



Fax

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Date 9/12/05 Number of pages (including cover sheet) 15

To Susan Hugo

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From Danielle Bogni

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Subject Sump Tank at Alameda Federal Center - 620 Central Avenue

Comments

Hello.

Thank you for your time. As I mentioned on the phone, our contractor, Jonas and Associates, was to have contacted you in 2003 to discuss the issue of a hydraulic lift system located in Building 4 of the aforementioned facility. Building 4 is a single-story wooden structure with a concrete floor and an out-of-service hydraulic lift. Apparently a subsurface sump/tank is located near the hydraulic lift with a pipe between the sump/tank and the hydraulic lift. The lift was installed in 1960 and has not been used since 1983. The Phase I reported "based on the likelihood heavy metals, hydraulic oil, and possibly solvents were used in the area of the hydraulic lift, there exists a concern that impacted soil may be present in this area of the site." I've included the results of the samples in this fax. We received closure for the underground storage tanks that we had onsite.

Should have any questions, please do not hesitate to give me a call. I can be reached at the numbers listed above. I can also be reached via email at Danielle.Bogni@gsa.gov.

Safety and Environmental Branch
450 Golden Gate Avenue, 4th Floor East
San Francisco, CA 94102

**SITE CHARACTERIZATION REPORT
BUILDING 4 - HYDRAULIC LIFT**

**Alameda Federal Center
620 Central Avenue
Alameda, California**

April 2, 2003

**SITE CHARACTERIZATION REPORT
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620 Central Avenue
Alameda, California**

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1.0 Introduction

This report presents a summary of the methodology and results associated with the March 10, 2002 soil and groundwater sampling and analysis event at the Building 4 hydraulic lift at the Alameda Federal Center, located at 620 Central Avenue, in Alameda, California.

1.1 Overview

The area of interest for this study is the hydraulic lift system at Building 4 in the Alameda Federal Center. Figures 1 and 2, in Appendix B, identifies the regional and site location, respectively. Building 4 is a single-story wooden structure with a concrete floor and an out-of-service hydraulic lift. Apparently a subsurface sump/tank is located near the hydraulic lift with a pipe between the sump/tank and the hydraulic lift (per comm. C. Cooley – Property Manager). According the Kleinfelder's November 8, 2002 Phase I Environmental Site Assessment Report, Alameda Service Center, Alameda, California (Phase I ESA) *"the hydraulic lift was installed in the 1960s and has not been used since 1983"* and *"Although no environmental incidents were observed during the site visit or have been reported in agency records reviewed, based on the likelihood heavy metals, hydraulic oil, and possibly solvents were used in the area of the hydraulic lift, there exists a concern that impacted soil may be present in this area of the site."* The recommendations by Kleinfelder in the Phase I ESA formed the basis for soil and groundwater sampling performed by Jonas & Associates, Inc. (J&A) on March 10, 2003.

The March 10, 2003 sampling event include two (2) geoprobe borings adjacent to the hydraulic lift and two (2) geoprobe borings adjacent to the subsurface sump/tank, apparently associated with the hydraulic lift. All four (4) geoprobe borings extended to 15 feet below ground surface (bgs), with soil samples collected at 2.5', 5', 10', and 15' bgs. Samples were composited and analyzed for Total Extractable Petroleum Hydrocarbons as Hydraulic Oil (TEPH-HO), Volatile Organic Compounds (VOCs), and CAM 17 Metals. Composite soil samples with detected petroleum analytes were analyzed as discrete samples. Two (2) groundwater samples were collected and analyzed for the same constituents as soil. This Site Characterization Report

presents the sampling methodology, results, and conclusions associated with the March 10, 2003 sampling event. Figure 3, in Appendix B, identifies boring locations.

Adjacent to Building 4 is a site where four (4) underground storage tanks (USTs) were removed and petroleum analytes, including Total Extractable Petroleum Hydrocarbons as Diesel (TEPH-d), were detected in soil and groundwater (Kleinfelder, 2002). These USTs apparently held gasoline (Tank #1), waste oil (Tank #2), and fuel oil (Tanks #3 and #4). Waste oil, fuel oil, and hydraulic oil can be detected in the spectrum of TEPH-d. This UST site reportedly will receive regulatory closure (per. comm. A. Merendi).

1.2 Scope of Report

This Site Characterization Report, Building 4 – Hydraulic Lift, Alameda Federal Center, 620 Central Avenue, Alameda, California is presented in six (6) sections and five appendices. Section 1, Introduction, provides an introduction, an overview and context for the project, and the scope of the report. Section 2, Preparations and Sampling Procedures, presents the preparations for sampling and sampling methods used in the field to collect soil and groundwater samples. Section 3, Soil Sampling Results, presents the soil sampling results and a discussion of these results. Section 4, Groundwater Sampling Results, presents groundwater sampling results and a discussion of these results. Section 5, Conclusions and Recommendations, provides conclusions associated with the March 10, 2003 sampling effort and recommendations. Section 6, References, identifies the references used in this report. The appendices of the report include tables and figures discussed in the report; data summary tables; the chain-of-custody record; and laboratory data reports.

2.0 Preparations and Sampling Procedures

This section of the report presents the preparations for soil and groundwater sampling and the on-site sampling procedures performed on March 10, 2003. The following Sections 3.0 and 4.0 provides a summary of the soil and groundwater results, respectively.

2.1 Preparations for Sampling

Prior to collecting borehole soil and groundwater samples at the site, Underground Service Alert (USA) was notified and performed a utility survey under USA Ticket #68979. The USA utility survey was performed on February 26 through 28, 2003. A private contractor also performed a utility survey on March 5, 2003. A site-specific *Environmental Health & Safety Plan for*

Sampling Activities (Health & Safety Plan), dated March 7, 2003, was produced for the field effort. After scheduling drilling contractor Fisch Environmental, geoprobe soil and groundwater sampling was performed on March 10, 2003. On the sampling day, a "tail-gate" meeting was held to review the contents of the site-specific Health & Safety Plan.

2.2 Sampling Procedures

The following presents a discussion of the methods and procedures associated with the soil and groundwater samples collected by J&A on March 10, 2003. Summary tables of laboratory results are presented in Appendix C. The chain-of-custody record is presented in Appendix D. The laboratory data reports are presented in Appendix E. Sampling locations are identified on Figure 3.

On March 10, 2003, J&A collected a total of sixteen (16) soil samples from four (4) borehole locations, using a geoprobe operated by Fisch Environmental (C-57 License #683865). Soil samples were collected from 2.5', 5', 10', and 15' bgs. Soil was originally collected in geoprobe sampling tubes and cut at each sampling depth and approximately 3 inches above and then capped and chilled. From two (2) boreholes, groundwater samples were collected. All samples were capped, labeled, placed in coolers with ice, and under a chain-of-custody were submitted to Severn Trent Laboratory San Francisco (STL SF, California Laboratory Certificate #1094) laboratory for analysis. All the samples were identified on a chain-of-custody record and signed jointly during transfer of the samples. The chain-of-custody records for soil samples are presented in Appendix D of this report. All boreholes were filled with a concrete. Sampling waste was left on-site in a sealed and labeled 55-gallon container.

Soil boring SB1 and SB2 were drilled around the hydraulic lift. Soil borings SB3 and SB4 were drilled around an underground storage sump/tank associated with the hydraulic lift. Soil samples were composited, as follows: SB1+SB2-2.5'+5'; SB1+SB2-10'+15'; SB3+SB4-2.5'+5'; and SB3+SB4-10'+15'. Groundwater samples were collected at boring SB1 and SB3, identified as SB1-GW and SB3-GW.

Soil and groundwater samples were analyzed for Total Extractable Petroleum Hydrocarbons as Hydraulic Oil, using EPA Method 8015M (TEPH-HO); Volatile Organic Compounds, using EPA Method 8260B (VOCs); and CAM 17 Metals, using EPA Methods 6010B, 7470/7471, and 200.7.

Because of detected TEPH-HO in composite sample SB3+SB4-2.5'+5', discrete samples SB3-2.5', SB3-5', SB4-2.5', and SB4-5' were analyzed for TEPH-HO. These samples were analyzed within the fourteen day turn-around-time (TAT) for this analyte.

3.0 Soil Sampling Results

Soil sampling results are summarized in Tables A, B, and C, in Appendix C. Chain-of-custody records are provided in Appendix D. Laboratory data sheets are presented in Appendix E. Tables 1 and 2, in Appendix A, present "Detected Metals and Natural Soil Concentrations" and "Preliminary Remediation Goals for Detected Soil Analytes", respectively. Natural soil concentrations are for California (Kearny, 1996), and the Western United States (Bowen, 1979; Shacklette and Boerngen, 1984). Figure 4 graphically displays March 10, 2003 soil sampling results.

Preliminary Remediation Goals (PRGs; EPA, 2002) are U.S. Environmental Protection Agency (EPA) Region 9 criteria for evaluating and cleaning up contaminated soil. They are human health risk-based concentrations derived from standardized equations, combining exposure information assumptions and EPA toxicity data. PRGs are considered by EPA to be protective of humans over a lifetime. They are generally relevant for "screening" sites, but they are not legally enforceable standards. The PRG's role in site "screening" is to help identify areas, contaminants, and conditions that do not require further attention at a particular site. In addition, because EPA generally does not require clean up below a natural background concentration, if a natural background concentration is higher than the risk-based PRG the background concentration typically becomes the screening criteria.

In the proceeding sections, soil sampling results are summarized and a comparison is made with detected concentrations versus background concentrations for metals and both Residential and Industrial PRGs.

3.1 TEPH as Hydraulic Oil in Soil

Analytical results for Total Extractable Petroleum Hydrocarbons as Hydraulic Oil (TEPH-HO) in soil are tabulated in Table A, in Appendix C. Following is a summary of TEPH-HO results:

- ◆ Composite soil samples SB1+SB2-2.5'+5' and SB1+SB2-10'+15', collected adjacent to the hydraulic lift, did not have detectable concentrations of TEPH-HO.

- ◆ Composite soil sample SB3+SB4-2.5'+5', collected adjacent to the associated hydraulic system sump/tank, had a concentration of 53 mg/Kg TEPH-HO. Discrete samples were then analyzed with the following results: SB3-2.5' at ND(50) mg/Kg; SB3-5' at ND(50) mg/Kg; SB4-2.5' at 190 mg/Kg; and SB4-5' at ND(50) mg/Kg. No PRGs exist for TEPH-HO.
- ◆ Composite soil sample SB3+SB4-10'+15', collected from 10' and 15' depth adjacent to the associated sump/tank, did not have a detectable concentration of TEPH-HO.

3.2 Volatile Organic Compounds in Soil

Analytical results for Volatile Organic Compounds (VOCs) in soil are tabulated in Table B, in Appendix C. Following is a summary of VOC results:

- ◆ No VOCs were detected in any of the borehole composite soil samples.

3.3 CAM 17 Metals in Soil

Analytical results for CAM 17 Metals in soil are tabulated in Table C, in Appendix C. Table 1, in Appendix A, presents the range of results for each detected metal and a comparison with published levels of natural soil concentrations for metals. Table 2, in Appendix A, presents detected analytes and Preliminary Remediation Goals (PRGs). Following is a summary of CAM 17 Metals results:

- ◆ Ten (10) of the CAM17 metals analyzed were detected in each of the four composite soil samples.
- ◆ The concentrations of the CAM 17 metals sampled at the site are within the range of natural-occurring typical background concentrations.
- ◆ Nine (9) of the ten (10) metals detected were below PRGs for residential and industrial soils.
- ◆ Some of the arsenic concentrations detected were above the PRG when using the arsenic cancer endpoint. All of the detected arsenic concentrations were below the PRG when using the noncancer endpoint for arsenic.

4.0 Groundwater Sampling Results

Groundwater samples were collected with a geoprobe from borings SB1 and SB3. Geoprobe groundwater samples have a greater uncertainty with respect to analytical results, compared to sampling a properly installed monitoring well, for collecting a representative groundwater sample. Boring SB1 is located adjacent to the hydraulic lift. Boring SB3 is located adjacent to the hydraulic oil tank/sump. Figure 5, in Appendix B, identifies groundwater sampling locations and a summary of analytical results

Groundwater sampling results are summarized in Tables D, E, and F, in Appendix C. Chain-of-custody records are provided in Appendix D. Laboratory data sheets are presented in Appendix E. Tables 3 and 4, in Appendix A, present "Detected Metals and Comparative Water Concentrations" and "Water Quality Criteria for Detected Groundwater Analytes", respectively. Water concentrations for comparison with detected metals are for typical worldwide groundwater concentrations (Dragon, 1988), average worldwide seawater concentrations (USGS, 1985), and for San Francisco Bay waters off Alameda (Port of Oakland, 1998).

4.1 TEPH as Hydraulic Oil in Groundwater

Analytical results for Total Extractable Petroleum Hydrocarbons as Hydraulic Oil (TEPH-HO) in groundwater are tabulated in Table D, in Appendix C. Following is a summary of TEPH-HO results:

- ◆ Geoprobe groundwater sample SB1-GW, collected adjacent to the hydraulic lift, did not have detectable concentrations of TEPH-HO.
- ◆ Geoprobe groundwater sample SB3-GW, collected adjacent to the hydraulic system tank/sump, had a concentration of 2.6 mg/L TEPH-HO. Because of potential false positive results when collecting groundwater with a geoprobe, if this is a concentration of concern, further characterization of the groundwater may be necessary.

4.2 Volatile Organic Compounds in Groundwater

Analytical results for Volatile Organic Compounds (VOCs) in groundwater are tabulated in Table E, in Appendix C. Following is a summary of VOC results:

- ◆ No VOCs were detected in the two (2) geoprobe borings groundwater samples.

4.3 CAM 17 Metals in Groundwater

Analytical results for CAM 17 Metals in groundwater are tabulated in Table F, in Appendix C. Following is a summary of CAM 17 Metals results:

- ◆ Groundwater samples SB1-GW and SB3-GW, collected adjacent to the hydraulic lift and associated sump/tank, respectively, detected eight (8) of the CAM17 metals analyzed.
- ◆ Groundwater sampling results for Arsenic, Copper, Molybdenum, and Vanadium were above the upper range for natural-occurring typical groundwater concentrations.
- ◆ Groundwater sampling results were below available Water Quality Criteria for San Francisco Bay water off Alameda for Arsenic, Nickel, and Zinc, and above Water Quality Criteria for Copper.

5.0 Conclusions and Recommendations

5.1 Conclusions

Following are conclusions associated with the March 10, 2003 soil and groundwater sampling event:

1. Composite soil samples collected adjacent to the hydraulic lift did not have detectable concentrations of Total Extractable Petroleum Hydrocarbons as Hydraulic Oil (TEPH-HO).
2. A soil sample (SB4-2.5') collected adjacent to the hydraulic system tank/sump had a detectable concentration of 190 mg/Kg.
3. Composite soil sample collected from 10' and 15' depth adjacent to the hydraulic system sump/tank did not have a detectable concentration of TEPH-HO.
4. No VOCs were detected in any of the borehole composite soil samples.
5. Ten (10) of the CAM 17 metals were detected in soil.
6. Detected metal concentrations in soil are within the range of natural-occurring typical background concentrations.
7. Nine (9) of the ten (10) metals detected in soil were below Preliminary Remediation Goals (PRGs) for residential and industrial soils.
8. Some of the arsenic concentrations detected in soil were above the PRG when using the arsenic cancer endpoint. All of the detected arsenic concentrations were below the PRG when using the noncancer endpoint for arsenic.
9. Geoprobe groundwater sample SB1-GW, collected adjacent to the hydraulic lift, did not have detectable concentrations of TEPH-HO.
10. Geoprobe groundwater sample SB3-GW, collected adjacent to the hydraulic system tank/sump, had a concentration of 2.6 mg/L TEPH-HO. Because of potential false positive results when collecting groundwater with a geoprobe, if this is a concentration of concern, further characterization of the groundwater may be necessary.
11. No VOCs were detected in the two (2) geoprobe boring groundwater samples.
12. Groundwater samples SB1-GW and SB3-GW, collected adjacent to the hydraulic lift and associated sump/tank, respectively, detected eight (8) of the CAM17 metals analyzed.
13. Groundwater sampling results for Arsenic, Copper, Molybdenum, and Vanadium were above the upper range for natural-occurring typical groundwater concentrations.
14. Groundwater sampling results were below Water Quality Criteria for San Francisco Bay water off Alameda for Arsenic, Nickel, and Zinc, and above Water Quality Criteria for Copper.

Table 1
 DETECTED METALS AND NATURAL SOIL CONCENTRATIONS

Building 4 – Hydraulic Lift
 Alameda Federal Center
 Alameda, California

Metal	Detected Concentration Range	California Background Concentrations ¹	Western U.S. Background Concentrations ²
	(mg/Kg)	(mg/Kg)	(mg/Kg)
Arsenic (As)	1.4 to 2.9	0.6 to 11.0	<0.01 to 97
Barium (Ba)	22 to 68	133 to 1,400	70 to 5,000
Cadmium (Cd)	0.61 to 1.4	0.05 to 1.70	<1 to 10
Chromium (Cr)	20 to 28	23 to 1,579	3.0 to 2,000
Cobalt (Co)	3.2 to 8.6	2.7 to 46.9	<3 to 50
Copper (Cu)	3.6 to 14	9.1 to 96.4	2 to 300
Lead (Pb)	1.4 to 6.4	12.4 to 97.1	<10 to 700
Nickel (Ni)	18 to 31	9 to 509	<5 to 700
Vanadium (V)	12 to 25	39 to 288	7 to 500
Zinc (Zn)	12 to 23	88 to 236	10 to 2,100

notes: ¹ = Kearny, 1996.

² = Bowen, 1979; Shacklette and Boerngen, 1984.

Table 2
 PRELIMINARY REMEDIATION GOALS FOR DETECTED SOIL ANALYTES

Building 4 – Hydraulic Lift
 Alameda Federal Center
 Alameda, California

Analyte	Concentration Range	Preliminary Remediation Goals Residential Soil	Preliminary Remediation Goals Industrial Soil
	(mg/Kg)	(mg/Kg)	(mg/Kg)
Total Extractable Petroleum Hydrocarbons (TEPH) - Hydraulic Oil (-HO)	TEPH-HO: ND(50) to 190	NA	NA
<u>Metals:</u>			
Arsenic (As)	1.4 to 2.9	22 ¹ , 0.39 ²	260 ¹ , 1.6 ²
Barium (Ba)	22 to 68	5,400	67,000
Cadmium (Cd)	0.61 to 1.4	37	450
Chromium (Cr)	20 to 28	210 ⁴	450 ⁴
Cobalt (Co)	3.2 to 8.6	900	1,900
Copper (Cu)	3.6 to 14	3,100	41,000
Lead (Pb)	1.4 to 6.4	400, 150 ³	750
Nickel (Ni)	18 to 31	1,600	20,000
Vanadium (Vn)	12 to 25	550	7,200
Zinc (Zn)	12 to 23	23,000	100,000

- notes
- ¹ = Arsenic (noncancer endpoint)
 - ² = Arsenic (cancer endpoint)
 - ³ = Cal-Modified PRG
 - ⁴ = Total Chromium (1:6 ratio Cr VI:Cr III)

Table 3
DETECTED METALS AND COMPARATIVE WATER CONCENTRATIONS
 Building 4 – Hydraulic Lift
 Alameda Federal Center
 Alameda, California

Detected Metals	Concentration Range	Natural Concentrations in Groundwater ¹	Natural Concentration in Seawater ²	S F Bay Alameda Water Quality Data ³
	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic (As)	0.011 to 0.050	<0.001 to 0.030	0.003	0.00149 to 0.00234
Barium (Ba)	0.11 to 0.14	0.010 to 0.50	0.02	NA
Copper (Cu)	0.029 to 0.045	<0.0010 to 0.030	0.003	0.00177 to 0.00229
Molybdenum (Mo)	0.014 to 0.065	<0.0010 to 0.030	0.01	NA
Nickel (Ni)	ND(0.0050) to 0.0052	<0.010 to 0.050	0.007	≤0.008 ⁴
Thallium (Tl)	ND(0.0050) to 0.0057	N/A	N/A	NA
Vanadium (V)	ND(0.0050) to 0.075	<0.0010 to 0.010	0.002	NA
Zinc (Zn)	ND(0.010) to 0.058	<0.010 to 2.0	0.01	0.00108 to 0.00198

notes. ¹ = Dragun, 1988.
² = USGS, 1985.
³ = Port of Oakland, 1998.
⁴ = SF Bay South, Port of Oakland, 1998.

Table 4
 WATER QUALITY CRITERIA FOR DETECTED GROUNDWATER ANALYTES

Building 4 – Hydraulic Lift
 Alameda Federal Center
 Alameda, California

Analyte	Detected Analyte & Concentration Range	Water Quality Criteria ¹
	(mg/L)	S F Bay South (mg/L)
Total Extractable Petroleum Hydrocarbons (TEPH) - Hydraulic Oil (-HO)	TEPH-HO: ND(0.5) to 2.6	TEPH-HO: N/A
<u>Metals:</u>		
Arsenic (As)	0.011 to 0.050	0.36 ² 0.069 ³
Barium (Ba)	0.11 to 0.14	NA
Copper (Cu)	0.029 to 0.045	0.0092 ² 0.0029 ³
Molybdenum (Mo)	0.014 to 0.065	NA
Nickel (Ni)	ND(0.0050) to 0.0052	1.41 ²
Thallium (Tl)	ND(0.0050) to 0.0057	NA
Vanadium (V)	ND(0.0050) to 0.075	NA
Zinc (Zn)	ND(0.010) to 0.058	0.21 ²

notes: 1 = Water Quality Criteria apply to surface water bodies and not directly to groundwater. Please note that groundwater concentrations discharging into a surface water body will tend to be diluted by the surface water body and decrease in concentration.

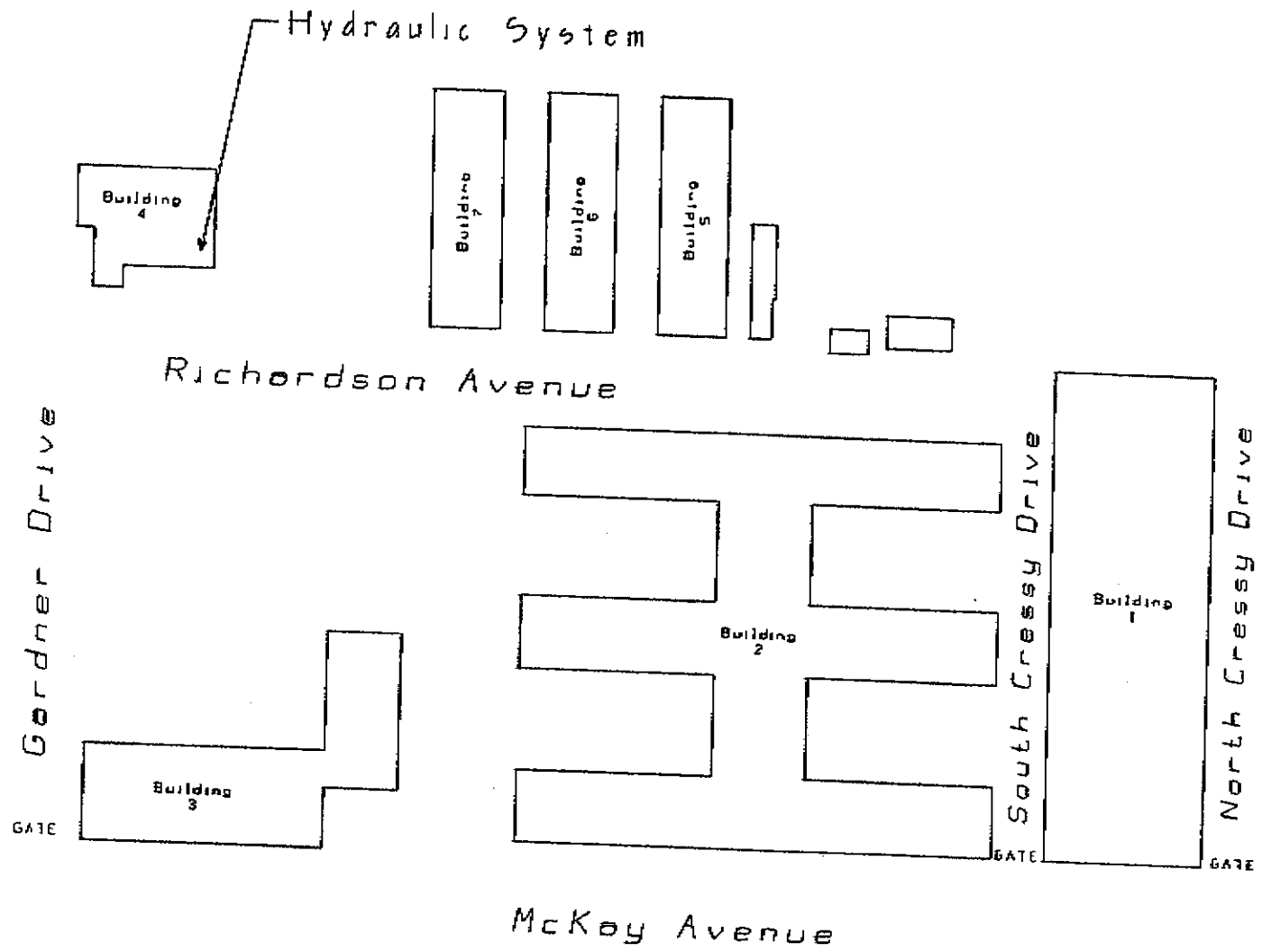
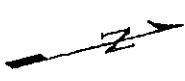
2 = One hour average with salinity <5 parts per thousand (ppt)

3 = One hour average with salinity >5 ppt

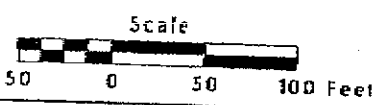
Drawn by M. J. 3-20-2003

DRAWING NUMBER FIG2SCR.gcd

Figure 2



Site Location
 Building 4 Hydraulic System
 Alameda Federal Center
 620 Central Avenue
 Alameda, California

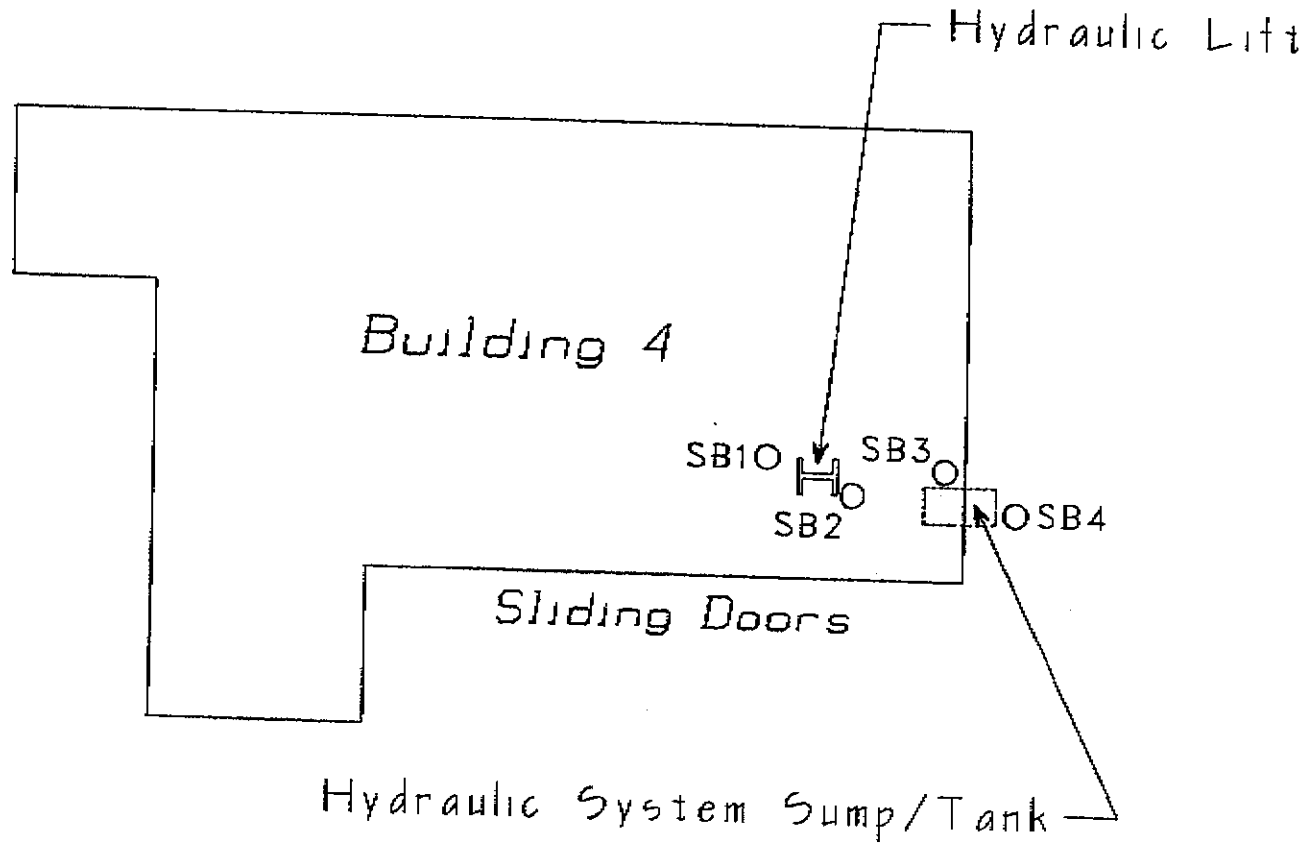
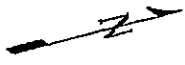


Date: 3-20-2003	Figure 2	Drawing Number FIG2SCR.gcd
Locations Approx.		

Drawn by M. J. 3-25-2003

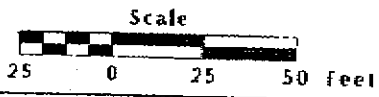
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Figure 3



Legend:

SB1
○ Borehole



Alameda Federal Center
620 Central Avenue
Alameda, California

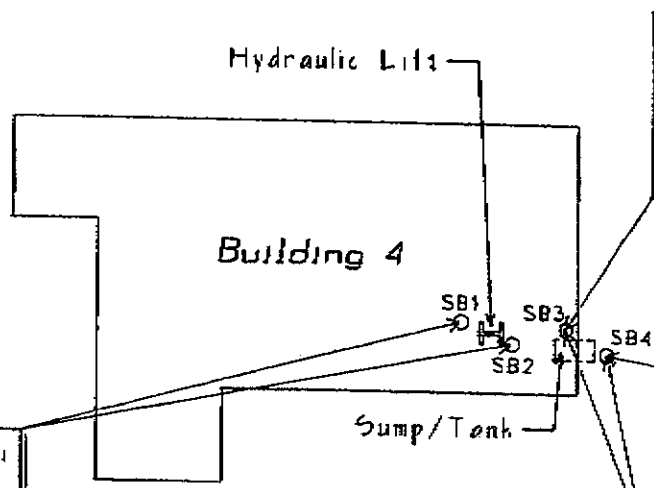
March 10, 2003
Boring Locations
Building 4 Hydraulic System

Date: 3-25-2003	Figure 3	Drawing Number FIG3SCR.ged
Locations Approx.		

Drawn by M.J. 3-25-2003

Drawing Number FIG4SCR.gcd

Figure 4



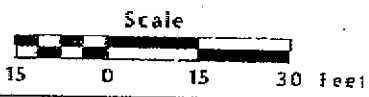
SB1+SB2-2.5'-5'		SB1+SB2-10'-15'	
March 10, 2003 results:		March 10, 2003 results:	
(ng/Kg)		(ng/Kg)	
TEPH-Hydraulic Oil ND(50)		TEPH-Hydraulic Oil ND(50)	
VOCs none detected		VOCs none detected	
Metals:		Metals:	
Arsenic	2.2	Arsenic	1.4
Barium	60	Barium	27
Cadmium	1.4	Cadmium	0.79
Chromium	28	Chromium	27
Cobalt	6.6	Cobalt	3.8
Copper	14	Copper	4.7
Lead	1.8	Lead	1.6
Nickel	31	Nickel	23
Vanadium	25	Vanadium	18
Zinc	23	Zinc	15

SB3+SB4-2.5'-5'		SB3+SB4-10'-15'	
March 10, 2003 results:		March 10, 2003 results:	
(ng/Kg)		(ng/Kg)	
TEPH-Hydraulic Oil 53		TEPH-Hydraulic Oil ND(50)	
VOCs none detected		VOCs none detected	
Metals:		Metals:	
Arsenic	2.9	Arsenic	1.7
Barium	26	Barium	21
Cadmium	0.94	Cadmium	0.61
Chromium	21	Chromium	21
Cobalt	4.3	Cobalt	3.7
Copper	7.6	Copper	3.6
Lead	6.4	Lead	1.4
Nickel	20	Nickel	18
Vanadium	15	Vanadium	12
Zinc	20	Zinc	12

SB3-2.5'	SB3-5'
March 10, 2003 results:	March 10, 2003 results:
(ng/Kg)	(ng/Kg)
TEPH-Hydraulic Oil ND(50)	TEPH-Hydraulic Oil ND(50)

SB4-2.5'	SB4-5'
March 10, 2003 results:	March 10, 2003 results:
(ng/Kg)	(ng/Kg)
TEPH-Hydraulic Oil 190	TEPH-Hydraulic Oil ND(50)

Legend:
 SB1
 ○ Borehole

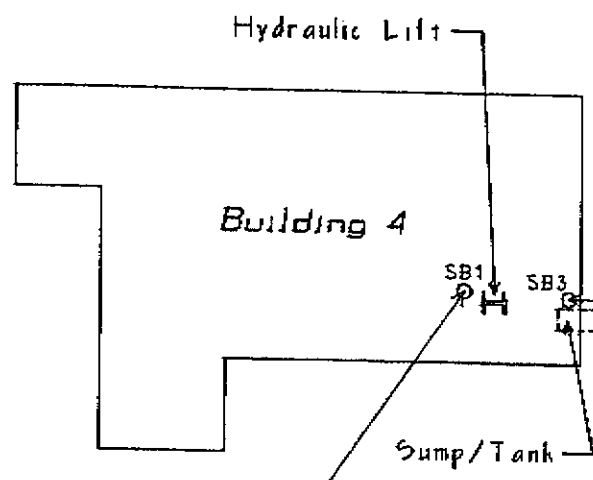
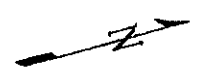


Alameda Federal Center
 620 Central Avenue
 Alameda, California

March 10, 2003
 Soil Sampling Results
 Building 4 Hydraulic System

Date: 3-25-2003	Figure 4	Drawing Number
Locations Approx.		FIG4SCR.gcd

Drawn by M. J. 3-25-2003
 Drawing Number FIG5SCR.gcd
 Figure 5

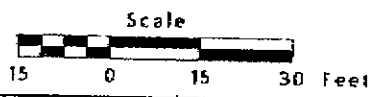


SB1-GW	
March 10, 2003 results:	
(ng/l)	
TEPH-Hydraulic Oil	ND(0.500)
VOCs	none detected
Metals:	
Arsenic	0.011
Barium	0.14
Copper	0.045
Molybdenum	0.014
Nickel	0.0052
Thallium	0.0057
Vanadium	ND(0.0050)
Zinc	0.056

SB3-GW	
March 10, 2003 results:	
(ng/l)	
TEPH-Hydraulic Oil	2.600
VOCs	none detected
Metals:	
Arsenic	0.050
Barium	0.11
Copper	0.029
Molybdenum	0.065
Nickel	ND(0.0050)
Thallium	ND(0.0050)
Vanadium	0.075
Zinc	ND(0.0002)

Legend:

SB1
 ○ Borehole



Alameda Federal Center
 620 Central Avenue
 Alameda, California

March 10, 2003
 Groundwater Sampling Results
 Building 4 Hydraulic System

Date: 3-25-2003
 Locations Approx.

Figure 5

Drawing Number
 FIG5SCR.gcd