SITE CONCEPTUAL MODEL AND DATA GAP WORK PLAN
WESTERN FORGE AND FLANGE
540 CLEVELAND AVENUE
ALBANY, CALIFORNIA
GEOTRACKER GLOBAL I.D. # T10000001598

PREPARED FOR:
Mr. Walter R. Pierce
Western Forge & Flange
687 County Road 2201
Cleveland, Texas 77328

PREPARED BY:
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October 11, 2012
Project No. 401823001

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Mr. Walter R. Pierce
Western Forge & Flange
687 County Road 2201
Cleveland, Texas 77328

Subject: Site Conceptual Model and Data Gap Work Plan
Western Forge and Flange
540 Cleveland Avenue
Albany, California.

Dear Mr. Pierce:

Ninyo & Moore has prepared a Site Conceptual Model and Data Gap Work Plan for the Western Forge and Flange located at 540 Cleveland Avenue, Albany, California (site). The attached report summarizes the findings of previous investigations and addresses data gaps in the lateral and vertical extents of contamination for the site. This Data Gap Work Plan has been prepared to address Alameda County Environmental Health (ACEH) comments received in a letter dated August 31, 2012, on the Remedial Investigation Report prepared by Ninyo & Moore dated June 27, 2012.

We appreciate the opportunity to be of service to Western Forge and Flange on this project. If you have any questions or comments regarding this Work Plan, please contact the undersigned at your convenience.

Sincerely,
NINYO & MOORE

Professional Geologist
Kristopher M. Larson
No. 8059
State of California

Sarah F. Price
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Principal Environmental Geologist

SFP/KML/cab

Distribution: (1) Addressee

October 26, 2012

To: Mr. Mark E. Detterman
Alameda County Environmental Health Department
Health Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Perjury Statement
Site Conceptual Model and Data Gap Work Plan
Western Forge and Flange
540 Cleveland Avenue
Albany, California 94706

I declare, under penalty of perjury, that the information or recommendations contained in the attached report are true and correct to the best of my knowledge.

Walter R. Pierce
President and CEO
Western Forge & Flange Company

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1. INTRODUCTION

Ninyo & Moore was retained by Western Forge and Flange Company to prepare a Site Conceptual Model (SCM) and Data Gap Work Plan for the property located at 540 Cleveland Avenue, Albany, County of Alameda, California (site). The SCM includes a discussion of the sites physical setting, historical use, sedimentology and hydrology, a chronology of previous environmental investigations, nature and distribution of impacts to soil and groundwater, and natural and anthropogenic pathways for site constituent of concern (COCs) and how they may impact human and ecologic receptors. The Data Gap Work Plan discusses recommended additional soil and groundwater sampling locations and methodologies for an additional Remedial Investigation (RI) conducted to further delineate the vertical and lateral extent of COCs.

1.1. Site Background

The site has been the subject of several environmental assessments dating back to 1984. A Press Release discussing the Cleanup of Western Forge & Flange Sites contained in a 1985 Western Forge & Flange Company, *Albany Site Correction Documentation Report* prepared by Brown & Caldwell (B&C) indicated that site contamination was first discovered in 1983 (B&C, 1985). The site contamination was related to process cooling water and storm water runoff carrying lead, nickel, copper, and oil and grease from inside the facility to an on site storm drain (located in the western section of the property) and adjacent properties. As a corrective action and remediation measure, Western Forge & Flange removed approximately 200 cubic yards (CY) of contaminated soil on site, and constructed barriers to stop materials from flowing off site. Verification soil sampling was also conducted subsequent to site remediation. A letter from the Department of Toxic Substances Control (DTSC) titled Deletion Recommendation for Western Forge & Flange dated November 1985 (DTSC, 1985) indicated that the site was fully mitigated and that no further action was necessary.

More recent environmental activities performed by Chemical Data Management Services (CDMS) included the preparation of a *Closure Plan for Western Forge & Flange* dated April 2008 (CDMS, 2008a), a *Site Environmental Assessment* (SEA) dated November 2008 (CDMS, 2008b), a *Closure Report for Western Forge & Flange* dated June 2009 (CDMS,

2009), a *Data Gap Work Plan* dated September 23, 2010 (CDMS, 2010a), and a *Subsurface Environmental Activities Report* dated December 10, 2010 (CDMS, 2010b). CDMS performed field activities and remedial efforts at the site including excavation and the removal of free product in groundwater (CDMS, 2009). In 2012, a RI was performed by Ninyo & Moore to define the lateral and vertical extents of hydraulic oil and metal contamination to the subsurface of the site. The results were reported in the *Remedial Investigation Report* (RIR) dated June 27, 2012 (N&M, 2012).

A more detailed description of the environmental investigations performed for this site and their findings are presented in the SCM section of this report.

2. PURPOSE

The purpose of this work is to address Alameda County Environmental Health (ACEH) comments received in a Directive dated August 31, 2012, on the RIR prepared by Ninyo & Moore by developing a SCM and Data Gap Work Plan, and further delineate the lateral and vertical impacts to soil and groundwater from historic site uses. A copy of the Directive is included in Appendix A.

3. SITE CONCEPTUAL MODEL

3.1. Physical Site Setting

The site, known as Western Forge & Flange, is located at 540 Cleveland Avenue, Albany, California as shown on Figure 1. The site consists of a 25,000 square-foot metal industrial building that covers the majority of the rectangular-shaped, approximately 1-acre property. It is bordered to the north by a heavy industrial property (Albany Steel), to the south by a bakery (Grace Bakery), to the east by Cleveland Avenue and to the west by railroad tracks (Southern Pacific Railroad Company).

3.2. History of Use

The Western Forge & Flange Company manufactured flanges onsite from 1944 until it closed operations at the facility in 2007. Raw materials such as titanium, aluminum, high nickel alloys, stainless steel and alloy steels were cut and heated in furnaces prior to being pressed, hammered/forged or machined into shape. The flanges were then inspected and shipped offsite to customers. Site operations included the use of two subsurface hydraulic lifts, one hydraulic ring roller, an oil/water separator, a boiler/compressor, quenching tanks, a small hammer/forge, and welding and maintenance areas. Hazardous materials were stored onsite near the center of the building. One above ground storage tank (AST), located along the northern boundary of the property as shown on Figure 2, was used to store diesel fuel. In 2007, Western Forge & Flange Company closed the facility and moved its operation to Texas. According to the 2008 CDMS Closure Plan, the diesel AST was returned to the vendor during remedial activities after the facility closed.

3.3. Environmental Setting

3.3.1. Geologic Setting

The site is located within the Coast Range Geologic Province. The San Francisco Bay and Bay margin geology was formed by a series of Mesozoic and Cenozoic aged oceanic crust and volcanic arc terranes accreted to the continent. Uplift also occurred due to transpression along the Hayward Fault Zone during the Cenozoic. Bedrock geologic units include Jurassic Coast Range Ophiolite, Late Jurassic-Early Cretaceous Franciscan Complex and Knoxville Formation, and the Late Cretaceous Great Valley Sequence. Late Quaternary deposits consisting of Pleistocene to Holocene alluvial fan deposits overly the bedrock formations within the site vicinity. According to the *Geologic Map and Map Database of the Oakland Metropolitan Area* prepared by Graymer et. al., the site vicinity is mapped as being underlain by Pleistocene alluvial fan and fluvial deposits that are associated with modern stream courses (Graymer, 2000).

No natural surface water bodies, including ponds, streams, or other bodies of water, are present on the site. The San Francisco Bay is located approximately 500 feet west of the site.

3.3.2. Site Sedimentology

Based on observations made during the field activities of the 2012 RIR, the shallow subsurface at the site is composed of alluvium consisting predominantly of silty sands, with some silts and rare clays. The predominant colors are greenish gray and black, turning darker with depth. Boring logs from the 2012 RIR are presented in Appendix B and a cross-section of the site sedimentology along with Total Petroleum Hydrocarbon (TPH) as hydraulic oil concentrations is presented as Figure 3.

Boring logs and cross sections from Brown and Caldwell's 2004 *Problem Definition Report* (PDR) (B&C, 2004) indicated the site lithology consisted of unweathered sandstone bedrock at approximately 13 feet below ground surface (bgs) in the eastern section of the site and dipping toward the west to approximately 20 feet bgs. The unweathered sandstone is overlain by weathered sandstone and clay. The weathered sandstone was observed at the surface in the northeastern section of the site; however clay was predominantly observed between the surface and 12 feet bgs toward the central eastern sections of the site. The 1985 B&C report indicated the western most portion of the site (outside of the building) and portions within the building have been filled with approximately 0.5 to 2 feet of imported aggregate base in the locations of the 1985 excavations. The areas and depths of excavation are illustrated on Figure 4.

3.3.3. Hydrogeology

During the soil boring advancement conducted for the RIR shallow groundwater was encountered between 4 and 6 feet bgs in 24 of the 27 borings. Groundwater was encountered in a perched zone between 0.5 and 1 foot bgs, in the remaining three borings (B-9, B-25, and B-26 on Figure 2). These boring are located within areas where previous excavations were conducted by B&C and the perched groundwater zone may be a

result of more permeable backfill material overlying native soils. The perched groundwater zone has also been documented in previous environmental assessments by CDMS (CDMS 2009). The groundwater flow direction is estimated to be west, towards the San Francisco Bay located approximately 500 feet to the west; however due to the site proximity to the San Francisco Bay, tidal fluctuation may have an impact to site groundwater gradient.

3.4. Prior Investigations

In July 1984, B&C prepared the PDR after site contamination was first discovered in 1983 (B&C, 1984). Following the PDR, the Site Correction Report was prepared documenting remedial activities prompting the DTSC issued a letter indicating no further action was necessary (B&C, 1985; DTSC, 1985). A 2008 investigation by CDMS included a SEA, Closure Plan and Closure Report for the site (CDMS, 2008a; CDMS, 2008b; CDMS, 2009). Upon submittal of these documents to the ACEH, the ACEH requested a Data Gap Work Plan to further investigate the extent of contamination (CDMS, 2010a). The Work Plan was implemented in October 2010 and results reported in the Subsurface Environmental Activities (CDMS, 2010b).

Ninyo & Moore prepared a *Work Plan for RI* dated November 18, 2011 to further define the lateral and vertical extents of the hydraulic oil and metal contamination to the subsurface at the site (N&M, 2011). The Work Plan and Work Plan addendum (prepared in February 2012) were approved by the ACEH and implemented in April 2012. The analytical results were detailed in the 2012 RIR

Findings of these investigations are summarized in the following subsections. The boring locations for the previous sampling events are included Table 1 and Figure 2, and analytical results of the previous investigations can be found in Tables 2 through 8 and Figures 5 through 9.

3.4.1. B&C Investigations

B&C 1984 PDR

The July 1984 PDR was prepared to characterize potential sources of metal in the site soils and extent of contamination; and evaluate if groundwater contamination had occurred at the site. Field activities for the PDR were conducted on May 21 and 22, and July 9 and 11, 1984 and included; surface water sampling, soil sampling, and monitoring well installation, development, and sampling. The PDR concluded the following:

- Contamination generated by site activities included copper, nickel, and zinc; one surface soil sample (S5 in Figure 2 and Table 4) exceeded the Total Threshold Limit Concentration (TTLC) for nickel.

- A geohydrologic evaluation of the site revealed the presence of hard sandstone approximately 10 to 20 feet bgs.

- Copper, lead and zinc were present above the Effluent Quality Requirements (EQRs) defined by the Water Quality Control Plan for Ocean Waters of California (Table 4-3 in the PDR) of 0.2 milligrams per liter (mg/L), 0.1 mg/L, and 0.3 mg/L, respectively, in one of three groundwater samples, while nickel was present in concentrations above the EQR of 0.1 mg/L in all three groundwater samples; oil and grease was not detected above the EQR of 10 mg/L in any of the groundwater samples (Table 8).

- Surface drainage had spread contaminants from inside the plant and into a storm drain inlet northwest of the building.

- Surface water samples were collected at the quench tank, separator tank and from the roof condensate. None of the surface water samples reported oil and grease above the EQR. Copper was detected above its EQR of 0.2 mg/L in the quench tank; lead was detected above its EQR of 0.1 mg/L in the separator tank; nickel was detected above its EQR of 0.1 mg/L in both the quench tank and separator tank; and zinc was detected above its EQR of 0.3 mg/L in the separator tank and roof condensate. Chromium was not detected in any of the surface water samples; no other metals were analyzed.

- Results of the soil samples collected inside the site building reported exceedences of Soluble Toxicity Limit Threshold (STLC) for copper, lead, nickel and zinc, notably in the areas of sample locations S4 and S5 (Figure 2, Table 4).

B&C 1985 Site Correction Documentation Report

The May 1985 *Site Correction Documentation Report* documented remedial activities based on the 1984 PDR analytical data, including; excavating approximately 153 CY of contaminated soils from outside of the western side of the building; excavating approximately 33 CY of contaminated soils surrounding equipment within the building; and installing site drainage controls to prevent oil and heavy metal discharge. Locations and depths of excavation are detailed in Figure 4.

The excavated areas outside the building were backfilled with an aggregate base while the areas inside the building were backfilled with an aggregate base and covered with a 6-inch concrete base. Verification samples were taken during excavation activities to further define the depth of contamination. If samples were detected above clean-up levels approved by the state (indicated in Table 1 of the Site Correction Documentation Report); 1,250 milligrams per kilogram (mg/kg) for copper, 500 mg/kg for lead, 1,000 mg/kg for nickel, and 1,000 mg/kg for oil and grease/TPH as hydraulic oil additional soil was removed and verification sampling was repeated at the lower depth. Based on the results of the verification sampling two locations were over-excavated to meet clean-up goals. All samples were reported below clean-up goals for the constituents analyzed (copper, lead, nickel, and oil and grease) with the exception of sample V17 (Figure 5, Table 4) where nickel (Table 4) and oil and grease (Table 2) exceeded clean-up goals. According to the Site Correction Documentation Report, excavation in the vicinity of V17 was not continued due to the depth of the soil sample being at the top of the foundation beneath Pit 1.

Surface drainage controls were installed in March 1985 which included collecting contaminated process water from the surface and roof as well as installing berms and gutters to segregate clean storm runoff from process water. A steam trap and condenser were mounted on the roof where condensate was directed to a separator and waste oil collected for disposal. Prior to remedial activities, a soil sample was collected in the vicinity of the storm drain inlet at the 0 to 6-inch depth. Laboratory analytical results from

the sample reported an oil concentration of 188,000 mg/kg. The verification samples collected at the storm drain inlet after excavation of soils and implementation of surface drainage controls reported the concentration of oil and grease to be 133 mg/kg in soil (Figure 5, Table 2) and 32 mg/L in the surface water runoff; both samples indicated low concentrations of metals.

Following remedial activities, in July 1985, a public notice of completion of remedial action at the site was issued by the California Department of Health Services and noted their intention to delete the site from the State Priority Ranking List.

3.4.2. Chemical Data Management System Investigations

CDMS 2008-2010 Investigations

During the 2008-2010 CDMS investigation, the 2008 SEA included the review of user provided information, an environmental records review, aerial photographs and historic maps review and site reconnaissance. The SEA concluded based on site observations and agency reports that the site contained hazardous materials and recommended that any contaminated soils should be removed (CDMS, 2008b). Following the SEA, a "Data Evaluation of Materials Related to the Subsurface Environmental Closure," was prepared for CDMS in December 2008 and is presented as an appendix of the CDMS Closure Report (CDMS, 2009). The evaluation summarized the analytical results of samples collected by CDMS in November of 2008 during their subsurface investigation. A summary of the evaluation is below.

Concentrations of TPH as carbon range (C19-C36), which includes a majority of the hydraulic oil carbon range, C20-C38, were reported to be 2,800 and 15,000 mg/kg in samples SB106 and SB107 (Table 2, Figure 2), respectively, which are above the Regional Water Quality Control Board (RWQCB) Table B ESL (Residential Land Use, Shallow Soils, Groundwater is NOT a Current or Potential Source of Drinking Water) concentration of 370 mg/kg. Concentrations of TPH as diesel and motor oil were detected above their respective Table B ESLs of 100 and 320 mg/kg in borings SB106 and

SB107 as well; TPH as diesel ranged from 230 to 5,500 mg/kg and TPH as motor oil ranged from 520 to 11,000 mg/kg (Table 2). All other soil samples collected in the 2008 investigation were below Table B ESLs for TPH as diesel, motor oil, and carbon range (C9-C36). Concentrations of lead in SB106 and SB107 were reported to be 210 and 260 mg/kg, respectively, and above the Table B ESL of 200 mg/kg.

TPH as diesel, motor oil, and carbon range (C19-C36) were not detected above the RWQCB Table F-1b ESL (Groundwater is not current or potential source of drinking water) in any of the groundwater samples (Table 5). Total chromium and cadmium were not detected above the Table F-1b ESL; however lead was reported above the Table F1-b ESL in seven of the nine samples collected ranging from 6.5 to 5,700 micrograms per liter (ug/L), nickel was reported above the Table F-1b ESLs in eight of the nine samples ranging from 52 to 480 ug/L, and zinc was detected above the Table F-1b ESLs in six of the nine samples collected ranging from 930 to 8,400 ug/L (Table 7).

Beginning on January 21, 2009, TPH impacted soil was excavated from several areas, including the hazardous waste storage area (Area 5) to a depth of 5 feet bgs, adjacent to the boiler area (Area 6B) to a depth of 3 feet bgs, around the Ring Roller Pit (Area 106), to a depth of 5 feet bgs and an area approximately 10 to 20 feet southeast of the Ring Roller Pit (Area 107) to a depth of 3 feet bgs. Hydraulic oil was encountered in soil during excavation of around the Ring Roller Pit. CDMS concluded that the hydraulic oil was held in a gravel backfill around the roller pit and penetrated during excavation to release the oil. According to the report, the excavator released the remainder of the oil when the oil-contaminated gravel was removed. The presence of hydraulic oil during the Ring Roller Pit excavation led CDMS to suspect the potential presence of hydraulic oil in two existing pits, Pits 1 and 2. The report indicated that the excavation at Pits 1 and 2 was discontinued after the concrete slab flooring was removed because perched groundwater was encountered just beneath the slab and no contamination was encountered. Additionally, CDMS reported an additional excavation near the waste oil storage

area along the western wall of the building; no contamination was observed (CDMS, 2009).

The area around the Ring Roller Pit was further evaluated in February 2009 due to free product observed floating on the perched groundwater after the excavation. The free product was removed using skimmers and a vacuum truck, and a decision was made by CDMS to use a chemical reagent to treat the remaining TPH impacted soil and groundwater (CDMS, 2009). The results of that treatment are not discussed in this report or in alternative reports obtained by Ninyo & Moore.

The ACEH responded to the CDMS Closure Report with a *Request for Data Gap Work Plan* on December 10, 2009 and again on July 30, 2010. The ACEH requested Western Forge & Flange Company and CDMS to fill in data gaps relating to previous investigations.

Results of confirmation samples for Areas 5, 6B, 106 and 107, labeled SCEX, SEEX, RREX and SWEX, respectively, were not discussed in CDMS' report, other than a mention of the subsurface sedimentology and depth to a perched groundwater zone. However, the results were reviewed by Ninyo & Moore, compared to RWQCB ESLs (Table 2), and depicted in Figure 5.

Confirmation soil samples from Area 107 (SWEX) indicated very high concentrations of hydraulic oil in the north, west and south wall samples, ranging from 9,400 to 30,000 mg/kg. Several metals were also elevated in comparison to the other confirmation samples from the north wall, including total chromium at 180 mg/kg. No ESLs exist for total chromium, however background concentrations in the San Francisco Bay Area do not typically exceed 100 mg/kg. No indication of at what depth the samples were collected is included in the report. All constituents of concern were very low and below Residential ESLs in the bottom sample collected in Area 107 (SWEX).

Confirmation soil samples collected from the area around the Ring Roller Pit (Area 106/RREX) indicated high concentrations of hydraulic oil from the north

(10,000 mg/kg) and south (24,000 mg/kg) walls. The west wall sample was very low, and below Residential ESLs.

Confirmation soil sample results from Area 5 (SCEX) indicated a high (1,300 mg/kg) concentration of hydraulic oil in the west wall confirmation sample. The confirmation sample collected from the remaining sidewalls and bottom sample were either below reporting limits or very low (below residential ESLs) for hydraulic oil.

The confirmation soil sample collected from the sidewall and bottom samples from Area 6B (SEEX) were either below reporting limits or below residential ESLs for hydraulic oil. Elevated concentrations of lead and zinc were detected in the south wall compared to the other confirmation samples. Lead was above the residential criteria but below the commercial/industrial criteria in the residential ESLs.

Sampling results of the Pits 1 and 2 excavations were discussed in the report, and was reported that no impacts to soil around these pits were observed. However, no mention of samples being collected after excavation was halted in these areas was found in the report.

CDMS responded to the ACEH request with a Data Gap Work Plan in September 2010 (CDMS, 2010a). This document provided information concerning the site's geology and hydrogeology, confirmation sampling proposed by the ACEH in Areas 5, 6B, 106 and 107 (CDMS agreed to use ACEH confirmation sampling protocol), clarification of questions relating to waste oil ASTs and an oil water separator, and the ACEHs recommendation for metals analysis, specifically copper, in future soil samples as part of their proposed Data Gap Work Plan.

The implementation of the Data Gap Work Plan was conducted in October 2010 by CDMS and the results were presented in the December 2010 Report of Subsurface Environmental Activities (CDMS, 2010b). Ninyo & Moore was not provided with a sample location map, so identification of confirmation sample locations is based on the description of the sample locations within the Report of Subsurface Environmental Ac-

tivities. Sample results provided for two soil and groundwater samples collected in the western section of the site (B-1001 and B-1002) indicated that only nickel in groundwater samples B-1001 and B-1002 was above Table F-1b ESLs, however below the nickel ESL listed in Table I-1 (Gross Contamination). No description of at what depth the groundwater sample was collected or what sampling methodology was used was included in the report, however boring logs indicate that soil was saturated below 6 feet in B-1001 and wet below 9 feet in B-1002 (CDMS, 2010b).

TPH as hydraulic oil was detected in shallow soils (surface to 6 inches) between 480 and 650 mg/kg at both B-1001 and B1002, well above the hydraulic oil results in deeper soil samples. Soil samples were collected in each of these borings to 10 feet bgs. Copper and nickel were elevated compared to other sample results in the shallow sample in B-1002, and copper was equal to the Table B ESL of 230 mg/kg. Nickel was slightly lower at 120 mg/kg than the Table B ESL of 150 mg/kg.

3.4.3. Ninyo & Moore Investigation

Ninyo & Moore 2012 RI

The most recent investigation conducted by Ninyo & Moore was reported in the 2012 RIR. According to the RIR, twenty-seven borings were advanced in April 2012 and soil samples were analyzed for TPH as hydraulic oil, CAM 17 Metals, hexavalent chromium, volatile organic compounds (VOCs), and Polychlorinated Biphenyls (PCBs). Groundwater samples were collected at 13 of the 27 borings and analyzed for TPH as hydraulic oil, CAM 17 Metals, hexavalent chromium, VOCs, Soluble VOCs, and Salinity.

In summary, 9 of the 27 boring locations displayed soil sample results exceeding the Table B ESLs for TPH as hydraulic oil as depicted on Figure 6.

Arsenic was detected in all soil samples analyzed for metals exceeding Table B ESLs, which is 0.39 mg/kg. Some naturally-occurring concentrations of metals in soils are higher than the thresholds calculated by risk-based models. The arsenic concentrations

detected in the soil samples collected for the RIR most likely represent background concentrations. As measured by the United States Geological Survey (USGS) and reported in Dragun and Chiasson's 1991 *Elements in North American Soils*, arsenic background levels in California soils (that are not impacted by anthropogenic sources) range from 0.3 mg/kg to 69 mg/kg (Dragun and Chaisson 1991). The Table B ESL for vanadium is 16 mg/kg, and was exceeded in ten of the soil samples, ranging from 17 to 38 mg/kg. These concentrations are consistent across the site, and can most likely be attributed to background levels. USGS measurements for background vanadium in the western United States range from 7 to 500 mg/Kg according to the 1984 geologic survey paper, *Element Concentrations in Soils and Other Surficial Materials in the Conterminous United States*, prepared by Shacklette and Boerngen (Shacklette and Boerngen, 1984). Mercury was detected in one soil sample, B-12 at 5 feet bgs above the Table B ESL. No PCBs were detected in the soil samples.

Total petroleum hydrocarbons as hydraulic oil in groundwater samples collected from borings B-8A, B-10, B-15, B-23 and B-24 (Figure 7) exceeded Table F-1b ESLs. TPH as hydraulic oil results ranged from 320 to 1,000 µg/L (Table 5). Several VOCs were detected in the groundwater sample collected from boring B-8A (Table 6). One of the VOCs, naphthalene, was detected at a concentration of 74 µg/L, which exceeds the Table F-1b naphthalene ESL of 24 µg/L.

Arsenic, barium, hexavalent chromium, cobalt, copper, lead, molybdenum, nickel, vanadium and zinc concentrations in groundwater exceeded their respective Table F-1b ESLs.

Hexavalent chromium concentrations in groundwater that exceeded the Table F-1b ESL of µg/L were detected at 40 µg/L in B-5, 30 µg/L in B-8A, 20 µg/L in B-9, 120 µg/L in B-10 and 20 µg/L in B-18 (Table 7, Figure 8). A request was made to the laboratory to reanalyze those samples with elevated concentrations, and the results indicated that groundwater samples from borings B-9, B-10, B-23, and B-24 appeared to be false posi-

tive due to sample matrix interference. The samples had exceeded their holding time at the time of the reanalysis.

Lastly, groundwater samples were analyzed for pH, conductivity and salinity. pH was fairly normal with the exception of chemically basic (10.63) groundwater at boring B-9. Salinity analysis was conducted on eight groundwater samples, and was reported between 160 and 5,100 mg/L. Three of the samples, B-1, B-5, and B-8A, were reported above the threshold used to classify freshwater (1,000 mg/L).

3.5. Proposed Remediation Criteria

The criteria proposed to evaluate soil analytical results for the site is the RWQCB ESL Table B (Residential Land Use, Shallow Soils, Groundwater is NOT a Current or Potential Source of Drinking Water). The criteria proposed to evaluate groundwater analytical results for the site is the RWQCB ESL Table F-1b. Although site groundwater is currently not used as a drinking water resource, there is no deed restriction for the site which would prevent future use of site groundwater as a drinking water resource. The proximity of the site to the San Francisco Bay and the high salinity reported in almost half of the groundwater samples (ranging from 1,400 to 5,100 mg/L) collected during the Ninyo & Moore RI makes it likely that groundwater on site is brackish and unsuitable for use as drinking water. Freshwaters are those in which the salinity is equal to or less than 1 part per thousand (1,000 mg/L) 95% of the time, as set forth in Chapter 4 of the RWQCB, San Francisco Bay Region Water Quality Control Plan (Basin Plan) (RWQCB 2007). In addition, a letter from the San Francisco Bay Region of the RWQCB prepared in January 1986 (RWQCB, 1986) indicated that "the shallow groundwater in this area is slightly saline, is high in Total Dissolved Solids and is therefore of limited beneficial use." A copy of the Letter is included in Appendix A.

3.6. Nature and Distribution of Impacts

Laboratory analytical results have shown concentrations of hydraulic oil and metals detected on site at levels exceeding regulatory guidelines (Tables 2, 4, 5 and 7). The nature and distribution of impacts to the site are based on historical verification and/or confirmation soil

samples collected by B&C and CDMS, and the April 2012 RI conducted by Ninyo & Moore. The nature and distribution of groundwater impacts were based on groundwater analytical data from the Ninyo & Moore RI.

An evaluation of contaminant occurrence is presented below.

TPH as Hydraulic Oil in Soil

TPHs as hydraulic oil was reported exceeding both the Table B ESL of 370 mg/Kg at the following locations and depths;

- Within near surface (no greater than 2 feet bgs) soil samples collected from within the vicinity of the former oil/water separator (Ninyo & Moore borings B-1 and B-2 on Figures 3 and 6), north of the Forge Area and RRP area (boring B-7 and B-8A on Figures 3 and 6) and east of the RRP area (B-19 on Figure 6). CDMS borings southwest (outside) of the oil/water separator (B1001 and B1002), and C&B verification samples between the oil/water separator and Pit 2 (V11), south and adjacent to Pit 1 (V17), Area 6B (V6);

- Soil samples collected between near surface and 5 foot bgs from the boring west of former Area 5 (boring B-14 on Figure 6), and south of former Pit 2 (boring B-7 on Figure 6). CDMS borings within Areas 5, 106 and 107;

- Soil samples collected at 5 feet bgs from locations south of former Area 107 (Boring B-12 on Figures 3 and 6), on the south end of the RRP (boring B-10), and in the western section of the former Forge Area (boring B-4 on Figure 6).

TPH as Hydraulic Oil in Groundwater

Total petroleum hydrocarbons as hydraulic oil in shallow groundwater samples exceeded Table F-1b ESLs within the vicinity of the RRP area (borings B-8A and B-10 on Figure 7), the former Small Hammer Area (boring B-15 on Figure 7), the former Pit 1 area (boring B-23 on Figure 7), and in the roof blow down area (boring B-24 on Figure 7).

The lateral extents of hydraulic oil impacts to groundwater were observed to extend to Pit 1 in the northern site area, and to Area 6B in the central-southern site area. Shallow soil samples collected from these areas were very low in hydraulic oil concentrations, so the source for groundwater impacts may be attributed to the Ring Roller Pit and Pit 2 areas.

TPHs as hydraulic oil was not reported above detection limits in groundwater samples collected from the oil/water separator area in the western corner of the site, therefore the lateral

extend of hydraulic oil impacted groundwater within the building appears to terminate before this area. Concentrations of TPH as hydraulic oil were detected below ESLs in groundwater samples collected from the southern corner of the building (borings B-9 and B-18 on Figure 7) terminating the lateral extent in that area.

Additionally, TPH as hydraulic oil was reported in one groundwater sample collected in the former blowdown area west of the building (B-24 on Figure 7); however this appears to be a localized concentration which has not extended more than 20 west of the building (Figure 7).

Metals and PCBs in Soil

Copper, lead and/or nickel were reported exceeding Table B ESLs in mostly shallow soils. C&B verification samples reported these constituents in several shallow sample locations, including V2 (lead, north of Area 6B), V7 (nickel, north east of the RRP), V8 and V9 (copper and nickel, RRP), V10, V12, and V14 (copper and nickel, north and northwest of the RRP) V-11 and V-15 (copper and nickel, between the oil/water separator and Pit 2), and V-17 (nickel, south and adjacent to Pit 1). C&B verification sample SV-3 exceeded the nickel Table B ESL and was located outside the northwest corner of the site building. Copper was reported exceeding the Table B ESL in a shallow soil sample collected by CDMS outside and west of the oil/water separator area in boring B1001. Ninyo & Moore shallow soil samples did not exceed the Table B ESls; however mercury was reported above the Table B ESL of 1.3 in Boring B-12 at 5.0 feet bgs, located south of Area 107.

PCBs were not reported in site soils above Table B ESLs in samples collected and analyzed by Ninyo & Moore.

Metals and VOCs in Groundwater

VOCs were not reported in groundwater samples with the exception of the groundwater sample collected from boring B-8A (boring location depicted on Figure 2). One of the VOCs, naphthalene, was detected at a concentration of 74 µg/L, which exceeds the Table F-1b ESL of 24 µg/L for naphthalene.

Several metals exceeded groundwater ESLs in every site boring where groundwater samples were collected. Arsenic, barium, hexavalent chromium, cobalt, copper, lead, molybdenum, nickel, vanadium and zinc concentrations in groundwater exceeded Table B ESLs in at least one groundwater sample. The highest concentrations of metals exceeding ESLs were reported in the southern and western sections of the site, in borings B-5, B-8a, B-10 and B-18. The boring with the most metals exceeding Table B ESLs in groundwater was B-18, where hexavalent chromium, cobalt, copper, lead, nickel, vanadium and zinc were reported.

3.7. Contaminant Migratory Pathways

3.7.1. Naturally Occurring Pathways

Based on observations gathered during the subsurface investigations on site, it is anticipated that groundwater migration is not facilitated by the presence of preferential migration pathways and is instead restricted exclusively to movement under natural conditions in fine-grained alluvial sediments described in the 2012 RIR boring logs (Appendix B). Subsurface groundwater flow is likely to be tidally influenced. No naturally occurring preferential pathway has been discerned to exist.

3.7.2. Anthropogenic Pathways

Anthropogenic pathways generally consist of subsurface trenches associated with underground utilities intercepting shallow groundwater. In order to evaluate the potential for utility trenches existing on site, Ninyo & Moore requested utility maps from East Bay Municipal Utility District (EBMUD) and Pacific Gas and Electric (PG&E), which were provided and copies of which are provided in Appendix C. The EBMUD utility maps indicate a water main entering the site from Cleveland Avenue on the north side of the site driveway between the site and Albany Steel. The water line trends to the west and terminates slightly more than halfway through the building. EBMUD also marked the water line prior to the RI conducted by Ninyo & Moore in the same location as the map indicates, and the water main does not enter the site driveway. The PG&E maps indicate a distribution gas main entering the site from a second distribution main located

on Cleveland Avenue. Our site reconnaissance located a gas meter outside the south side of the building where it was connected to aboveground piping that entered the buildings south wall. We also observed several aboveground electrical panels that were connected to underground electrical piping throughout the work areas. The underground piping appeared to be installed within the concrete slab floor as evidenced by several areas of the slab that had concrete removed and replaced where the electrical piping entered the floor. No floor drains, sinks or toilets were observed in the work area, and the closest sewer main is located on Cleveland Avenue, so it appears that any sewer lines on site are probably within the office (eastern) section of the site and drain toward Cleveland Avenue. Based on this information and the recorded groundwater depths on site of 4 to 6 feet bgs, it is unlikely that any subsurface utility trenches intersect the local groundwater table.

Several concrete lined pits are located within the production section of the site, including three former hammer pits and the RRP. The bottom of the hammer pit is approximately 5 feet bgs, and the bottom of the RRP is approximately 8 feet bgs. Each pit is underlain by 12 to 14 feet of concrete. The RRP is a known source of hydraulic oil contamination, and the hammer pits are a suspected source of hydraulic oil contamination to both soil and groundwater on site. The hammer pits and RRP also intersect the shallow groundwater table, however because they are not linear features are constructed of solid concrete, they are not considered a lateral or vertical migratory pathway.

Based on the information discussed above, it is unlikely that anthropogenic preferential migration pathway exists at the subject site.

3.7.3. Receptor and Exposure Pathway Analysis

3.7.3.1. Potentially Exposed Populations

Potential receptors at the subject site include humans and ecological organisms. Possible human receptors include site visitors and maintenance/construction workers. Given the future intended use as a commercial property, site workers and

visitors are considered to be a potentially exposed population. Ecologic receptors appear to be an unlikely receptor because petroleum hydrocarbon impacted groundwater does not appear to be migrating off-site, and therefore would not impact the Bay or marine and waterfowl populations.

There are no known potential receptors (other than the San Francisco Bay) downgradient of the site. Directly west and downgradient of the site are railroad tracks and Interstate 580, and the San Francisco Bay is located approximately 500 feet west of the site.

3.7.3.2. Exposure Pathways

The United States Environmental Protection Agency (EPA) has identified three basic exposure pathways in which a person may come into contact with a hazardous substance: inhalation, ingestion, and direct contact. Exposure pathways potentially impacting ecological organisms must also be identified. Following is an evaluation of site specific conditions with respect to the main exposure pathways.

Inhalation: Human inhalation of harmful chemicals could potentially originate from two sources; wind-blown dust and vapor consisting of volatilized chemicals. In its current condition, the subject site is an unlikely source of wind blown dust because the majority is within a building and covered with concrete slab. A small portion of the western section of the site is open, however and exposed to the elements, including railroad tracks and Interstate 580 to the west. Regarding the potential for inhalation of COCs, most of the soil contamination on site is related to petroleum hydrocarbons, which are not readily blown into the air in particulate form. Analytical results also indicate that arsenic exists in shallow soil in excess of regulatory guidance. Although inhalation of particulate arsenic is a known cancer risks, exposure to particulate arsenic as a result of wind-blown dust is considered to be a minimal risk to humans on site. The only other COC that would present a potential inhalation risk are VOCs. Because low-level VOCs were only found in one

groundwater sample collected on site during the RI, VOCs are also considered a minimal risk to human health.

Ingestion: Typical sources of ingestion of harmful chemicals include consumption of contaminated drinking water, consumption of garden vegetables that have taken up chemicals from soil and groundwater, and direct consumption of soil. Groundwater at the subject site is not presently produced for drinking water and due to its brackish nature should not be considered a drinking water source. The commercial land use of the property does not presently include garden vegetables. If redevelopment changes the site use to include garden vegetables, a detailed assessment of soils may be appropriate. Direct consumption of contaminated soil is not likely for adult humans, and is usually associated with children.

Direct Dermal Contact: Currently, absorption of harmful chemicals through the skin or eyes may be the most significant exposure pathway for humans. Construction workers could potentially be exposed to contaminants in soil during redevelopment. Current site users and maintenance workers could also be exposed through direct contact.

Ecological Organisms: If harmful chemicals originating from the site are able to migrate into ecological habitats, marine life and waterfowl could be exposed through the potential exposure pathways that apply to humans. The nearest sensitive receptor is the San Francisco Bay, approximately 500 feet west of the site. Given the low concentrations of constituents of concern impacting groundwater on the downgradient (western) section of the site, the low permeability of shallow site soils, and the proximity to the Bay, it is unlikely that site COCs could migrate into surface water and impact ecological populations.

3.8. Fate and Transport of Constituents of Concern

Title 22 Metals and TPH as hydraulic oil are present in low to moderately high groundwater concentrations and appear to have been introduced to groundwater by migrating through soil

and/or discharge to storm drains prior to the reported site remediation in 1985 by B&C (B&C, 1985). Recent groundwater samples collected during the 2012 RI have indicated that these COCs appear to remain fairly immobile and contained within the site boundary. This is evidenced by Title 22 Metals reported in fairly low concentrations, and TPH as hydraulic oil not reported above detection limits in the most westerly groundwater sample collected (B-24) during the 2012 RI. The lack of COC mobility is potentially related to the low permeability of site soils, as well as adsorption of the COCs onto soil particles. Both Ninyo & Moore and B&C boring logs indicate sandy silt, silt, and clay in shallow soils creating a low permeability for COC transport. Lateral migration of COCs is also unlikely because of the buoyant nature of the TPH compounds, the low permeability of shallow soils, and the bedrock layer of unweathered sandstone underlying soils between approximately 13 feet bgs (western site boundary) and 20 feet bgs (eastern site boundary) on site.

4. DATA GAP WORK PLAN

This Data Gap Work Plan will discuss comments associated with the ACEH August 2012 Directive regarding the delineation of soil and groundwater impacts in several site areas, and provide details and sampling methodology for an additional RI. The following comments were provided by the ACEH relating to further delineating site contaminants:

- Define the vertical extent of soil contamination in borings B-8A, B-10, B-12, B-14 which are located adjacent to the RRP and Areas 5 and 107, borings B-20 and B-21 (Pit 2), B-22 and B-23 (Pit 1), and the area surrounding the RRP. In addition, additional soil sample analytical data was requested from Areas 6B and 107 to define the extent of contamination adjacent to the former hammer pits.

- Define the lateral extent of soil and groundwater contamination in the area of borings B-8A, B-10, B-23, and B-24. Boring B-24 is located outside and west of the northwest corner of the site building.

- Further evaluate the possibility of hexavalent chromium in site groundwater, especially in the western section of the site; and further evaluate those Title 22 Metals, including barium, cobalt, lead, molybdenum, nickel, vanadium and zinc, that were reported in several filtered groundwater samples.

- Include analysis of Semi-VOCs in the analytical suite during the additional RI.

4.1. Scope of Work

The following Scope of Work for the Data Gap Work Plan will include a discussion of sample locations and methodologies, laboratory analytical methods, and reporting procedures relating to an additional RI in those site areas of concern (AOC) described by the ACEH in their August 2012 Directive. In addition, the Data Gap Work Plan will also discuss sampling locations and methodologies for several off site sample locations in order to establish background conditions within the site vicinity. Several on and off site samples will also be either field tested and/or analyzed for water quality (including salinity, electrical conductivity and total dissolved solids) to help establish site remediation goals.

4.1.1. Soil and Groundwater Sampling Locations

Ninyo & Moore will perform the following additional RI soil and groundwater sampling activities from within site AOCs and offsite boring locations as shown on Figures 10 and 11 and summarized in Table 9.

- Step out soil samples will be collected to delineate the vertical and lateral extent of contamination of TPH as hydraulic oil, and potential impacts to site groundwater, at previous sample locations B-7, B-8A, B-9, B-10, B-12, and B-14, located in the southwestern site AOC. Two soil samples from each boring will be collected between 4 and 7 feet bgs depending on field observations during sample collection.

- Step out soil samples will be collected in the northern and northwestern site AOCs to evaluate potential TPH as hydraulic oil impacts to groundwater near previous borings B-3, B-7, and B-20 through B-24. Two soil samples from each boring will be collected between 4 and 7 feet bgs depending on field observations during sample collection. In addition, one soil sample will be collected outside the northwestern corner of the site building (B-25A) to confirm nickel concentrations exceeding Table B ESLs in shallow soil from a previous sampling event (B&C, 1984).

- The ACEH requested additional samples in Areas 6B and 107 due to lack of confirmation sample data from CDMS subsequent to their excavation activities. Confirmation sample data does exists in these Areas from both the sidewall and pit bottoms (Figure 5); however additional soil samples will be collected within these Areas to evaluate potential impacts to groundwater from TPH as hydraulic oil contaminated soils. Two soil samples from each boring will be collected between 4 and 7 feet bgs depending on field observations during sample collection.

- Groundwater samples will also be collected in several AOCs in order to delineate the lateral extend of TPH as hydraulic oil impacts to groundwater. Groundwater samples will be collected from step out samples near previous borings B-3, B-8A, B-9, B-10, B-15, B-20, B-22, B-23, and B-24. Several of these groundwater samples will also be analyzed for Title 22 Metals to evaluate the extent of metals contamination in site groundwater, hexavalent chromium to confirm whether this compound has impacted site groundwater, total dissolved solids (TDS) and salinity to evaluate water quality as it compares to the RWQCB Basin Plan.

- Two groundwater samples will be collected at upgradient locations on site and analyzed for TPH as hydraulic oil, Title 22 Metals and hexavalent chromium to the potential for off site impacts to site groundwater, and TDS and salinity.

- Three borings will be advanced off site to evaluate background levels of metals in groundwater. Three borings will be located within the median between Interstate-580 and the railroad tracks downgradient of the site.

4.1.2. Project Setup and Pre-field Activities

Permits

Project setup and pre-field activities will include obtaining a drilling permit from the Alameda County Public Works Agency (ACPWA) prior to sampling activities on site. In addition, because off site samples are proposed in locations on the shoulder of Interstate 580 a California Department of Transportation (Caltrans) Encroachment Permit will be also obtained**.**

Site Specific Health and Safety Plan

A Site Specific Health and Safety Plan (SSHSP) has been prepared by Steve Waide, a Certified Industrial Hygienist employed by Ninyo & Moore, for its employees and subcontractors. The SSHSP will be reviewed by field personnel prior to the start of each day of field work. Field personnel will sign the acknowledgement form attached to the SSHSP indicating that they understand and will abide by the provisions of the SSHSP. A copy of Ninyo & Moore's SSHSP is provided in Appendix D.

Boring Marking and USA Notification

Ninyo & Moore will conduct a site reconnaissance to visually evaluate and mark boring locations. Ninyo & Moore will contact Underground Service Alert (USA) at least

48 hours prior to the start of drilling activities to identify subsurface utilities in the areas of planned soil sampling. A private utility locating subcontractor will also be retained to clear the boring locations prior to subsurface activities.

4.1.3. Soil and Groundwater Sampling Procedures

Borings will be advanced using a direct push drill rig to approximately 10 feet bgs. Sampling equipment will be decontaminated between sample locations using a steam cleaner to minimize the likelihood of cross contamination. Each soil sample collected will be screened using a photo-ionization detection (PID) meter for organic vapors. The results will be included on boring logs prepared on site. Soil samples will be collected in laboratory supplied glass jars, sealed, labeled, placed in a cooler on ice, and transported to an NELAP certified environmental laboratory using standard chain-of-custody procedures. Groundwater samples for analysis of metals will be filtered using a 0.45 micron filter prior to collection in containers preserved with nitric acid for analysis of dissolved metals.

Traffic control will be conducted during collection of the groundwater samples on the shoulder of Interstate 580. Ninyo & Moore will perform traffic control in accordance with guidelines presented in the California Manual on Uniform Traffic Control Devices (MUTCD) adopted by Caltrans and Caltrans Standard Plan sheet number T11. This will include the use of an appropriate signs, a support truck, and orange traffic cones as shown on Figure 12. Figure 12 will be attached to the Encroachment Permit Work Scheduling Request Form to be submitted to Caltrans for review and approval.

4.1.4. Laboratory Analysis

Select soil samples will be analyzed for TPH as hydraulic oil by EPA Method 8015M with Silica Gel Clean-up and Semi-Volatile Organic Compounds (SVOCs) using EPA Method 8270. Select on and off site groundwater samples will be analyzed for TPH as hydraulic oil using EPA Method 8015M with Silica Gel Cleanup, hexavalent chromium

by EPA Method 7196A, Title 22 Metals using EPA Method 6010B, salinity using Method SM-2510B, and Total Dissolved Solids using Method SM-2540C.

4.1.5. Investigation Derived Waste

Soil cuttings and decontamination rinsate water resulting from soil sampling activities will be contained in 55-gallon drums which will be stored at the site until the waste has been characterized and can be picked up for disposal.

4.1.6. Reporting

The results of the soil and groundwater testing will be presented in a Data Gap Investigation Report. The Data Gap Investigation Report will include the following:

a. Introduction/project description
b. Investigative methods
c. Investigative results and field observations
d. Conclusions and recommendations
e. Summarized laboratory data tables
f. Site Plans depicting boring and sample locations
g. Figures depicting analytical results
h. Appendices including laboratory reports and COC documentation

5. LIMITATIONS

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard-of-care exercised by environmental consultants performing similar work in the project area. No warranty, expressed or implied, is made regarding the professional opinions presented in this report. Variations in site conditions may exist and conditions not observed or described in this report may be encountered during subsequent activities.

The environmental interpretations and opinions contained in this report are based on the results of laboratory tests and analyses intended to detect the presence and concentration of specific chemical or physical constituents in samples collected from the subject site. The testing and analyses have been conducted by an independent laboratory which is certified by the State of California to conduct such tests. Ninyo & Moore has no involvement in, or control over, such

testing and analysis. Ninyo & Moore, therefore, disclaims responsibility for any inaccuracy in such laboratory results.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires any additional information, or has questions regarding content, interpretations presented, or completeness of this document.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

6. SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

Sarah F. Price
Staff Engineer

Kris M. Larson, PG 8059
Principal Environmental Geologist

7. QUALIFICATION OF ENVIRONMENTAL PROFESSIONAL

Mr. Larson states that the SCM and Data Gap Work Plan was prepared under his direct supervision, that he has reviewed and approved the report, and that the methods and procedures employed in the development of the report. Mr. Larson certifies that Ninyo & Moore project personnel and subcontractors are properly licensed and/or certified to do the work described herein.

8. REFERENCES

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Ninyo & Moore, 2011 Work Plan for Remedial Investigation, Western Forge & Flange Company, 540 Cleveland Avenue, Albany, California, November 18.

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TABLE 1
HISTORICAL SAMPLE LOCATIONS AND ANALYSES PERFORMED

Firm	Sample Location	Date Sampled	Total Depth of Sample Point (ft bgs)	Analyses Performed			
				TPH	Metals	VOCs	PCBs
B & C	W1	May-84	13.5				
B & C	W2	May-84	19.0	w	w		
B & C	W3	May-84	16.0	w	w		
B & C	W4	May-84	13.0	w	w		
B & C	S1	May-84	1.0		s		
B & C	S2	May-84	1.0		s		
B & C	S3	May-84	1.0		s		
B & C	S4	May-84	1.0		s		
B & C	S5	May-84	1.0		s		
B & C	S6	May-84	1.0		s		
B & C	S7	May-84	1.0		s		
B & C	M1	May-84	0.5		s		
B & C	M2	May-84	0.5		s		
B & C	M3	May-84	0.5		s		
B & C	S16	May-84	0.5	s			
B & C	Floor Residue	May-84	surface wipe sample		f		
B & C	Quench Tank	May-84	surface water	w	w		
B & C	Separator Tank	May-84	surface water	w	w		
B & C	Roof Condensate	May-84	surface water	w	w		
B & C	V1	Mar-85	2.0	s	s		
B & C	V2	Mar-85	1.0	s	s		
B & C	V3	Mar-85	1.5	s	s		
B & C	V4	Mar-85	1.0	s	s		
B & C	V5	Mar-85	1.0	s	s		
B & C	V6	Mar-85	1.0	s	s		
B & C	V7	Mar-85	1.0	s	s		
B & C	V8	Mar-85	1.0	s	s		
B & C	V9	Mar-85	2.0	s	s		
B & C	V10	Mar-85	1.5	s	s		
B & C	V11	Mar-85	1.5	s	s		
B & C	V12	Mar-85	1.5	s	s		
B & C	V13	Mar-85	2.5	s	s		
B & C	V14	Mar-85	1.5	s	s		
B & C	V15	Mar-85	2.0	s	s		
B & C	V16	Mar-85	2.0	s	s		
B & C	V17	Mar-85	1.0	s	s		
B & C	SV1	Mar-85	1.5	s	s		
B & C	SV2	Mar-85	1.5	s	s		
B & C	SV3	Mar-85	2.0	s	s		
B & C	SV4	Mar-85	1.0	s	s		
B & C	SV5	Mar-85	2.5	s	s		
B & C	Storm Drain Sample	Mar-85	Surface Water Runoff	w	w		
CDMS	SB-101/W-101	Nov-08	16.0	s/w	s/w		
CDMS	SB-102/W-102	Nov-08	16.0	s/w	s/w		
CDMS	SB-103/W-103	Nov-08	16.0	s/w	s/w		
CDMS	SB-104	Nov-08	9.0	s	s		
CDMS	SB-101/W-105	Nov-08	9.0	s/w	s/w		
CDMS	SB-106	Nov-08	9.0	s	s		
CDMS	SB-107/W-107	Nov-08	9.0	s/w	s/w		
CDMS	SB-108/W-108	Nov-08	9.0	s/w	s/w		
CDMS	SB-109/W-109	Nov-08	9.0	s/w	s/w		
CDMS	SB-110/W-110	Nov-08	9.0	s/w	s/w		
CDMS	SB-111/W-111	Nov-08	9.0	s/w	s/w		
CDMS	SB-112	Nov-08	9.0	s	s		
CDMS	#5	Oct-08	9.0	s	s		
CDMS	#6A	Oct-08	9.0	s	s		
CDMS	#6B	Oct-08	9.0	s	s		
CDMS	#8	Oct-08	9.0	s	s		
CDMS	#9	Oct-08	9.0	s	s		
CDMS	RRP (Ring Roller Pit)	Oct-10	NA	w	w		

TABLE 1
HISTORICAL SAMPLE LOCATIONS AND ANALYSES PERFORMED

Firm	Sample Location	Date Sampled	Total Depth of Sample Point (ft bgs)	Analyses Performed			
				TPH	Metals	VOCs	PCBs
CDMS	B1001 (immediately upgradient of B-111)	Oct-10	12.0	s,w	s,w		
CDMS	B1002 (immediately upgradient of B-111)	Oct-10	12.0	s,w	s,w		
CDMS	Back (west)	Oct-10	1.0	s	s		
CDMS	SWEX (walls of the excavation at Area 107)	Oct-10	5.0	s	s		
CDMS	RREX (walls of the excavation at Ring Roller area/Area 106)	Oct-10	3.0	s	s		
CDMS	SCEX (walls of the excavation at Area 5)	Oct-10	5.0	s	s		
CDMS	SEEX (walls of the excavation at Area 6B)	Oct-10	3.0	s	s		
N & M	B1	Apr-12	10.0	s,w	s,w	w	s
N & M	B2	Apr-12	10.0	s	s		s
N & M	B3	Apr-12	10.0	s			
N & M	B4	Apr-12	10.0	s	s		s
N & M	B5	Apr-12	10.0	s,w	w	w	
N & M	B6	Apr-12	10.0	s,w	w	w	
N & M	B7	Apr-12	10.0	s	s		s
N & M	B8A	Apr-12	10.0	s,w	s,w	w	s
N & M	B9	Apr-12	5.5	s,w	s,w	w	s
N & M	B10	Apr-12	10.0	s,w	s,w	w	s
N & M	B11	Apr-12	10.0	s			
N & M	B12	Apr-12	10.0	s	s		s
N & M	B14	Apr-12	10.0	s	s		s
N & M	B15	Apr-12	10.0	s,w	w	w	
N & M	B16	Apr-12	10.0	s,w	w	w	
N & M	B17	Apr-12	10.0	s			
N & M	B18	Apr-12	10.0	s,w	w	w	
N & M	B19	Apr-12	10.0	s	s		s
N & M	B20	Apr-12	10.0	s			
N & M	B21	Apr-12	10.0	s,w	w	w	
N & M	B22	Apr-12	10.0	s			
N & M	B23	Apr-12	10.0	s,w	w	w	
N & M	B24	Apr-12	10.0	s,w	s,w	w	s
N & M	B25	Apr-12	6.0				
N & M	B26	Apr-12	9.0	w	w	w	
N & M	B27	Apr-12	6.0				
N & M	B28	Apr-12	6.0	w	w	w	

NOTES:
B &C = Brown and Caldwell
CDMS = Chemical Data Management Systems
N & M = Ninyo and Moore
TPC = Total Petroleum Hydrocarbons
VOCs = Volitile Organic Compounds
PCBs = Polychlorinated Biphenyls
s = Soil analyzed
f = wipe sample analyzed
w = groundwater analyzed
NA = Not Applicable
Total Depths of sample points are total excavation depths in feet below ground surface

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS
AS DIESEL, MOTOR OIL, CARBON RANGE (C9-C36), AND HYDRAULIC OIL

Sample Identification (depth in feet)	Consultant	Date Sampled	ANALYTE			
			TPH-D	TPH-MO	TPH-CR	TPH-HO
			ANALYTICAL RESULTS (mg/kg)			
S16 (0-0.5)	B&C	Dec-84	--	--	--	**188,000**
S16 (0.5-0.75)	B&C	Dec-84	--	--	--	**3,690**
V1 (1.5-2.0)	B&C	Mar-85	--	--	--	<50
V2 (0.5-1.0)	B&C	Mar-85	--	--	--	240
V3 (1.0-1.5)	B&C	Mar-85	--	--	--	<50
V4 (0.5-1.0)	B&C	Mar-85	--	--	--	**380**
V5 (0.5-1.0)	B&C	Mar-85	--	--	--	**2,180**
V6 (0.5-1.0)	B&C	Mar-85	--	--	--	**640**
V7 (0.5-1.0)	B&C	Mar-85	--	--	--	<50
V8 (1.0-1.5)	B&C	Mar-85	--	--	--	**3,510**
V9 (1.5-2.0)	B&C	Mar-85	--	--	--	**1,290**
V10 (1.0-1.5)	B&C	Mar-85	--	--	--	120
V11 (1.0-1.5)	B&C	Mar-85	--	--	--	**10,700**
V12 (1.0-1.5)	B&C	Mar-85	--	--	--	<50
V13 (2.0-2.5)	B&C	Mar-85	--	--	--	170
V14 (1.0-1.5)	B&C	Mar-85	--	--	--	240
V15 (1.5-2.0)	B&C	Mar-85	--	--	--	240
V16 (1.5-2.0)	B&C	Mar-85	--	--	--	120
V17 (0.5-1.0)	B&C	Mar-85	--	--	--	**2,470**
SV1 (1.0-1.5)	B&C	Mar-85	--	--	--	270
SV2 (1.0-1.5)	B&C	Mar-85	--	--	--	94
SV3 (1.5-2.0)	B&C	Mar-85	--	--	--	<50
SV4 (0.5-1.0)	B&C	Mar-85	--	--	--	<50
SV5 (2.0-2.5)	B&C	Mar-85	--	--	--	133
#5 (0.75)	CDMS	Oct-08	--	--	--	6,500
#5 (3.5)	CDMS	Oct-08	--	--	--	4,900
#6A (2.75)	CDMS	Oct-08	--	--	--	<100
#6A (3.5)	CDMS	Oct-08	--	--	--	<100
#6B (2.0)	CDMS	Oct-08	--	--	--	3,700
#6B (3.75)	CDMS	Oct-08	--	--	--	780
#8 (1.25)	CDMS	Oct-08	--	--	--	880
#8 (3.5)	CDMS	Oct-08	--	--	--	1,500
#9 (1.0)	CDMS	Oct-08	--	--	--	<100
#9 (3.5)	CDMS	Oct-08	--	--	--	<100
SB-101 (3.5)	CDMS	Nov-08	85	58	150	--
SB-101 (7.5)	CDMS	Nov-08	<1	<50	<50	--
SB-101 (11.5)	CDMS	Nov-08	<1	<50	<50	--
SB-101 (15.5)	CDMS	Nov-08	<1	<50	<50	--
SB-102 (3.5)	CDMS	Nov-08	<1	<50	<50	--
SB-102 (7.5)	CDMS	Nov-08	13	<50	52	--
SB-102 (11.5)	CDMS	Nov-08	<1	<50	<50	--
SB-102 (15.5)	CDMS	Nov-08	4.9	<50	<50	--
SB-103 (3.5)	CDMS	Nov-08	46	180	<50	--
SB-103 (7.5)	CDMS	Nov-08	23	94	110	--
SB-103 (11.5)	CDMS	Nov-08	<1	<50	<50	--
SB-103 (15.5)	CDMS	Nov-08	<1	<50	<50	--
SB-104 (1.5)	CDMS	Nov-08	2.2	<50	<50	--

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS
AS DIESEL, MOTOR OIL, CARBON RANGE (C9-C36), AND HYDRAULIC OIL

Sample Identification (depth in feet)	Consultant	Date Sampled	ANALYTE			
			TPH-D	TPH-MO	TPH-CR	TPH-HO
			ANALYTICAL RESULTS (mg/kg)			
SB-104 (3.5)	CDMS	Nov-08	6.1	<50	<50	--
SB-104 (7.5)	CDMS	Nov-08	<1	<50	<50	--
SB-105 (1.5)	CDMS	Nov-08	<1	<50	<50	--
SB-105 (3.5)	CDMS	Nov-08	3.4	<50	<50	--
SB-105 (7.5)	CDMS	Nov-08	<1	<50	<50	--
SB-106 (1.5)	CDMS	Nov-08	<1	<50	<50	--
SB-106 (4.5)	CDMS	Nov-08	**1,100**	**1,900**	**2,800**	--
SB-106 (7.5)	CDMS	Nov-08	2.8	<50	<50	--
SB-107 (1.5)	CDMS	Nov-08	**5,500**	**11,000**	**15,000**	--
SB-107 (4.5)	CDMS	Nov-08	**230**	**520**	**700**	--
SB-107 (7.5)	CDMS	Nov-08	<1	<50	<50	--
SB-108 (1.5)	CDMS	Nov-08	2.6	<50	<50	--
SB-108 (4.5)	CDMS	Nov-08	49	<50	<50	--
SB-108 (7.5)	CDMS	Nov-08	<1	<50	<50	--
SB-109 (1.5)	CDMS	Nov-08	7.6	<50	<50	--
SB-109 (4.5)	CDMS	Nov-08	8.4	<50	<50	--
SB-109 (7.5)	CDMS	Nov-08	<1	<50	<50	--
SB-110 (1.5)	CDMS	Nov-08	1.5	<50	<50	--
SB-110 (4.5)	CDMS	Nov-08	<1	<50	<50	--
SB-110 (7.5)	CDMS	Nov-08	<1	<50	<50	--
SB-111 (0.5)	CDMS	Nov-08	68	310	360	--
SB-111 (3.5)	CDMS	Nov-08	8.6	55	60	--
SB-111 (5.5)	CDMS	Nov-08	3.6	<50	<50	--
SB-111 (7.5)	CDMS	Nov-08	23	70	87	--
SB-111 (9.5)	CDMS	Nov-08	<1	<50	ND	--
SB-112 (3.5)	CDMS	Nov-08	16	51	<50	--
SB-112 (7.5)	CDMS	Nov-08	58	<50	<50	--
B1001 (0.5)	CDMS	Oct-10	--	--	--	**650**
B1001 (2.0)	CDMS	Oct-10	--	--	--	ND
B1001 (4.0)	CDMS	Oct-10	--	--	--	ND
B1001 (6.0)	CDMS	Oct-10	--	--	--	110
B1001 (8.0)	CDMS	Oct-10	--	--	--	ND
B1001 (10.0)	CDMS	Oct-10	--	--	--	69
B1002 (0.5)	CDMS	Oct-10	--	--	--	**480**
B1002 (2.0)	CDMS	Oct-10	--	--	--	ND
B1002 (4.0)	CDMS	Oct-10	--	--	--	ND
B1002 (10.0)	CDMS	Oct-08	--	--	--	ND
SWEX- bottom (unknown)	CDMS	Oct-10	--	--	--	81
SWEX- North Wall (unknown)	CDMS	Oct-10	--	--	--	**30,000**
SWEX- East Wall (unknown)	CDMS	Oct-10	--	--	--	57
SWEX- South Wall (unknown)	CDMS	Oct-10	--	--	--	**10,000**
SWEX- West Wall (unknown)	CDMS	Oct-10	--	--	--	**9,400**
RREX- North Wall (unknown)	CDMS	Oct-10	--	--	--	**10,000**
RREX- South Wall (unknown)	CDMS	Oct-10	--	--	--	**24,000**
RREX- West Wall (unknown)	CDMS	Oct-10	--	--	--	56
SCEX - Bottom (unknown)	CDMS	Oct-10	--	--	--	88
SCEX- North Wall (unknown)	CDMS	Oct-10	--	--	--	ND

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS
AS DIESEL, MOTOR OIL, CARBON RANGE (C9-C36), AND HYDRAULIC OIL

Sample Identification (depth in feet)	Consultant	Date Sampled	ANALYTE			
			TPH-D	TPH-MO	TPH-CR	TPH-HO
			ANALYTICAL RESULTS (mg/kg)			
SCEX- East Wall (unknown)	CDMS	Oct-10	--	--	--	ND
SCEX- South Wall (unknown)	CDMS	Oct-10	--	--	--	ND
SCEX- West Wall (unknown)	CDMS	Oct-10	--	--	--	**1,300**
SEEX - Bottom (unknown)	CDMS	Oct-10	--	--	--	ND
SEEX- North Wall (unknown)	CDMS	Oct-10	--	--	--	71
SEEX- East Wall (unknown)	CDMS	Oct-10	--	--	--	ND
SEEX- South Wall (unknown)	CDMS	Oct-10	--	--	--	120
SEEX- West Wall (unknown)	CDMS	Oct-10	--	--	--	ND
B-1 (0.5)	N&M	Apr-12	--	--	--	**410**
B-1 (1.0)	N&M	Apr-12	--	--	--	16
B-2 (0.5)	N&M	Apr-12	--	--	--	**1,300**
B-2 (1.0)	N&M	Apr-12	--	--	--	130
B-3 (0.5)	N&M	Apr-12	--	--	--	60
B-3 (1.0)	N&M	Apr-12	--	--	--	7.7
B-4 (0.5)	N&M	Apr-12	--	--	--	21
B-4 (1.0)	N&M	Apr-12	--	--	--	83
B-4 (2.0)	N&M	Apr-12	--	--	--	270
B-4 (4.0)	N&M	Apr-12	--	--	--	**400**
B-5 (0.5)	N&M	Apr-12	--	--	--	32
B-5 (1.0)	N&M	Apr-12	--	--	--	67
B-6 (0.5)	N&M	Apr-12	--	--	--	19
B-6 (1.0)	N&M	Apr-12	--	--	--	10
B-6 (5.0)	N&M	Apr-12	--	--	--	--
B-7 (0.5)	N&M	Apr-12	--	--	--	**4,100**
B-7 (1.0)	N&M	Apr-12	--	--	--	**1,400**
B-7 (2.0)	N&M	Apr-12	--	--	--	**4,600**
B-7 (5.0)	N&M	Apr-12	--	--	--	180
B-8A (0.5)	N&M	Apr-12	--	--	--	**1,200**
B-8A (1.0)	N&M	Apr-12	--	--	--	**4,500**
B-8A (2.0)	N&M	Apr-12	--	--	--	**560**
B-9 (0.5)	N&M	Apr-12	--	--	--	120
B-9 (5.0)	N&M	Apr-12	--	--	--	6.0
B-10 (0.5)	N&M	Apr-12	--	--	--	260
B-10 (1.0)	N&M	Apr-12	--	--	--	55
B-10 (2.0)	N&M	Apr-12	--	--	--	82
B-10 (5.0)	N&M	Apr-12	--	--	--	**1,100**
B-11 (0.5)	N&M	Apr-12	--	--	--	230
B-11 (1.0)	N&M	Apr-12	--	--	--	170
B-12 (0.5)*	N&M	Apr-12	--	--	--	350/380
B-12 (1.0)	N&M	Apr-12	--	--	--	3.3
B-12 (5.0)	N&M	Apr-12	--	--	--	**580**
B-14 (0.5)	N&M	Apr-12	--	--	--	290
B-14 (1.0)	N&M	Apr-12	--	--	--	**6,500**
B-14 (2.0)	N&M	Apr-12	--	--	--	**410**
B-14 (5.0)	N&M	Apr-12	--	--	--	**1,200**
B-15 (0.5)	N&M	Apr-12	--	--	--	14
B-15 (1.0)	N&M	Apr-12	--	--	--	2.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS
AS DIESEL, MOTOR OIL, CARBON RANGE (C9-C36), AND HYDRAULIC OIL

Sample Identification (depth in feet)	Consultant	Date Sampled	ANALYTE			
			TPH-D	TPH-MO	TPH-CR	TPH-HO
			ANALYTICAL RESULTS (mg/kg)			
B-16 (0.5)	N&M	Apr-12	--	--	--	9
B-16 (1.0)	N&M	Apr-12	--	--	--	14
B-16 (3.0)	N&M	Apr-12	--	--	--	11
B-17 (0.5)	N&M	Apr-12	--	--	--	20
B-17 (1.0)	N&M	Apr-12	--	--	--	13
B-18 (0.5)	N&M	Apr-12	--	--	--	99
B-18 (1.0)	N&M	Apr-12	--	--	--	<1.0
B-18 (2.0)	N&M	Apr-12	--	--	--	18
B-19 (0.5)	N&M	Apr-12	--	--	--	**6,300**
B-19 (1.0)	N&M	Apr-12	--	--	--	**3,400**
B-19 (2.0)	N&M	Apr-12	--	--	--	**1,500**
B-19 (5.0)	N&M	Apr-12	--	--	--	20
B-20 (0.5)*	N&M	Apr-12	--	--	--	230/120
B-20 (1.0)	N&M	Apr-12	--	--	--	87
B-20 (2.5)	N&M	Apr-12	--	--	--	NA
B-21 (0.5)*	N&M	Apr-12	--	--	--	49/53
B-21 (1.0)	N&M	Apr-12	--	--	--	3.7
B-21 (2.0)	N&M	Apr-12	--	--	--	97
B-22 (0.5)	N&M	Apr-12	--	--	--	34
B-22 (1.0)	N&M	Apr-12	--	--	--	1.3
B-23 (0.5)	N&M	Apr-12	--	--	--	6.0
B-23 (1.0)	N&M	Apr-12	--	--	--	3.0
B-24 (1.0)	N&M	Apr-12	--	--	--	7.7
B-24 (2.0)	N&M	Apr-12	--	--	--	9.3
B-24 (3.0)	N&M	Apr-12	--	--	--	7.1
1985 California Clean-up Levels			NE	NE	NE	1,000
Residential Land Use ESLs (mg/kg)[1]			83	370	370	370
Residential Land Use ESLs (mg/kg)[2]			100	370	370	370
Commercial/Industrial ESLs (mg/kg)[1]			83	2,500	2,500	2,500
Commercial/Industrial ESLs (mg/kg)[2]			180	2,500	2,500	2,500

NOTES:

[1]ESLs = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels - Shallow Soils (≤3m bgs) - Where Groundwater IS NOT a current or potential source of drinking water (February 2005)

[2]ESLs = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels - Shallow Soils (≤3m bgs) - Where Groundwater IS a current or potential source of drinking water (February 2005)

TPH-D, TPH-MO, TPH-CR and TPH-HF = Total petroleum hydrocarbons as diesel, motor oil, carbon range (C19-C36), and hydraulic oil respectively.

TPH-D, TPH-MO, TPH-CR, and TPH-HF analyzed using EPA Method 8015B(M)

mg/kg = milligrams per kilogram

< = not detected above laboratory reporting limits

NE = Not Established

ND = Not Detected and laboratory reporting limits were not indicated

* = Duplicate sample

Bold numbers indicate concentrations greater than Residential Land Use ESLs

Shaded cells indicate concentrations reported greater than Commercial/Industrial [2]ESLs

TABLE 3
SOIL SAMPLE ANALYTICAL RESULTS
POLYCHLORINATED BIPHENYLS (PCBs)

Sample Identification (depth in feet)	Consultant	Date Sampled	ANALYTE								
			Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268
			ANALYTICAL RESULTS (µg/Kg)								
B1 (0.5)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B2 (0.5)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B4 (5.0)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B7 (0.5)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B8A (1.0)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B9 (0.5)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B9 (5.0)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B10 (5.0)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B12 (5.0)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B14 (1.0)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B19 (0.5)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B24 (1.0)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B24 (2.0)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
B24 (3.0)	N&M	Apr-12	<16	<16	<16	<16	<16	<16	<16	<16	<16
Residential Land Use ESLs (µg/kg)[1]			220	220	220	220	220	220	220	220	220
Residential Land Use ESLs (µg/kg)[2]			220	220	220	220	220	220	220	220	220
Commercial/Industrial ESLs (µg/kg)[1]			740	740	740	740	740	740	740	740	740
Commercial/Industrial ESLs (µg/kg)[2]			740	740	740	740	740	740	740	740	740

NOTES:

[1]ESLs = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels - Shallow Soils (≤3m bgs) - Where Groundwater IS NOT a current or potential source of drinking water (February 2005)

[2]ESLs = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels - Shallow Soils (≤3m bgs) - Where Groundwater IS a current or potential source of drinking water (February 2005)

µg/kg = micrograms per kilogram

< = not detected above laboratory reporting limit

TABLE 4
SOIL SAMPLE ANALYTICAL RESULTS
TITLE 22 METALS

Sample Identification (depth in feet)	Consultant	Date Sampled	Analyte																	
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Cr	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Analytical Results (mg/kg)																	
S1 (0-0.5)	B&C	Jul-84	--	--	--	--	--	160	--	--	91	190	--	--	**270**	--	--	--	--	**780**
S1 (0.5-1.0)	B&C	Jul-84	--	--	--	--	--	200	--	--	63	61	--	--	**240**	--	--	--	--	48
S2 (0-0.5)	B&C	Jul-84	--	--	--	--	--	47	--	--	72	140	--	--	110	--	--	--	--	**820**
S2 (0.5-1.0)	B&C	Jul-84	--	--	--	--	--	71	--	--	72	94	--	--	140	--	--	--	--	220
S3 (0-0.5)	B&C	Jul-84	--	--	--	--	--	15	--	--	18	95	--	--	25	--	--	--	--	120
S3 (0.5-1.0)	B&C	Jul-84	--	--	--	--	--	22	--	--	51	160	--	--	42	--	--	--	--	230
S4 (0-0.5)	B&C	Jul-84	--	--	--	--	--	270	--	--	**550**	**370**	--	--	**1300**	--	--	--	--	420
S4 (0.5-1.0)	B&C	Jul-84	--	--	--	--	--	120	--	--	**240**	**710**	--	--	**370**	--	--	--	--	**620**
S5 (0-0.5)	B&C	Jul-84	--	--	--	--	--	410	--	--	**1700**	**200**	--	--	**4600**	--	--	--	--	**630**
S5 (0.5-1.0)	B&C	Jul-84	--	--	--	--	--	16	--	--	15	76	--	--	19	--	--	--	--	90
S6 (0-0.5)	B&C	Jul-84	--	--	--	--	--	24	--	--	32	150	--	--	46	--	--	--	--	190
S6 (0.5-1.0)	B&C	Jul-84	--	--	--	--	--	13	--	--	16	100	--	--	23	--	--	--	--	250
S7 (0-0.5)	B&C	Jul-84	--	--	--	--	--	--	--	--	130	**340**	--	--	47	--	--	--	--	**660**
S7 (0.5-1.0)	B&C	Jul-84	--	--	--	--	--	--	--	--	33	170	--	--	47	--	--	--	--	390
M1 (0-0.5)	B&C	Jul-84	--	--	--	--	--	99	--	--	32	100	--	--	**180**	--	--	--	--	91
M2 (0-0.5)	B&C	Jul-84	--	--	--	--	--	35	--	--	83	**310**	--	--	51	--	--	--	--	83
M3 (0-0.5)	B&C	Jul-84	--	--	--	--	--	--	--	--	100	**440**	--	--	47	--	--	--	--	160
S16 (0-0.5)	B&C	Dec-84	--	--	--	--	--	--	--	--	1500	**650**	--	--	**2200**	--	--	--	--	--
S16 (0.5-0.75)	B&C	Dec-84	--	--	--	--	--	--	--	--	210	**16000**	--	--	**200**	--	--	--	--	--
V1 (1.5-2.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	20	17	--	--	15	--	--	--	--	--
V2 (0.5-1.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	66	**240**	--	--	48	--	--	--	--	--
V3 (1.0-1.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	62	14	--	--	95	--	--	--	--	--
V4 (0.5-1.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	75	38	--	--	88	--	--	--	--	--
V5 (0.5-1.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	42	64	--	--	51	--	--	--	--	--
V6(0.5-1.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	110	150	--	--	130	--	--	--	--	--
V7 (0.5-1.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	240	99	--	--	**560**	--	--	--	--	--
V8 (1.0-1.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	**470**	100	--	--	**820**	--	--	--	--	--
V9 (1.5-2.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	140	97	--	--	**350**	--	--	--	--	--
V10 (1.0-1.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	**320**	87	--	--	**210**	--	--	--	--	--
V11 (1.0-1.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	**2000**	82	--	--	**2100**	--	--	--	--	--
V12 (1.0-1.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	**500**	50	--	--	**190**	--	--	--	--	--
V13 (2.0-2.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
V14 (1.0-1.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	**300**	180	--	--	**250**	--	--	--	--	--
V15 (1.5-2.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	150	37	--	--	**460**	--	--	--	--	--
V16 (1.5-2.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	27	<13	--	--	100	--	--	--	--	--
V17 (0.5-1.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	110	18	--	--	**1900**	--	--	--	--	--
SV1 (1.0-1.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	8.7	13	--	--	32	--	--	--	--	--
SV2 (1.0-1.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	22	23	--	--	63	--	--	--	--	--
SV3 (1.5-2.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	32	22	--	--	**210**	--	--	--	--	--
SV4 (0.5-1.0)	B&C	Mar-85	--	--	--	--	--	--	--	--	29	40	--	--	58	--	--	--	--	--
SV5 (2.0-2.5)	B&C	Mar-85	--	--	--	--	--	--	--	--	26	15	--	--	62	--	--	--	--	--

TABLE 4
SOIL SAMPLE ANALYTICAL RESULTS
TITLE 22 METALS

Sample Identification (depth in feet)	Consultant	Date Sampled	Analyte																	
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Cr	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Analytical Results (mg/kg)																	
SB-101 (3.5)	CDMS	Nov-08	--	--	--	--	ND	17	--	--	--	12	--	--	22	--	--	--	--	26
SB-101 (7.5)	CDMS	Nov-08	--	--	--	--	ND	14	--	--	--	5	--	--	8	--	--	--	--	9
SB-101 (11.5)	CDMS	Nov-08	--	--	--	--	ND	9	--	--	--	4	--	--	10	--	--	--	--	14
SB-101 (15.5)	CDMS	Nov-08	--	--	--	--	ND	16	--	--	--	6	--	--	20	--	--	--	--	23
SB-102 (3.5)	CDMS	Nov-08	--	--	--	--	ND	45	--	--	--	15	--	--	60	--	--	--	--	33
SB-102 (7.5)	CDMS	Nov-08	--	--	--	--	ND	16	--	--	--	110	--	--	8	--	--	--	--	70
SB-102 (11.5)	CDMS	Nov-08	--	--	--	--	ND	13	--	--	--	5	--	--	9	--	--	--	--	13
SB-102 (15.5)	CDMS	Nov-08	--	--	--	--	ND	11	--	--	--	7	--	--	15	--	--	--	--	26
SB-103 (3.5)	CDMS	Nov-08	--	--	--	--	ND	67	--	--	--	11	--	--	85	--	--	--	--	52
SB-103 (7.5)	CDMS	Nov-08	--	--	--	--	ND	18	--	--	--	150	--	--	10	--	--	--	--	110
SB-103 (11.5)	CDMS	Nov-08	--	--	--	--	ND	18	--	--	--	4	--	--	23	--	--	--	--	12
SB-103 (15.5)	CDMS	Nov-08	--	--	--	--	ND	18	--	--	--	4	--	--	23	--	--	--	--	13
SB-104 (1.5)	CDMS	Nov-08	--	--	--	--	ND	32	--	--	--	10	--	--	35	--	--	--	--	34
SB-104 (3.5)	CDMS	Nov-08	--	--	--	--	ND	16	--	--	--	75	--	--	11	--	--	--	--	120
SB-104 (7.5)	CDMS	Nov-08	--	--	--	--	ND	12	--	--	--	13	--	--	8	--	--	--	--	120
SB-105 (1.5)	CDMS	Nov-08	--	--	--	--	ND	70	--	--	--	13	--	--	82	--	--	--	--	17
SB-105 (3.5)	CDMS	Nov-08	--	--	--	--	ND	17	--	--	--	44	--	--	12	--	--	--	--	62
SB-105 (7.5)	CDMS	Nov-08	--	--	--	--	ND	14	--	--	--	17	--	--	10	--	--	--	--	35
SB-106 (1.5)	CDMS	Nov-08	--	--	--	--	ND	53	--	--	--	11	--	--	64	--	--	--	--	46
SB-106 (4.5)	CDMS	Nov-08	--	--	--	--	ND	54	--	--	--	31	--	--	79	--	--	--	--	67
SB-106 (7.5)	CDMS	Nov-08	--	--	--	--	ND	12	--	--	--	**210**	--	--	24	--	--	--	--	200
SB-107 (1.5)	CDMS	Nov-08	--	--	--	--	1.3	72	--	--	--	**260**	--	--	72	--	--	--	--	580
SB-107 (3.5)	CDMS	Nov-08	--	--	--	--	ND	14	--	--	--	23	--	--	10	--	--	--	--	49
SB-107 (7.5)	CDMS	Nov-08	--	--	--	--	ND	--	--	--	--	--	--	--	11	--	--	--	--	--
SB-108 (1.5)	CDMS	Nov-08	--	--	--	--	ND	52	--	--	--	12	--	--	59	--	--	--	--	41
SB-108 (4.5)	CDMS	Nov-08	--	--	--	--	ND	25	--	--	--	65	--	--	24	--	--	--	--	100
SB-108 (7.5)	CDMS	Nov-08	--	--	--	--	ND	14	--	--	--	5	--	--	10	--	--	--	--	9
SB-109 (1.5)	CDMS	Nov-08	--	--	--	--	ND	14	--	--	--	160	--	--	12	--	--	--	--	210
SB-109 (4.5)	CDMS	Nov-08	--	--	--	--	ND	19	--	--	--	120	--	--	14	--	--	--	--	200
SB-109 (7.5)	CDMS	Nov-08	--	--	--	--	ND	13	--	--	--	5	--	--	10	--	--	--	--	10
SB-110 (1.5)	CDMS	Nov-08	--	--	--	--	ND	25	--	--	--	87	--	--	19	--	--	--	--	290
SB-110 (4.5)	CDMS	Nov-08	--	--	--	--	ND	17	--	--	--	10	--	--	11	--	--	--	--	26
SB-110 (7.5)	CDMS	Nov-08	--	--	--	--	ND	13	--	--	--	5	--	--	8	--	--	--	--	8
SB-111 (0.5)	CDMS	Nov-08	--	--	--	--	ND	37	--	--	--	19	--	--	**180**	--	--	--	--	**920**
SB-111 (3.5)	CDMS	Nov-08	--	--	--	--	ND	50	--	--	--	7	--	--	69	--	--	--	--	44
SB-111 (5.5)	CDMS	Nov-08	--	--	--	--	ND	26	--	--	--	29	--	--	21	--	--	--	--	62

TABLE 4
SOIL SAMPLE ANALYTICAL RESULTS
TITLE 22 METALS

Sample Identification (depth in feet)	Consultant	Date Sampled	Analyte																
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Cr	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Analytical Results (mg/kg)																	
SB-111 (7.5)	CDMS	Nov-08	--	--	--	--	ND	15	--	--	--	49	--	--	12	--	--	--	--	50
SB-111 (9.5)	CDMS	Nov-08	--	--	--	--	ND	14	--	--	--	10	--	--	9	--	--	--	--	13
SB-112 (3.5)	CDMS	Nov-08	--	--	--	--	ND	13	--	--	--	13	--	--	26	--	--	--	--	29
SB-112 (7.5)	CDMS	Nov-08	--	--	--	--	ND	70	--	--	--	8	--	--	86	--	--	--	--	42
#5 (0.75)	CDMS	Oct-08	--	--	--	--	--	51	--	--	--	30	--	--	140	--	--	--	--	73
#5 (3.5)	CDMS	Oct-08	--	--	--	--	--	16	--	--	--	81	--	--	20	--	--	--	--	110
#6A (2.75)	CDMS	Oct-08	--	--	--	--	--	54	--	--	--	110	--	--	97	--	--	--	--	140
#6A (3.5)	CDMS	Oct-08	--	--	--	--	--	14	--	--	--	7	--	--	8	--	--	--	--	16
#6B (2.0)	CDMS	Oct-08	--	--	--	--	--	5	--	--	--	8	--	--	83	--	--	--	--	81
#6B (3.75)	CDMS	Oct-08	--	--	--	--	--	15	--	--	--	56	--	--	9	--	--	--	--	76
#8 (1.25)	CDMS	Oct-08	--	--	--	--	--	18	--	--	--	180	--	--	14	--	--	--	--	130
#8 (3.5)	CDMS	Oct-08	--	--	--	--	--	73	--	--	--	140	--	--	**180**	--	--	--	--	90
#9 (1.0)	CDMS	Oct-08	--	--	--	--	--	15	--	--	--	23	--	--	14	--	--	--	--	56
#9 (3.5)	CDMS	Oct-08	--	--	--	--	--	20	--	--	--	15	--	--	24	--	--	--	--	29
B1001 (0.5)	CDMS	Oct-10	--	--	--	--	--	28	--	--	17	76	--	--	23	--	--	--	--	130
B1001 (2.0)	CDMS	Oct-10	--	--	--	--	ND	63	--	--	48	48	--	--	83	--	--	--	--	73
B1001 (4.0)	CDMS	Oct-10	--	--	--	--	ND	10	--	--	7	11	--	--	15	--	--	--	--	26
B1001 (6.0)	CDMS	Oct-10	--	--	--	--	ND	73	--	--	42	43	--	--	84	--	--	--	--	70
B1001 (8.0)	CDMS	Oct-10	--	--	--	--	ND	28	--	--	11	41	--	--	16	--	--	--	--	55
B1001 (10.0)	CDMS	Oct-10	--	--	--	--	ND	35	--	--	14	**280**	--	--	25	--	--	--	--	41
B1002 (0.5)	CDMS	Oct-10	--	--	--	--	ND	79	--	--	**230**	55	--	--	**120**	--	--	--	--	110
B1002 (2.0)	CDMS	Oct-10	--	--	--	--	ND	59	--	--	30	9.9	--	--	82	--	--	--	--	52
B1002 (4.0)	CDMS	Oct-10	--	--	--	--	ND	58	--	--	28	9.5	--	--	69	--	--	--	--	48
B1002 (10.0)	CDMS	Oct-10	--	--	--	--	ND	14	--	--	--	26	--	--	9.1	--	--	--	--	16
SWEX- bottom (unknown)	CDMS	Oct-10	--	--	--	--	ND	12	--	--	10	41	--	--	--	--	--	--	--	85
SWEX- North Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	180	--	--	140	110	--	--	--	--	--	--	--	140
SWEX- East Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	17	--	--	16	21	--	--	--	--	--	--	--	34
SWEX- South Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	18	--	--	17	26	--	--	--	--	--	--	--	38
SWEX- West Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	21	--	--	17	49	--	--	--	--	--	--	--	73
RREX- North Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	44	--	--	28	190	--	--	--	--	--	--	--	42
RREX- South Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	61	--	--	63	12	--	--	--	--	--	--	--	74
RREX- West Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	20	--	--	28	11	--	--	--	--	--	--	--	52
SCEX - Bottom (unknown)	CDMS	Oct-10	--	--	--	--	ND	11	--	--	14	26	--	--	--	--	--	--	--	36
SCEX- North Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	15	--	--	22	54	--	--	--	--	--	--	--	100
SCEX- East Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	12	--	--	10	8	--	--	--	--	--	--	--	45
SCEX- South Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	14	--	--	31	6	--	--	--	--	--	--	--	36
SCEX- West Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	18	--	--	20	9	--	--	--	--	--	--	--	36
SEEX - Bottom (unknown)	CDMS	Oct-10	--	--	--	--	ND	14	--	--	14	38	--	--	--	--	--	--	--	34
SEEX- North Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	14	--	--	9	9	--	--	--	--	--	--	--	25
SEEX- East Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	13	--	--	7	8	--	--	--	--	--	--	--	16
SEEX- South Wall (unknown)	CDMS	Oct-10	--	--	--	--	1	49	--	--	46	**500**	--	--	--	--	--	--	--	560

TABLE 4
SOIL SAMPLE ANALYTICAL RESULTS
TITLE 22 METALS

Sample Identification (depth in feet)	Consultant	Date Sampled	Analyte																
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Cr	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			Analytical Results (mg/kg)																	
SEEX- West Wall (unknown)	CDMS	Oct-10	--	--	--	--	ND	17	--	--	ND	4	--	--	--	--	--	--	--	13
B1 (0.5)	N&M	Apr-12	<2.0	2.9	130	<1.0	<1.0	54	0.16	8.4	62	88	0.13	9.5	83	--	1.6	--	23	550
B2 (0.5)	N&M	Apr-12	<2.0	**3.9**	110	<1.0	<1.0	31	<0.10	5.8	26	160	0.18	2.6	23	--	<1.0	--	**16**	240
B4 (5.0)	N&M	Apr-12	<2.0	**1.6**	160	<1.0	<1.0	8.7	<0.10	5.2	5.9	48	0.29	<1.0	7.1	--	<1.0	--	**16**	34
B7 (0.5)	N&M	Apr-12	<2.0	**3.9**	160	<1.0	<1.0	29	<0.10	8	19	88	<0.10	3.4	32	--	<1.0	--	**22**	44
B8A (1.0)	N&M	Apr-12	<2.0	**3.2**	97	<1.0	<1.0	23	<0.10	15	65	34	<0.10	8.6	120	--	<1.0	--	**20**	50
B9 (0.5)	N&M	Apr-12	<2.0	**3.0**	110	<1.0	<1.0	51	0.10	5.8	91	18	<0.10	7.4	47	<1.0	<1.0	<1.0	**23**	32
B9 (5.0)	N&M	Apr-12	<2.0	**2.8**	260	<1.0	<1.0	20	<0.10	4.2	25	72	0.34	1.2	19	<1.0	<1.0	<1.0	14	130
B10 (5.0)	N&M	Apr-12	<2.0	**1.2**	140	<1.0	<1.0	6.9	<0.10	2.7	11	52	0.41	<1.0	7	<1.0	<1.0	<1.0	11	32
B12 (5.0)	N&M	Apr-12	<2.0	**3.5**	360	<1.0	<1.0	16	<0.10	7.0	25	160	**4.1**	<1.0	12	<1.0	<1.0	<1.0	**20**	300
B14 (1.0)	N&M	Apr-12	<2.0	**2.2**	170	<1.0	<1.0	15	<0.10	4.7	16	40	0.37	2.4	23	<1.0	<1.0	<1.0	**17**	51
B19 (0.5)	N&M	Apr-12	<2.0	**3.0**	150	<1.0	<1.0	71	<0.10	13	26	16	<0.10	1.8	90	<1.0	<1.0	<1.0	**38**	89
B24 (1.0)	N&M	Apr-12	<2.0	**4.0**	150	<1.0	<1.0	50	<0.10	12	37	12	0.27	<1.0	68	<1.0	<1.0	<1.0	**37**	49
B24 (2.0)	N&M	Apr-12	<2.0	**4.1**	150	<1.0	<1.0	48	<0.10	12	31	9.4	0.21	<1.0	71	<1.0	<1.0	<1.0	**35**	43
B24 (3.0)	N&M	Apr-12	<2.0	**2.9**	160	<1.0	<1.0	39	<0.10	11	56	17	0.31	<1.0	50	<1.0	<1.0	<1.0	**34**	50
1985 California Clean-up levels			NE	NE	NE	NE	NE	NE	NE	NE	1,250	500	NE	NE	1,000	NE	NE	NE	NE	NE
Residential Land Use ESLs (mg/kg)[1]			6.3	0.39	750	4	1.7	NE	8	40	230	200	1.3	40	150	10	20	1.3	16	600
Residential Land Use ESLs (mg/kg)[2]			6.3	0.39	750	4	1.7	NE	8	40	230	200	1.3	40	150	10	20	1.3	16	600
Commercial/Industrial ESLs (mg/kg)[1]			40	1.6	1,500	8	7.4	NE	8	80	230	750	10	40	150	10	40	16	200	600
Commercial/Industrial ESLs (mg/kg)[2]			40	1.6	1,500	8	7.4	NE	8	80	230	750	10	40	150	10	40	16	200	600

Notes:

[1]ESLs = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels - Shallow Soils (<3m bgs) - Where Groundwater IS NOT a current or potential source of drinking water (February 2005)

[2]ESLs = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels - Shallow Soils (<3m bgs) - Where Groundwater IS a current or potential source of drinking water (February 2005)

Title 22 Metals analyzed using EPA Method 6010B.

Mercury analyzed using EPA Method 7471A

mg/kg = milligrams per kilograms

< = not detected above laboratory reporting limit

Bold numbers indicate concentrations greater than Residential Land Use ESLs

Shaded cells indicate concentrations reported greater than Commercial/Industrial[2] ESLs

ND = Not detected and laboratory reporting limits were not found

-- = Not Analyzed

TABLE 5
GROUNDWATER AND SURFACE WATER SAMPLE ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS
AS DIESEL, MOTOR OIL, CARBON RANGE (C9-C36), AND HYDRAULIC OIL

Sample I.D.	Consultant	Sample Date	Depth to Groundwater (feet bgs)	Analyte			
				TPH-D	TPH-MO	TPH-CR	TPH-HO
				Analytical Results (µg/L)			
W1	B&C	NS - May-84	unkown	--	--	--	--
W2	B&C	May-84	unkown	--	--	--	**7000**
W3	B&C	May-84	unkown	--	--	--	<5000
W4	B&C	May-84	unkown	--	--	--	**7000**
Quench Tank	B&C	May-84	unkown	--	--	--	**5000**
Separator Tank	B&C	May-84	unkown	--	--	--	**20000**
Roof Condensate	B&C	May-84	unkown	--	--	--	**69000**
Storm Drain Sample	B&C	Mar-85	unkown	--	--	--	**32000**
W-101	CDMS	Nov-08	unkown	58	<500	<500	--
W-102	CDMS	Nov-08	unkown	54	<500	<500	--
W-103	CDMS	Nov-08	unkown	74	<500	<500	--
W-105	CDMS	Nov-08	unkown	52	<500	<500	--
W-107	CDMS	Nov-08	unkown	62	<500	<500	--
W-108	CDMS	Nov-08	unkown	58	<500	<500	--
W-109	CDMS	Nov-08	unkown	<50	<500	<500	--
W-111	CDMS	Nov-08	unkown	91	<500	<500	--
RRP	CDMS	Oct-10	unkown	--	--	--	**280000**
B1001	CDMS	Oct-10	unkown	--	--	--	**1700**
B1002	CDMS	Oct-10	unkown	--	--	--	**2000**
B1	N&M	Apr-12	4.0	--	--	--	<50
B5	N&M	Apr-12	5.0	--	--	--	<50
B6	N&M	Apr-12	4.0	--	--	--	<50
B8A	N&M	Apr-12	5.0	--	--	--	**7300**
B9	N&M	Apr-12	1.0	--	--	--	**110**
B10	N&M	Apr-12	5.0	--	--	--	**1000**
B15	N&M	Apr-12	5.0	--	--	--	**520**
B16	N&M	Apr-12	5.0	--	--	--	<50
B17	N&M	Apr-12	5.0	--	--	--	<50
B18	N&M	Apr-12	4.0	--	--	--	**160**
B21	N&M	Apr-12	6.0	--	--	--	<50
B23	N&M	Apr-12	5.0	--	--	--	**370**
B24	N&M	Apr-12	4.0	--	--	--	**320**
B26	N&M	Apr-12	1.0	--	--	--	**830**
B28	N&M	Apr-12	5.0	--	--	--	<50
ESLs [1]				100	100	100	100
ESLs [2]				210	210	210	210

Notes:
TPH-D = Total Petroleum Hydrocarbons as Diesel analyzed by EPA Method 8015B
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil analyzed by EPA Method 8015B
TPH-CR = Total Petroleum Hydrocarbons asCarbon Range C19-C36 analyzed by EPA Method 8015B
TPH-HF = Total Petroleum Hydrocarbons as Hydraulic Fliud analyzed by EPA Method 8015B
bgs = below ground surface
B&C = Brown & Caldwell
CDMS = Chemical Data Management Services
N&M = Ninyo & Moore
µg/L = micrograms per liter
< = not detected above laboratory reporting limits
(1) ESL = Environmental Screening Level, RWQCB Table F-1a, Groundwater is current or potential source of drinking water.
(2) ESL = Envireonmental Screening Level, RWQCB Table F-1b, Groundwater is NOT a current or potential drinking water resourc
Bold numbers indicate concentrations greater than Residential Land Use ESLs
Shaded cells indicate concentrations reported greater than Commercial/Industrial ESLs
-- = Not Analyzed

TABLE 6
GROUNDWATER SAMPLE ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Sample I.D.	Consultant	Sample Date	Depth to Groundwater (feet bgs)	Analyte							
				1,2,4-Trimethylbenzene	Benzene	Di-isopropryl ether	Ethylbenzene	MTBE	Naphthalene	Xylenes	tert-Butanol
				Analytical Results (µg/L)							
B1	N&M	Apr-12	4.0	<0.50	<0.50	89	<0.50	1.6	<0.50	<0.50	<0.50
B5	N&M	Apr-12	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	3.5	<0.50	<0.50
B6	N&M	Apr-12	4.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
B8A	N&M	Apr-12	5.0	0.87	**1.70**	11	1.3	<0.50	**74**	3.5	**13.0**
B9	N&M	Apr-12	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
B10	N&M	Apr-12	5.0	<5	<5	<5	<5	<5	<5	<10	<5
B15	N&M	Apr-12	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
B16	N&M	Apr-12	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
B17	N&M	Apr-12	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
B18	N&M	Apr-12	4.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
B21	N&M	Apr-12	6.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
B23	N&M	Apr-12	5.0	<0.50	0.63	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
B24	N&M	Apr-12	4.0	<0.50	0.67	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
ESLs[1]				NE	1.0	NE	30	5	17	20	12
ESLs[2]				NE	46.0	NE	43	1,800	24	100	18,000

Notes:
µg/L = micrograms per liter
bgs = below ground surface
N&M = Ninyo & Moore
< = not detected above laboratory reporting limits
ESLs[1] = Environmental Screening Level, RWQCB Table F-1a, Groundwater is current or potential source of drinking water.
ESLs [2] = Envireonmental Screening Level, TWQCB Table F-1b, Groundwater is not a current or potential drinking water resource.
Volatile Organic Compounds analyzed using EPA Method 8260B
Bold numbers indicate concentrations greater than Residential Land Use ESLs
Shaded cells indicate concentrations reported greater than Commercial/Industrial ²ESLs
NE = Not Established

Ninyo & Moore

TABLE 7
GRAB GROUNDWATER SAMPLE ANALYTICAL RESULTS
TITLE 22 METALS

Sample I.D.	Consultant	Sample Date	Depth to Groundwater (feet bgs)	Analyte (ug/L)												
				Antimony	Arsenic	Barium	Cadmium	Chromium	Hexavalent Cr	Cobalt	Copper	Lead	Molybdenum	Nickel	Vanadium	Zinc
				Analytical Results (µg/L)												
W1	B&C[a]	NS	unknown	--	--	--	--	--	--	--	--	--	--	--	--	--
W2	B&C[a]	May-84	unknown	--	--	--	--	ND	--	--	ND	ND	--	**30**	--	30
W3	B&C[a]	May-84	unknown	--	--	--	--	ND	--	--	ND	**500**	--	**420**	--	30
W4	B&C[a]	May-84	unknown	--	--	--	--	--	--	--	**40**	ND	--	**120**	--	**320**
Quench Tank	B&C[a]	May-84	unknown	--	--	--	--	ND	--	--	**700**	ND	--	**1,200**	--	60
Separator Tank	B&C[a]	May-84	unknown	--	--	--	--	ND	--	--	ND	**8**	--	**120**	--	**220**
Roof Condensate	B&C[a]	May-84	unknown	--	--	--	--	ND	--	--	ND	ND	--	ND	--	**260**
Storm Drain Sample	B&C[a]	Mar-85	unknown			--	--	--	--	--	<0.01	<0.1	--	<0.02	--	--
W-101	CDMS[a]	Nov-08	unknown	--	--	--	--	ND	--	--	--	**6.5**	--	**120**	--	56
W-102	CDMS[a]	Nov-08	unknown	--	--	--	--	14	--	--	--	**770**	--	**140**	--	**1,200**
W-103	CDMS[a]	Nov-08	unknown	--	--	--	--	26	--	--	--	**61**	--	**380**	--	**1,400**
W-105	CDMS[a]	Nov-08	unknown	--	--	--	ND	ND	--	--	--	**9**	--	**52**	--	**930**
W-107	CDMS[a]	Nov-08	unknown	--	--	--	**3**	22	--	--	--	**120**	--	**480**	--	**1,300**
W-108	CDMS[a]	Nov-08	unknown	--	--	--	**2**	25	--	--	--	**5,600**	--	**76**	--	**970**
W-108**	CDMS[a]	Nov-08	unknown	--	--	--	ND	26	--	--	--	**5,700**	--	**79**	--	--
W-109	CDMS[a]	Nov-08	unknown	--	--	--	ND	ND	--	--	--	ND	--	ND	--	18
W-111	CDMS[a]	Nov-08	unknown	--	--	--	ND	ND	--	--	--	ND	--	**420**	--	**8,400**
RRP	CDMS[a]	Oct-10	unknown	--	--	--	ND	11	--	--	**52**	**10**	--	**68**	--	--
B1001	CDMS[a]	Oct-10	unknown	--	--	--	ND	ND	--	--	ND	ND	--	**44**	--	--
B1002	CDMS[a]	Oct-10	unknown	--	--	--	ND	ND	--	--	ND	ND	--	**550**	--	--
B1	N&M[b]	Apr-12	4.0	**6**	**40**	480	--	5	<10	<3	<5	<5	<5	**40**	10	10
B5	N&M[b]	Apr-12	5.0	<5	30	330	--	10	**40**	**4**	<5	<5	5	**90**	10	10
B6	N&M[b]	Apr-12	4.0	<5	10	240	--	<3	<10	<3	<5	<5	**40**	**10**	**20**	<10
B8A	N&M[b]	Apr-12	5.0	<5	20	430	--	3	**30**	**4**	<5	<5	**70**	**30**	8	20
B9	N&M[b]	Apr-12	1.0	<5	<10	40	--	<3	**20***	<3	<5	<5	**300**	**10**	8	<10
B10	N&M[c]	Apr-12	5.0	<5	20	250	--	10	**120***	<3	<5	<5	**200**	**40**	**110**	10
B15	N&M[b]	Apr-12	5.0	<5	<10	100	--	<3	<10	3	<5	<5	**40**	**10**	4	<10
B16	N&M[b]	Apr-12	5.0	<5	<10	200	--	<3	<10	**8**	**6**	<5	20	**20**	7	10
B17	N&M[b]	Apr-12	5.0	<5	<10	190	--	4	<10	**7**	**7**	<5	20	**20**	9	20
B18	N&M[d]	Apr-12	4.0	<5	<10	310	--	40	**20**	**10**	**70**	**80**	**110**	**50**	**70**	**90**
B21	N&M[b]	Apr-12	6.0	**10**	<10	**1,200**	--	<3	<10	**7**	<5	<5	<5	8	6	<10
B23	N&M[b]	Apr-12	5.0	**8**	<10	30	--	4	NA	<3	**20**	<5	**910**	**10**	<3	70

Ninyo & Moore

TABLE 7

B24	N&M[(d)]	Apr-12	4.0	<5	<10	50	--	<3	10*	<3	**20**	<5	**940**	**10**	<3	<10
B26	N&M[(d)]	Apr-12	1.0	**6**	<10	340	--	<3	10	**8**	10	<5	**90**	**40**	8	20
B28	N&M[(b)]	Apr-12	5.0	--	--	--	--	--	--	--	--	--	--	--	--	--
ESLs[1]				6	36	1,000	0.25	50	11	3	3.1	2.5	35	8.2	15	81
ESLs[2]				30	36	1,000	0.25	180	11	3	3.1	2.5	240	8.2	19	81
ESLs[3]				500	36	1,000	9.3	180	50	3	3.1	5.6	240	8.2	19	81

Notes:
Title 22 Metals analyzed using EPA Method 6010B
bgs = below ground surface
B&C = Brown & Caldwell
CDMS = Chemical Data Management Services
N&M = Ninyo & Moore
µg/L = micrograms per liter
< = Not detected above laboratory reporting limits
--- = Not analyzed
(a) = It is unknow if B&C and CDMS groundwater samples were filtered.
(b) = N&M groundwater samples were filtered using a 0.45 micron filter
(c) = Hexavalent Chromium sample was collected with unfiltered water; all other metals were analyzed using filtered water.
(d) = Sample was collected with unfiltered water since water was too muddy to pass through the filter
* = Samples reanalysis (outside of holding time) reported that Hexavalent Chromium result appears to be false positive due to sample matrix
** = Duplicate sample
ESLs[1] = Environmental Screening Level, RWQCB Table F-1a, Groundwater is current or potential source of drinking water

ESLs[2] = Envireonmental Screening Level, TWQCB Table F-1b, Groundwater is not a current or potential drinking water resource.

ESLs[3] = Envireonmental Screening Level, TWQCB Table F-1a, Summary of Selected Aquatic Habitat Goals, Lowest Marine Aquatic Habitat Goal.

Bold numbers indicate concentrations greater than ESLs[1]
Shaded cells indicate concentrations reported greater than ESLs[2]

TABLE 8
pH, CONDUCTIVITY AND SALINITY IN GROUNDWATER

SAMPLE ID	Consultant	pH	Conductivity (mS/cm)	SALINITY (mg/L of NaCl)
		Analytical Results		
Quench Tank	B&C	6.0	4.85	--
Separator Tank	B&C	10.0	0.46	--
Roof Condensate	B&C	6.0	0.40	--
W1	B&C	--	--	--
W2	B&C	6.5	9.7	--
W3	B&C	6.5	42	--
W4	B&C	--	2.08	--
B-1	N&M	7.69	3.53	1,400
B-5	N&M	7.27	3.13	5,100
B-6	N&M	7.54	2.76	--
B-8A	N&M	7.34	2.34	1,700
B-9	N&M	10.63	0.761	160
B-10	N&M	7.19	5.37	260
B-15	N&M	7.47	2.01	--
B-16	N&M	7.25	3.63	--
B-18	N&M	7.31	2.97	440
B-21	N&M	7.3	7.4	210
B-23	N&M	9.11	0.879	210
B-24	N&M	7.56	1.53	--
B-26	N&M	7.15	6.11	--

Notes:

pH and Conductivity were measured in the field.

Salinity was laboratory analyzed by SM 2025B.

B&C = Brown and Caldwell

N&M = Ninyo & Moore

-- = Not Analyzed

TABLE 9 - DATA GAP WORK PLAN PROPOSED SAMPLING ANALYSIS

Sample Identification	Soil		Groundwater
	Depth	Analysis	Analysis
On-site boring locations			
B-8B	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil and PAHs	TPH as hydraulic oil, hexavalent chromium and Title 22 Metals, salinity and TDS
B-5A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	--
B-9A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	TPH as hydraulic oil, hexavalent chromium and Title 22 Metals, salinity and TDS
B-10A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil and PAHs	TPH as hydraulic oil, hexavalent chromium and Title 22 Metals, salinity and TDS
B-12A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	--
B-14A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil and PAHs	TPH as hydraulic oil and hexavalent chromium, salinity and TDS
B-15A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil and PAHs	--
B-15B	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	TPH as hydraulic oil, Salinity and TDS
B-15C	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	
B-17A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	TPH as hydraulic oil, hexavalent chromium and Title 22 Metals, salinity and TDS
B-20A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil and PAHs	TPH as hydraulic oil, Salinity and TDS
B-20B	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	
B-21A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	TPH as hydraulic oil
B-22A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil and PAHs	TPH as hydraulic oil, hexavalent chromium and Title 22 Metals, salinity and TDS
B-22B	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	--
B-23A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	TPH as hydraulic oil

B-24A	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil and PAHs	TPH as hydraulic oil, hexavalent chromium and Title 22 Metals, salinity and TDS
B-24B	Two samples between 4 and 7 feet bgs	TPH as hydraulic oil	--
B-25A	One sample between 1-2 feet bgs	Title 22 Metals	--
UG-1	--	--	TPH as hydraulic oil, hexavalent chromium and Title 22 Metals, salinity and TDS
UG-2	--	--	TPH as hydraulic oil, hexavalent chromium and Title 22 Metals, salinity and TDS
Off-site boring locations			
DG-1	--	--	TPH as hydraulic oil and Title 22 Metals
DG-2	--	--	TPH as hydraulic oil and Title 22 Metals
DG-3	--	--	TPH as hydraulic oil and Title 22 Metals

Notes:
* = samples will be placed on hold
bgs = below ground surface
-- = no samples will be collected
TPH = Total Petroleum Hydrocarbons
TPH as hydraulic oil will be analyzed by EPA Method 8015M with Silica Gel Cleanup
SVOCs = Semi-Volatile Organic Compounds
SVOCs will be analyzed using EPA Method 8270
hexavalent chromium will be analyzed by EPA Method 7196A

Title 22 Metals will be analyzed using EPA Method 6010B; groundwater samples will be field filtered and preserved.

REFERENCE: METRO AREAS OF ALAMEDA, CONTRA COSTA, MARIN, SAN FRANCISCO, SAN MATEO, AND SANTA CLARA COUNTIES, THOMAS GUIDE, 2008.

N

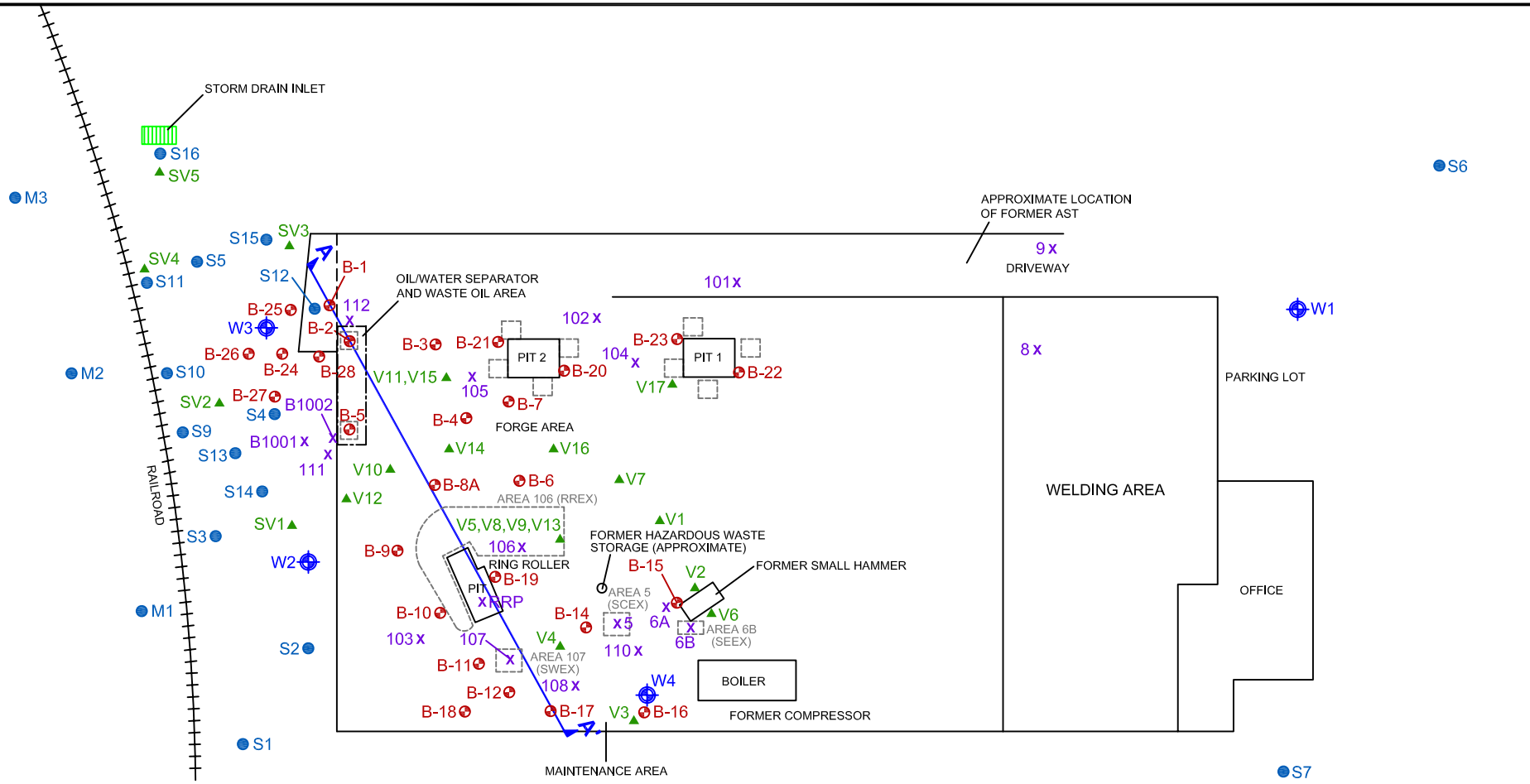
SCALE IN FEET

0 2,000 4,000

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	SITE LOCATION	FIGURE
PROJECT NO. / DATE	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	1
401823001 / 10/12		

401823001-FIG1.dwg, Oct 09, 2012, 9:04am, snguyen



LEGEND

- NINYO & MOORE BORING LOCATION (APRIL 2012)
- BROWN + CALDWELL BORING LOCATION (MAY AND DECEMBER 1984)
- BROWN + CALDWELL VERIFICATION SAMPLE LOCATION (MARCH 1985)
- BROWN + CALDWELL MONITORING WELLS
- x CHEMICAL DATA MANAGEMENT SYSTEMS BORING LOCATION (OCTOBER AND NOVEMBER 2008)
- EXISTING EXCAVATIONS FROM THE 2010 CDMS REMEDIAL ACTIVITIES
- A A' GEOLOGIC CROSS SECTION LOCATION, SEE FIGURE 3

N

SCALE IN FEET

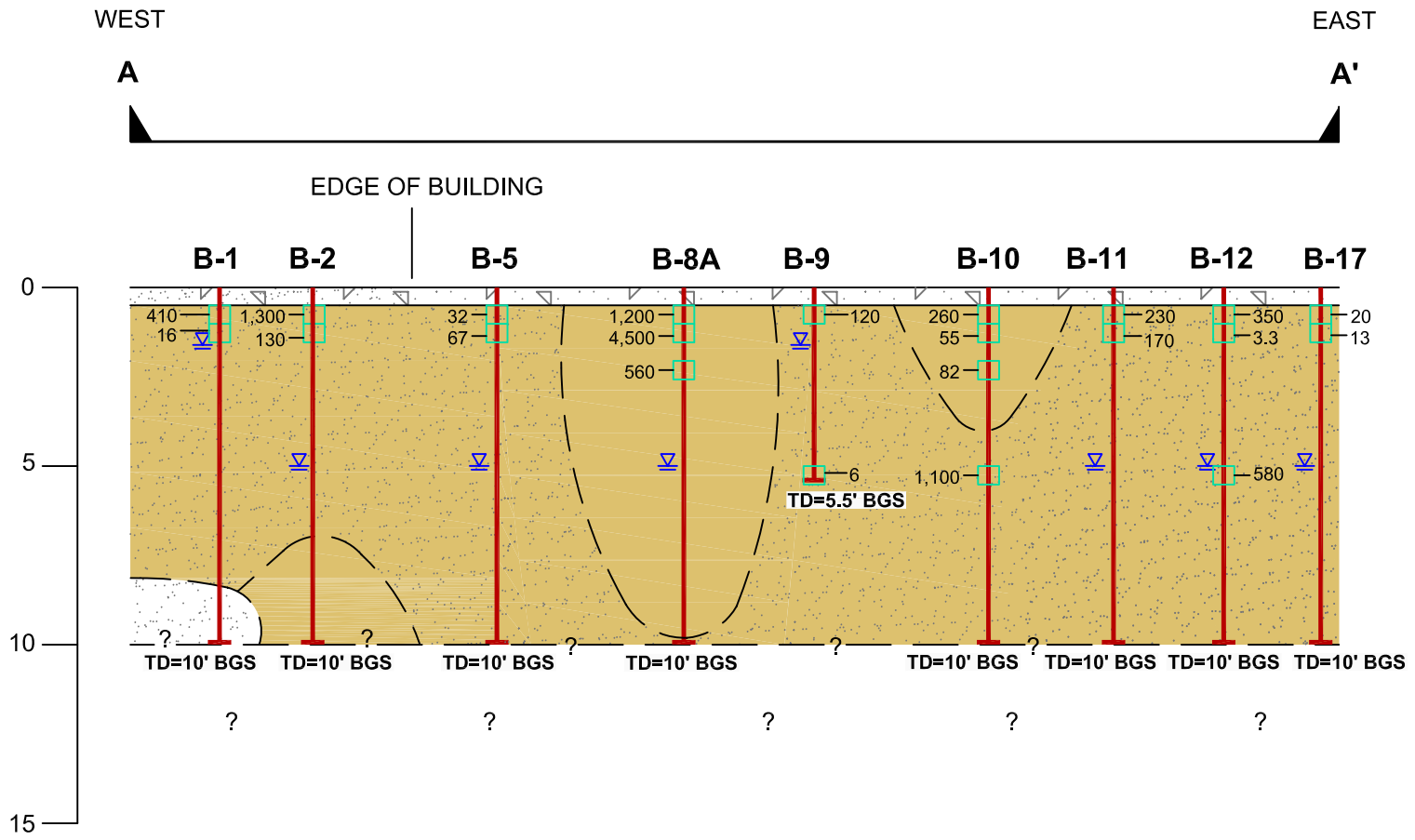
0 40 80

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: MASTER LAYOUT FIGURE, CDMS, 1998, REV. 2008, NINYO & MOORE MEASUREMENTS OCTOBER 2011.

Ninyo & Moore		BORING LOCATIONS	FIGURE
PROJECT NO.	DATE	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	2
401823001	10/12		

401823001-FIG2.dwg, Oct 09, 2012, 9:07am,snguyen



LEGEND

CONCRETE	DEPTH OF GROUNDWATER ENCOUNTERED
SILT	TD TOTAL DEPTH IN FEET
SILTY SAND	BGS BELOW GROUND SURFACE
SAND	TOTAL PETROLEUM HYDROCARBON AS HYDRAULIC OIL SOIL SAMPLE RESULTS IN MILLIGRAMS PER KILOGRAM

HORIZONTAL SCALE: 1" = 20'

VERTICAL SCALE: 1" = 5'

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	GEOLOGIC CROSS SECTION A-A'	FIGURE
PROJECT NO. 401823001 / DATE 10/12	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	3

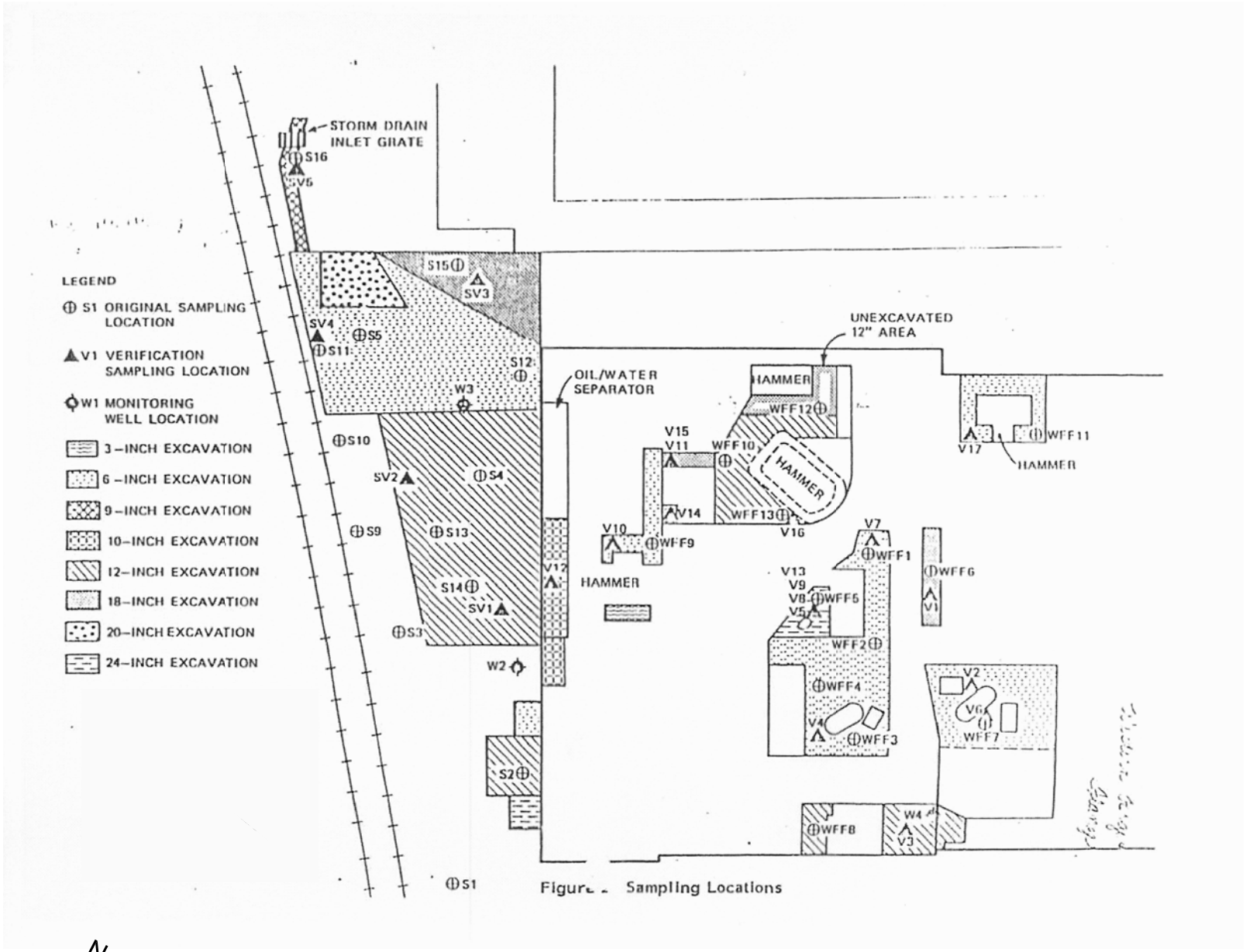


Figure 4 Sampling Locations

N

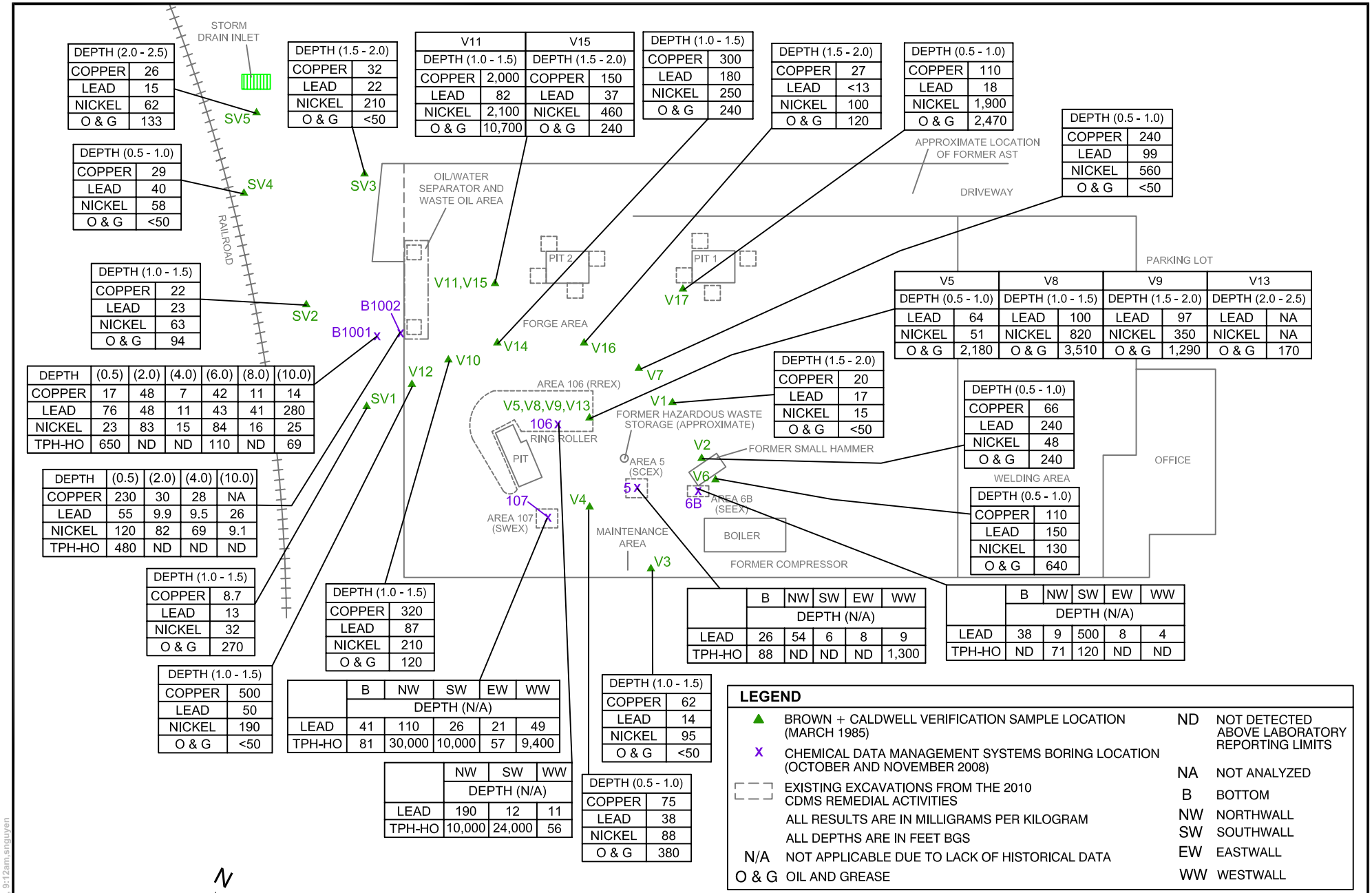
SCALE IN FEET

0 30 60

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: BROWN AND CALDWELL, 1985, WESTERN FORGE & FLANGE COMPANY, ALBANY SITE CORRECTION DOCUMENTATION REPORT, DATED MAY 10.

Ninyo & Moore	1985 BROWN & CALDWELL EXCAVATION AREAS	FIGURE
PROJECT NO. 401823001 / DATE 10/12	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	4



DEPTH (2.0 - 2.5)	
COPPER	26
LEAD	15
NICKEL	62
O & G	133

DEPTH (0.5 - 1.0)	
COPPER	29
LEAD	40
NICKEL	58
O & G	<50

DEPTH (1.0 - 1.5)	
COPPER	22
LEAD	23
NICKEL	63
O & G	94

DEPTH	(0.5)	(2.0)	(4.0)	(6.0)	(8.0)	(10.0)
COPPER	17	48	7	42	11	14
LEAD	76	48	11	43	41	280
NICKEL	23	83	15	84	16	25
TPH-HO	650	ND	ND	110	ND	69

DEPTH	(0.5)	(2.0)	(4.0)	(10.0)
COPPER	230	30	28	NA
LEAD	55	9.9	9.5	26
NICKEL	120	82	69	9.1
TPH-HO	480	ND	ND	ND

DEPTH (1.0 - 1.5)	
COPPER	8.7
LEAD	13
NICKEL	32
O & G	270

DEPTH (1.0 - 1.5)	
COPPER	500
LEAD	50
NICKEL	190
O & G	<50

DEPTH (1.5 - 2.0)	
COPPER	32
LEAD	22
NICKEL	210
O & G	<50

V11		V15	
DEPTH (1.0 - 1.5)		DEPTH (1.5 - 2.0)	
COPPER	2,000	COPPER	150
LEAD	82	LEAD	37
NICKEL	2,100	NICKEL	460
O & G	10,700	O & G	240

DEPTH (1.0 - 1.5)	
COPPER	320
LEAD	87
NICKEL	210
O & G	120

	B	NW	SW	EW	WW
	DEPTH (N/A)				
LEAD	41	110	26	21	49
TPH-HO	81	30,000	10,000	57	9,400

	NW	SW	WW
	DEPTH (N/A)		
LEAD	190	12	11
TPH-HO	10,000	24,000	56

DEPTH (1.0 - 1.5)	
COPPER	300
LEAD	180
NICKEL	250
O & G	240

DEPTH (1.0 - 1.5)	
COPPER	62
LEAD	14
NICKEL	95
O & G	<50

DEPTH (0.5 - 1.0)	
COPPER	75
LEAD	38
NICKEL	88
O & G	380

DEPTH (1.5 - 2.0)	
COPPER	27
LEAD	<13
NICKEL	100
O & G	120

DEPTH (1.5 - 2.0)	
COPPER	20
LEAD	17
NICKEL	15
O & G	<50

	B	NW	SW	EW	WW
	DEPTH (N/A)				
LEAD	26	54	6	8	9
TPH-HO	88	ND	ND	ND	1,300

DEPTH (0.5 - 1.0)	
COPPER	110
LEAD	18
NICKEL	1,900
O & G	2,470

DEPTH (0.5 - 1.0)	
COPPER	240
LEAD	99
NICKEL	560
O & G	<50

V5		V8		V9		V13	
DEPTH (0.5 - 1.0)		DEPTH (1.0 - 1.5)		DEPTH (1.5 - 2.0)		DEPTH (2.0 - 2.5)	
LEAD	64	LEAD	100	LEAD	97	LEAD	NA
NICKEL	51	NICKEL	820	NICKEL	350	NICKEL	NA
O & G	2,180	O & G	3,510	O & G	1,290	O & G	170

DEPTH (0.5 - 1.0)	
COPPER	66
LEAD	240
NICKEL	48
O & G	240

DEPTH (0.5 - 1.0)	
COPPER	110
LEAD	150
NICKEL	130
O & G	640

	B	NW	SW	EW	WW
	DEPTH (N/A)				
LEAD	38	9	500	8	4
TPH-HO	ND	71	120	ND	ND

LEGEND

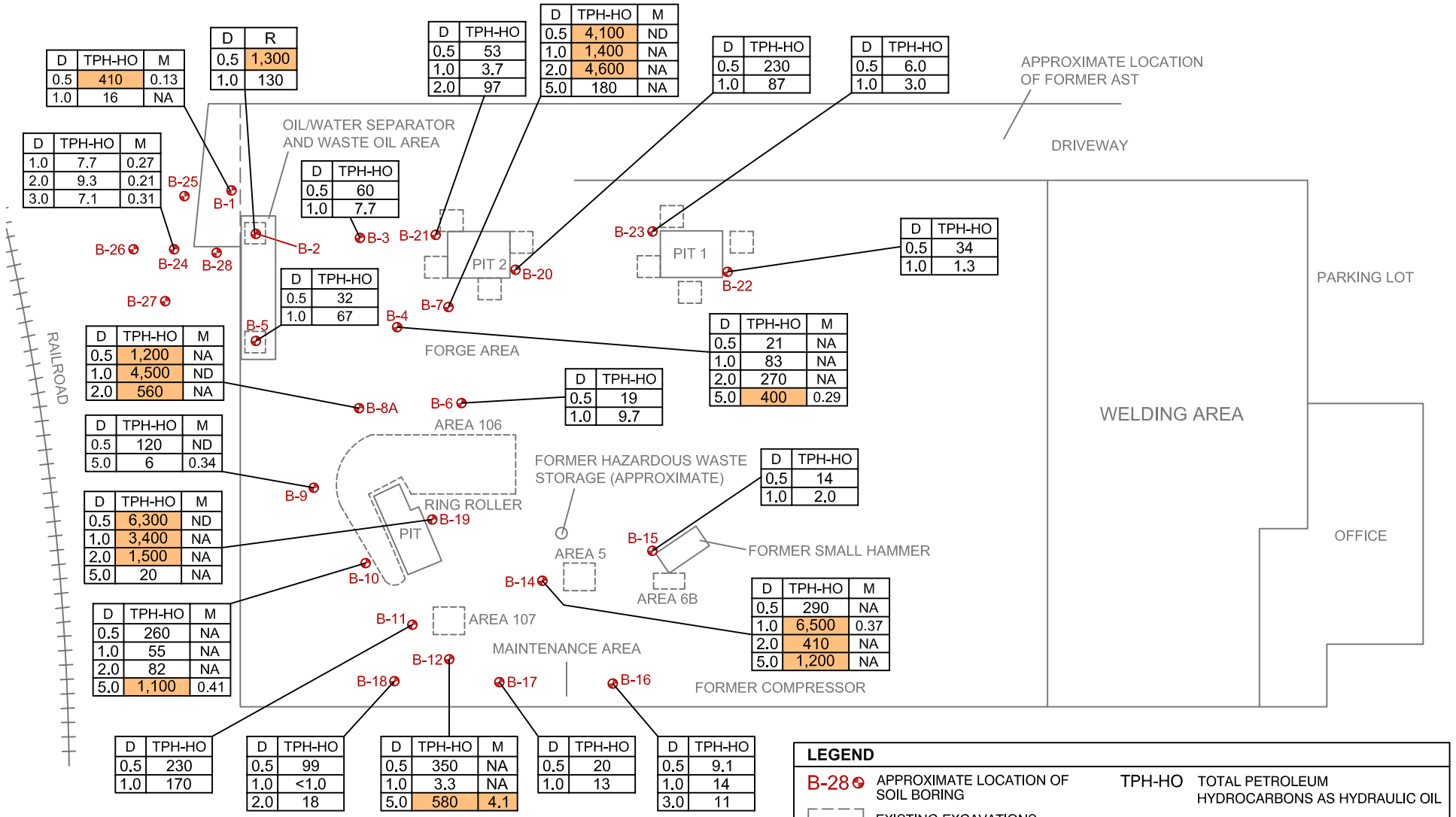
▲	BROWN + CALDWELL VERIFICATION SAMPLE LOCATION (MARCH 1985)
X	CHEMICAL DATA MANAGEMENT SYSTEMS BORING LOCATION (OCTOBER AND NOVEMBER 2008)
- - -	EXISTING EXCAVATIONS FROM THE 2010 CDMS REMEDIAL ACTIVITIES
	ALL RESULTS ARE IN MILLIGRAMS PER KILOGRAM
	ALL DEPTHS ARE IN FEET BGS
N/A	NOT APPLICABLE DUE TO LACK OF HISTORICAL DATA
O & G	OIL AND GREASE
ND	NOT DETECTED ABOVE LABORATORY REPORTING LIMITS
NA	NOT ANALYZED
B	BOTTOM
NW	NORTHWALL
SW	SOUTHWALL
EW	EASTWALL
WW	WESTWALL

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: MASTER LAYOUT FIGURE, CDMS, 1998, REV. 2008, NINYO & MOORE MEASUREMENTS OCTOBER 2011.

Ninyo & Moore	HISTORIC VERIFICATION SOIL SAMPLING RESULTS	FIGURE
PROJECT NO. 401823001 / DATE 10/12	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	5

401823001-FIG5.dwg, Oct 09, 2012, 9:12am,snguyen

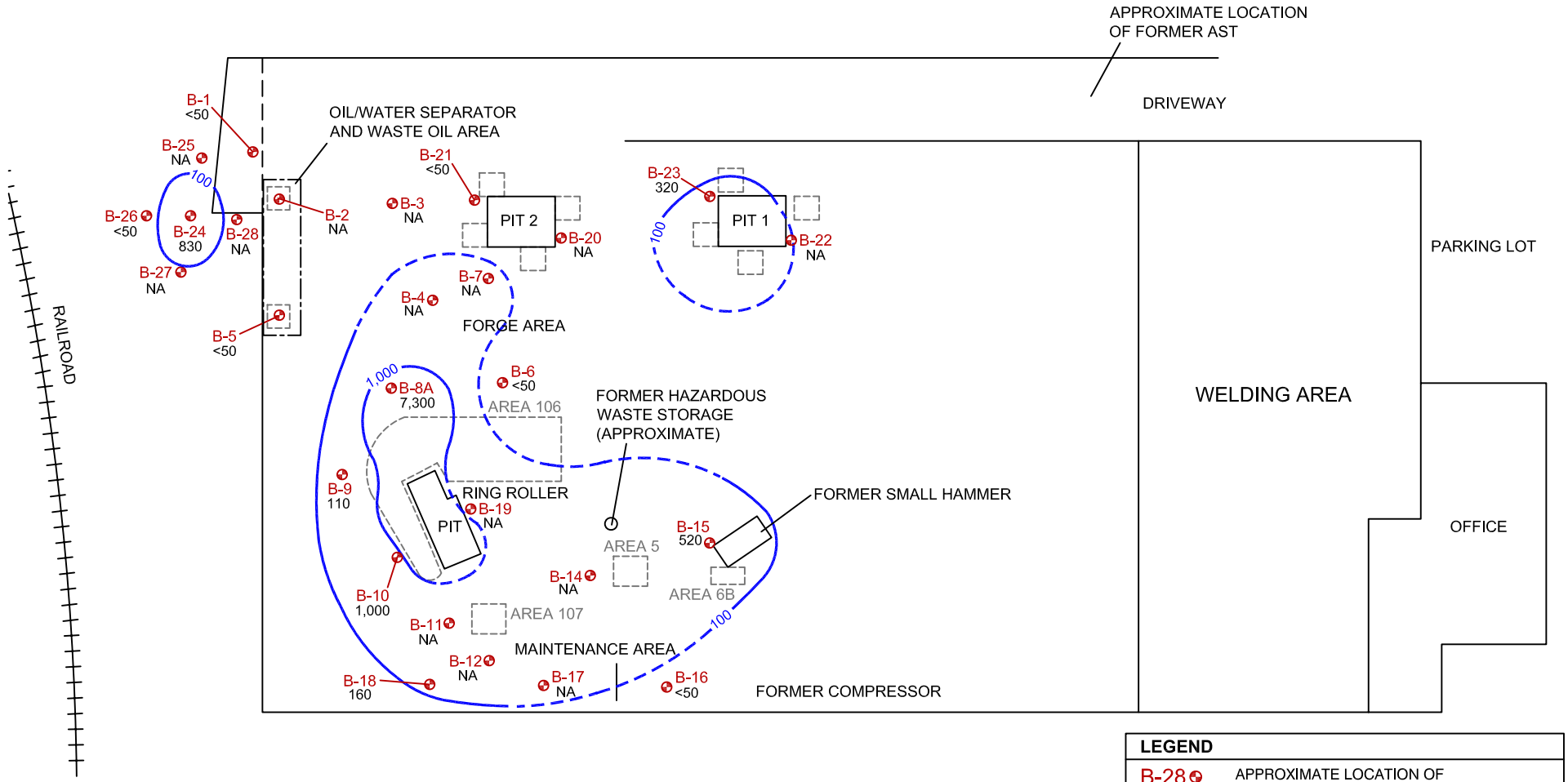


REFERENCE: MASTER LAYOUT FIGURE, CDMS, 1998, REV. 2008, NINYO & MOORE MEASUREMENTS OCTOBER 2011.

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	2012 SOIL ANALYTICAL RESULTS FOR TOTAL PETROLEUM HYDROCARBONS AS HYDRAULIC OIL AND MERCURY	FIGURE
PROJECT NO. 401823001 / DATE 10/12	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	6

401823001-FIG6.dwg, Oct 09, 2012, 9:14am,snguyen



LEGEND

B-28	APPROXIMATE LOCATION OF SOIL BORING
	EXISTING EXCAVATIONS
	TPH AS HYDRAULIC OIL ISOCONTOUR, DASHED WHERE INFERRED
NA	NOT ANALYZED
<50 µg/L	LESS THAN LABORATORY REPORTING LIMIT
	ALL CONCENTRATIONS IN MICROGRAMS PER LITER (µg/L)

N

SCALE IN FEET

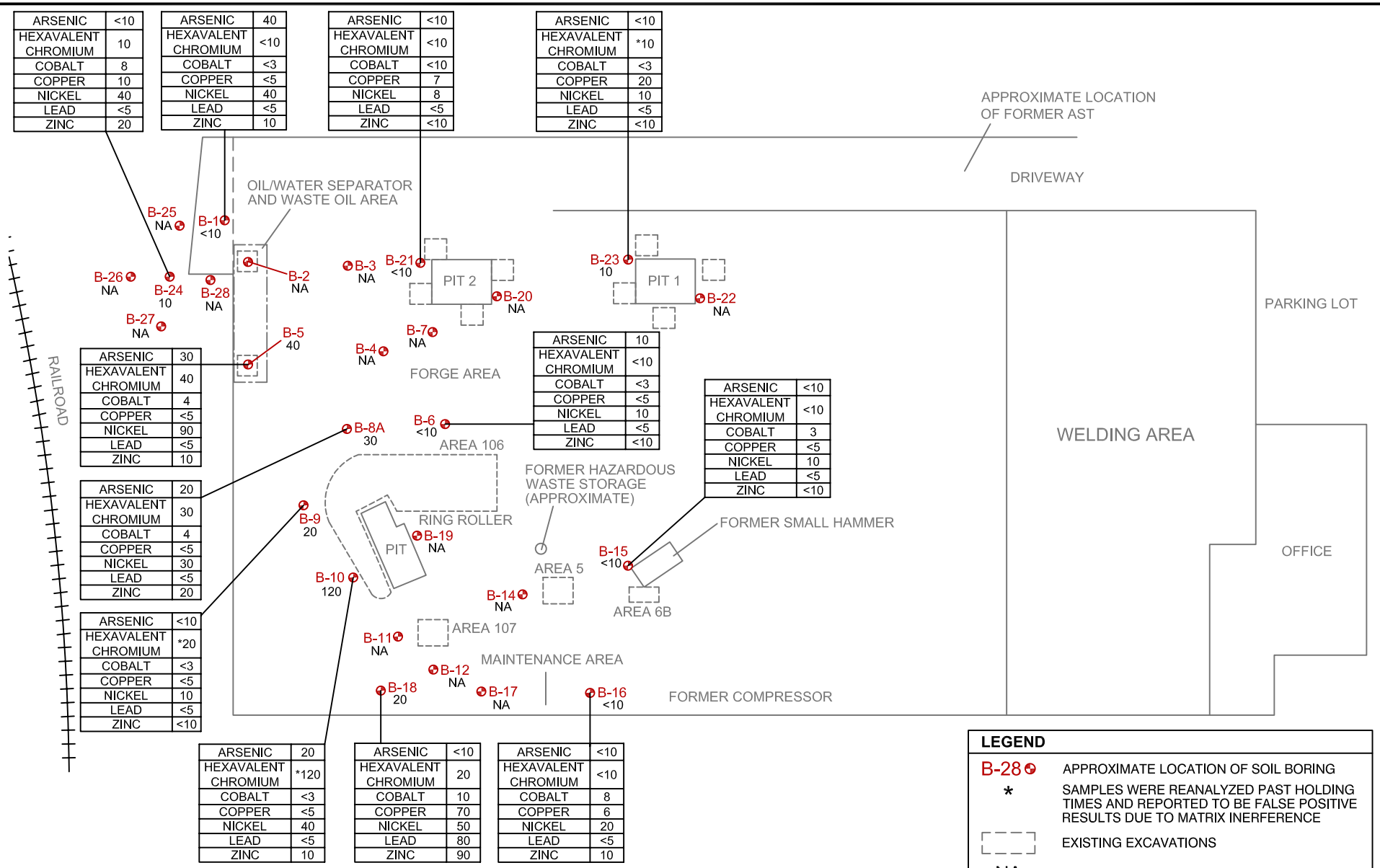
0 30 60

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: MASTER LAYOUT FIGURE, CDMS, 1998, REV. 2008, NINYO & MOORE MEASUREMENTS OCTOBER 2011.

Ninyo & Moore	2012 GROUNDWATER ANALYTICAL RESULTS FOR TOTAL PETROLEUM HYDROCARBONS AS HYDRAULIC OIL	FIGURE
PROJECT NO. 401823001 / DATE 10/12	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	7

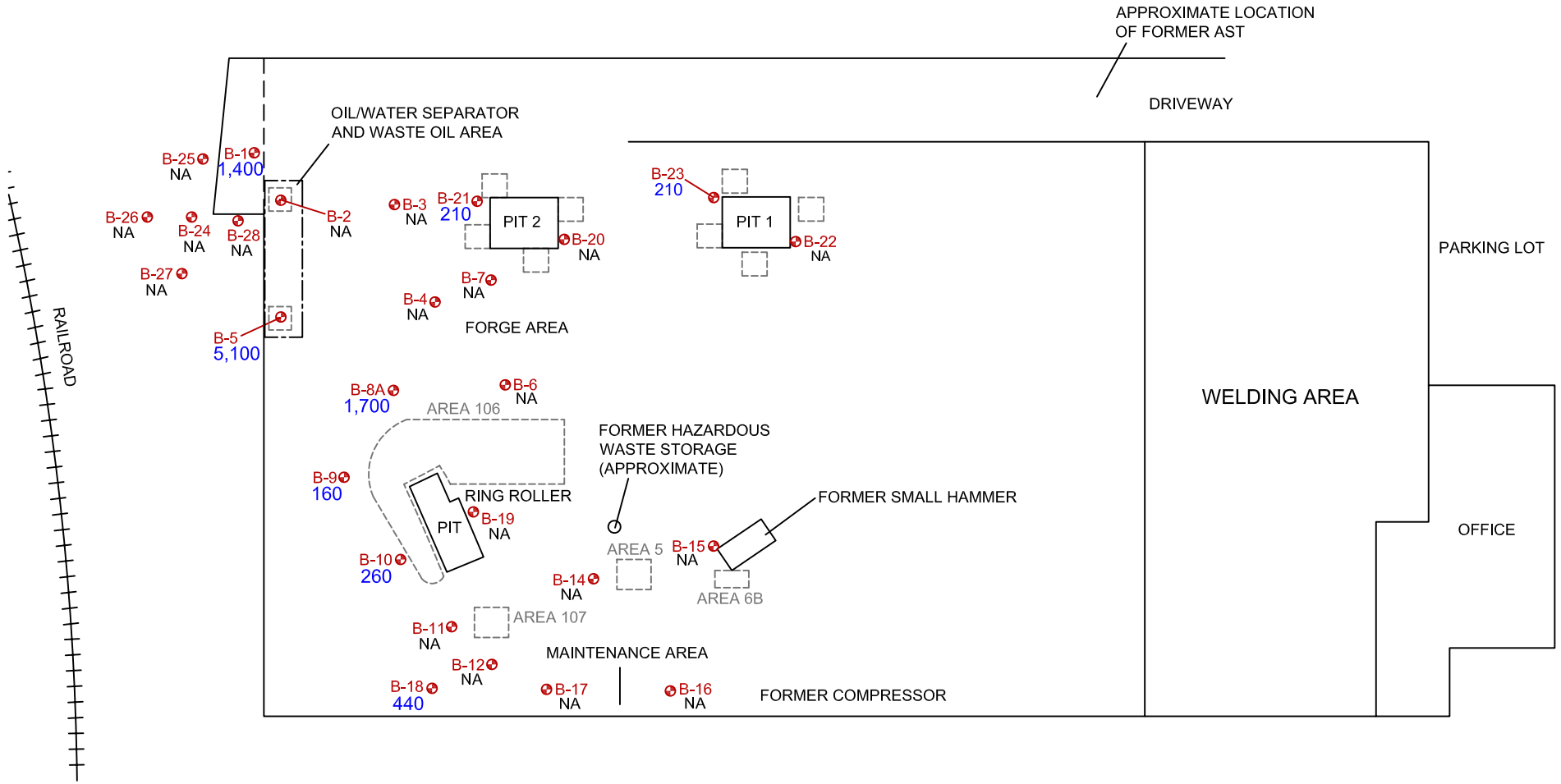
401823001-FIG7.dwg, Oct 09, 2012, 9:16am,snguyen



NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: MASTER LAYOUT FIGURE, CDMS, 1998, REV. 2008, NINYO & MOORE MEASUREMENTS OCTOBER 2011.

Ninyo & Moore	2012 GROUNDWATER ANALYTICAL RESULTS FOR SELECT TITLE 22 METALS & HEXAVALENT CHROMIUM	FIGURE
PROJECT NO. 401823001 / DATE 10/12	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	8



LEGEND	
B-28	APPROXIMATE LOCATION OF SOIL BORING
	EXISTING EXCAVATIONS
NA	NOT ANALYZED
	UNITS OF MEASUREMENTS = NaCL IN MILLIGRAMS PER LITER

N

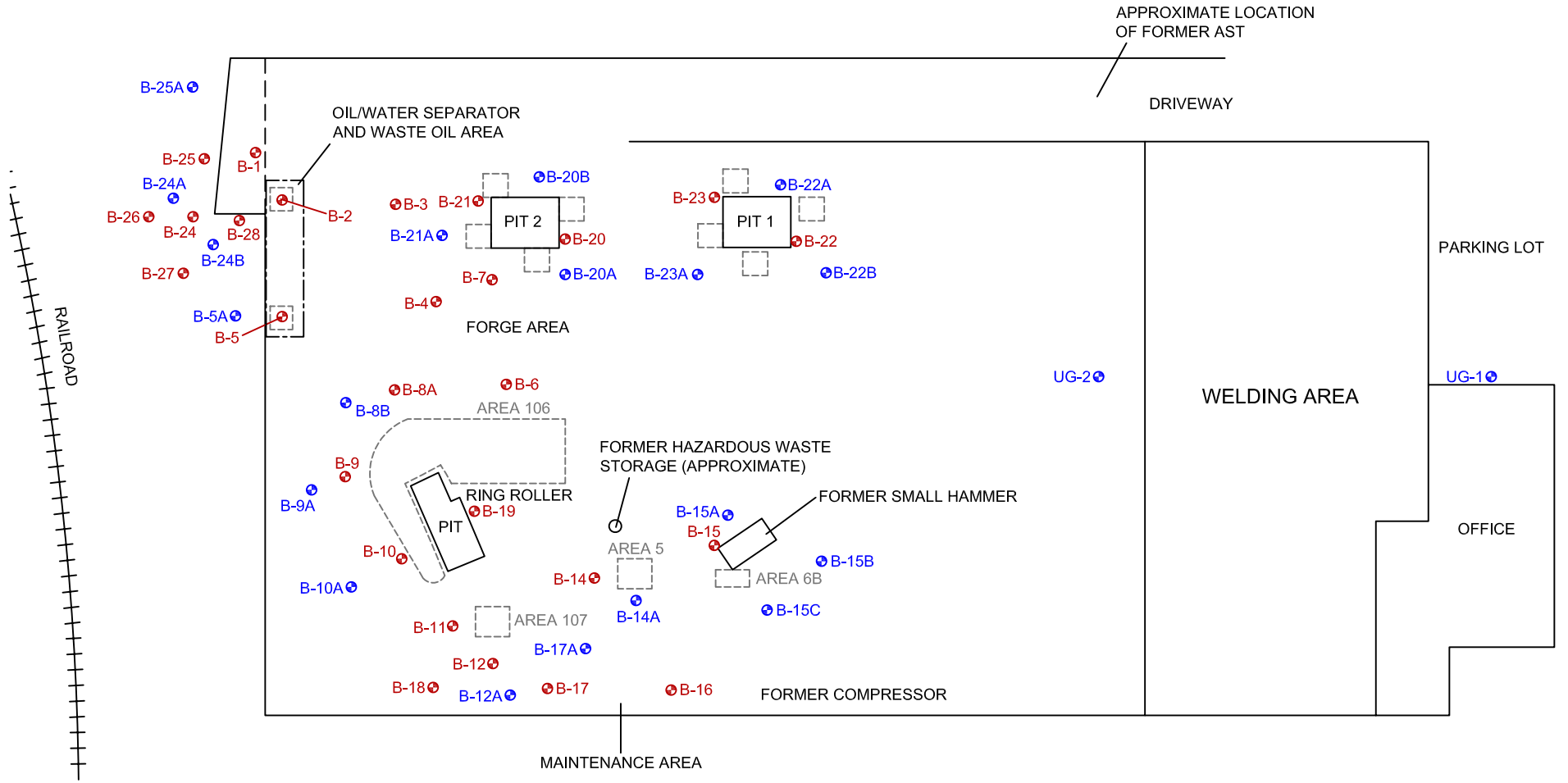
SCALE IN FEET

0 30 60

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: MASTER LAYOUT FIGURE, CDMS, 1998, REV. 2008, NINYO & MOORE MEASUREMENTS OCTOBER 2011.

Ninyo & Moore	2012 GROUNDWATER ANALYTICAL RESULTS FOR SALINITY	FIGURE
PROJECT NO. 401823001 / DATE 10/12	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	9



LEGEND

B-28	2012 REMEDIAL INVESTIGATION BORING LOCATION
B-25A	PROPOSED BORING LOCATION
	EXISTING EXCAVATIONS

N

SCALE IN FEET

0 30 60

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: MASTER LAYOUT FIGURE, CDMS, 1998, REV. 2008, NINYO & MOORE MEASUREMENTS OCTOBER 2011.

Ninyo & Moore

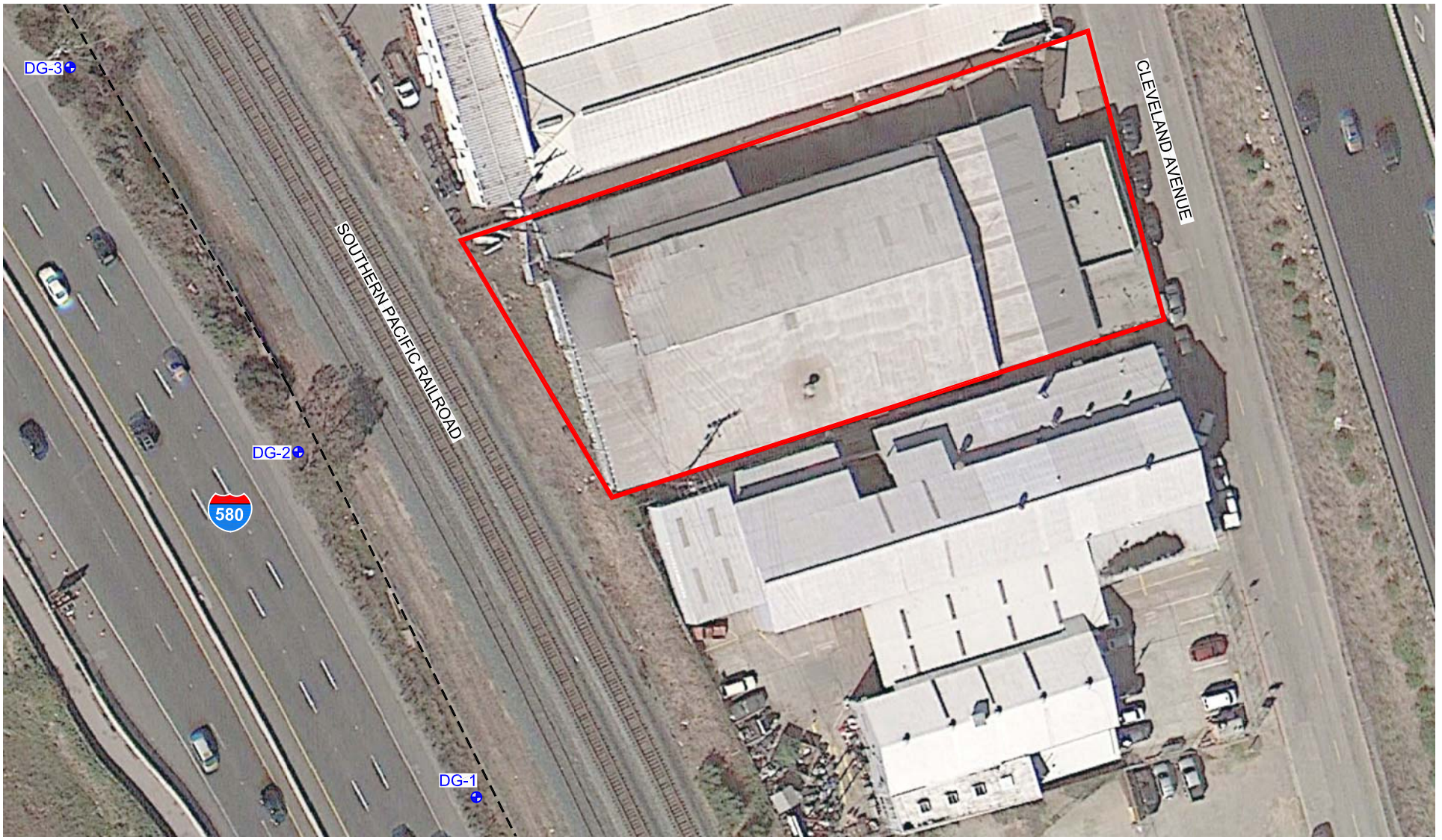
PROJECT NO.	DATE
401823001	10/12

DATA GAP WORK PLAN
PROPOSED ON SITE BORING LOCATIONS

WESTERN FORGE & FLANGE
540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

FIGURE
10

401823001-FIG10.dwg, Oct 09, 2012, 9:37am snguyen



REFERENCE: GOOGLE EARTH IMAGERY, 2011.

LEGEND	
DG-3	PROPOSED OFF-SITE BORING LOCATION
	SITE BOUNDARY
	FENCE FOR SOUTHER PACIFIC RAILROAD COMPANY

N

SCALE IN FEET

0 60 120

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

PROJECT NO.	DATE
401823001	10/12

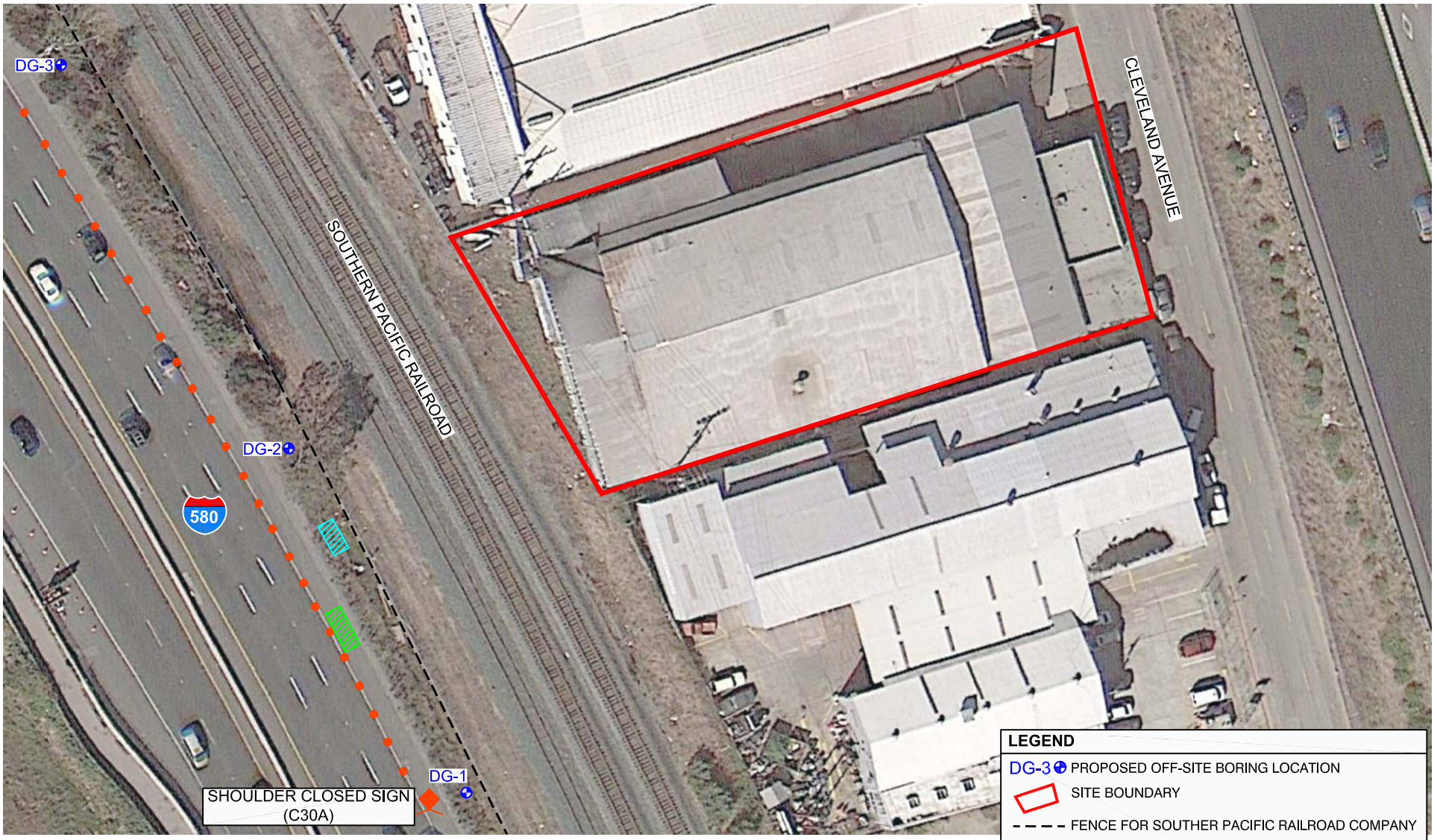
DATA GAP WORK PLAN
PROPOSED OFF SITE BORING LOCATIONS

WESTERN FORGE & FLANGE
540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

FIGURE

11

401823001-FIG11.dwg, Oct 09, 2012, 10:55am, snguyen



REFERENCE: GOOGLE EARTH IMAGERY, 2011.

N

SCALE IN FEET

0 60 120

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	GENERAL TRAFFIC PLAN FOR DATA GAP WORK PLAN OFF SITE BORING LOCATIONS	FIGURE
PROJECT NO. 401823001 / DATE 10/12	WESTERN FORGE & FLANGE 540 CLEVELAND AVENUE ALBANY, CALIFORNIA	12

401823001-FIG12.dwg, Oct 09, 2012, 10:54am,snguyen

APPENDIX A

SITE DOCUMENTS

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
1111 JACKSON STREET, ROOM 6040
OAKLAND 94607

Phone: Area Code 415
464-1255

January 15, 1986
File No. 2199.9227(PCM)

Peter Zaklan, President
Western Forge and Flange Co.
780 Reed Street
Santa Clara, CA 95052

Subject: Status of water quality concerns at Western Forge and Flange's Albany facility

Dear Mr. Zaklan:

The purpose of this letter is to formally state Regional Board staff assessment of the pollution definition and cleanup activities at the subject site.

Brown and Caldwell's May 1985 Correction Documentation Report on the subject site as well as their May 23, 1985 submittal of a supplement to that report summarize cleanup activities at the site and include groundwater monitoring data. Past site operations have resulted in the heavy contamination of soils with metals and oil and grease.

Regional Board staff are satisfied with the soil cleanup activities involving the removal of highly polluted soil according to DOHS specifications. The removal of polluted soil results in the mitigation of a potential longterm source of pollution of surface and groundwater. Staff is also satisfied with the installation of more effective wastewater collection systems at the facility.

The shallow groundwater at the site does contain dissolved metals, including lead, above established drinking water action levels. Oil and grease have also been detected in the groundwater. However, the shallow groundwater in this area is slightly saline, is high in Total Dissolved Solids and is therefore of limited beneficial use. Furthermore, the aquifer is situated in low permeability clayey soils which limit the spread of the pollutants in question in the groundwater. Based on these considerations, Regional Board staff do not believe that a costly groundwater cleanup program is warranted for this site.

In conclusion, Regional Board staff believe that with cleanup of site soils according to DOHS specifications the pollution problem at the subject site will have been adequately mitigated. Based on the information regarding the pollution problem at the subject site available to Regional Board staff, it has been concluded that the site does not pose a significant threat to the beneficial uses of the waters of the State.

In regards to the monitoring wells presently on site, I see no reason to require that they remain accessible for future use and recommend that they be removed from service. Craig Mayfield, (415)443-9300, at the Alameda Flood Control District must be notified to ensure that the wells are properly sealed and abandoned according to Department of Water Resources standards.

Thank you for your cooperation with us in this important matter. If you have any questions, please contact Philip Mellen of our staff at (415)464-1247.

Sincerely,

Roger B. James
Executive Officer

cc. Erwin Koehler, California Department of Health Services
Thomas Kasnick, California Department of Fish and Game
Mark Ransom, Southern Pacific Transportation Company
William Cosden, Alameda County District Attorney

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

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

August 31, 2012

Mr. Walter Pierce
Western Forge & Flange Co.
687 Country Rd 2201
Cleveland, TX 77327
(sent via electronic mail to wpierce@western-forge.com)

Subject: Request for an SCM and a Data Gap Work Plan; Spills, Leaks, Investigations and Cleanup (SLIC) Case No. RO0003009 and Geotracker, Global ID # T10000001598; Western Forge & Flange, 540 Cleveland Ave. Albany, CA 94706

Dear Mr. Pierce:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site including the *Remedial Investigation Report,* dated June 27, 2012. The document was submitted on your behalf by Ninyo & Moore, Inc. Thank you for submitting the report.

The report documented the installation of 28 shallow soil bores to investigate multiple source areas at the site (a minimum of eight to nine are documented). Concentrations up to 6,500 mg/kg TPHho, 4.1 mg/kg arsenic, and 38 mg/kg vanadium were detected in soil; all other metals analytes, and PCBs, were non-detectable at standard reporting limits. Concentrations up to 7,300 µg/l TPHho, 1.7 µg/l benzene, 74 µg/l naphthalene, and 13.0 tert-butanol (TBA) were detected in groundwater. A series of metals were also detected in groundwater over ESLs after field filtering and include arsenic, barium, cobalt, hexavalent chromium (the later potentially partially due to matrix interference), lead, molybdenum, nickel, vanadium, and zinc. Groundwater was generally established to be non-potable with conductivity generally over California recommended conductivity goals; however, was below Basin Plan standards for saltwater (10,000 mg/l or 10 part per thousand, 95% of the time).

Based on the review of the case file ACEH requests that you address the following technical comments and send us the documents requested below.

TECHNICAL COMMENTS

1. **Electronic Report and Data Upload Compliance** – A review of the case file and the State's Geotracker database indicates that the site is not in compliance with previous directive letters. **Compliance is a State requirement**. While a recent telephone conversation with Ninyo and Moore requested uploads and these are reported to have recently been initiated, these are not yet available for review. To preclude future miscommunications ACEH includes this Technical Comment in this letter. Please be aware that California Code of Regulations, Title 23, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1, require that beginning September 1, 2001, all analytical data, including monitoring well samples, submitted in a report to a regulatory agency as part of the UST or LUST program, must be transmitted electronically to the SWRCB GeoTracker system via the internet. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs, including SLIC programs. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites was required in GeoTracker. At present missing data and documents include, but may not be limited to, older reports, older EDF submittals, GEO_MAPS, GEO_WELL data, and all bore logs. **Compliance is required by the State**. Please see Attachment 1 for limited additional details, and the state GeoTracker website for full details.

ACEH requests notification of, and a list of, the documents uploaded to Geotracker. Please upload all submittals to GeoTracker as well as to ACEH's ftp website by the date specified below.

2. **Request for an SCM and Data Gap Work Plan** - In order to define the extent of soil and groundwater contamination (upgradient, lateral, and downgradient in soil and groundwater) at the site ACEH requests the submittal of a Site Conceptual Model (SCM) and a data gap work plan by the date identified below. The SCM is expected to serve to identify data gaps at the site for the associated requested work plan.

   A site conceptual model (SCM) is intended to synthesize all analytical data and evaluates all potential exposure pathways and potential receptors that may exist at the site and vicinity, including identifying or developing site cleanup objectives and goals. At a minimum, the SCM should include:

   (1) Local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.) extent of contamination, direction and rate of groundwater flow, potential preferential pathways, and locations of receptors;

   (2) Geologic cross section maps that illustrate subsurface features, man-made conduits, and lateral and vertical extent of contamination;

   (3) Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor);

   (4) Well logs, boring logs, and well survey maps; and

   (5) Discussion of likely contaminant fate and transport.

   If data gaps (i.e. potential upgradient sources, potential contaminant volatilization to indoor air. or contaminant migration along preferential pathways, etc.) are identified in the SCM, please include a proposed scope of work to address those data gaps in the work plan due by the date specified below.

   Data gaps noted by ACEH include the following; however, are NOT limited to the following observations:

   a. **Resolution of Remedial Goals** – The site is located in a heavy industrial / commercial area between two Interstate Freeways (580 and 80); however, analytical tables provide comparisons to residential soil and groundwater cleanup values. This produces conflicting work scoping issues and goals for the site and requires clarification prior to proceeding with a data gap investigation, and is best done within an SCM and a data gap work plan.

   b. **Delineation of Vertical and Lateral Extent of Soil and Groundwater Contamination** – Analytical data from several soil bores do not define the vertical extent of soil contamination at the site (depending on the remedial goals selected for the site B-8A, B-10, B-12, and B-14). Analytical data from several bores are not laterally constrained by lower analytical data and thus do not define the lateral extent of soil and groundwater contamination at the site (B-8A, B-10, B-23, and B-24). A source for soil contamination in B-7 is unresolved, but may be associated with Pit 2; however, the lack of soil analytical at the groundwater interface in B-20 and B-21 or soil in association with the groundwater interface or groundwater data in B3 renders this Area of Concern undefined. The lack of soil analytical at the groundwater interface in soil bores B-22 and B-23 indicates the delineation of Pit 1 is not complete due to the presence of 320 µg/l TPHho in groundwater collected from bore B-23 (presuming Pit 1 is the source of this hydraulic oil). The Ring Roller Pit also has multiple issues that require resolution.

   c. **Sidewall Confirmation Sampling** – The southeast side wall of Area of Concern 6B was sampled by the previous consultant and yielded 120 mg/kg TPHho. Presuming there was sufficient reason to investigate this area, at present there is no data for the other three sides and the bottom, while soil bore B-15 only has (very low) analytical data collected within the upper 1.0 feet of the surface; however, 520 µg/l TPHho were documented in bore B-15. Area of Concern 107 similarly lacks certain details (eastern sidewall and pit bottom

confirmation samples), and depending on remedial goals may not be defined to the south and is not defined laterally to the southwest, west, north and east.

d. **Hexavalent Chromium** – Although unidentified as such, the source for the hexavalent chromium may potentially be the Ring Roller Pit; however, matrix interference may account for some of the reported concentrations that contribute to this identification. It would appear appropriate to further investigate this contaminant and potential sources at the site. In general this contaminant appears to be predominantly found in the western portion of the site.

e. **Metals Contamination** – A series of metals were detected in groundwater over ESLs after field filtering and include arsenic, barium, cobalt, hexavalent chromium, lead, molybdenum, nickel, vanadium, and zinc. With the exception of arsenic and vanadium, concentrations in soil were not above ESLs, and it was surmised that metal concentrations were likely to be related not to soil contaminants but to pre-1985 discharges of metals impacted process cooling water and storm water to the site storm drain located at the western end of the site (not located). While these contaminants may (or may not) be from former discharges, one or more of the metals contaminants were present in groundwater collected from all soil bores across the western investigated portion of the site. ACEH notes that the sample with the highest percentage of detections exceeding ESLs (B-18) was in the southern-most portion of the site and presumes this location is away from the unlocated storm drain discharge location. Site specific background metals contamination in soil or in groundwater has also not been established or investigated. As a consequence additional investigative effort appears appropriate to establish appropriate remedial goals prior to identification of a remediation technology.

3. **Appropriate Analytical Suite** – The nearly complete lack of detection of volatile organic compounds in groundwater appears to indicate that these analytes can be eliminated from future analytical testing. Conversely because of the use of the hydraulic oil as quenching oil, inclusion of semi-volatile compounds in the analytical suite appears appropriate (by EPA 8270). Naphthalene, detected in one bore location over ESLs, would be included in this analytical suite.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **September 28, 2012** – Geotracker Submittal Notification
  File to be named: RO3009_CORRES_L_yyyy-mm-dd
- **October 26, 2012** – SCM and Data Gap Work Plan
  File to be named: RO3009_SCM_WP_R_yyyy-mm-dd
- **Sixty Days After SCM and Data Gap Work Plan Approval** – Site Investigation Report
  File to be named: RO3009_SWI_R_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm.

Should you have any questions, please contact me at (510) 567--6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email, c=US
Date: 2012.08.31 10:44:41 -07'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

cc: Kris Larson, Ninyo & Moore, 1956 Webster Street, Suite 400, Oakland, CA 94612; (sent via electronic mail to klarson@ninyoandmoore.com)

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

Attachment 1

Responsible Party(ies) Legal Requirements/Obligations

REPORT/DATA REQUESTS

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. Please visit the SWRCB website for more information on these requirements. (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/)

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 7835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, late reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**REVISION DATE:** July 25, 2012
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (petroleum UST and SCP) require submission of all reports in electronic form to the county's FTP site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single Portable Document Format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

APPENDIX B

2012 REMEDIAL INVESTIGATION REPORT BORING LOGS

BORING LOG EXPLANATION SHEET

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	
0	■							Bulk sample.
		■						Modified split-barrel drive sampler.
		⊠						No recovery with modified split-barrel drive sampler.
		▥						Sample retained by others.
		◪						Standard Penetration Test (SPT).
5		◫						No recovery with a SPT.
		▯	XX/XX					Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.
		◪						No recovery with Shelby tube sampler.
		▥						Continuous Push Sample.
				⚲				Seepage.
10				▽				Groundwater encountered during drilling.
				▼				Groundwater measured after drilling.
						▦	SM	ALLUVIUM: Solid line denotes unit change.
								Dashed line denotes material change.
								Attitudes: Strike/Dip b: Bedding c: Contact j: Joint f: Fracture F: Fault cs: Clay Seam s: Shear bss: Basal Slide Surface sf: Shear Fracture sz: Shear Zone sbs: Sheared Bedding Surface
15								
								The total depth line is a solid line that is drawn at the bottom of the boring.
20								

Ninyo & Moore

BORING LOG

EXPLANATION OF BORING LOG SYMBOLS

PROJECT NO.	DATE	FIGURE
	Rev. 01/03	

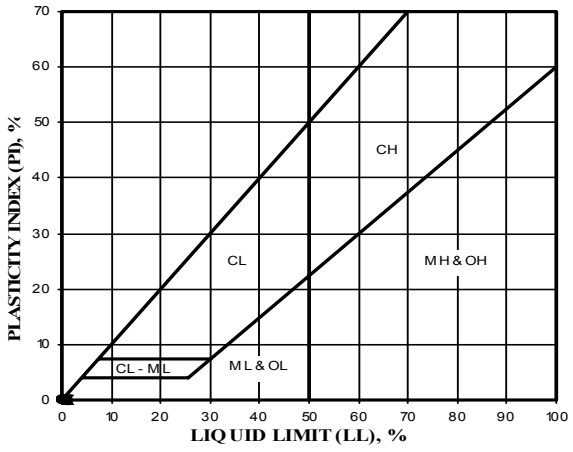
U.S.C.S. METHOD OF SOIL CLASSIFICATION

MAJOR DIVISIONS		SYMBOL	TYPICAL NAMES
COARSE-GRAINED SOILS (More than 1/2 of soil >No. 200 sieve size)	**GRAVELS (More than 1/2 of coarse fraction > No. 4 sieve size)**	GW	Well graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS (More than 1/2 of coarse fraction <No. 4 sieve size)	SW	Well graded sands or gravelly sands, little or no fines
		SP	Poorly graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (More than 1/2 of soil <No. 200 sieve size)	**SILTS & CLAYS Liquid Limit <50**	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean
		OL	Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS Liquid Limit >50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS		Pt	Peat and other highly organic soils

GRAIN SIZE CHART

CLASSIFICATION	RANGE OF GRAIN SIZE	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL	3" to No. 4	76.2 to 4.76
Coarse	3" to 3/4"	76.2 to 19.1
Fine	3/4" to No. 4	19.1 to 4.76
SAND	No. 4 to No. 200	4.76 to 0.075
Coarse	No. 4 to No. 10	4.76 to 2.00
Medium	No. 10 to No. 40	2.00 to 0.420
Fine	No. 40 to No. 200	0.420 to 0.075
SILT & CLAY	Below No. 200	Below 0.075

PLASTICITY CHART



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U.S.C.S. METHOD OF SOIL CLASSIFICATION

DATE DRILLED 4-24-12 BORING NO. B-1

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		SM	ALLUVIUM: Olive brown (2.5Y 4/4), dry, firm, silty SAND.
		X				0.0			
		X				0.0			Greenish black (GLEY1 2.5/10GY), moist, silty SAND.
				▽					Wet.
5		X				0.0			
								SP	Greenish black (GLEY1 2.5/10GY), wet, loose, poorly-graded SAND.
10									Final Depth = approximately 10 feet bgs.
									Groundwater encountered at approximately 4 feet bgs.
									Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-24-12.
15									
20									

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-24-12 BORING NO. B-2

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ALLUVIUM: Greenish gray (GLEY1 5/10GY), moist, soft, silty SAND.
					0.0			
					0.0			
					0.0			
5								
							ML	Greenish gray (GLEY1 5/10GY), wet, soft, SILT. Some sand.
10								Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 6 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-24-12.
15								
20								

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-24-12 BORING NO. B-3

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								CONCRETE
	X				0.0		ML	ALLUVIUM: Greenish black (GLEY1 2.5/10GY), stiff, moist, SILT; trace gravel.
	X				0.0			
							SM	Greenish gray (GLEY1 5/10GY), very stiff, moist, silty SAND.
5	X		▽		0.0		CL	Black (GLEY1 2.5/N), soft, moist, CLAY.
								Wet.
							ML	Black (GLEY1 2.5/N), very soft, wet, SILT.
								Trace SAND.
10								Final Depth = approximately 10 feet bgs.
								Groundwater encountered at approximately 5.5 feet bgs.
								Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-24-12.
15								
20								

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-24-12 BORING NO. B-4

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		ML	ALLUVIUM: Greenish black (GLEY 2.5/10GY), moist, stiff, clayey SILT.
		X				0.0			
		X				0.0			Greenish gray (GLEY 5/10GY).
5		X		▽		0.0			Greenish black (GLEY 2.5/10GY), wet, very soft.
									Black (GLEY 2.5/N).
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-24-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-24-12 BORING NO. B-5

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		SM	ALLUVIUM: Greenish black (GLEY1 2.5/10GY), moist, firm, silty SAND.
		X				0.0			
		X				0.0			
5		X		▽		0.0			Wet, soft.
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-24-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-24-12 BORING NO. B-6

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
	X					0.0		ML	ALLUVIUM: Very dark gray (5Y 3/1), moist, firm, SILT.
	X					0.0			
	X					0.0			Dark olive gray (5Y 3/2).
				▽					Soft, wet.
5	X					0.0			Very dark gray (5Y 3/1).
									Very soft.
10									Grayish green (GLEY1 4/2).
									Final Depth = approximately 10 feet bgs.
									Groundwater encountered at approximately 4 feet bgs.
									Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-24-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-7

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								CONCRETE
	Driven				0.0		CL	ALLUVIUM: Greenish gray (GLEY 5/10GY), moist, firm, CLAY.
	Driven				0.0			
	Driven				0.0			
							ML	Greenish black (GLEY 2.5/10GY), moist, firm, SILT.
5	Driven		▽		0.0			Wet, soft.
							SM	Greenish black (GLEY 2.5/10GY), wet, soft, silty SAND.
								Greenish gray (GLEY 5/10GY).
10								Final Depth = approximately 10 feet bgs.
								Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15								
20								

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-8A

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
	X					0.0		ML	ALLUVIUM: Very dark greenish gray (GLEY1 3/5GY), moist, soft, SILT.
	X					0.0			
		X				0.0			
5				▽		0.0			Wet.
						0.0			
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-26-12 BORING NO. B-9

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
	X			▽		0.0		SM	ALLUVIUM: Olive brown (2.5Y 4/4), wet, very soft, silty SAND.
	X					0.0			
									Greenish black (GLEY1 2.5/10GY).
5		X				0.0			
									Final Depth = approximately 5.5 feet bgs. Groundwater encountered at approximately 1 foot bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-26-12.
10									
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-10

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								CONCRETE
					0.0		ML	ALLUVIUM: Greenish black (GLEY 2.5/10GY), moist, firm, SILT.
					0.0			
					0.0			
							SM	Greenish gray (GLEY 5/10GY), moist, soft, silty SAND.
5			▽		0.0			Wet, very soft.
								Greenish black (GLEY1 5/10GY).
10								Final Depth = approximately 10 feet bgs.
								Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15								
20								

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-11

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								CONCRETE
	X				0.0		SM	ALLUVIUM: Olive brown (2.5Y 4/4), damp, firm, silty SAND.
	X				0.0			
	X				0.0			Greenish black (GLEY 2.5/10GY), moist, soft, silty SAND.
5	X		▽		0.0			Wet.
10								Greenish gray (GLEY1 5/10GY).
								Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15								
20								

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-12

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		SM	ALLUVIUM: Olive brown (2.5Y 4/4), damp, firm, silty SAND.
		X				0.0			
		X				0.0			Greenish black (GLEY1 2.5/10GY), moist, soft.
5		X		▽		0.0			Wet.
									Greenish gray (GLEY1 5/10GY).
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-14

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								ML	ALLUVIUM: Greenish black (GLEY1 2.5/10GY), dry, stiff, SILT.
		X				0.0			
		X				0.0			
		X				0.0			Moist.
5		X		▽		0.0			Wet.
									Yellowish brown (10YR 5/6).
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-15

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		SM	ALLUVIUM: Greenish black (GLEY1 2.5/10GY), moist firm, silty SAND.
		X				0.0			
		X				0.0			
		X				0.0			
5				▽		0.0			Wet.
									Olive brown (2.5Y 4/4).
10									Final Depth = approximately 10 feet bgs.
									Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-16

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		SM	ALLUVIUM: Greenish black (GLEY1 2.5/10GY), moist, firm, silty SAND.
		X				0.0			
		X				0.0			
5				▽					Wet.
		X				0.0			
									Olive brown (2.5Y 4/4).
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-17

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		SM	ALLUVIUM: Greenish black (GLEY1 2.5/10GY), moist, firm, silty SAND.
		X				0.0			
5				▽		0.0			Wet, soft.
									Olive brown (2.5Y 4/4), firm.
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-18

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								CONCRETE:
	X				0.0		ML	ALLUVIUM: Dark brown (7.5YR 3/2), moist, firm, SILT.
	X				0.0			
	X				0.0			Greenish gray (GLEY1 5/10GY).
			▽					Greenish black (GLEY1 2.5/10GY). Wet, soft.
5	X				0.0		MH	Black (GLEY1 2.5/N), wet, very soft, elastic SILT; some clay.
							ML	Greenish gray (GLEY1 2.5/10GY), wet, soft, clayey SILT.
10								Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 4 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15								
20								

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-25-12 BORING NO. B-19

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		SM	ALLUVIUM: Greenish gray (GLEY1 5/10GY), damp, soft, silty SAND.
		X				0.0			
		X				0.0			Wet.
									Greenish black (GLEY1 2.5/10GY), moist.
5		X		▽		0.0			Black (GLEY1 2.5/N), wet.
									Greenish gray (GLEY1 5/10GY).
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5.5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-25-12.
15									
20									

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BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-26-12 BORING NO. B-20

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		SM	ALLUVIUM: Greenish gray (GLEY1 5/10GY), moist, soft, silty SAND.
		X				0.0			
		X				0.0			
		X				0.0			Greenish black (GLEY1 2.5/10GY).
5		X		▽		0.0			Black (GLEY1 2.5/N), wet, very soft.
									Greenish gray (GLEY1 5/10GY).
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-26-12.
15									
20									

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-24-12 BORING NO. B-21

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								CONCRETE
	X				0.0		GW	FILL: Greenish gray (GLEY1 5/10GY), damp, loose, well-graded GRAVEL.
	X				0.0			
	X				0.0			
							SM	ALLUVIUM: Greenish gray (GLEY1 5/10GY), damp, firm, silty SAND.
5	X				0.0		CL	Greenish black (GLEY1 2.5/10GY), moist, soft, CLAY.
			▽		0.0		SM	Greenish black (GLEY1 2.5/10GY), wet, soft, silty SAND.
10								Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 6 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-24-12.
15								
20								

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-24-12 BORING NO. B-22

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		GW	FILL: Greenish gray (GLEY1 5/10GY), damp, loose, well-graded GRAVEL.
		X				0.0			
		X				0.0		SM	ALLUVIUM: Olive brown (2.5Y 4/4), moist, firm, silty SAND.
		X				0.0			
						0.0			
5		X		▽		0.0			Wet, soft.
									Greenish gray (GLEY1 5/10GY), moist, firm.
10		X				0.0			Final Depth = approximately 10 feet bgs.
									Groundwater encountered at approximately 5 feet bgs.
									Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-24-12.
15									
20									

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-26-12 BORING NO. B-23

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE
		X				0.0		SM	ALLUVIUM: Olive brown (2.5Y 4/4), moist, soft, silty SAND.
		X				0.0			Greenish black (GLEY1 2.5/10GY).
5				▽		0.0			Very soft. Wet.
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-26-12.
15									
20									

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-26-12 BORING NO. B-24

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								GW	FILL: Greenish black (2.5Y 10GY), wet, loose, silty GRAVEL.
		X				0.0		SM	ALLUVIUM: Greenish black (GLEY1 2.5/10GY), moist, soft, silty SAND.
		X				0.0			
		X				0.0			
				▽		0.0			Wet.
5									
10									Final Depth = approximately 10 feet bgs. Groundwater encountered at approximately 4 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-26-12.
15									
20									

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-26-12 BORING NO. B-25

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0				▽				SM	ALLUVIUM: Olive brown (2.5Y 4/4), wet, soft, silty SAND.
		X				0.0			
		X				0.0			
									Greenish black (GLEY1 2.5/10GY).
		X				0.0			
5									
									Final Depth = approximately 6 feet bgs.
									Groundwater encountered at 0.5 feet bgs.
									Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-26-12.
10									
15									
20									

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-26-12 BORING NO. B-26

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0				▽		0.0		SM	ALLUVIUM: Olive brown (2.5Y 4/4), wet, soft, silty SAND.
						0.0			
5						0.0			Greenish black (GLEY1 2.5/10GY).
10									Final Depth = 9 feet bgs. Groundwater encountered at 0.5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-26-12.
15									
20									

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-26-12 BORING NO. B-27

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								SM	ALLUVIUM: Olive brown (2.5Y 4/4), moist, soft, silty SAND.
		X				0.0			
		X				0.0			
		X				0.0			
				▽		0.0			Greenish black (GLEY1 2.5/10GY), wet, very soft.
5									
									Final Depth = approximately 6 feet bgs. Groundwater encountered at approximately 4 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-26-12.
10									
15									
20									

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

DATE DRILLED 4-26-12 BORING NO. B-28

GROUND ELEVATION N/A SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY MAT LOGGED BY JJW REVIEWED BY KML

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ALLUVIUM: Greenish black (GLEY1 2.5/10GY), moist, soft, silty SAND.
					0.0			
					0.0			
					0.0			
5			▽		0.0			Wet.
								Final Depth = approximately 6 feet bgs. Groundwater encountered at approximately 5 feet bgs. Tremie grouted with Portland Cement to 1 feet bgs. Concrete placed from 1 feet bgs to original grade on 4-26-12.
10								
15								
20								

Ninyo & Moore

BORING LOG

WESTERN FORGE & FLANGE - 540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
401823001	06/12	

APPENDIX C

UTILITY MAPS

SUBDIV. TITLE _____ NO. _____ WORK ORDER 39357

AREA ALBANY 623 MAP NO. 1476 B 512

PRESSURE ZONE CENTRAL (GOA) REFERENCE 93-C MC-62

JUSTIFICATION Replacement (Custom Rolled EST. 8631 MISC. AG. 64-8

R/W Vacation (Corrugated Metals Co.) 95451

RECOMMENDED BY R. J. Ruppel

APPROVED BY Bradbury

CORROSION CHK'D BY G. Dowd

39357

172'-8" ASB. CEM.

42' R/W #1062

14' to be vacated

CLEVELAND AVE

28'

W.S.

9.05'

16'

CURB

CURB

EASTSHORE FREEWAY

39357

1+75.7 4" Riser

1+73.9 4" Gate C=45"
M.R.S.

1+72.1 8"x4" Reducer S.S.

1+72.0 8" Sleeve, End 8" A.C.
C=42"

1+65.8 Conc. Anchor

0+28 W/L CLEVELAND AVE.

0+13.5 12" R.C.P. C=29"

8" A.C., C=45"

0+01.6 8" Topping Gate C=34" 15'
M: 44°, 0: Rt, T: 27

0+00 8" Split Tee C=34"
Conn. to exist. 9.05" W.S.

- 0+16 E/Curb
CLEVELAND AVE.

BARE

PIPE STA.	SUR. STA.
0+09.3	0+00
0+24.4	0+15
0+59.4	0+50
1+09.3	1+00
1+40.1	1+30.7
1+74.4	1+65

AS BUILT

STARTED 5 Oct 64 IN SERVICE 9 Oct 64

COMPLETED 7 Oct 64

RECORDED W. Fischer APPROVED N. Parrimon

REVISED 28 Oct 64 BY R. F. Enos

MAPPED 100' | RFE

SER. IMPROV. #6658

SCALE 1" = 40'

DATE 24 Aug 64

PAVING A.C.

JOINTS 3-8" lead — 2-4" lead

MAKE OF PIPE Century Fluid Tite

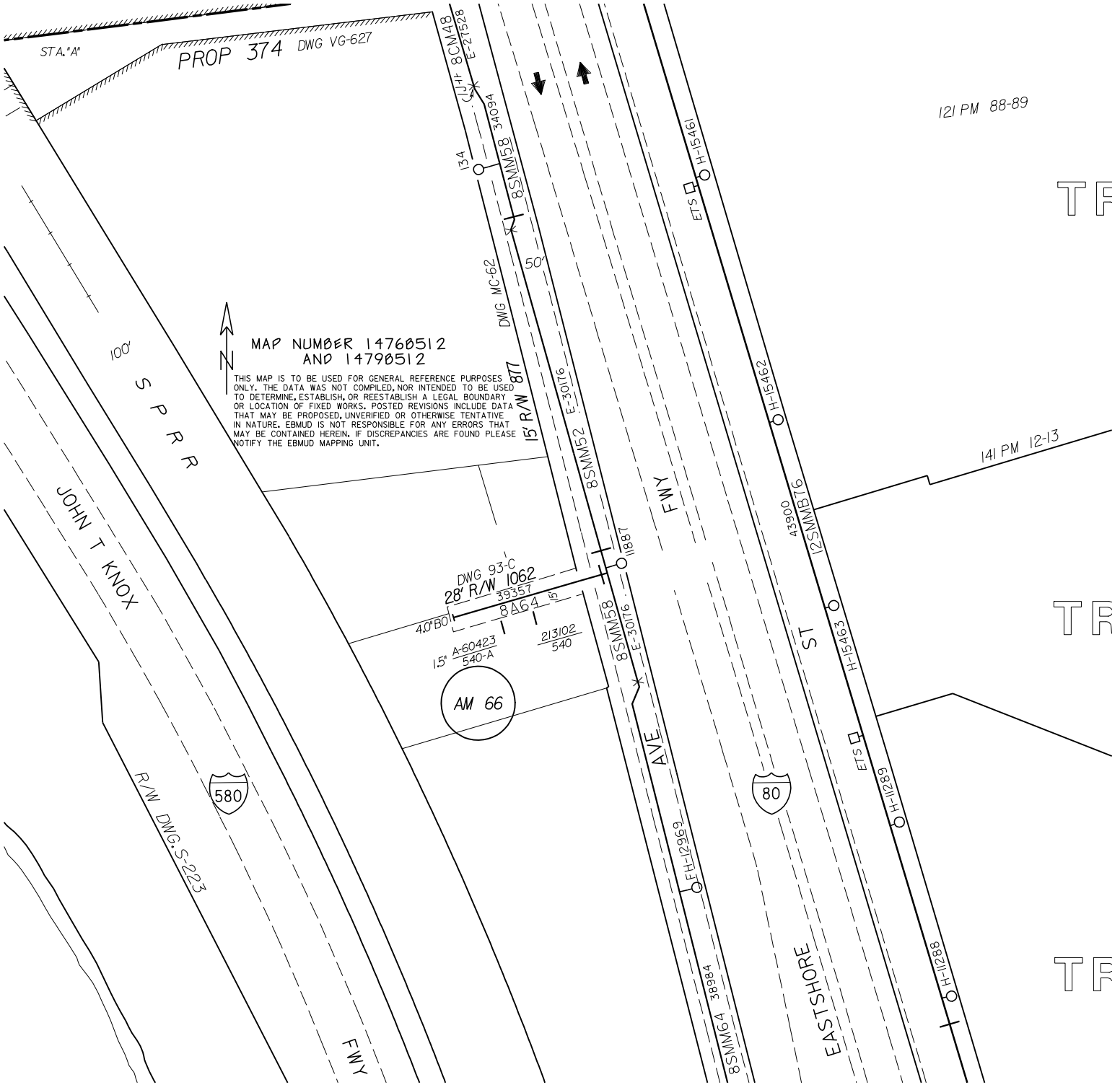
CONSTRUCTION BY DISTRICT FORCES

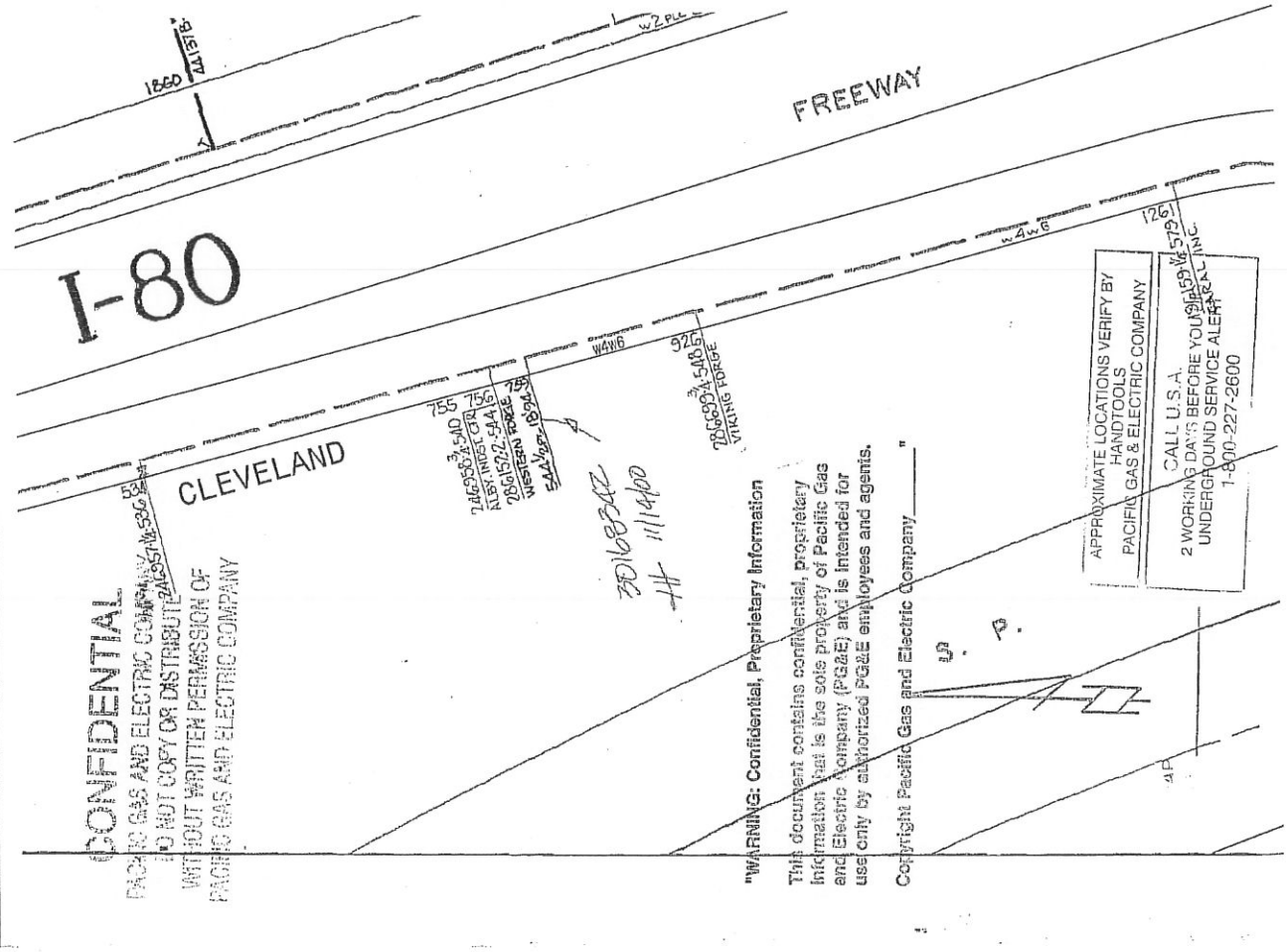
CONTRACT NO. _____

MAPPED	YARD	WALL	200	400	TAP

28 Oct 64
Enos

FORM E-85


STA. "A"
PROP 374 DWG VG-627
8CM48
E-21528
134
8SMM58
34094
DWG MC-62
50'
MAP NUMBER 14760512
AND 14790512
THIS MAP IS TO BE USED FOR GENERAL REFERENCE PURPOSES ONLY. THE DATA WAS NOT COMPILED, NOR INTENDED TO BE USED TO DETERMINE, ESTABLISH, OR REESTABLISH A LEGAL BOUNDARY OR LOCATION OF FIXED WORKS. POSTED REVISIONS INCLUDE DATA THAT MAY BE PROPOSED, UNVERIFIED OR OTHERWISE TENTATIVE IN NATURE. EBMUD IS NOT RESPONSIBLE FOR ANY ERRORS THAT MAY BE CONTAINED HEREIN. IF DISCREPANCIES ARE FOUND PLEASE NOTIFY THE EBMUD MAPPING UNIT.
100'
S P R R
15' R/W 877
8SMM52
E-30176
11887
DWG 93-C
28' R/W 1062
39357
8A64
4.0" BO
1.5"
A-60423
540-A
213102
540
AM 66
8SMM58
E-30176
JOHN T KNOX
R/W DWG. S-223
580
FWY
AVE
FH-12969
8SMM64
38984
EASTSHORE
FWY
80
ETS
H-15461
H-15462
43900
12SMMB76
H-15463
ETS
H-11286
H-11288
121 PM 88-89
141 PM 12-13
TF
TF
TF


I-80
FREEWAY
CLEVELAND
W4W6
APPROXIMATE LOCATIONS VERIFY BY HANDTOOLS
PACIFIC GAS & ELECTRIC COMPANY
CALL U.S.A.
2 WORKING DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
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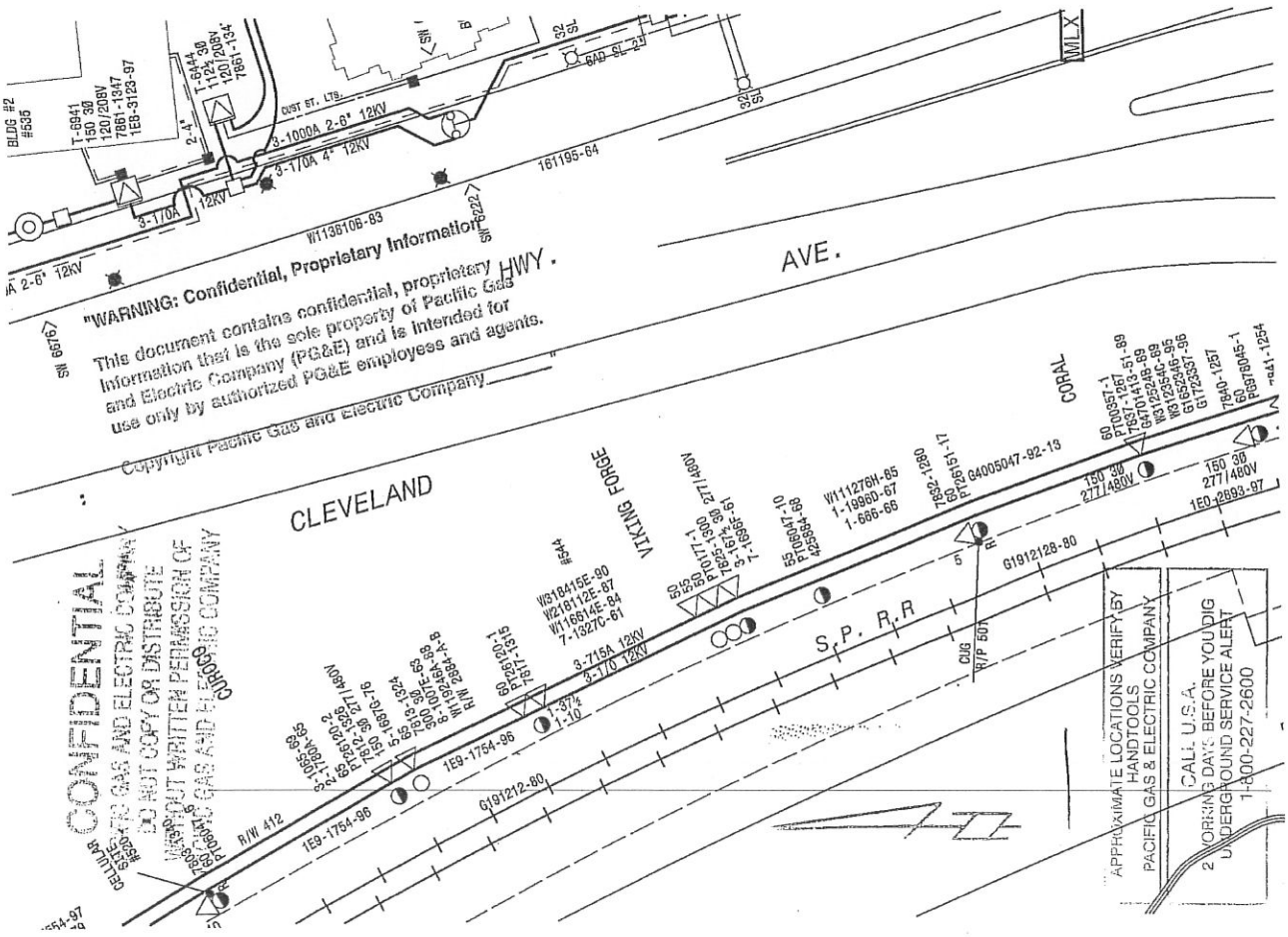
CLEVELAND
AVE.
HWY.
S.P. R.R
VIKING FORGE
CORAL
MLX
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SYMBOLS FOR P.G.&E. GAS MAPS

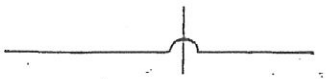
UNLESS OTHERWISE NOTED THE SCALE ON A GAS PLAT WILL ALWAYS BE 1" = 100'

TRANSMISSION GAS LINE (TRANSMISSION PRESS. 61 PSIG AND UP)

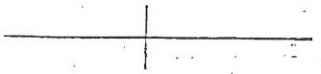
DISTRIBUTION GAS MAIN (HIGH PRESS. 26-60 PSIG)

DISTRIBUTION GAS MAIN (SEMI-HIGH PRESS. 5-25 PSIG)

DISTRIBUTION GAS MAIN (LOW PRESS. 10" WATER COLUMN)

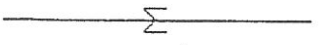


GAS MAINS NOT TIED (USUALLY IN INTERSECTIONS)

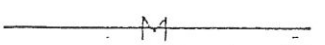


GAS MAINS TIED (USUALLY IN INTERSECTIONS)

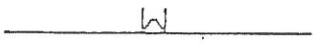
GAS MAIN (DEAD ENDED)



M2 PRESSURE CONTROL FITTING



PRESSURE CONTROL FITTING (BOTTOM TAP)

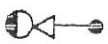


PRESSURE CONTROL FITTING (SIDE TAP)

GAS MAIN VALVE

ELECTROLYSIS TEST STATION (CATHODIC PROTECTION)

ANODE (CATHODIC PROTECTION)



RECTIFIER, POLE MOUNTED W/ANODE(S) (CATHODIC PROTECTION)

DISTRICT REGULATOR STATION

GM1234567-95

GM NUMBER-YEAR INSTALLED

W2W2

WELDED/SIZE/WRAPPED/DISTANCE OUT FROM PROPERTY LINE

1 1/4"PL(2)2

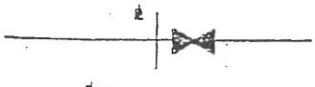
1 1/4" PLASTIC/ INSERTED IN 2" STEEL/ 2'OUT FROM PROPERTY LINE

JT

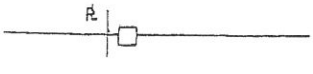
JOINT TRENCH

1/2"PL 35 95

GAS SERVICE/ 1/2" PLASTIC/ 35' LONG/ INSTALLED IN 1995



GAS SERVICE WITH CURB VALVE



GAS SERVICE WITH CURB METER

SYMBOLS FOR P.G.&E. ELECTRIC MAPS

⊗	P.G.&E. PHONE LINE POLE.
○ 45	SOLELY OWNED WOOD POLE WITH LENGTH IN FEET.
◑ 45 PT-6200-1	JOINT WOOD POLE WITH LENGTH IN FEET AND — JOINT POLE APPLICATION NUMBER.
● C	CUSTOMER OWNED POLE.
○ R	POLE WITH RISER TO UNDERGROUND.
○) PT-6200-A	POLE WITH JOINT ANCHOR & JOINT APP. NUMBER.
○▷ 25	POLE WITH OVERHEAD TRANSFORMER, SIZED AS NOTED.
○⊣	POLE WITH STREET LIGHT.
32 SL ●⊣	CUSTOMER OWNED STREET LIGHT WITH POLE SIZE.
◐ 20-0123-1	POLE WITH CONTACT & AGREEMENT NUMBER.
4W 4KV	4 WIRE 4000 VOLT OVERHEAD PRIMARY LINE &.....
	3 WIRE no.6 ALUMINUM SECONDARY 1Ø LINE.
3W 12KV 4-6A	3 WIRE 12,000 VOLT OVERHEAD PRIMARY LINE &.....
	4 WIRE no.6 ALUMINUM SECONDARY 3Ø LINE. open secondary
UG/ CUG	UNDERGROUND / CUSTOMER UNDERGROUND.
R UG	UNDERGROUND LINES.
2W 12KV UG 2-350 1-4/0	2 WIRE 12,000 VOLT UNDERGROUND PRIMARY &.....
	350 ALUM. TRIPLEX UNDERGROUND SECONDARY & SERVICES.
△△△	3 Ø BANK OF TRANSFORMERS,
◯△	SUBSURFACE TRANSFORMER.
▣	PADMOUNTED TRANSFORMER.
□	PRIMARY SPLICEBOX / EQUIPMENT ENCLOSURE.
▫	SECONDARY SPLICEBOX.
	PRIMARY & SECONDARY WIRE SIZE CHANGE.
⊠ 80	LATTICE STEEL POLE, HEIGHT NOTED.
⊠ 25/101	TRANSMISSION TOWER WITH MILE & TOWER NUMBER.
⊙ 1/10 75	TRANSMISSION POLE " " " POLE " HEIGHT NOTED.
2-4" SPARE	EMPTY DUCT, SIZE & QUANTITY AS NOTED.

APPENDIX D

SITE SPECIFIC HEALTH AND SAFETY PLAN

NISITE SPECIFIC HEALTH AND SAFETY PLAN
WESTERN FORGE AND FLANGE
540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

PREPARED FOR:
Mr. Walt Pierce
Western Forge & Flange
P.O. Box 1788
Cleveland, Texas 77328

PREPARED BY:
Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
1956 Webster Street, Suite 400
Oakland, California 94610

October 11, 2012
Project No. 401823001

October 11 2012
Project No. 401823001

Mr. Walt Pierce
Western Forge & Flange
P.O. Box 1788
Cleveland, Texas 77328

Subject: Site Specific Health and Safety Plan
Western Forge & Flange
540 Cleveland Avenue
Albany, California

Dear Mr. Pierce:

This site specific Health and Safety Plan (SSHSP) has been prepared to address potential safety and health hazards during the planned remedial investigation of Western Forge & Flange. The site is located at 540 Cleveland Avenue in the City of Albany, California.

This SSHSP was prepared in accordance with the Federal Occupational Safety and Health Administration Hazardous Waste Operations and Emergency Response Standard (29 Code of Federal Regulations FR 1910.120) and California Title 8 California Code of Regulations Section 5192.

We appreciate the opportunity to be of service on this important project.

Respectfully submitted,
NINYO & MOORE

Melissa Terry
Senior Staff Scientist

Stephen Waide CIH, CSP
Principal Environmental Scientist

MAT/SW/cab

Distribution: (3) Addressee (2 hard copy, and via e-mail)

TABLE OF CONTENTS

Tables

Figures

Appendices

1. INTRODUCTION

This Site Specific Health and Safety Plan (SSHSP) provides policies, information, requirements, and guidelines regarding procedures to be followed by Ninyo & Moore personnel participating in remedial investigation activities associated with the Western Forge & Flange facility located at 540 Cleveland Avenue in the City of Albany, California. This SSHSP was prepared in accordance with the Federal Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard (29 Code of Federal Regulations [CFR] 1910.120) and California Title 8 California Code of Regulations (CCR) Section 5192.

Previous subsurface investigations at the site indicate that Total Petroleum Hydrocarbons as hydraulic oil (TPHho) and metals have impacted soil, and that TPHho has also impacted groundwater. These compounds are the current known Constituents of Concern (COC) for the site.

2. KEY PERSONNEL AND RESPONSIBILITIES

This section describes key personnel and their responsibilities. Job titles and applicable contact information is provided in the following table.

Table 1 – Title and Contact Information

Title	Name	Daytime	Cell Phone
Drilling Subcontractor	PeneCore Drilling Co.	530-661-3600	530-681-3198
Ninyo & Moore Site Health and Safety Officer (SHSO)	Melissa Terry	510-633-5640	510-455-1087
Ninyo & Moore Project Manager	Melissa Terry	510-633-5640	510-455-1087
Ninyo & Moore Corporate Safety and Health Manager	Steve Waide	858-576-1000 x1282	858-449-8619

2.1. Site Health and Safety Officer Field Responsibilities

The Ninyo & Moore SHSO responsibility will be to inform the subcontractor(s) and other field personnel of chemical hazards as he/she becomes aware of them. The subcontractor is responsible for evaluating and mitigating the physical hazards.

Additional SHSO responsibilities include:

- ensuring that Ninyo & Moore personnel complete the SSHSP Acknowledgment Form (Appendix A) and attend daily field safety ("tailgate") meetings;
- updating equipment or procedures to be used on site based on new information gathered during site work;
- immediately notifying the Project Manager of any changing conditions that require changes in personnel, personal protective equipment (PPE), procedures, etc.;
- conducting accurate and consistent calibration of all testing, sampling, monitoring, etc. equipment;
- collecting required documentation, training records, etc.;
- performing monitoring, excavation soil sampling, and stockpile soil sampling;
- inspecting personal protective equipment before use;
- evaluating the effectiveness of decontamination procedures for personnel, protective equipment, sampling equipment and containers, and heavy equipment and vehicles;
- enforcing the "buddy system" as appropriate for site activities;
- monitoring any exposures or environmental conditions in accordance with this plan and documenting these conditions or exposures or their non-existence;
- directing Ninyo & Moore field personnel on upgrading or downgrading of PPE, based on monitoring results; and,
- ceasing operations that threaten the health and safety of the site personnel or surrounding populace.

2.2. Subcontractor Responsibilities

The subcontractor will be responsible for their own safety and health supervision and plan. They shall ensure that all personnel, including subcontractor personnel, will have completed comprehensive health and safety training, which meets the requirements of Title 29 CFR Part 1910.120 (29 CFR 1910.120) and CCR Title 8, Section 5192.

3. EMPLOYEE TRAINING ASSIGNMENTS

3.1. General Training Requirements

A matrix summarizing training requirements for Ninyo & Moore personnel, excavation subcontractor personnel, visitors, and vendors is presented in Table 2.

Category	40-Hour Basic	8-Hour Refresher	8-Hour Supervisor	Excavation Competent Person	First Aid/CPR
Ninyo & Moore SHSO	X	X			
Ninyo & Moore Staff	X	X			
Excavation Subcontractor	X	X			
Visitor	X[1]	X[1]			
Vendor	X[1]	X[1]			

[1] Not required if escorted

4. HAZARD ANALYSIS

The potential hazards to personnel working at the site include, but are not limited to the following: exposure to elevated concentrations of heavy metals, physical hazards of working with heavy equipment, noise, explosive atmospheres, heat stress, sunburn, excavation hazards including cave-ins, buried objects and potentially hazardous materials such as, burned wastes or buried pipes, etc. Each potential hazard is described below in more detail, including control measures and level of PPE to be used.

4.1. Physical Hazards

Accidents involving physical hazards can directly injure field personnel and can create additional hazards such as increased exposure to chemicals due to damaged protective equipment. One of the most common potential hazards is improper bending and lifting which may result in back injuries. Ninyo & Moore field personnel are aware of such hazards and will implement proper lifting techniques when handling equipment and material. Field personnel should maintain awareness of potential safety hazards at each specific activity lo-

cation and should immediately inform the Contractor's Site Superintendent of any new hazards so that corrective measures can be taken.

4.1.1. Excavation

Before the start of excavation activities, a "competent person" in accordance with 29 CFR 1926.650 (a person who has the knowledge and training to identify hazards and the authority to correct the hazards) will ensure that the following activities are completed:

- Contact utility companies and the property owner to ensure underground installations and utilities are located. Make sure underground installations and utilities are located, protected, supported or removed as necessary to safeguard employees.
- Remove or secure any surface obstacles, such as trees, rocks and sidewalks that may create a hazard.
- If personnel are to enter excavations deeper than 5 feet, classify the type of soil and rock deposits at the site. One visual and at least one analytical classification should be made.

The following safety rules must be implemented during excavation activities when personnel are to enter the excavation:

- In excavations greater than four feet, and where hazardous atmospheres exist, or could reasonably be expected to exist, the competent person will test the air before entering the excavation. The competent person will use a combustible gas indicator (CGI) to test for the presence of oxygen, carbon monoxide, hydrogen sulfide, and explosive concentrations of gases or vapors.
- Keep materials or equipment that might fall or roll into an excavation at least two feet from the edge.
- Adequate protection from falling rock, soil or other materials and equipment will be provided in the form of benching, sloping or shoring.
- Do not work in excavations where water has accumulated, or is accumulating, unless adequate precautions have been taken.
- Do not cross over an excavation unless walkways are provided. Guardrails must be provided if the walkway is six feet or more above the bottom of the excavation.

4.1.2. Vehicle and Heavy Equipment Operation

Vehicles should only be operated in authorized areas. When moving equipment, caution should be exercised in order not to damage equipment or cause injury. When backing up heavy vehicles (larger than pickup trucks), passenger vehicles, or pickups with obscured rear vision, a guide should be used to direct the vehicle. Extra caution should be exercised during vehicle operation on dike roads, industrial areas, and other close spaces. Personnel directing traffic should wear orange vests. Each vehicle should be equipped with a minimum of one fire extinguisher rated 3A:40B:40C.

4.1.3. Slip, Trip and Fall

During field activities, work could occur in areas where hoses and other equipment at ground level present possible slip, trip and fall hazards. In addition, wet weather conditions may also pose such hazards when working outdoors. The work locations will be kept as tidy as possible and free of debris on the ground. Tools and materials should not be left randomly on surfaces where not in direct use. Foot traffic should avoid areas where materials are stored on the ground. Any hoses and cables should be grouped, routed to minimize hazards, and covered with a ramp or bridge or clearly marked with hazard tape or flags if such material will remain in place for more than one shift. Personnel should wear appropriate footwear for site conditions and walk carefully.

4.1.4. Manual Lifting Techniques

During any manual material-handling tasks, personnel will be trained to lift with the force of the load suspended on their legs and not on their backs. An adequate number of personnel or an appropriate mechanical device must be used to safely lift or handle heavy equipment. When heavy objects must be lifted manually, workers should keep the load close to the body and avoid any twisting or turning motions to minimize stress on the lower back. A lifting orientation and specific back stretching and warm-up exercises will help minimize the potential for back injuries. Use of these exercises by all field personnel at the start of each shift should be encouraged.

4.1.5. Noise

Noise is a potential hazard in areas where heavy equipment is operated. Relatively high noise levels are expected at the site. Exposure to elevated noise levels can lead to temporary or permanent hearing loss and can also cause muscle tension and irritability. The SHSO will ensure hearing protection is utilized when noise levels are elevated. Elevated noise levels will be evaluated by the SHSO when equipment is operated. Excess noise levels can be estimated using the following rule of thumb. When normal voice communication is not possible between field personnel who are no more than 3 feet apart, hearing protection will be utilized. Hearing protection typically involves the use of disposable ear plugs for the duration of the excessive noise condition and will be used during operations that present a noise hazard.

4.1.6. Sunburn

Working outdoors on sunny days for extended periods of time can cause sunburn. Excessive exposure to sunlight is associated with the development of skin cancer. Field staff should take precautions to prevent sunburn by using sun-screen lotion and/or wearing hats and long-sleeved garments.

4.1.7. Extreme Heat and Heat Stress

Heat stress is an important health consideration in warm weather. Weather conditions, characterized by high temperatures and low humidity, in conjunction with wearing personal protective clothing, may aggravate heat-stress problems. Standard measures, including designating a shaded rest area, taking frequent rest breaks, and performing heat-stress monitoring of workers, may be used to minimize heat-stress-related problems. A readily available supply of liquids, such as water and fluids containing electrolytes, will be available at the work site to replenish body fluids. Visual observation of workers by the SHSO for heat-stress-related signs and symptoms, and body core temperature monitoring will be performed when outside temperatures exceed 70 degrees Fahrenheit and impermeable clothing is being worn, when outside temperatures exceed 90 degrees Fahrenheit in street clothes, or whenever other

conditions warrant. Signs and symptoms of heat stress include profuse sweating, headache, skin flushing, dizziness, confusion, and rapid heart rate. Workers exhibiting a body core temperature of 100.4 degrees Fahrenheit or greater (measured at the ear drum) will be removed to a cooler area or activity until body core temperature returns to below 99 degrees Fahrenheit.

If persons exhibiting heat-stress symptoms are left untreated, the condition can elevate to heat stroke. Heat stroke is typically manifested by hot, dry skin with a body core temperature of 104 degrees Fahrenheit or greater. Heat stroke can be fatal if treatment is delayed. Therefore, persons exhibiting heat-stroke symptoms need to have their core temperature reduced immediately by use of cold packs, cold water wipes, or immersion. Heat-stroke victims need to be transported to a professional medical facility immediately after the victim's core temperature has been reduced or while the victim's core temperature is being reduced.

4.1.8. Buried Objects

Buried objects such as glass and brick have been excavated at the site. Workers must take care to prevent injury from handling previously buried objects, including, when necessary, the use of leather outer gloves.

Because buried underground cables may be present on portions of this site, an underground utility check should be performed before subsurface construction activities. All work areas should be cleared prior to excavation, trenching, or other intrusive work by notifying Underground Service Alert (USA), performing private geophysical clearance, and pot-holing or other means, as appropriate. Personnel will obtain written clearances that set forth the detailed requirements for obtaining clearance to excavate at the site. In addition, when locations of buried lines are uncertain, excavation should always be performed by hand until the utility is located or the area is cleared.

4.1.9. Overhead Hazards

Overhead cables may be present on portions of the site. A hazard analysis should be reviewed prior to operating heavy equipment such as excavators underneath or within 10 feet of the maximum reach of the equipment. All field vehicles and equipment should be maintained at a minimum distance of 10 feet, vertically and horizontally, from all electrical power lines (energized lines) and/or electrical equipment with a voltage less than or equal to 50 kilovolts (kv). If the voltage exceeds 50 kv, the clearance will be increased by 4 inches for every 10 kv over that voltage. The location and marking of such lines and equipment will be coordinated with USA prior to the start of construction/excavation activities.

4.1.10. Fire and Explosion Hazards

While not expected, the potential for development of methane (a landfill decomposition gas) or flammable concentrations of other materials where soil-intrusive work is occurring may exist. Care will be taken to insure that explosive mixture monitoring is performed where appropriate, in an adequate manner and that ignition sources are controlled or eliminated.

4.1.11. Oxygen Deficiency

Oxygen deficiency can occur in excavations as a result of displacement by another gas (marsh gas, chemical decomposition, or leaking gas cylinders). The SHSO will monitor all suspect areas prior to initial entry into excavations.

4.2. Chemical Hazards

Health hazards associated with potential chemical exposures at this site are discussed in this section. The most likely route for exposure to toxic chemicals is through inhalation of contaminated dust that could potentially be released from the subsurface during excavation activities. Secondary routes for chemical exposure include dermal absorption, injection, and ingestion. The overall risk to field personnel from these potential exposures is considered

low to moderate and will be controlled through the use of protective equipment and safe work practices as described in this plan under PPE and Site Control, respectively.

The constituents of potential concern (COPCs) are predominantly heavy metals and petroleum hydrocarbons as hydraulic oil. Should contaminants be identified that are associated with burned wastes, other potential COPCs might include dioxins/furans, polychlorinated biphenyls (PCBs), and polynuclear aromatic hydrocarbons (PAHs), all often associated with burned wastes. Although not likely based on the anticipated types of wastes at the site, other potential COPCs may include volatile organic compounds (VOCs) and landfill gases (vinyl chloride, hydrogen sulfide, methane). In addition, unidentified chemicals may be present at excavation locations. A conservative action level based upon total dust and total organic vapor monitoring will be utilized during fieldwork. Please refer to Section 6, Hazard Monitoring, for appropriate action levels regarding the potentially hazardous materials or wastes of concern, discussed below.

4.2.1. Lead

Lead has been identified in elevated concentrations at the site and is often encountered as a contaminant of soil as a result of industrial processes using hydraulic oil. Lead is a toxic heavy metal and a suspected carcinogen that may be encountered in inorganic or organic forms. Significant exposure to airborne lead is not expected at the site and lead exposure will be effectively controlled by controlling visual dust. The SHSO will have the option of monitoring total dust with a real-time aerosol monitor at the work location if levels of visible dust are not controlled through the normal engineering controls (water spray, 15 mph speed limit, etc.).

4.2.2. Other Metals

Arsenic, zinc and nickel have been identified at this site in elevated concentrations. In addition, a variety of other metals are often encountered as contaminants at industrial or dump sites. Some heavy metals are highly toxic; others are also recognized human carcinogens. Because these materials are not volatile unless highly heated, control by

proper use of PPE and personnel hygiene practices will prevent significant exposure to heavy metals.

Inorganic arsenic may be found in areas where certain industrial residue may have contaminated soils. Arsenic is a toxic heavy metal and some arsenic compounds may release a toxic gas when in an acidic environment. Inorganic arsenic is regulated by OSHA as a carcinogen. Control for airborne exposure to lead will adequately control arsenic exposure at this site.

Nickel or Zinc compounds can be hazardous by inhalation of dust and fumes, ingestion, and skin and eye contact. Zinc oxide is toxic via inhalation of fumes and dusts and may cause dermatitis. As with arsenic above, control for airborne exposure to lead will adequately control other metals at this site.

4.2.3. Petroleum Hydrocarbons

TPH is a term used to describe a large family of several hundred chemical compounds that originate from crude oil. TPH is a mixture of chemicals, but they are all made primarily from hydrocarbons. Some chemicals that may be found in TPH are hexane, jet fuels, mineral oils, benzene, toluene, xylenes, naphthalene, and fluorene, as well as other petroleum products and gasoline components. Some of the TPH compounds can affect your central nervous system. One compound can cause headaches and dizziness at high levels in the air. Another compound can cause a nerve disorder called "peripheral neuropathy," consisting of numbness in the feet and legs. Other TPH compounds can cause effects on the blood, immune system, lungs, skin, and eyes.

Animal studies have shown effects on the lungs, central nervous system, liver, and kidney from exposure to TPH compounds. Some TPH compounds have also been shown to affect reproduction and the developing fetus in animals. The International Agency for Research on Cancer (IARC) has determined that one TPH compound (benzene) is carcinogenic to humans. IARC has determined that other TPH compounds (benzo[a]pyrene

and gasoline) are probable and possible carcinogens to humans. Most of the other TPH compounds are considered not classifiable by IARC

4.2.4. Polychlorinated Biphenyls

PCBs, also referred to as Aroclors, are synthetic industrial products which have been commonly used as cooling fluid and for electrical insulation. PCBs are common contaminants of oily type waste and are found around railroad tracks and in industrial areas and dumps. PCBs are recognized environmental pollutants and suspected human carcinogens.

While PCBs are not expected, controls used to prevent exposure to airborne metals should adequately control exposure to trace levels of PCBs that might be associated with uncovered waste at this site.

4.3. Biological Hazards

The SHSO will screen the area for biological hazards during the initial site visit and will discuss any problems with subcontractors and site personnel during the tailgate safety meeting. Multiple biological hazards are present at the site. The most common hazards anticipated are discussed below.

4.3.1. Bird Droppings

The onsite building is currently a roosting place for pigeons, and thus there are large quantities of pigeon droppings on the floor throughout the building. Exposure to bird droppings increases the risk for developing several illnesses, including histoplasmosis and cryptococcosis. Histoplasmosis is a fungal infection affecting the lungs and cryptococcosis is a fungal infection affecting the central nervous system. Exposure typically comes from inhaling a significant quantity of spores of the fungus (either *Histoplasma capsolatum* or *Cryptococcus neoformans*). Symptoms vary widely by individual but can range from cold-like symptoms (e.g. cough) to life-threatening central nervous system impairment, and in rare cases, death.

Personnel should refrain from walking or driving equipment through the mounds of pigeon feces in the building, so as not to create feces-laden dust within the breathing zone. Dust masks should be onsite in the event that the work area becomes dusty.

4.3.2. Rattlesnakes

Personnel should be extremely careful when walking through tall grass, rocks, or debris. If a rattlesnake is encountered, slowly and quietly back away from the snake. Inform all personnel at the site of its location. Do not attempt to move or kill a snake because certain species of rattlesnake are protected under state and federal laws. In the event of a snakebite, immediately summon emergency medical services and notify the SHSO. Do not try to move the affected limb; instead, immobilize the injured area, keeping it lower than the heart if possible, and wait for transportation. Do not apply ice, do not cut the wound, do not apply a tourniquet. The venom should be wiped off the skin since venom will attack intact skin.

4.3.3. Insects

Bees, wasps, yellow jackets, black widow spiders, scorpions, and brown recluse spiders present a potential hazard on this project, especially so for those individuals sensitized to those bites or stings. Prior to initial assignment on this project, personnel with known allergic responses to insect stings will be identified and field supervisors made aware of this condition. These personnel will also carry an antidote kit if so advised by their physician. The SHSO will confirm that the antidote kit is accessible and notify the emergency medical service providers in the event of any incident.

In all cases, a victim suspected of being bitten by either a black widow or brown recluse spider, or stung by a scorpion will receive medical attention. The venom from the brown recluse spider is capable of causing coma and kidney failure in its victim.

Protection methods against insects may be employed, such as the use of protective clothing or insect repellents, as well as extermination measures, and training in recognition and identification of harmful insects.

4.3.4. Poisonous Plants

Poisonous plants may be present at the site. Poison ivy, poison oak, and poison sumac are identified by three leaves or five leaves emanating from a stem. The plants contain a resin that causes a delayed allergic hypersensitivity reaction on contact. The resin is active in live, dead, dry, and burned plant parts; and it may be carried through the air. Signs and symptoms are usually evident within 24 to 48 hours after exposure. These include burning, stinging, and blisters. Notify the SHSO if these plants are observed. If exposure or contact occurs, wash the affected area, but do not spread the resin to uncontacted areas.

5. SPILL PREVENTION AND CONTROL MEASURES

Liquids and other potentially spilled materials are not anticipated to be used during this fieldwork. In case unanticipated conditions are encountered and these types of materials are subsequently brought into the field, the following applies:

5.1. Preventive Measures

- Inspect all containers upon delivery to the site for visible defects and ensure that each drum or container includes a re-sealable lid.
- Set any 55-gallon drums on wooden pallets to facilitate transport via forklift.
- Perform weekly inspections of the storage area.
- Select flat areas for temporary storage away from high-traffic zones and storm or sewer drains.

5.2. Spill Containment Measures

The following actions will be taken by Ninyo & Moore field personnel assigned to the field activities in the event of a spill:

- the Site Coordinator (field team leader) and SHSO are to be notified immediately;
- workers not involved in spill containment and/or cleanup shall evacuate the immediate area and designated emergency response personnel attired in appropriate PPE (see

Section 9), shall proceed to the spill area with a spill cleanup and control kit, including absorbent materials;

- attempts shall be made to stop the source(s) of spillage immediately; and
- the SHSO shall monitor for exposure to chemicals or hazardous substances during spill cleanup work and shall stay at the spill area until the area has been cleared, inspected, and readied for reentry. A spill incident report shall be prepared by the SHSO.

5.3. Record Keeping and Notifications

The SHSO shall thoroughly document the spill in an Incident Report which will be forwarded to the Corporate Safety Manager and Project Manager. Records of all hazardous materials releases shall be maintained with the project files and the facility operating record. The Project Manager will make any necessary notifications to off-site authorities and the Safety Manager will approve the reentry to the site for routine use and will issue a final release report pertaining to cleanup of the area.

6. HAZARD MONITORING

During field activities at the site, potentially toxic air contaminants and explosive gas mixtures will be monitored. Monitoring instruments to be used during site activities include a photoionization detector (PID) or a flame ionization detector (FID). The frequency of monitoring is provided in Table 2, and action levels and protection actions are summarized in Table 3.

Table 2 – Chemical/Physical Agent Monitoring Requirements

Scope of Work Task	Chemical/Hazard	Instrument	Responsible Party	Initial Frequency
Low Hazard				
Decontamination of Equipment	Organic vapor	PID/FID	SHSO	@ SHSO discretion
Moderate hazard				
Drilling and subsurface soil and groundwater sampling; excavation	Oxygen Organic Vapor Explosivity	PID/FID Explosimeter	SHSO	Start of task, hourly, continuous if zone of contamination encountered

Notes:
[a] PID – photoionization detector
[b] FID – flame ionization detector

Table 3 – Monitoring Methods and Action Levels for Petroleum Hydrocarbon Only[1] Sites Using Screening Survey Instruments

Hazard	Method	Action Level[2]	Protection Action
Total Organic Vapor (benzene suspected)	PID[3] or FID[4]	Background to 5 ppm[5] above background	No action required
		> 5 ppm	Air purifying respirator, half or full face, level C protection with organic vapor cartridges
		> 50 ppm	Supplied air protection, Level B
		> 100 ppm	STOP WORK
Total Organic Vapor (benzene absent[6])	PID[3] or FID[4]	Background to 25 ppm above background	No action required
		> 25 ppm	Air purifying respirator, half or full face, level C protection with organic vapor cartridges
		> 200 ppm	Supplied air protection, Level B
		> 500 ppm	STOP WORK
Combustible Gas	Explosimeter or FID	10% to 20% LEL	Start continuous monitoring; Permit only classified electrical equipment and non-sparking tools
		> 20% LEL	STOP WORK, ascertain source of gas
Oxygen Concen-tration	Oxygen ana-lyzer	< 19.5% v/v[8]	Leave area, evaluate reason for deficiency, monitor again remotely or with IDLH[9] entry program
		19.5 to 20.5 v/v	Slight deficiency, continue continuous monitoring
		20-5 - 21.0% v/v	Normal range
		> 22.0% v/v	Investigate cause, STOP any potential spark-producing activity
Total Dust	MiniRAM	1mg/m^3	Use of water, other engineering controls, and respiratory protection, if exceeded.

Notes:
1 Action levels based on gasoline, aviation gasoline, and diesel contaminants only. A conservative 20% benzene is assumed where benzene is not verified absent from atmosphere. Action levels should be reestablished based on periodic analysis of atmosphere.
2 All action levels are readings observed above background
3 photoionization detector
4 flame ionization detector
5 parts per million
6 Confirm benzene is less than 1 ppm with chromatography or colorimetric indicator tube specific for benzene in the presence of petroleum hydrocarbons (Drager, benzene 0.05, #CH24801 or equivalent)

Chemical Agent Monitoring

During excavation activities, chemical agent monitoring will be conducted both at the worker's breathing zone and perimeter air.

Environmental (Area) Monitoring

In the event that action levels of contaminants are experienced in workers breathing zones and work continues (in Level "C" protection), perimeter monitoring will be conducted at the outer edge of the controlled area. If action levels are experienced at any perimeter area, work will be suspended until engineering controls or natural ventilation allows ambient area contaminant concentrations to fall below acceptable (action) levels. Table 2 indicates the frequency of monitoring required for site tasks.

Personnel Monitoring

Personnel monitoring will be initiated if the action levels for dusts and/or volatile organic compound (VOCs) are equaled or exceeded, and/or personnel are required to work using respiratory protection for periods exceeding one hour. Table 3 discusses action levels for VOCs and total dust.

7. CONFINED SPACE ENTRY

Confined spaces, including but not limited to trenches, ditches, holes, culverts, structures, and tanks, present multiple hazards including oxygen deficiency, toxic agent exposure, heat stress, engulfment, and other hazards. Confined space entry is not anticipated nor is it authorized for project personnel or subcontractors during this work activity. If it becomes necessary to enter a confined space during this project, appropriate training, equipment and supervision will be put in place and the entry will be made in accordance with a specific confined space entry permit approved by the Corporate Safety Manager. A designated OSHA-competent person for confined space work will be on-site during all confined space entry activities. A competent person will be on site during excavation activities to evaluate atmospheric and safety hazards within excavations that might have to be entered by site personnel.

8. PERSONAL PROTECTIVE EQUIPMENT

Based on previous investigations conducted at the site, the anticipated level of PPE for most of the field activities will be Level D and modified Level D. The minimum required level of personal protection during field activities is Level D. In addition, chemical-resistant gloves will be mandatory for all personnel during handling of soil or decontamination equipment. Ear plugs will be worn if, at any time, verbal communication becomes difficult to comprehend within a radius of 3 feet. All PPE must meet current American National Standards Institute standards.

Level C PPE will be required at any activity location where the levels of contaminants exceed the action levels listed in this plan. Upgrading to Level C PPE involves Level D PPE with the addition of Tyvek coveralls, nitrile gloves, and an appropriate respirator with HEPA and organic vapor (OV) cartridges. The following table describes the PPE associated with each level of protection.

Table 4 – Personal Protective Equipment Levels

Level	Body	Respirator	Skin	Other
D	Normal work clothes Long pants	None	Work gloves	Hard hat Safety glasses
Mod. D[a]	Tyvek® suit	None	Chemical-resistant latex or nitrile gloves	Hard hat Safety glasses
C	Tyvek® suit	Air purifying respirator with HEPA and OV	Chemical-resistant latex or nitrile gloves	Hard hat Safety glasses

Note:
[a] = Where the potential for heat stress exists, modified Level D may be downgraded to Level D if continuous monitoring verifies the absence of organic vapor.

Changes to these specified items of PPE will not be made without the approval of the SHSO. The SHSO will have the authority to either upgrade or downgrade the level of PPE based on actual site conditions. If at any time there is a potential for increased chemical exposure, the appropriate upgrade of PPE will be required.

9. DECONTAMINATION

This section describes personnel, vehicle and equipment decontamination.

9.1. Personnel Decontamination

A minimal decontamination procedure (consisting of washing exposed skin with soap and water) shall be required at the project site.

9.2. Vehicle and Equipment Decontamination

The primary focus of any decontamination program is to minimize the spread of contaminated material beyond a given site. During field activities, a variety of heavy equipment, vehicles, and small equipment is anticipated. The level of potential contamination for vehicles and equipment at this site is low for support vehicles used in uncontaminated areas and/or for non-intrusive field activities, and medium for intrusive activities in potentially contaminated sites. For equipment coming from contaminated areas, items will be steam-cleaned and the cleaning solution captured and contained.

10. MEDICAL SURVEILLANCE REQUIREMENTS

Site personnel, including subcontractor personnel, directly involved with the field work must meet the medical surveillance requirements of 29 CFR 1910.120 and 8 CCR 5192. All site personnel will be required to participate in their employer's medical surveillance program before being permitted to work on location. Teaming partner or subcontractor medical surveillance programs are described in respective company documents. Contractors and subcontractors will be required to demonstrate, by document submittal, their maintenance of OSHA-compliant programs and to maintain records as required by the applicable contract.

Medical surveillance includes baseline medical examinations for field work certification and annual follow-up examinations. Special medical tests or examinations are not anticipated for personnel assigned to this project. The medical surveillance program is conducted under the guidance of an occupational medicine physician who established the medical exam protocol and certification requirements. Medical records of a confidential nature will be maintained by the medical provider or by each employer.

11. SITE CONTROL

This section describes work practices for this project. Although potential chemical and physical hazards have been identified in this SHSP, if unexpected conditions arise, the SHSO will stop all work at the site and notify the appropriate point of contact. Work will not resume until the SHSP and working conditions have been reevaluated and the SHSP revised accordingly.

11.1. Controlled Area Designation

For intrusive field activities such as excavations and trenching, only authorized personnel with the proper training and PPE should enter work areas associated with the operation of heavy equipment and/or the potential for exposure to hazardous conditions/materials. In these areas, access is generally controlled with caution tape and/or barricades.

12. EMERGENCY RESPONSE

In the event of an emergency on site related to project activities, the SHSO should notify the project CIH and dial "911," as appropriate. In case of a medical emergency:

- Remove the exposed or injured person(s) from immediate danger.
- Render first aid if necessary. Decontaminate affected personnel if necessary or obtain paramedic service or ambulance transport to local hospital by calling 911. Another field personnel member will accompany any person to the medical facility and remain with the person until release or admittance is determined.
- If applicable, evacuate other personnel at the facility to a safe distance until the Fire Department determines that it is safe for work to resume.
- Any accident/incident resulting in an OSHA-reportable injury or illness, treatment at a hospital or physician's office, property damage, or a near-accident, requires that an accident/incident report be completed and submitted to the appropriate authorities.

The implementation of a spill contingency plan is not anticipated for this project. The planned field activities involve neither large quantities of materials nor the movement of containers of hazardous materials. For spills of less than one-half gallon, the Contractor will respond by using

rags or sorbent material and dispose of the sorbent material in a labeled container. When reporting a spill, the Contractor will provide the following information:

- Worker name, organization, phone number, and location;
- Number of injured personnel, if any, and nature of injuries if known;
- Substance spilled;
- Source and cause of the spill;
- Approximate amount and extent of the spill;
- Approximate rate of release;
- Action taken so far;
- Approximate time spill occurred; and
- Any other pertinent information the operator asks.

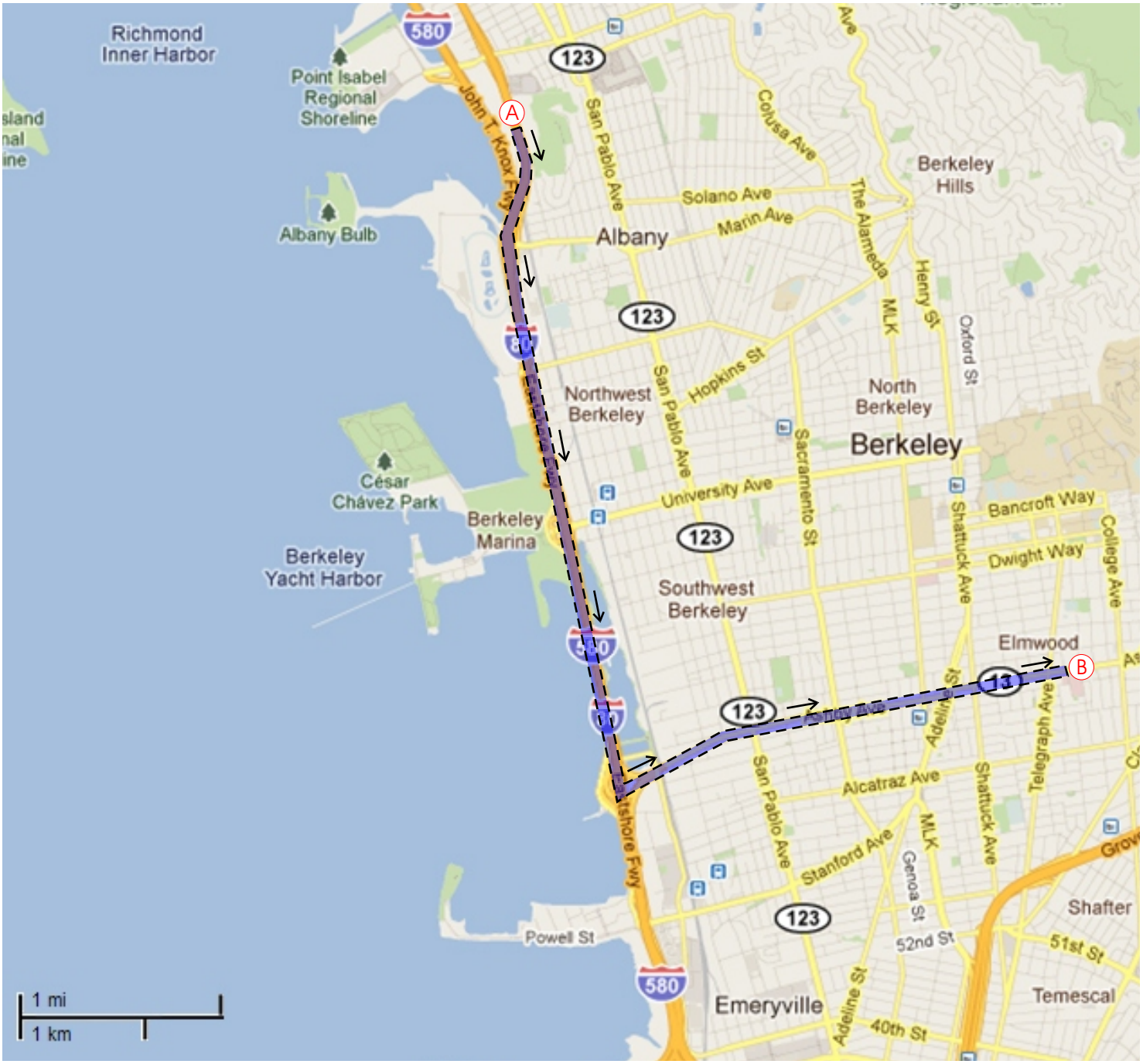
13. EMERGENCY ACTION PLAN

In the event of a medical emergency or fire during activities at the project site, the standard "**911**" emergency telephone number shall be called from an on-site mobile phone. A mobile telephone will be available during all site activities, and will be accessible to all personnel. A first aid kit and fire extinguisher should be located on site in a readily accessible location. The emergency facility located in closest proximity to the site is **DOCTORS MEDICAL CENTER.** The hospital address is **2450 Ashby Avenue, Berkeley, California.** The route from the project site to the hospital is shown in Figure 1.

Emergency	Number	Contact
Medical, Fire or Police	911	Emergency operator
Doctor's Medical Center(to be used only if local hospital/clinic will be first contact)	510-204-1566	Emergency room

FIGURE 1

ROUTE TO HOSPITAL



REFERENCE: MAP FROM GOOGLE MAPS, 2011.

NOTE: ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.

ROUTE TO HOSPITAL MAP

WESTERN FORGE AND FLANGE
540 CLEVELAND AVENUE
ALBANY, CALIFORNIA

FIGURE
1

Ninyo & Moore

PROJECT NO: 401823001

DATE: 10/11

APPENDIX A

HEALTH AND SAFETY PLAN ACKNOWLEDGEMENT FORM, FIELD HEALTH AND SAFETY MEETING FORM, AND AIR MONITORING FORM

Attachment 1
Health and Safety Plan Acknowledgement Sheet

ONSITE WORKING PERSONNEL SIGN IN

The personnel listed below have 40-hour HAZWOPER training with current refresher status and have read and understood this Health and Safety plan, and agree to abide by its provisions.

Onsite Personnel Name	Signature	Company	Date