic log does not show coarse-grained materials, the natural gamma log does. The borehole was drilled with a hollow stem auger collecting soil samples at 5-foot intervals, and it is possible that the sand layer was between soil samples.
			23-33		X		
11/18/1986	PB-1	80.0	12-15, 16-17	X			Location B-1 on site maps. Borehole drilled with mud rotary methods. Driller reported sand 15-17 ft bgs. Natural gamma log shows sand at 12 to 15 and 16 to 17 ft bgs.
			23-37		X		
			43-49			X	
			52-54			X	
			61-74				Unlabeled water-bearing zone
2/1/1994	HPB-1	21.0	1-5				No shallow A Zone encountered.
12/27/1995	TW-1	25.0	None Encountered				No shallow A Zone encountered.
12/27/1995	TW-2	20.0	1-7				No shallow A Zone encountered.
12/27/1995	TW-3	20.0	1-7				No shallow A Zone encountered.

APPENDIX C

Historical Onsite and Offsite Geophysical Resistivity Profiles

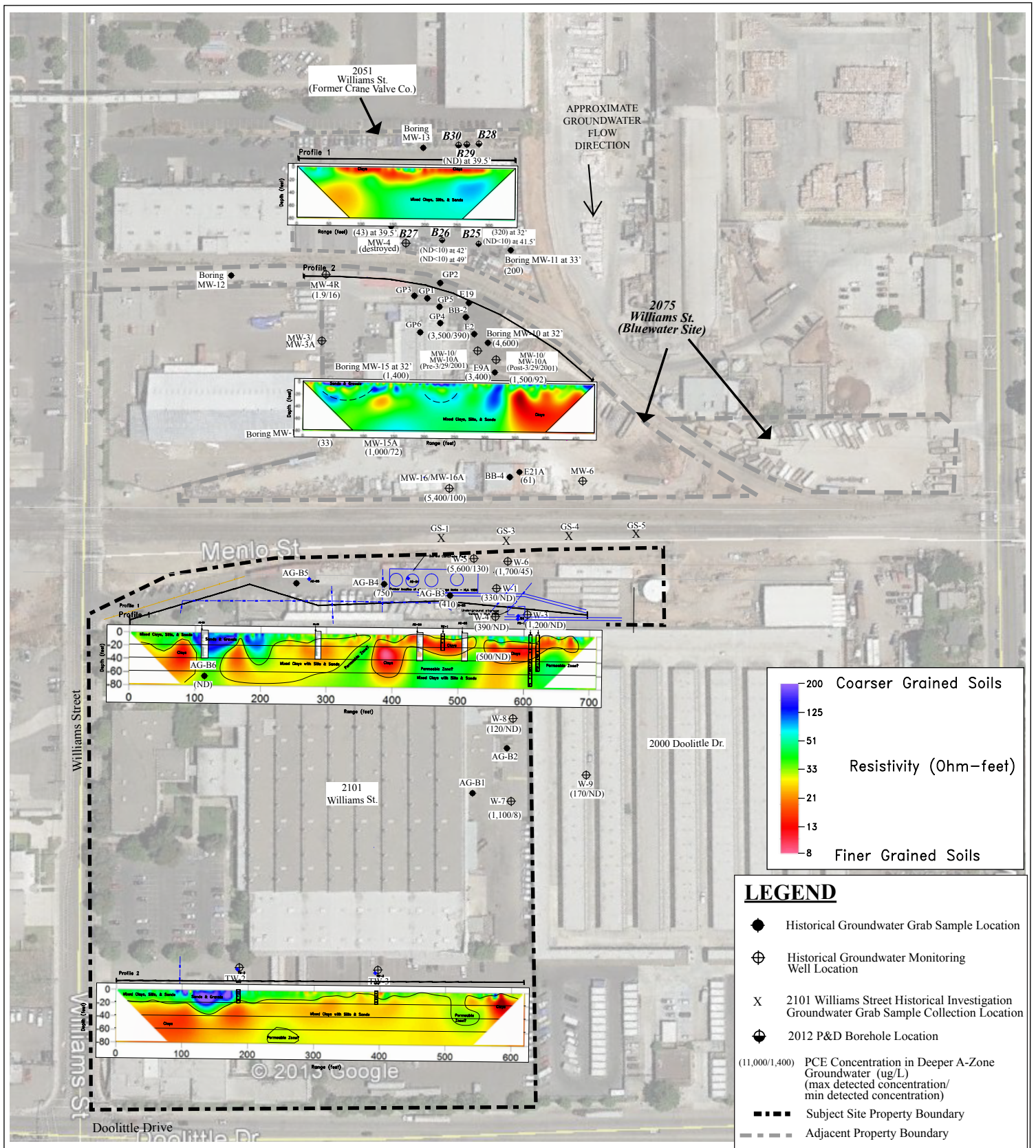
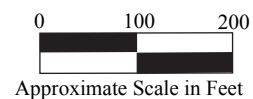


Figure C1
 Site Vicinity Aerial Photograph Showing Offsite and Onsite Resistivity Profile Locations
 2101 Williams Street
 San Leandro, California

Base Map from:

JR Associates, Geophysical Investigation at 2101 Williams Street, San Leandro, California, February 22, 2014, and Google Earth, image dated August 28, 2012

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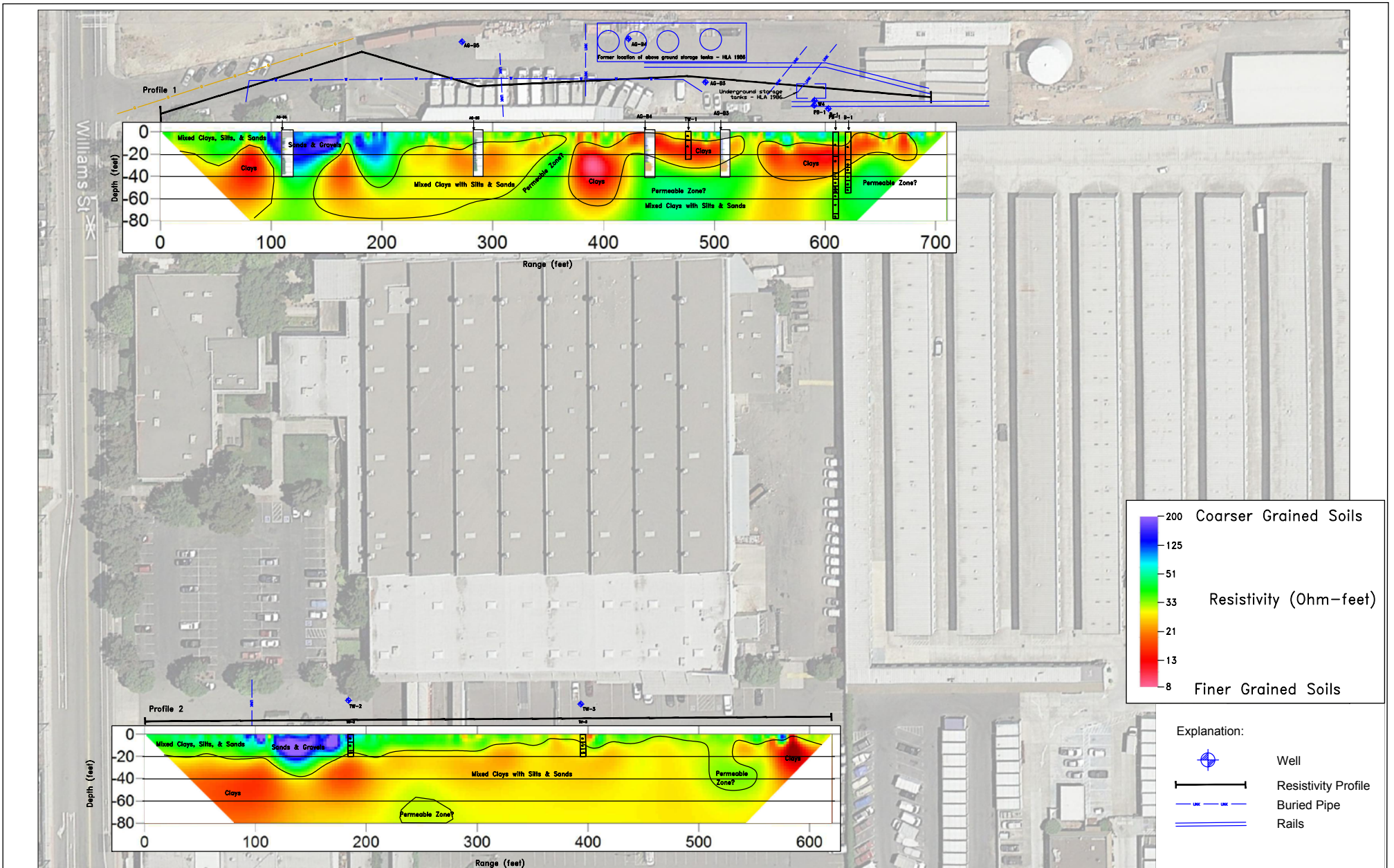
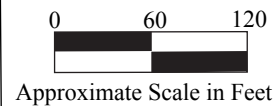


Figure C2
 Site Aerial Photograph Showing Soil Resistivity Profiles at 2101 Williams Street
 2101 Williams Street
 San Leandro, California

Base Map from:

JR Associates, Geophysical Investigation at 2101 Williams Street, San Leandro, California, February 22, 2014, and Google Earth, image dated August 28, 2012

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APPENDIX D

1964 Williams Street Geologic Cross Sections

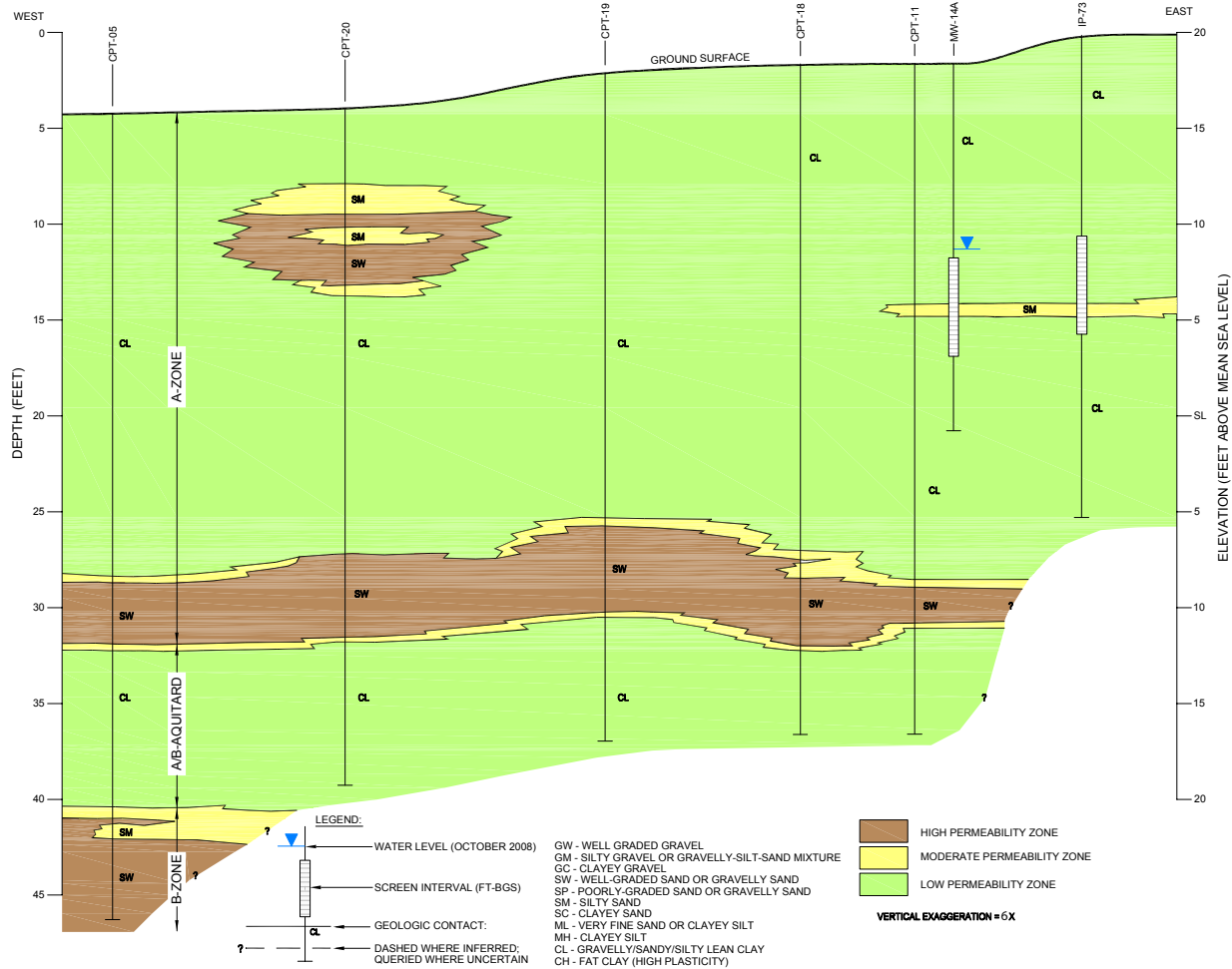
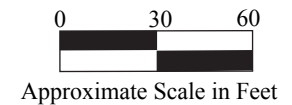


Figure D2
Cross Section IZR-5 West-East at 1964 Williams Street
San Leandro, California

Base Map from:
Arcadis, IRZ-4 Investigation Report, 1964 Williams
Street, San Leandro, California, dated May 18, 2009

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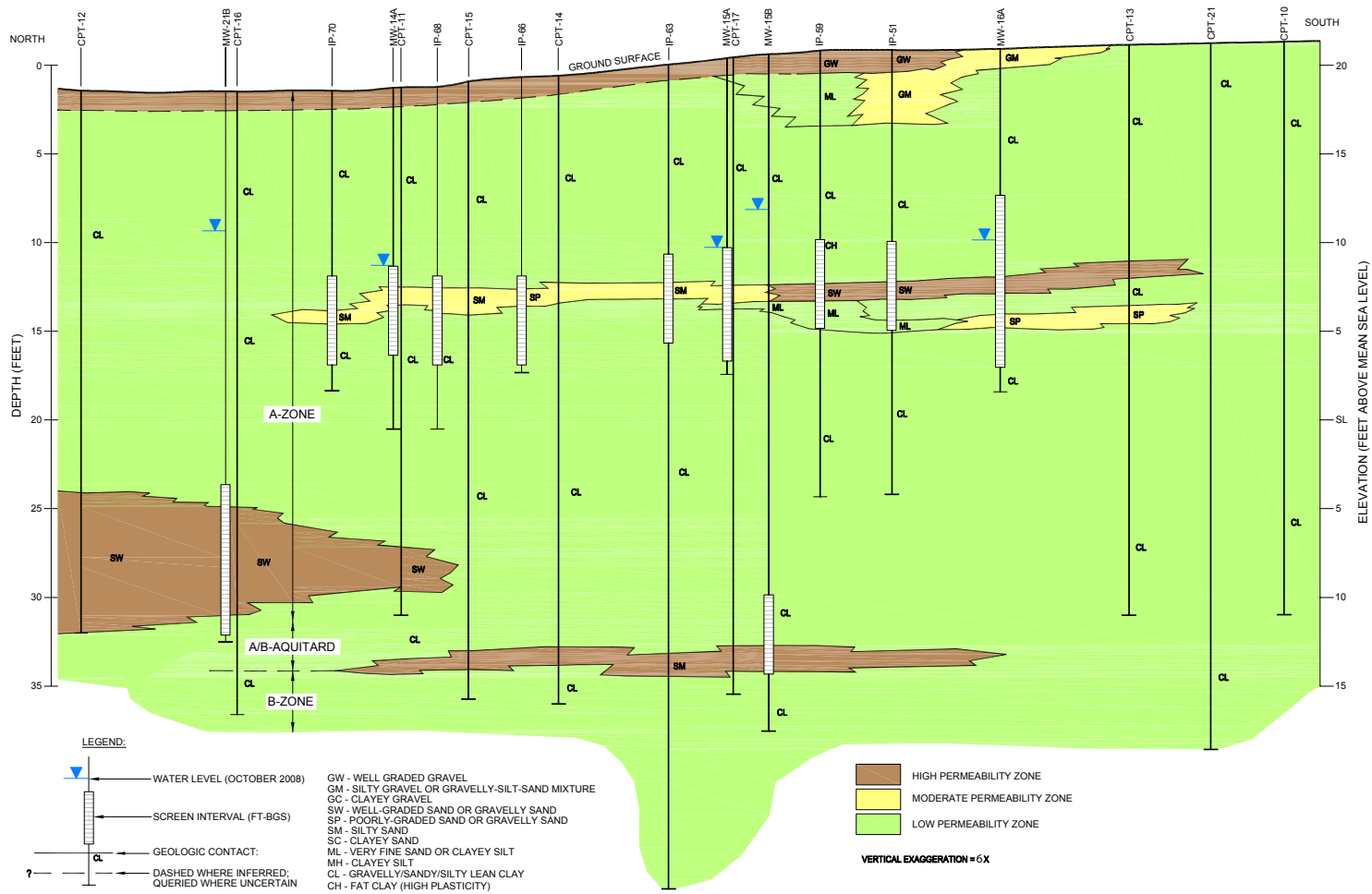


Figure D3
 Cross Section IZR-4 North-South at 1964 Williams Street
 San Leandro, California

Base Map from:
 Arcadis, IRZ-4 Investigation Report, 1964 Williams
 Street, San Leandro, California, dated May 18, 2009

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