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ENVIRONMENTAL HEALTH SERVICE

November 18, 2005

Jerry Wickham Hazardous Materials Specialist Alameda County Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

Clayton Project No. 70-04583.02

Subject:

Site Investigation Workplan for

SLIC Case No. RO0002874, GE/Imatron/Caral Manufacturing

578 Cleveland Avenue, Albany, California

Dear Mr. Wickham:

Clayton Group Services, Inc., (Clayton) a Bureau Veritas Company, has prepared the enclosed Site Investigation Workplan on behalf of GE Healthcare (GE) for the subject facility in response to your October 13, 2005 letter.

Please review the Workplan and call me at (925) 426-2681 or Mr. Richard Rinck of GE at (650) 827-7729 if you have any questions.

Sincerely,

Michael Zimmerman, P.E., R.E.A.

Senior Project Manager Environmental Services

MJZ/mjz

Enclosure

cc: Richard Rinck, GE Healthcare, 389 Oyster Point Blvd. Suite 8, South San

Francisco, California 94080

Clayton Group Services, Inc.





NOV 2 0 2005

ENVIRONMENTAL HEALTH SERVICE

RO 2874

Site Investigation Workplan

Former GE Caral Manufacturing Facility 578 Cleveland Avenue Albany, California 94710

> Clayton Project No. 70-04583.02.000 November 18, 2005

> > ${\it Prepared for:}$

GE HEALTHCARE

389 Oyster Point Blvd. Suite 8 South San Francisco, California 94080

Prepared by:

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1.0 INTRODUCTION

Clayton Group Services, Inc., (Clayton) a Bureau Veritas Company, on behalf of GE Healthcare (GE), prepared this Site Investigation Workplan ("Workplan") regarding the former GE facility located at 578 Cleveland Avenue in Albany, California (the "Site") (Figures 1 and 2). Clayton prepared this Workplan in response to an October 13, 2005 letter from the Alameda County Health Care Services Agency (the County). The following sections provide the proposed investigation methods for addressing the County's requests.

A considerable amount of soil investigation data is available for the Site. Clayton reviewed the existing data and selected investigation activities that will add the complimentary data requested by the County.

1.1 SITE BACKGROUND

Caral was a wholly-owned subsidiary of GE Healthcare. The standard industrial code for Caral was 3499, designated fabricated metal products. The facility was operated as a machine shop since the 1950s, and Caral provided machining and fabrication services to a number of clients, including GE Healthcare. The onsite equipment included milling machines, lathes, drill presses, bridge cranes, welding equipment, saws, grinders, and other tools. In early 2004, GE Healthcare announced that Caral would cease operations and close. In May 2004, Environmental Resources Management (ERM) completed a Phase I Update with the results of soil, sediment, and groundwater sampling completed at the Site in September and October 2001 and February 2002. GE ceased manufacturing operations at the Site in mid-2004.

Clayton assisted GE with completing environmental closure activities including collecting soil samples, excavating contaminated soil, and collecting confirmation samples. The soil sampling and excavation activities were completed indoors and outdoors at the Site. Four excavations were completed in the North Yard (Figure 2) in the areas of former borings B-2, B-4, B-9, and B-10. In addition, Clayton completed an indoor and outdoor excavation related to the former Hydrotel Sump. The excavation activities for each area were expanded until sidewall and base soil samples confirmed that concentrations of contaminants were not present or were below the Regional Water Quality Control Board's Environmental Screening Levels (ESLs) for shallow soil at industrial facilities.

Clayton submitted a Closure Report to GE on May 24, 2005. GE submitted the Closure Report to the County and requested the County review the report and provide case closure. The County sent a letter on October 13, 2005 requesting additional soil and groundwater investigation at the Site and issued GE a SLIC Case number, NO. RO0002874.



1.2 SITE DESCRIPTION

The Site is located on an approximately 60,000-square foot property in an industrial area between two major freeways near the eastern portion of the San Francisco Bay (Figure 1). Adjacent land uses around the Site include the following:

- North: The City of Albany operates the facility as a maintenance yard.
- South: A bridal shop is located south of the Site.
- East: Cleveland Avenue and immediately east of that is Highway 80.
- West: Union Pacific Railroad tracks, and immediately west of that is Highway 580.

The nearest residential area is a development of high-rise apartments/condominiums located approximately 0.5 miles to the east across Highway 80.

The Site consists of a single approximately 30,000 square foot warehouse building (Figure 2). All machine tools were sold during an auction and were removed from the Site. All hazardous materials and hazardous wastes were removed from the Site and appropriately disposed or recycled offsite. In addition, the following Site equipment shown in Figure 2 was removed during the facility closure activities: oil/water separator, steam cleaning tray, and the cyclone unit.

1.3 GEOLOGICAL SETTING

1.3.1 REGIONAL GEOLOGY

The East Bay Plain overlies a flank of a broad Franciscan bedrock depression, the core of which is roughly centered under the San Francisco Bay. The Hayward Fault and the San Andreas Fault form the eastern and western boundaries of the depression. The geologic units can be divided into two groups: 1) consolidated bedrock of Jurassic, Cretaceous, and Tertiary age and 2) unconsolidated sediments of Pleistocene and Holocene age. Bedrock forms the bottom and eastern boundary of the Basin. The bedrock is structurally complex and includes the Franciscan Complex (melanges, serpentines, and ultramafic rocks) and the Great Valley Sequence (shale, sandstone, and conglomerate). The unconsolidated sediments have a variable thickness, but are up to 1,000 feet thick in their deepest areas.

Shallow groundwater-bearing units are defined as the units above the Yerba Buena Mud (Artificial Fill, San Antonio/Merritt/Posey Member, and Temescal Formation). Deeper groundwater-bearing units are defined as the units below the Yerba Buena Mud (Unnamed member of the Alameda Formation and Santa Clara Formation). The groundwater flow direction



generally correlates to topography and flows east to west from the Hayward Fault to the San Francisco Bay.

1.3.2 SITE GEOLOGY

Previous investigations have been completed to 10 feet below ground surface (bgs) and indicate the soils beneath the Site consist of fill material, clayey silts and sands, and bedrock. Below this depth, the soil type is unknown. The observations from previous investigations indicate that groundwater is not prevalent in the upper 10 feet of soil and bedrock beneath the Site.

2.0 PREVIOUS INVESTIGATION DATA

Below is a summary of the contaminants detected in the previous investigations as well as the County's requests for additional soil or groundwater data. The boring locations completed during the earlier investigations in the North Yard and west of the main building are included on Figure 2. Table 1 includes the soil concentrations from the Phase I Update that exceeded the RWQCB ESLs for shallow soil at industrial sites.

Isolated contamination was identified in the areas of borings B-2, B-4, B-9, and B-10 in soil at approximately 1.5 to 5 feet bgs. The data indicates the contamination is present in a narrow lens and does not continue into deeper soil. In 2004, Clayton completed four excavations in the North Yard to remove contamination identified in the areas of Borings B-2, B-4, B-9, and B-10 (Figure 2). After completing the excavations, Clayton collected soil samples from the sidewalls and base of each excavation that confirmed the residual concentrations of contaminants were not present or were below the RWQCB ESLs.

North Yard

The Phase I Update reported that total petroleum hydrocarbons as gasoline (TPH-gas) and total extractible petroleum hydrocarbons as diesel (TPH-diesel) were detected in soil samples in borings B-2, B-4, B-9, and B-10. TPH-gas ranged from not detected at 1.0 mg/kg to 1,800 milligrams per kilogram (mg/kg), and TPH-d ranged from 3.5 to 5,300 mg/kg (Table 1). In each instance where a TPH concentration was detected, the subsequent sample from the same boring at a deeper depth was one to two orders of magnitude less. In boring B-9, TPH-diesel was detected at 1.25 feet bgs at 1,400 mg/kg; the concentration in the deeper sample at 2.5 feet bgs was 27 mg/kg (Table 1). Based on this data, Clayton completed an over-excavation of the areas around borings B-2, B-4, B-9, and B-10. Sidewall and base samples collected after the excavation confirmed that residual TPH concentrations were below the RWQCB ESLs.

Trichloroethylene and cis-1,2-dichloroethylene were detected up to 29 mg/kg in soil samples in boring B-2 at depths of 1.25 and 1.75 feet bgs (Table 1). The RWQCB ESLs for trichloroethene and cis-1,2-dichloroethylene respectively are 0.46 mg/kg and 0.19 mg/kg.



Chromium and nickel were detected in soil samples in borings B-9 and B-10 up to 270 mg/kg and 220 mg/kg, respectively. The RWQCB ESL is 58 mg/kg for chromium and 150 mg/kg for nickel. The deeper soil samples at borings B-9 and B-10 were below the RWQCB ESLs for chromium and nickel.

Concentrations of soil samples from borings B-1 and B-3 (Figure 2) were all below the laboratory detection limits or the applicable RWQCB ESLs.

The County requested that further investigation be completed in the North Yard in the area of borings B-2, B-4, B-9, and B-10 to confirm additional contamination is not present outside the areas previously excavated (Figure 2).

Oil Water Separator

TPH-gas was detected at 26 mg/kg in soil in boring B-4 at 1.5 feet bgs but not detected greater than 1.0 mg/kg in a deeper sample from the same boring at 5.0 feet (Table 1). TPH-diesel was detected at 82 mg/kg in soil in boring B-4 at 1.5 feet bgs but was present at a significantly lower concentration of 3.5 mg/kg in a deeper sample in the same boring at 5.0 feet (Table 1).

In 2004, Clayton removed and pressure-washed the oil/water separator and associated steam-cleaning tray to remove waste oil and sludge. Clayton also excavated approximately 10 cubic yards of contaminated soil near B-4 to a depth of 3.3 feet bgs in the area of the former oil/water separator. Confirmation sampling collected after the excavation indicated that petroleum hydrocarbon concentrations were well below the RWQCB ESL of 100 mg/kg for TPH-gas and TPH-diesel.

The County requested that additional investigation be completed to confirm that contaminated soils in the area of the oil/water separator were adequately removed. In addition, the County requested that GE investigate the area of the former steam cleaning tray east of the separator including the area where drainage from the steam cleaning tray may have flowed at the surface (Figure 2). Clayton understands that drainage from the oil/water separator and the steam cleaning tray did not flow on the surface. In early 2004, GE indicated there was a hose connecting the oil/water separator to the sewer.

Areas West of Main Building

Arsenic was detected at 2,200 mg/kg in soil in boring B-5 at 1.5 feet bgs. The RWQCB ESL for arsenic is 5.5 mg/kg. The subsequent sample at 5 feet bgs reported arsenic was below the laboratory detection limit of 5.0 mg/kg. The arsenic detection appears to be an anomaly since there were no detection greater than 5.4 mg/kg in the remaining 18 samples (Table 1). Soil samples will be collected around B-5 to confirm the previous arsenic concentration.



Lead and chromium were detected in soil in SS-1 at 630 and 250 mg/kg, respectively (Table 1). The RWQCB ESL for lead is 750 mg/kg and for nickel is 150 mg/kg. Polychlorinated biphenyls (PCBs) were detected in soil in SS-1 up to 240 mg/kg. The RWQCB ESL for PCBs is 0.74 mg/kg.

The County requested that GE conduct further investigation in the area of borings B-5 and SS-1 west of the building to define the lateral and vertical extent of elevated concentrations in soil (Figure 2).

Groundwater

In 2004, Clayton did not encounter groundwater during the excavations and investigations completed to depths of almost 10 feet bgs. In 2002, ERM attempted to collect groundwater samples from eleven borings at the Site (Figure 2). ERM was unable to collect a groundwater sample in ten of the eleven borings. ERM did encounter groundwater in boring B-4 (Figure 2) at 10 feet bgs and collected a sample and submitted it for analysis of TPH, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), PCBs, and metals.

Pentachlorophenol was detected in the groundwater sample at a concentration of 210 micrograms per liger (ug/L). The RWQCB ESL for pentachlorophenol in groundwater is 1 ug/L. TPH-diesel was detected at a concentration of 150 ug/L. The RWQCB ESL for TPH-diesel in groundwater is 100 ug/L.

The County requested that GE collect additional groundwater samples to define the extent of groundwater contamination at the Site.

Betts and Hydrotel Sumps

The County did not request further investigation of the Betts Sump and Hydrotel Sump. Clayton's investigation in 2004 determined there was no significant soil contamination associated with the Betts Sump. In 2004 and 2005, Clayton removed the soil contaminated with TPH and associated with the Hydrotel Sump.

3.0 SAMPLE AND ANALYSIS PLAN

Clayton has developed a sampling and analysis plan to address the County's requests. This Workplan includes soil and groundwater samples in the North Yard and west of the building. Clayton discussed our plan with the County and determined it would be prudent to collect transect soil samples in the North Yard to compliment the original samples and excavation confirmation samples.



Clayton proposes to use a direct-push drill rig to complete the soil borings. Clayton anticipates the presence of bedrock may not allow us to collect groundwater samples in some areas. We therefore propose to use a hollow-stem auger to collect the grab groundwater samples since a direct-push rig may encounter refusal in the bedrock subsurface prior to reaching groundwater. Clayton selected groundwater sample points near the property lines to identify upgradient and end of property concentrations.

The proposed scope of work for the investigation will include the following components:

- Completing pre-field activities.
- Completing 10 soil borings, with two soil samples collected from each boring (Figure 2).
 - 6 borings in the North Yard near borings B-2, B-4, B-9, and B-10.
 - 4 borings west of the main building.
- Collecting up to a total of 4 grab groundwater samples from upgradient and downgradient property lines (Figure 2).
- Evaluating the analytical results and preparing a report summarizing the field activities and findings.

3.1 PRE-FIELD ACTIVITIES

The purpose of the pre-field activities is to appropriately plan the work and to ensure that onsite personnel are prepared for potential safety hazards at the property. Prior to conducting the field activities Clayton will complete obtain permits and access agreements, locate utilities, and complete a health and safety plan.

3.1.1 Obtaining Permits and Access Agreements

Before commencing field activities, Clayton will obtain necessary drilling permits from the Alameda County Public Works Agency. Site access agreements will be secured from the property owner prior to initiating field activities.

3.1.2 Locate Utilities

Clayton will contact Underground Service Alert to mark underground utilities in the vicinity of the proposed borings a minimum of 48 hours prior to the commencement of field activities. A private utility locator will also be contracted to clear safe drilling locations and mark subsurface utilities in the project areas.



3.1.3 Health and Safety Plan

A health and safety plan (HASP) will be prepared for the proposed investigative work at the Site detailing the work to be performed, safety precautions, emergency response procedures, nearest hospital information and onsite personnel responsible for managing emergency situations. A copy of the HASP will be kept onsite during field activities.

3.2 FIELD ACTIVITIES

Clayton will contract with a California licensed (C-57) driller to operate a truck-mounted direct-push drill rig to advance the soil borings. We anticipate having to use limited access drilling equipment to collect the soil samples along the west side of the building (Figure 2). The soil will be inspected for lithology and physical indications of contamination (i.e., odors, discoloration, and vapor readings).

Drilling and sampling equipment (truck mounted drilling equipment) will be steam cleaned prior to drilling each boring, as appropriate. Sampling equipment may also be cleaned between coring using a triple rinse method. The initial rinse will consist of an Alconox and water solution, followed by a tap water rinse (second rinse) and deionized water rinse (final rinse). Decontamination wastewater will be pumped from the driller's self-contained decontamination unit, if utilized, and placed into 5-gallon buckets or 55-gallon waste drums. New clean disposable tubing will be used to collect each grab groundwater sample.

Clayton will collect two soil samples from each proposed boring location identified in Figure 2: one at near surface or a depth of 1 to 2 feet bgs and one at a depth of 3 to 6 feet bgs. A 6-inch long soil sample will be cut from the acetate sample tube, sealed with Teflon tape, capped, labeled, and placed in a pre-chilled ice chest.

Clayton will attempt to collect grab groundwater samples from borings located on the upgradient (east) and downgradient (west) property lines using a hollow-stem auger drill rig. One grab groundwater sample will be collected from within the building since a hollow-stem auger rig would not be able to access the area west of the main building. The grab groundwater samples will be decanted into appropriate laboratory-supplied containers.

The sample containers will be capped and sealed, labeled with the identifying project information and placed on ice inside an insulated ice chest for transportation to the analytical laboratory. Chain of custody documentation will also accompany the soil and grab groundwater samples to the analytical laboratory.

Once the fieldwork is complete, the borings will be filled to the ground surface with cement grout. Soil cuttings generated during drilling activities will be placed into plastic buckets or 55-gallon drums for temporary storage. Disposal of the soil cuttings and purge water will be



contingent upon analytical laboratory results. Once the data is reviewed, an appropriate method of disposal will be selected.

3.2.1 Quality Assurance/Quality Control Sampling

For quality assurance/quality control purposes, one equipment blank and one duplicate sample will be collected for each day sampling is conducted. The equipment rinseate sample will be collected by pouring distilled water over the sampling equipment once decontaminated and airdried. The equipment rinse water will be collected into appropriate laboratory supplied containers. The equipment rinseate and duplicate samples will then be placed in a chilled ice chest for transport to the laboratory. A chain-of-custody record will be completed and will accompany the samples until the laboratory receives them.

3.3 LABORATORY ANALYSIS

Clayton will submit soil and grab groundwater samples for analysis to a State of California-certified analytical laboratory. The laboratory analysis will be conducted on a standard turnaround time. The samples will be analyzed by the methods below.

- Soil samples collected in the North Yard will be analyzed for TPH using a multiscan for gasoline, diesel, and motor oil (multiscan) by EPA Method 8015. Silica gel cleanup will be used for the extractable TPH analysis. In addition, the soil samples will be analyzed for total chrome and nickel by EPA Method 6000/7000 and volatile organic compounds (VOCs) by EPA Method 8260. Clayton will ask the analytical laboratory to put the deeper metal samples on hold pending the results of the shallow results since total metals analyses have a hold time of up to 6 months. If a shallow sample has a total metal concentration that exceeds the respective RWQCB ESL, Clayton will ask the laboratory to analyze the deeper sample.
- Soil samples collected on the west side of the building will be analyzed for arsenic, total chrome, and lead by EPA Method 6000/7000 and for PCBs by EPA Method 8082.
- Groundwater samples will be analyzed for TPH quantified for gasoline, diesel, and motor
 oil (multiscan) by EPA Method 8015. Silica gel cleanup will be used for the extractable
 TPH analysis. Groundwater samples will also be analyzed for pentachlorophenol by
 EPA Method 8270 and VOCs by EPA Method 8260.

4.0 REPORTING

Clayton proposes to compare the analytical results for the soil and grab groundwater samples to the current RWQCB ESLs for shallow soil and groundwater at industrial properties. As appropriate, we will include the ESLs in the Investigation Report's data tables.



Following receipt and verification of all analytical data, Clayton will prepare an Investigation Report documenting the field activities, analytical results, conclusions, and recommendations. The Investigation Report will include a description of the subject property, summary of investigative methodologies, figures depicting the sample locations, permits, data tables, certified laboratory analytical data sheets findings, conclusions, and recommendations.

This report prepared by:

Michael Zimmerman, P.E., R.E.A.

Senior Project Manager Environmental Services

This report reviewed by:

Jon Rosso, P.E.

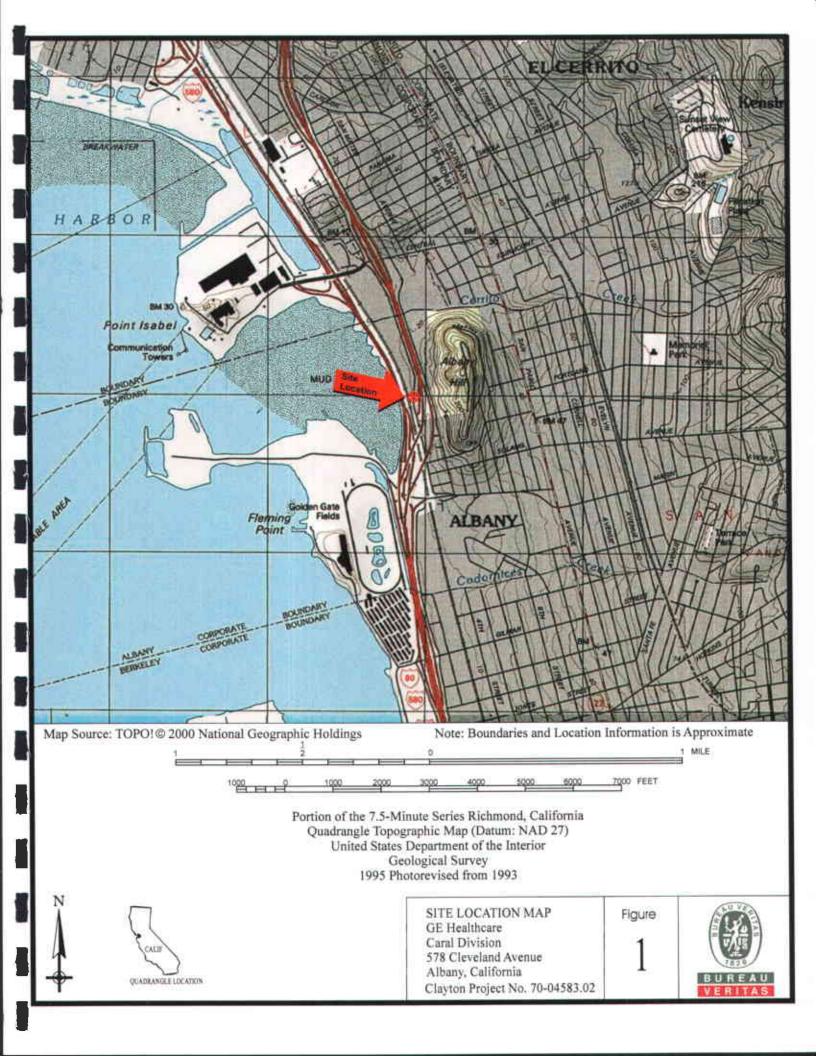
Director

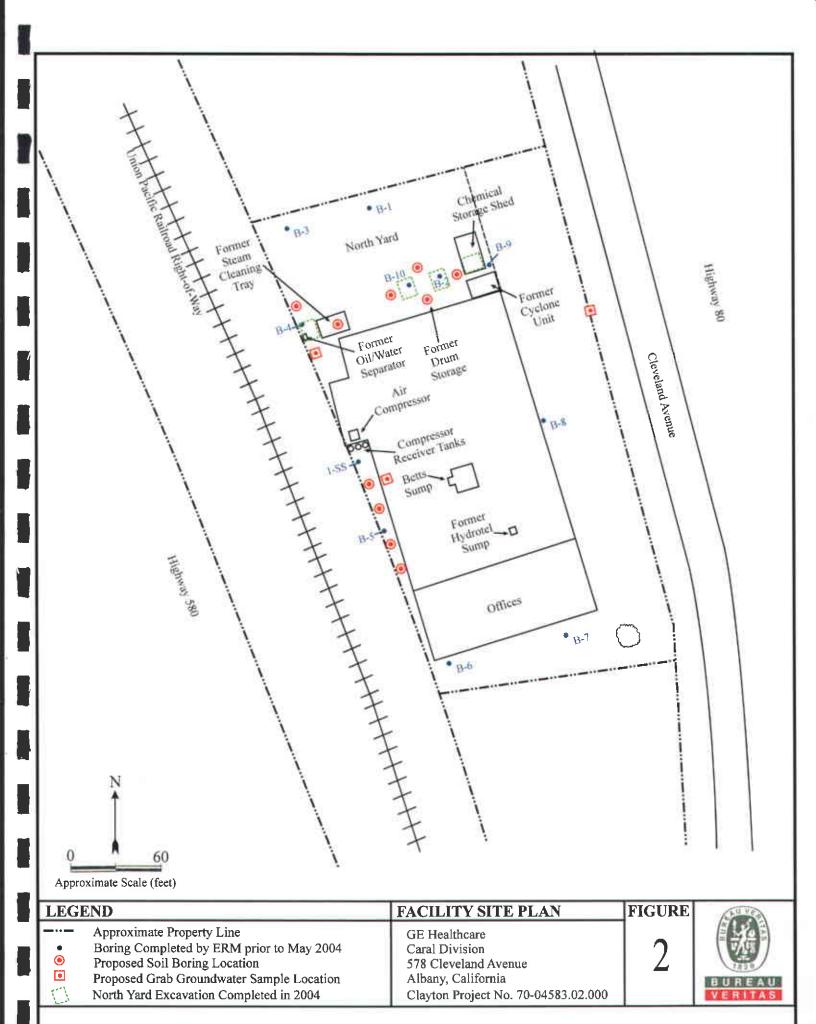
Environmental Services

November 18, 2005



FIGURES







TABLES

Table 1 Phase I Update Soil Samples that Exceeded RWQCB ESLs GE Caral Albany, California

ug/to in Phase I

						PCBs										
Sample Number and		TPH-		1												
Depth of Sample	TPH-gas	dieseł	cis-1,2-DCE	TCE	1254	1260	1268	arsenic	cadmium	chromium	cobalt	copper	lead	nickel	thallium	zinc
North Yard																
B-2-1.25'	1,800	5,300	5.8	29	<20	25	<20	<5	<0.5	53	8.5	1.3	3.8	46	<25	1:
B-2-1.75'	170	140	9.1	14	31	<20	<20	5.4	<0.5	23	5.5	1.9	2.5	23	<25	1:
B-4-1.5'	26	82	<0.4	<0.4	<20	74	<20	<5	<0.5	100	37	34	2,200	220	<25	52
B-4-5.0'	<1.0	3.5	<0.4	<0.4	<20	35	<20	<5	<0.5	120	46	5.8	22	240	<25	60
B-9-1.25'	8	1,400	<0.2	<0.2	<20	<20	<20	<5	<0.5	260	23	24	6.2	200	<5	11
B-9-2.5'	<1.0	27	<0.2	<0.2	<20	<20	<20	<5	<0.5	33	11	3.2	6.1	28	<5	14
B-10-1.5'	<1.0	17	<0.2	<0.2	<20	<20	<20	<5	<0.5	270	23	32	<1.0	220		12
B-10-3.0'	11	8.2	<0.2	<0.2	<20	<20	<20	<5	<0.5	77	11	<0.5	2.8	66	5.9	14
Area West of Buildin	g					4.	→ 1/△									
SS-1	<2.0	66	<0.2	<0.2	<20	<20	ZJU-20	<5	12	410	14	280	630	250		4,900
B-5-1.5'	<1.0	<1.0	< 0.4	<0.4	<20	<20	<20	2,200	3.5	8.6	<0.5	<0.5	3.2	<1.0		<1
B-5-5.0'	<1.0	<1.0	<0.4	<0.4	<20	<20	<20	<5	<0.5	290	26	34	3.8	200	<25	30
Soil ESL (Note 3).	100	100	0.19	0.46	0.74	0.74	0.74	5.5	7.4	58	10.48	225	750	150	12.7	600
B-1						05.0	100			- 11 0004	D6 1 U-	July Davis			24	

Note 1: Soil Samples were collected by ERM in October 2001 and February 2002 at the GE Caral Site. Results were provided in May 2004 Phase I Update Report.

Note 2: Items in boldface exceed the RWQCB ESL.

Note 3: Regional Water Quality Control Board (RWQCB) Environmental Screening Level (ESL) in shallow soil at industrial sites, February 2005.

LEGEND

cis-1,2-DCE = cis-1,2-dichloroethylene

PCBs = polychlorinated biphenyls

TCE = trichloroethylene

TPH = total petroleum hydrocarbons