CAMBRIA

December 13, 2002

Ms. Eva Chu
Alameda County of Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Re: **Corrective Action Completion Report**
Balaam Brothers Property
1350 Powell Street
Emeryville, California

Dear Mr. Diamond:

On behalf of the Balaam Brothers Partnership, Cambria Environmental Technology, Inc. (Cambria) prepared this *Corrective Action Completion Report* for the above-referenced site. This report describes site remediation activities completed in accordance with the July 3, *2002 Corrective Action Plan* approved by the Alameda County Department of Environmental Health (ACDEH).

This report concludes that no further action (NFA) is merited for the site. Due to property transaction deadlines, Cambria respectfully requests that the ACDEH approve residential development for the site and issue a no further action (NFA) letter before December 31, 2002.

Cambria and interested parties are available to meet with you and your supervisor Ms. Donna Drogos this week. If a meeting would help expedite review of this case, please call me to confirm a meeting time for this Wednesday or Thursday. Thank you in advance for your consideration.

If you have any questions or comments, please call me at (510) 420-3303.

Sincerely,
Cambria Environmental Technology, Inc.

Bob Clark-Riddell

Bob Clark-Riddell, P.E.
Principal Engineer

cc: Mr. David Diamond, Balaam Brothers Partnership, 1115 Hillview Road, Berkeley, California 94708

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San Ramon, CA
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CORRECTIVE ACTION COMPLETION REPORT

Balaam Brothers Property
1350 Powell Street
Emeryville, California
Cambria Project No. 502-1795

December 13, 2002

Prepared for:

Balaam Brothers Partnership
1115 Hillview Road
Berkeley, California 94708

Prepared by:

Cambria Environmental Technology, Inc.
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CORRECTIVE ACTION COMPLETION REPORT

Balaam Brothers Property
1350 Powell Street
Emeryville, California

INTRODUCTION

Cambria Environmental Technology, Inc. (Cambria) is submitting this Corrective Action Completion Report for the above-referenced site (the Site) on behalf of the Balaam Brothers Partnership. Site remediation activities were performed in accordance with Cambria's July 3, 2002 *Corrective Action Plan* (CAP) as approved by the Alameda County Department of Environmental Health (ACDEH). Implementation of the CAP was designed to remediate petroleum hydrocarbons to facilitate issuance of a no further action (NFA) letter. The Site cleanup goals were agreed to by the ACDEH and the San Francisco Bay Regional Water Quality Control Board (RWQCB) in a June 21, 2002 letter. Upon receipt of an NFA letter from the local regulatory agencies, Pulte Homes plans to purchase the Site property and the adjacent property at 1300 Powell Street for redevelopment as high-density housing. Described below are the Site background, cleanup goals and agency requirements, soil and groundwater remediation activities, post-remediation groundwater sampling, low-risk groundwater case closure criteria, and our conclusions.

SITE BACKGROUND

The Site is located on the northeast corner of the intersection of Powell Street and Hollis Street, in a mixed industrial/commercial area within Emeryville, California (see Figure 1). Immediately prior to Site remediation activities, the Site was leased as a commercial compressed gas sales and distribution business. Based on information provided by the owner and review of previously prepared Phase 1 Reports (Hicks, 2001, Lowney, 2002), the site history is as follows:

- In 1911, the property was undeveloped, except for a stable located at the northern property boundary.
- In 1935, A&M Castle & Co, a railway freight car mover, occupied the property.
- From 1939 to 1951 aerial photos and Sanborn maps show that four above-ground storage tanks (ASTs) were located to the north of the building in the center of the property (the "Custom Nest" building) (see Figure 2). The Sanborn maps label this portion of the property

as Cook's Oil Company. In 1941, Cook's Oil Company leased the property to Standard Oil Co. During this period, two underground fuel storage tanks and two fuel pumps were installed on the west side of the "Custom Nest" Building, and were present when Balaam Brothers subsequently leased the property. During this same period, approximately 21 ASTS that were part of an oil storage and canning facility operated by Pennzoil was located on the adjacent property (1300 Powell Street) immediately east of, and in the groundwater upgradient direction from, the Site.

- The property was leased to Balaam Brothers in 1957 for use as a bottled compressed gas warehousing and distribution business. At this time, no ASTs were present on the property or at 1300 Powell Street. The pre-existing USTs and fuel pumps were used for fueling company vehicles. See photo below (date: 1962)

- The property was purchased by Balaam Brothers in 1966. Use as a bottled compressed gas warehousing and distribution business continued.

- Bay Airgas NCN purchased the bottled compressed gas business in approximately 1978 and continued to operate the business through September 2002 as a tenant of Balaam Brothers.

- In 1987, a UST removal permit was obtained from the Emeryville Fire Department, and the USTs were removed from the property.

In 2001 and 2002, several soil and groundwater investigation studies were conducted as a precursor to the planned sale of the property (Hicks, 2001, Lowney, 2002). These investigations showed that the Site had been impacted by petroleum hydrocarbons derived from the two onsite former underground storage tanks (USTs), four former onsite aboveground storage tanks (ASTs), and possibly from the 21 ASTs at 1300 Powell Street.

Prior to the excavation of impacted soils as described in this report, the extent of chemicals of concern in Site soil and groundwater had been well characterized through sampling of 28 borings and 6 test pits (see Figure 2). The chemicals of concern (COCs) at the Site are petroleum hydrocarbons in the range of gasoline (TPHg), diesel (TPHd) and motor oil (TPHmo), and individual petroleum hydrocarbon constituents (e.g. benzene, toluene, ethylbenzene and xylenes [BTEX] and naphthalene). To evaluate shallow Site groundwater conditions, R.T. Hicks installed temporary groundwater monitoring wells in September 2001 to depths of approximately 12 feet below ground surface (bgs). In July 2002, Cambria sampled groundwater from the accessible temporary wells installed by Hicks. The extent of COCs in soil and groundwater prior to remedial activities is summarized on Figures 3 and 4, respectively. Soil analytical data is presented in Tables 1a, 1b and 1c. Groundwater analytical data is presented in Tables 2a and 2b.

Prior to remediation, Site subsurface soils predominantly consisted of clay with discontinuous interbeds of clayey silt, sand and gravel (e.g. Lowney, 2002). Shallow fill material (clayey gravel or gravelly clay) was present in some locations at the Site, generally to depths of 3 feet or less. During drilling of pre-remediation borings and monitoring wells at the Site, the depth of first encountered groundwater ranged from 7 to 18 feet bgs, except for some borings where groundwater was not encountered. This range of depths is attributed to the large amount of clay in the subsurface section and to the discontinuous nature of the silt, sand and gravel interbeds, which represent the water-bearing units at the Site. After drilling of pre-remediation wells, water levels rose quickly, indicating that groundwater was present under confined conditions, and that the piezometric surface was at a higher elevation than the elevation of the water-bearing units. Monitoring of the temporary monitoring wells indicated that the piezometric surface at the Site was approximately 4 ft below grade surface (bgs) in May 2002 based on gauging by Cambria, and was approximately 7 to 8 ft bgs in September 2001 based on gauging by R.T. Hicks. Similar observations were made at the adjacent 1300 Powell Street site. Similar observations were made again during installation of the post-remediation temporary wells. In summary, this information indicates that groundwater was present under confined conditions at depths of approximately 7 feet or greater within a number of discontinuous, thin, relatively high permeability zones, separated by clay confining layers. This interpretation of subsurface conditions was confirmed during the 4-month excavation activities when only a small volume of water entered the excavation, in the northern portion of the property. Excavation activities removed the shallow

discontinuous silt, sand and gravel interbeds, which contained 'perched' water and occasionally free product.

In response to the petroleum releases and the proposed Site redevelopment plans at 1300 and 1350 Powell Street, the ACDEH and the RWQCB reviewed Site information and attended meetings on March 21 and June 11, 2002 with Site proponents. In their June 21, 2002 letter, the ACDEH stated that the ACDEH and the RWQCB concur with the cleanup goals presented in Lowney's letters dated March 25 and 28, 2002, and indicated additional engineering and administration controls requirements. The June 21, 2002 ACDEH letter also indicated that the two adjacent properties will be managed by the ACDEH as separately-funded SLIC cases.

Corrective action plans were submitted by Lowney Associates and Cambria for the adjacent properties at 1300 and 1350 Powell Street. The ACDEH approved both plans. Site remediation was conducted concurrently at the adjacent properties. A detailed description of the background and previous environmental reports for both 1300 and 1350 Powell Street sites is presented in the *Soil and Ground Water Quality Evaluation* dated May 22, 2002, by Lowney Associates (Lowney, 2002). Cambria understands that groundwater in the Site vicinity is not being protected for the beneficial use of potable water, and that groundwater elsewhere in the Site vicinity is being managed for chemical impact.

CLEANUP GOALS AND AGENCY REQUIREMENTS

The following cleanup goals have been approved by the ACDEH and the RWQCB for Sit redevelopment as residences, were used as guidelines during Site remediation:

- Remediation of the upper 10 feet of soil to less than 1,000 parts per million (ppm) total petroleum hydrocarbons (combined TPHg, TPHd and TPHmo) for any location at the Site.
- Removal of floating product from the groundwater.
- Reduction of dissolved hydrocarbons to less than 20 ppm (milligrams/liter) total petroleum hydrocarbons (combined TPHg, TPHd and TPHmo).
- Clean imported soil shall comprise the upper 2 feet of all landscaped areas, planting boxes, etc.
- Vapor barriers (membranes) shall underlie the entirety of all inhabited structures; no utilities shall penetrate vapor barriers.

- Final Site development plans will be submitted prior to Site development.
- A post-remediation groundwater monitoring program shall be conducted to confirm residual groundwater contaminants at the Site.
- Deed notifications/restrictions shall be filed in accordance with agency requirements.

The above cleanup goals reflect the fact that groundwater in the Site vicinity is not being protected for beneficial use of potable water.

SOIL AND GROUNDWATER REMEDIATION ACTIVITIES

To remediate Site soil and groundwater, Cambria implemented the ACDEH-approved *Corrective Action Plan (CAP)*. The CAP consisted of soil excavation and groundwater removal during excavation. In summary, Site remediation and restoration consisted of the following activities:

- Excavating approximately 16,890 tons of hydrocarbon-impacted soil during July through November 2002. A total of 16,338 tons was transported and disposed offsite, and approximately 550 tons were reused onsite.
- Excavating most of the Site to 10 feet below grade surface (bgs), with some excavation extending to 16 feet bgs to target impacted soil and reduce potential impact to groundwater.
- Using soil analytical results of excavation sidewall and floor samples to help guide excavation boundaries.
- Removing all perched groundwater encountered during the excavation, which was only approximately 1,500 gallons.
- Reusing approximately 550 tons of soil after reviewing soil stockpile analytical results. The soil was reused in the deeper portions of the excavation, between approximately 8 and 16 feet bgs.
- Regrading/excavating the remainder of the Site to approximately 5 feet bgs for geotechnnical purposes. The regraded/excavated area encompassed the entire Site, and extended beyond the hydrocarbon-impacted excavation area and up to the property boundary.

- Backfilling the Site to approximately 2 feet below original Site grade with clean, import material of high clay content soil, providing additional containment of any residual hydrocarbons beneath the excavation.

The Site remediation and restoration activities are detailed below.

Excavation Activities

Hydrocarbon-impacted soil was excavated during July through November 2002 by R&B Equipment of Hayward, California with oversight by Cambria. The initial planned excavation areas and depths are illustrated on Figure 5. Due to Site access restrictions and tenant use of portions of the Site, the initial excavation was conducted in excavation areas 'EX-A' and 'EX-B', located south and north of the former shed in the central portion of the Site. Cambria then collected and analyzed soil samples for excavation sidewalls and floor bottoms in accordance with the approved CAP. Confirmation sampling was also conducted under the direction of Ms. Eva Chu, who was present during the initial confirmation sampling. Upon reviewing soil analytical results, excavation pits were expanded and exploratory potholes and trenches were excavated across the Site. The excavation continued in an iterative manner, relying on analytical results and field visual/olfactory observations and field screening with an organic vapor analyzer.

In most areas the hydrocarbon impact was limited to 10 ft bgs or shallower, as determined by field observations and excavation-floor confirmation sampling. In two areas the excavations were extended deeper to remove impacted materials, with a final excavation depths of approximately 16 feet bgs near the former USTs. The impact area generally consisted of green, odorous clayey soil with occasional thin silty, sandy, gravel units limited in extent and discontinuous. These more permeable discontinuous units occasionally contained visible free product, which was observed seeping into the excavation. Site soil was excavated until encountering underlying brown, hydrocarbon odor-free soil. As hydrocarbon impact was discovered beneath buildings, additional demolition was required to access the impacted soil. In order to achieve the soil cleanup goals, two of the three Site buildings were demolished and soil was excavated to the property boundary along most of the Site.

The final excavation area measured approximately 110 feet by 195 feet and covered most of the property. The final excavation extent showing confirmation sample locations is presented on Figure 6. The locations of all excavation soil sample locations are shown on Figure 7. Analytical results of confirmation soil samples are summarized in Tables 2a and 2b.

Soil Analytical Results

Soil samples were collected from excavation sidewalls, and from the excavation floor when the excavation was shallower than 10 ft bgs. Samples were typically analyzed for TPHg, TPHd, TPHmo, and TPH as bunker oil (TPHbo). To avoid double-counting of overlapping results, the total TPH was calculated by adding the TPHg results (C6-C9 range) and the TPHbo results (C10 and higher range). Select soil samples were also analyzed for TPHg, BTEX and MTBE, primarily samples near the former USTs on the southern portion of the Site.

Analytical results from confirmation sampling show that all impacted soil in excess of 1,000 mg/kg total TPH has been removed to a total depth of 10 feet bgs or greater. Only two soil samples, from excavation sidewall samples located at the western edge of the property, contained concentrations in excess of 1,000 mg/kg total TPH.

All BTEX concentrations in surface soil (<10 feet bgs) exceeding the risk-based screening levels (RBSLs) for residential use established by the RWQCB (RWQCB, 2001) were excavated and disposed offsite with the following clarification. One residual soil sample from the southern property boundary at 3 feet bgs (EX-A-S-3, 10-2-02) contained benzene and xylenes above the residential RBSLs. Another soil sample along the southern property boundary at 9 feet bgs (EX-A-S-9, 7-24-02) contained benzene above the residential RBSL. These residual concentrations are along the property boundary, should attenuate with time, and will be mitigated by the high, clay content backfill material at the Site as well as the sidewalk widening and vapor barrier installation planned during Site redevelopment. In soil deeper than 10 feet bgs, one sample from 10 to 10.5 feet bgs (EX-A-B-10) contained 0.47 ug/L benzene, slightly above the residential RBSL of 0.18 ug/L. This residual concentration will also attenuate with time and be mitigated by the imported fill and planned vapor barriers. No MTBE was detected in Site soil samples.

Geotechnical Grading/Excavation

All Site soil located approximately 5 feet bgs or shallower and located beyond the final excavation boundaries was regraded into the deeper excavation areas. This excavation/grading was performed for geotechnical purposes and to facilitate replacement of all shallow soil with clean, imported fill. Shallow soil beneath the small existing building at the southwest corner will be replaced following future building demolition.

Waste Management and Disposal

Excavated soil was stockpiled onsite pending analysis for soil disposal during the early stages of excavation. During the later stages of excavation, soil was pre-characterized and loaded directly into trucks for offsite disposal. Most soil (11,716 tons) contained less than 50 ppm TPHg and was off-hauled for Class III disposal at Newby Island Landfill in Milpitas, California. A total of 4,622 tons of soil excavated from the southern portion of the property near the former USTs typically exceeded 50 ppm TPHg and was off-hauled for Class II disposal at Forward Landfill in Manteca, California.

Shallow overburden soil (approximately 0-2.5 feet bgs) was stockpiled based on field observations and analyzed for reuse. With ACDEH approval, soil stockpiles A2 and SP-1 were reused onsite (approximately 250 tons of soil). Also, approximately 300 tons of shallow soil beneath the former dock and shed along the western property was reused. This soil had no field indications of hydrocarbon impact. Therefore, a total of approximately 550 tons of soil was reused at the Site. The reused soil was placed in the deeper excavation areas between 8 and 16 feet bgs. Analytical results from soil stockpiles are presented in Table 2. Soil stockpile samples were analyzed for TPHg by modified EPA Method 8015, and for TPHd, TPHmo, and TPHbo by EPA Method 8015 with silica gel cleanup. Selected samples were also analyzed for BTEX and MTBE by EPA Method 8021.

Site Restoration and Backfilling

Stockpiled soil produced during excavation activities that was approved for reuse was spread at the bottom of the excavation prior to backfilling with clean, imported soil. Lowney Associates supervised the backfilling activities in accordance with geotechnical specifications for the planned Site redevelopment. The Site was backfilled and compacted in layers up to approximately 2 feet of the original Site grade, which is considered the winter grade or 'finished grade' in this report. The clean, imported fill placed in the excavation has a very high clay content.

Groundwater Removal

During the approximate 4-month duration of excavation activities, a limited volume (approximately 1,500 gallons) of groundwater was encountered. During initial excavation activities, perched groundwater was encountered in excavation EX-A (south of the former UST and near boring EB-12) and in excavation EX-C (north of the dock near boring EB-10). The water entered the excavations from thin sandy units at approximately 7 ft bgs. Once the water

was removed with offhauled soil, groundwater did not return in these areas. After approximately two months of excavation, approximately 100 to 200 gallons of groundwater slowly entered the excavation floor near EX-D in the northern portion of the Site. All encountered groundwater was offhauled with the exported soil.

On August 2, 2002, Cambria collected and analyzed a perched groundwater sample EX-A-W1 from excavation EX-A. The analytical results and sample location is shown on Figure 4 and presented in Table 2b. Sample EX-A-W-1 contained 240 ug/l benzene and 25,900 ug/l total TPH. Again, this water was offhauled with exported soil and additional perched water was not encountered during excavation in this area. The excavation was extended to approximately 16 feet bgs in this area to target impacted soil with the potential to degrade groundwater quality.

POST-REMEDIATION GROUNDWATER SAMPLING

To confirm that remediation had achieved Site cleanup goals, Cambria installed seven temporary groundwater monitoring wells as specified in our *Temporary Well Installation Workplan* dated December 3, 2002. The temporary wells were installed using a Geoprobe drill rig. The seven temporary well locations are presented in Figure 8. Well installation activities and results are described below.

Temporary Well Installation

The well locations target the primary areas of concern from prior Site groundwater sampling, and provide lateral assessment of the Site. Well TW-1 was located near the former USTs. Four temporary wells were located near former borings that encountered free product and/or sheen: TW-2 is south of the former USTs and near boring EB-12; TW-4 is west of the former USTs and near former temporary 'well' 4A/B/C; TW-6 is south of the former ASTs/piping and near boring EB-9; and TW-7 is north of the dock near boring EB-10. Temporary wells TW-5 and TW-8 were not installed near primary areas of concern, but were installed to provide additional lateral assessment of groundwater quality at the Site. Well location TW-3, as shown in the *Temporary Well Installation Workplan,* was also planned to provide lateral assessment outside the primary areas of concern. However, the drilling equipment was unable to access this location due to the presence of a large soil stockpile.

Three of the wells (TW-1, TW-2 and TW-5) were removed after sampling to allow concurrent grading activities at the Site prior to a winter storm. These three wells were located approximately in areas five feet or greater below planned finished grade. Four temporary wells (TW-4, TW-6, TW-7 and TW-8) were at or near finish grade and remain at the Site. To facilitate comparison to prior and current Site data, Cambria describes depths with respect to planned finish grade rather than depth below grade from within the excavation cavity. The original Site grade is approximately 2 feet above the planned winter grade or 'finished grade' in this report.

To adequately characterize Site soil and hydrogeologic conditions, Cambria logged soil continuously and monitored carefully for first encountered groundwater. In general, Cambria encountered clayey soil beneath the excavation and did not encounter groundwater until approximately 16 to 29 ft below finish grade (bfg). Water rose significantly in Site wells, with static depth to water ranging from approximately 10 to 14 ft bfg during the well installation day (December 4, 2002), and ranging from approximately 5 to 11 ft bfg one day later (December 5, 2002). The well screen length was 10 feet in each well, with well intervals ranging from 15- 25 ft bfg, to 20-30 ft bfg. All wells were developed on December 4. Wells TW-1, TW-5 and TW-6 were sampled on December 4, with the remainder sampled on December 5, 2002.

Additional well installation and sampling details and Cambria's *Standard Field Procedures for Soil Borings and Monitoring Wells* are included in Appendix A.

Post-Remediation Groundwater Analytical Results

Analytical results for the seven temporary monitoring wells were well below the Site cleanup goals of 20,000 ug/l total TPH. Post-remediation analytical results are summarized on Table 2a and Figure 8. No COCs were detected above reporting limits in three of the seven wells, including well TW-1 adjacent the former UST cavity, well TW-4 located near Hicks well cluster 4A/B/C where free product had been previously measured, and perimeter well TW-8. TPHg and benzene were only detected in one well (TW-2) and at low concentrations (56 and 11 ug/l, respectively); well TW-2 was near the former UST and near EB-12 where free product has been observed in a pre-excavation grab groundwater sample. In wells with detected TPH, the total TPH concentrations ranged from only 79 to 596 ug/l in wells TW-2, TW-5, and TW-7, and was 5,000 ug/l in well TW-6.

Trace BTEX concentrations were detected in two of the seven post-remediation wells. Detected BTEX concentrations were well below groundwater RBSLs for residential site use.

No PNA's were detected in the four analyzed samples from the temporary wells. Prior to remediation, naphthalene had been detected in grab samples from Hick's wells 1, 4 and 4B at a maximum concentration of 150 ug/L. Temporary wells TW-4 and TW-8 were located near the Hick's wells and did not detect any naphthalene (<10 ug/L).

Groundwater Flow Direction and Gradient

Depth to water measurements and a well elevation survey conducted on December 11, 2002, one week after well installation, suggest an apparent groundwater flow direction towards the southwest at an approximate gradient of 0.04 ft/ft (see Figure 8). Groundwater level measurement and the well elevation survey are described in Table 2c and Appendix B. Like Lowney Associates, Cambria surveyed all top of casings to the 19.39 ft benchmark elevation on the sidewalk outside the gate on Powell Street, approximately 15 feet west of the boundary between 1300 and 1350 Powell Street.

Groundwater Assessment Summary

A cross section drawn through the most highly impacted area of the site (Figure 9) illustrates the relationships between pre- and post-remediation groundwater sampling results. Highly impacted groundwater and free product was encountered in the shallow wells screened within the excavation boundaries prior to soil and groundwater removal. During excavation, it was observed that this groundwater and free product was present within laterally discontinuous permeable zones surrounded by low permeability clay. The confined nature of these zones was demonstrated by the rise in water levels above first-encountered groundwater in the pre-excavation wells. Both the impacted groundwater and the generally coincident impacted soils were removed during excavation. The very low overall permeability of Site soil resulted in extremely low groundwater velocities, which explains the presence of highly impacted groundwater and free product at the Site more 15 years after removal of the USTs and approximately 50 years after removal of the ASTs.

Post-remediation wells were drilled through the floor of the excavation and also encountered primarily low permeability clay and apparently discontinuous more permeable saturated zones at depths ranging from 16 to 29 feet. Similar to the shallow pre-excavation wells, water also rose in these wells to depths of approximately 5 to 11 feet (above the floor of the excavation), indicating that the groundwater is confined, and was not hydraulically connected to the previously existing shallow groundwater zones within the excavation. This interpretation is corroborated by the observation that much of the excavation floor was left exposed over a period of approximately 4 months (August through November, 2002), while groundwater did not seep up through the floor of the excavation except for a very small quantity in the northern portion of the Site. The isolation of the shallow groundwater from the deeper groundwater explains the low to non-detect levels of Site COCs found in the post-remediation groundwater samples.

LOW-RISK GROUNDWATER CASE CRITERIA

The RWQCB released guidelines for cleanup and closure of low-risk groundwater sites impacted by petroleum hydrocarbons. According to the RWQCB, a low-risk groundwater site has the following characteristics:

- The leak has stopped and the hydrocarbon source has been removed;
- Groundwater is less than 50 ft deep;
- The site is adequately characterized;
- No water wells or other sensitive receptors are likely to be impacted;
- The hydrocarbon plume is defined and stable or decreasing;
- The site presents no significant risk to human health; and
- The site presents no significant risk to the environment.

Our evaluation of low-risk groundwater case closure criteria is presented below.

The leak has stopped and the hydrocarbon source has been removed: All former ASTs, USTs, associated piping and structures have been removed from the Site. Site excavation removed the hydrocarbon source in soil and groundwater.

Groundwater is less than 50 ft deep: Groundwater is considerably less than 50 ft deep.

The site is adequately characterized: The hydrogeologic characteristics of the Site are well understood. The extent of hydrocarbons in soil and groundwater has been well characterized by pre- and post-remediation activities including a total of 35 borings, 6 test pits, and 15 temporary wells/standpipes. In addition, approximately 100 confirmation soil samples were analyzed from the excavation sidewall and floor, including 40 confirmation soil samples from the final excavation boundary.. The characterization indicates that all impacted Site soil above cleanup goals has been removed. Both the hydrogeologic data and analytical results from post-remediation groundwater sampling demonstrate that groundwater remaining beneath the Site has not been impacted above cleanup levels and has been adequately characterized.

No water wells or other sensitive receptors are likely to be impacted: According to the ACDEH and to the RWQCB's basin plan, shallow groundwater beneath the Site is not considered a source of potable water. No known water wells or sensitive receptors have been identified within the vicinity of the known hydrocarbon impact.

The hydrocarbon plume is stable or decreasing: Analytical results from post-remediation groundwater sampling indicate that groundwater concentrations are significantly lower than pre-remediation concentrations. Given the very significant source removal, the hydrocarbon plume will certainly decrease. Residual hydrocarbons should naturally attenuate within a reasonable time frame.

The site presents no significant risk to human health: Based on the removal of impacted soil up to 10 feet bgs, site capping by 2 or more feet of clean imported fill, future capping by Site redevelopment, and the lack of significant volatile compounds in soil and/or groundwater, the Site presents no significant risk to human health. To further minimize the potential for exposure to any residual COCs, Site redevelopment will include vapor barriers underlying the inhabited structures and deed restrictions/notifications shall be filed in accordance with agency requirements. Natural attenuation of any residual hydrocarbons will further reduce any risk to human health.

The site presents no significant risk to the environment: No potential exposure pathways that would adversely impact surface water, wetlands, or other sensitive receptors have been identified in the vicinity of the Site, and shallow groundwater beneath the site is not considered a source of potable water by the RWQCB's basin plan. Therefore, the site does not pose a significant risk to the environment.

CONCLUSIONS

Cambria offers the following conclusions pertaining to the completed corrective action and the planned Site redevelopment:

- The completed Site corrective action has achieved the approved cleanup goals for the Site.
- The Corrective action has been conducted in accordance with the approved July 3, 2002 *Corrective Action Plan*.
- The excavation of approximately 16,890 tons of impacted soil represents an extensive remedial effort, involving the removal of soil and contaminated groundwater as deep as 16 feet below grade surface.
- Groundwater conditions have been adequately characterized by pre- and post-remediation sampling. Discontinuous thin permeable zones containing impacted groundwater and free product were limited in extent and removed during corrective action activities. Subsequent groundwater sampling has verified that groundwater beneath the impacted groundwater zones was not impacted above cleanup levels.
- The Site has been capped with at least 5 feet, and up to 16 feet of clean, imported fill, which has a high clay content to restrict migration of any residual COCs.
- The Site does not pose a significant risk to human health or the environment, and planned engineering and institutional controls will further safeguard human health.
- The Site merits case closure as a low-risk groundwater case and issuance of a No Further Action (NFA) letter.

- Upon NFA letter issuance, the remaining building will be demolished and engineering/administrative controls required by the ACDEH will be implemented.

Having achieved Site cleanup goals and satisfied RWQCB criteria for low-risk groundwater case closure, the Site merits consideration for no further action by the ACDEH and approval for residential redevelopment.

REFERENCES

Alameda County Department of Environmental Health. June 21, 2002 Cleanup requirements letter for properties located at 1300 and 1350 Powell Street.

California Regional Water Quality Control Board – San Francisco Bay Region (RWQCB). December 2001. Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater

California Regional Water Quality Control Board – San Francisco Bay Region (RWQCB). January 5, 1996 Memorandum – Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup of Low-Risk Fuel Sites.

Cambria Environmental Technology, Inc. July 3, 2002 Corrective Action Plan for 1350 Powell Street.

Lowney Associates. May 22, 2002 Soil and Groundwater Quality Evaluation for properties located at 1300 and 1350 Powell Street.

R.T. Hicks Consultants. 2001. Subsurface Investigation, 1350 Powell Street.

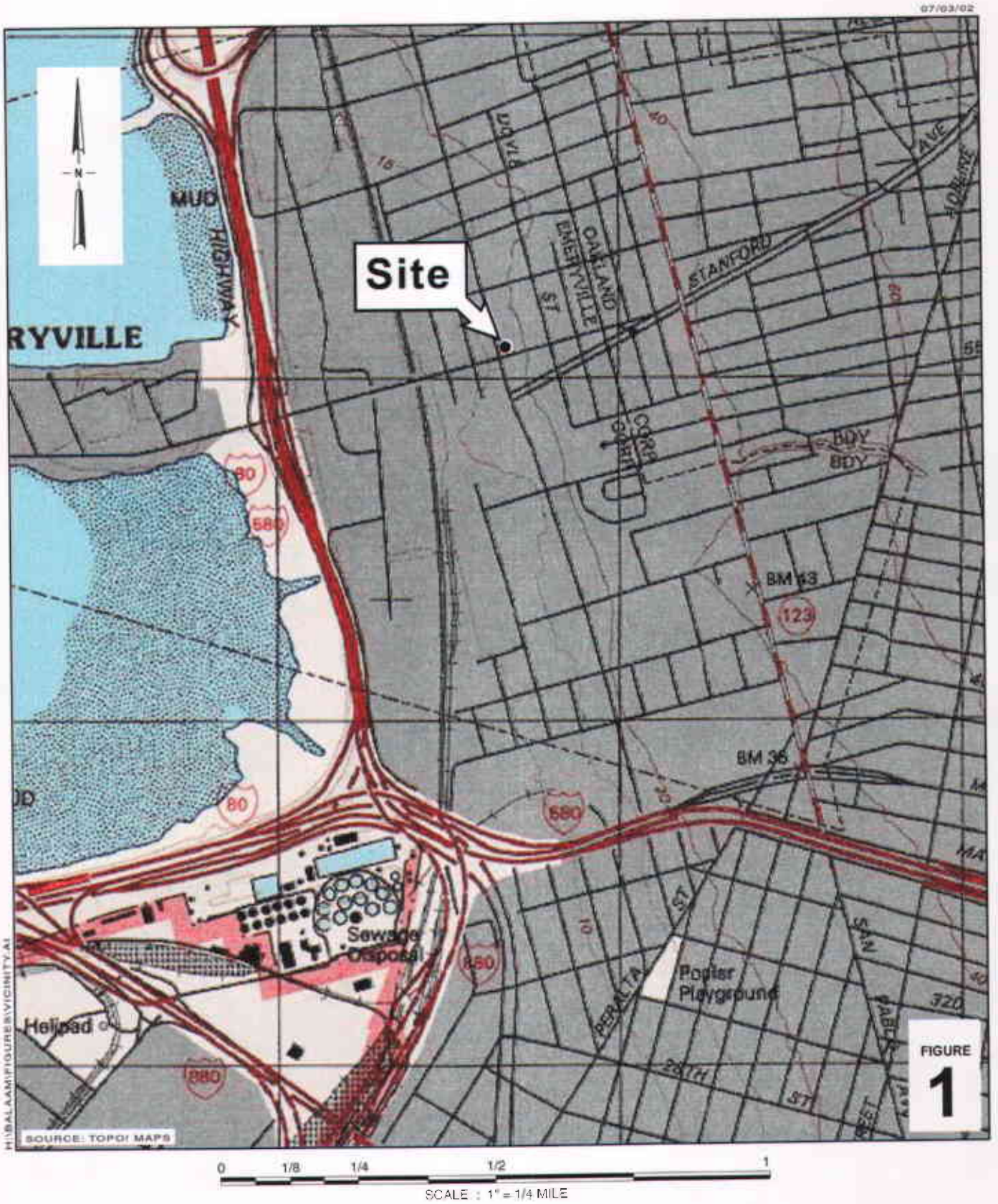


FIGURE 1

Balaam Property

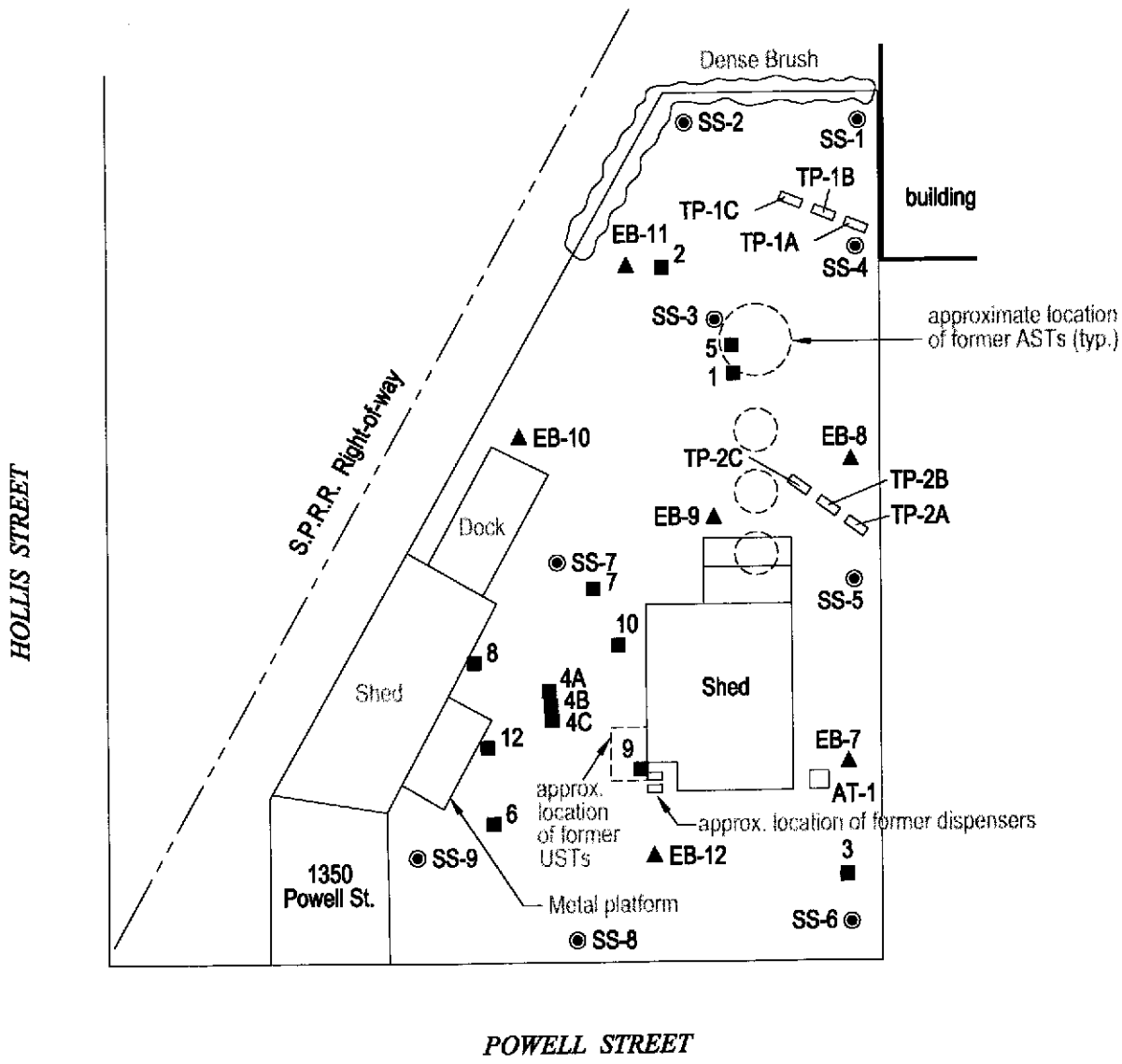
1350 Powell Street

Emeryville, California

CAMBRIA

Vicinity Map

07/03/02



EXPLANATION

EB-11 ▲ - Approximate location of exploratory ground water boring (by Lowney)

SS-9 ◉ - Approximate location of exploratory soil boring (by Lowney)

12 ■ - Approximate location of exploratory boring (by R.T. Hicks)

TP-1A ▭ - Approximate location of exploratory test pit (by Lowney)

N

0 25 50

Approx. Scale (ft)

FIGURE **2**

Base by Lowney Associates dated 5/02.

H:\BALAAM\FIGURES\SITEPLAN.DWG

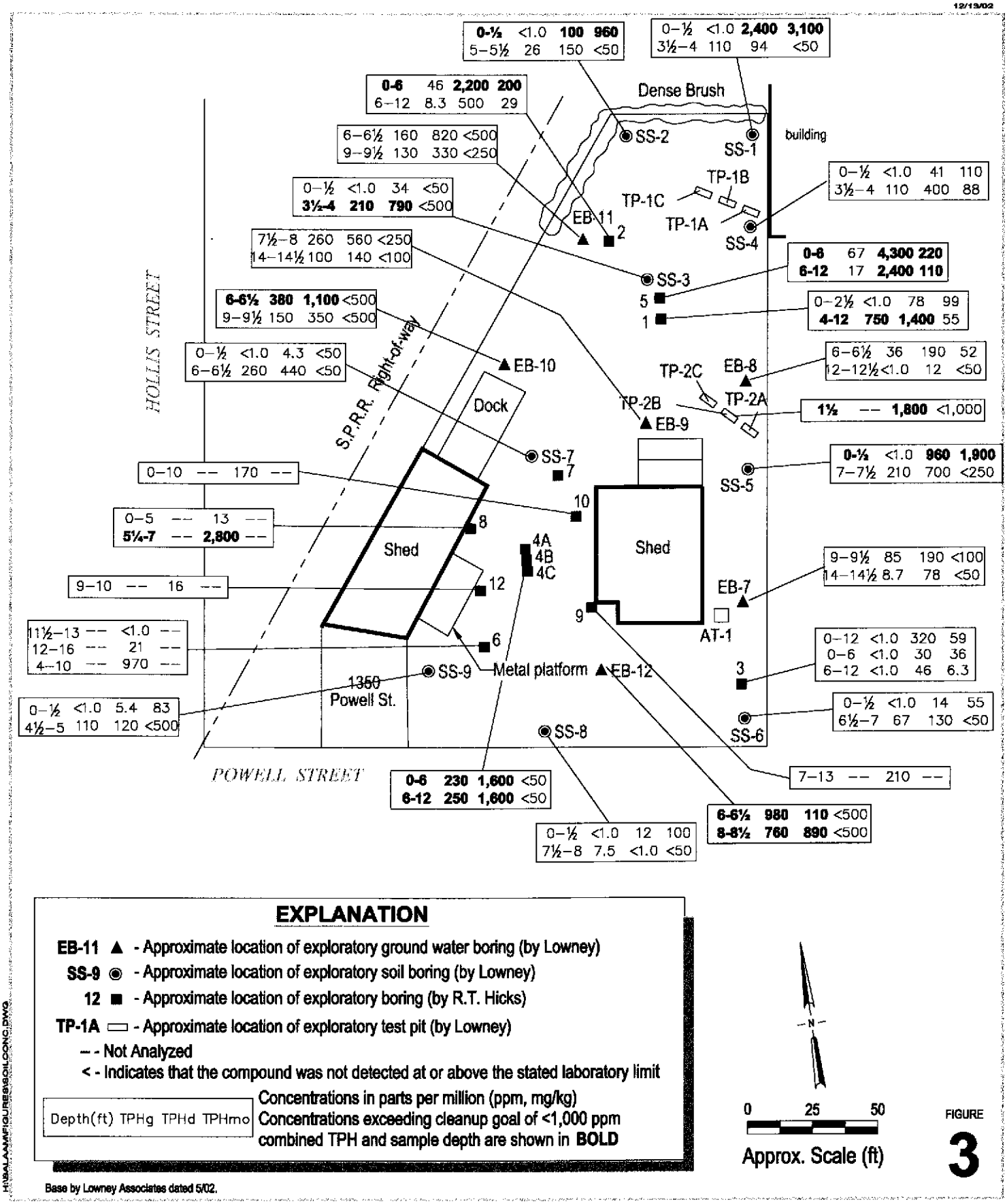
Balaam Property

1350 Powell Street

Emeryville, California

CAMBRIA

Pre-Remediation Site Plan



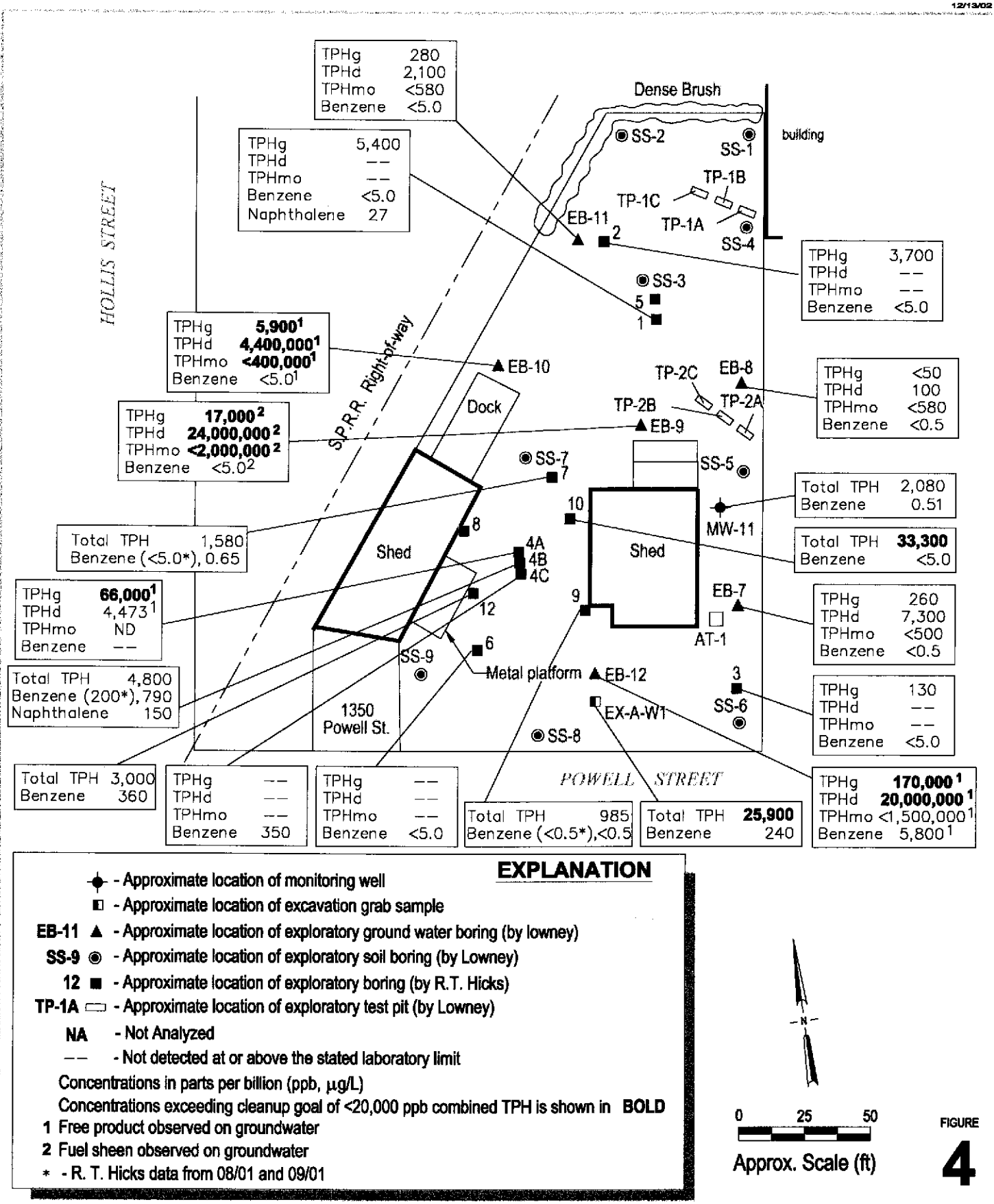
Balaam Property

1350 Powell Street

Emeryville, California

CAMBRIA

Pre-Remediation Conditions in Soil



H:\BALAAM\FIGURES\GWCONC.DWG

Base by Lowney Associates dated 5/02.

FIGURE **4**

Balaam Property

1350 Powell Street

Emeryville, California

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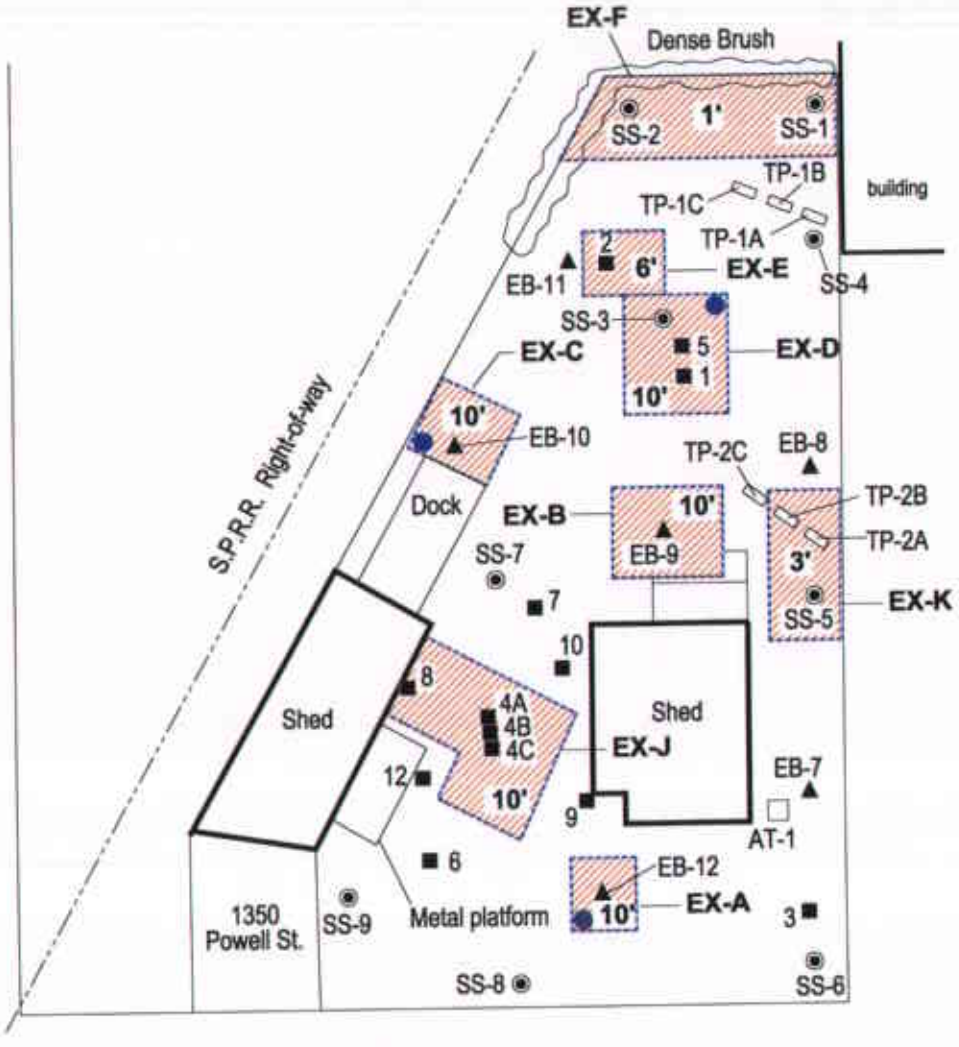
Pre-Remediation Conditions in Groundwater



EXPLANATION

EX-B
10'
- Planned excavation area with planned excavation depth (i.e. 10')

EB-11 ▲ - Approximate location of exploratory ground water boring (by Lowney)

SS-9 ◉ - Approximate location of exploratory soil boring (by Lowney)

12 ■ - Approximate location of exploratory boring (by R.T. Hicks)

TP-1A ▭ - Approximate location of exploratory test pit (by Lowney)

● - Groundwater encountered during excavation

N

0 25 50

Approx. Scale (ft)

FIGURE 5

Base by Lowney Associates dated 5/02.

H:\BALAAM\FIGURES\EXCAVATION.DWG

Balaam Property

1350 Powell Street

Emeryville, California

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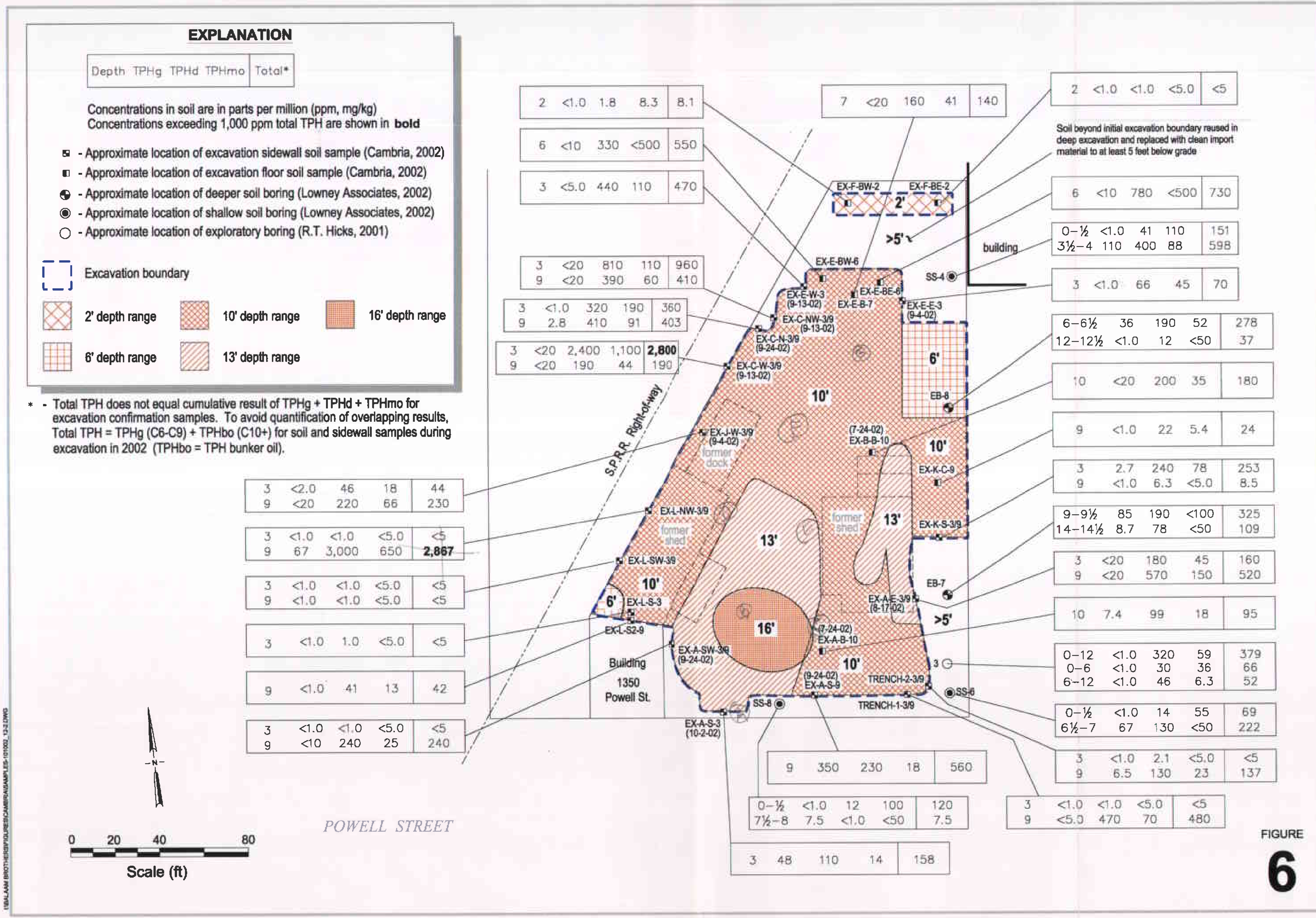
Initial Excavation Areas and Depths


EXPLANATION
Depth TPHg TPHd TPHmo Total*
Concentrations in soil are in parts per million (ppm, mg/kg)
Concentrations exceeding 1,000 ppm total TPH are shown in bold
- Approximate location of excavation sidewall soil sample (Cambria, 2002)
- Approximate location of excavation floor soil sample (Cambria, 2002)
- Approximate location of deeper soil boring (Lowney Associates, 2002)
- Approximate location of shallow soil boring (Lowney Associates, 2002)
- Approximate location of exploratory boring (R.T. Hicks, 2001)
Excavation boundary
2' depth range
10' depth range
16' depth range
6' depth range
13' depth range
* - Total TPH does not equal cumulative result of TPHg + TPHd + TPHmo for excavation confirmation samples. To avoid quantification of overlapping results, Total TPH = TPHg (C6-C9) + TPHbo (C10+) for soil and sidewall samples during excavation in 2002 (TPHbo = TPH bunker oil).
2 <1.0 1.8 8.3 8.1
6 <10 330 <500 550
3 <5.0 440 110 470
7 <20 160 41 140
2 <1.0 <1.0 <5.0 <5
Soil beyond initial excavation boundary reused in deep excavation and replaced with clean import material to at least 5 feet below grade
6 <10 780 <500 730
0–½ <1.0 41 110 151
3½–4 110 400 88 598
3 <1.0 66 45 70
3 <20 810 110 960
9 <20 390 60 410
3 <1.0 320 190 360
9 2.8 410 91 403
3 <20 2,400 1,100 **2,800**
9 <20 190 44 190
6–6½ 36 190 52 278
12–12½ <1.0 12 <50 37
10 <20 200 35 180
9 <1.0 22 5.4 24
3 2.7 240 78 253
9 <1.0 6.3 <5.0 8.5
9–9½ 85 190 <100 325
14–14½ 8.7 78 <50 109
3 <20 180 45 160
9 <20 570 150 520
10 7.4 99 18 95
0–12 <1.0 320 59 379
0–6 <1.0 30 36 66
6–12 <1.0 46 6.3 52
0–½ <1.0 14 55 69
6½–7 67 130 <50 222
3 <1.0 2.1 <5.0 <5
9 6.5 130 23 137
3 <1.0 <1.0 <5.0 <5
9 <5.0 470 70 480
9 350 230 18 560
0–½ <1.0 12 100 120
7½–8 7.5 <1.0 <50 7.5
3 48 110 14 158
3 <2.0 46 18 44
9 <20 220 66 230
3 <1.0 <1.0 <5.0 <5
9 67 3,000 650 **2,867**
3 <1.0 <1.0 <5.0 <5
9 <1.0 <1.0 <5.0 <5
3 <1.0 1.0 <5.0 <5
9 <1.0 41 13 42
3 <1.0 <1.0 <5.0 <5
9 <10 240 25 240
EX-F-BW-2
EX-F-BE-2
2'
>5'
building
SS-4
EX-E-BW-6
EX-E-BE-6
EX-E-W-3 (9-13-02)
EX-E-B-7
EX-E-E-3 (9-4-02)
EX-C-NW-3/9 (9-13-02)
EX-C-N-3/9 (9-24-02)
EX-C-W-3/9 (9-13-02)
6'
10'
EB-8
EX-J-W-3/9 (9-4-02)
former dock
(7-24-02) EX-B-B-10
10'
EX-K-C-9
S.P.R.R. Right-of-way
EX-L-NW-3/9
former shed
13'
former shed
13'
EX-K-S-3/9
EX-L-SW-3/9
10'
EB-7
EX-A-E-3/9 (8-17-02)
>5'
6'
EX-L-S-3
EX-L-S2-9
16'
(7-24-02) EX-A-B-10
Building 1350 Powell St.
EX-A-SW-3/9 (9-24-02)
10'
3
(9-24-02) EX-A-S-9
TRENCH-2-3/9
SS-6
SS-8
TRENCH-1-3/9
EX-A-S-3 (10-2-02)
N
POWELL STREET
0 20 40 80
Scale (ft)
FIGURE
6

Post-Remediation Conditions in Soil and Excavation Extents

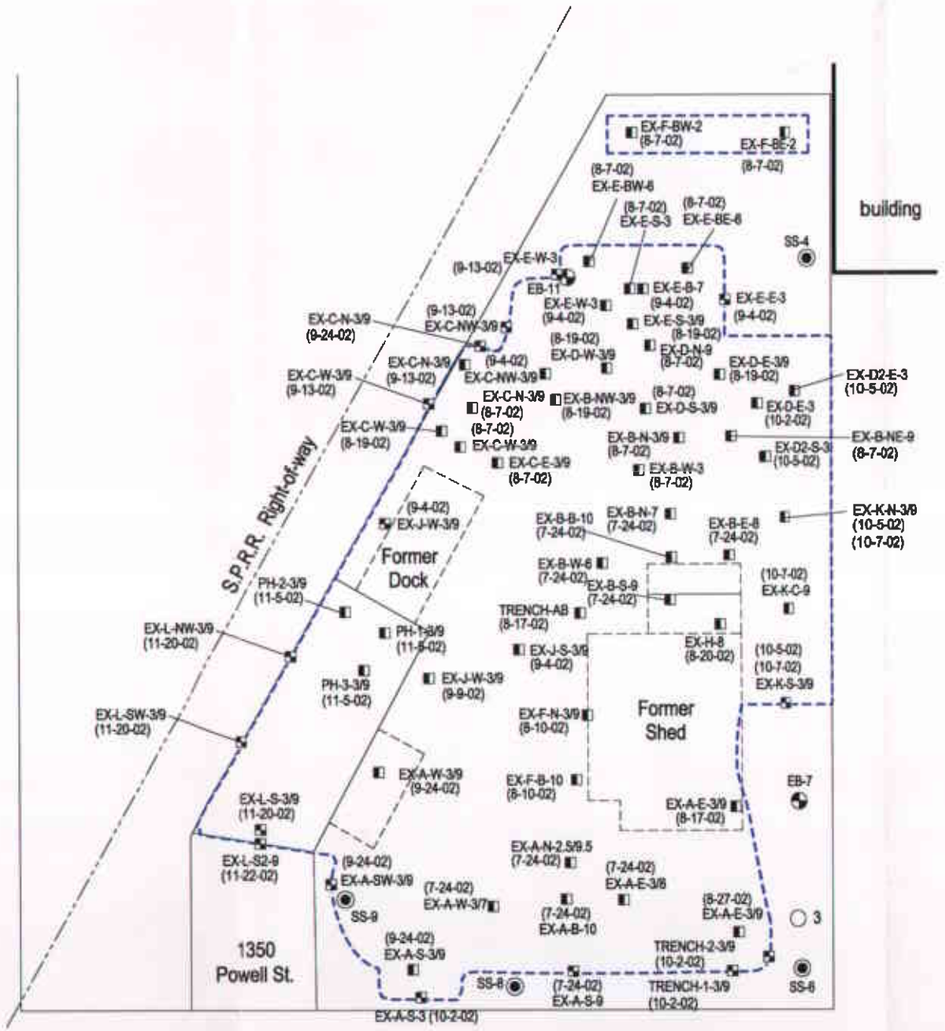
CAMBRIA

Balaam Property
1350 Powell Street
Emeryville, California

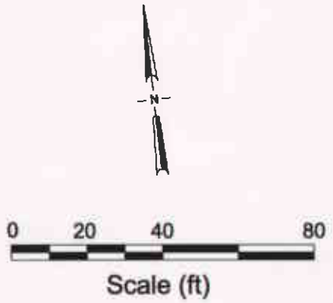
12/13/02

EXPLANATION

- ▪ - Approximate location of excavation sidewall soil sample (Cambria, 2002)
- ◧ - Approximate location of excavation floor soil sample (Cambria, 2002)
- ◔ - Approximate location of deeper soil boring (Lowney Associates, 2002)
- ◉ - Approximate location of shallow soil boring (Lowney Associates, 2002)



POWELL STREET



I:\BALAAM BROTHERS\FIGURES\CAMBRIA\SOIL SAMPLES_12-3.DWG

Excavation Soil Sample Locations

CAMBRIA

Balaam Property
1350 Powell Street
Emeryville, California

FIGURE
7

12/13/02

EXPLANATION

TW-1 — Temporary well location

BM — Benchmark in sidewalk, 19.39 feet elevation

— Excavation Area

10.28 — Groundwater Elevation as of 12/11/02 (feet above sea level **)

0.04 — Groundwater flow direction and gradient (feet above sea level **)

10.00 — Groundwater elevation contour line as of 12/11/02 (feet above sea level **)

Total TPH — Combined Total Petroleum Hydrocarbons (TPH) by EPA Method 8015C
Total TPH does not equal cumulative result of TPHg + TPHd + TPHmo. To avoid quantification of overlapping results, Total TPH = TPHg (C6-C9) + TPHbo (C10+)

TPHg — TPH as gasoline by EPA Method 8015C

TPHd — TPH as diesel by EPA Method 8015Cm with silica gel cleanup

TPHmo — TPH as motor oil by EPA Method 8015Cm with silica gel cleanup

TPHbo — TPH as bunker oil by EPA Method 8015Cm with silica gel cleanup

Benzene — Benzene by EPA Method 8021B

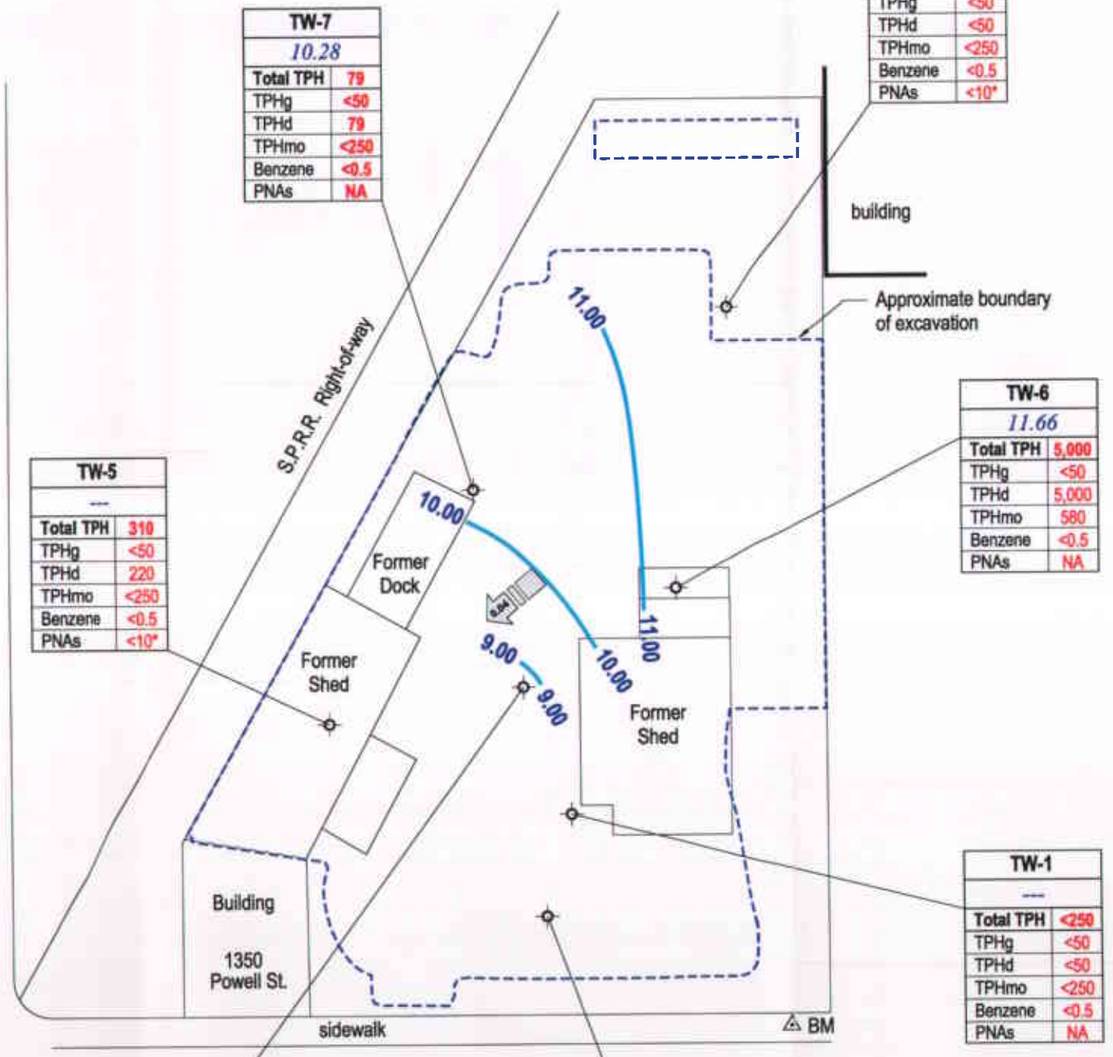
PNA's — Polynuclear aromatic hydrocarbons by EPA Method 8270D

NA — Not Analyzed

Concentrations are in parts per billion (ppb, µg/L)

• — The reporting limit for phenanthrene was 50 µg/L

•• — Based on 19.39' benchmark in sidewalk



N

0 20 40 80

Scale (ft)

FIGURE

8

Post-Remediation Conditions in Groundwater

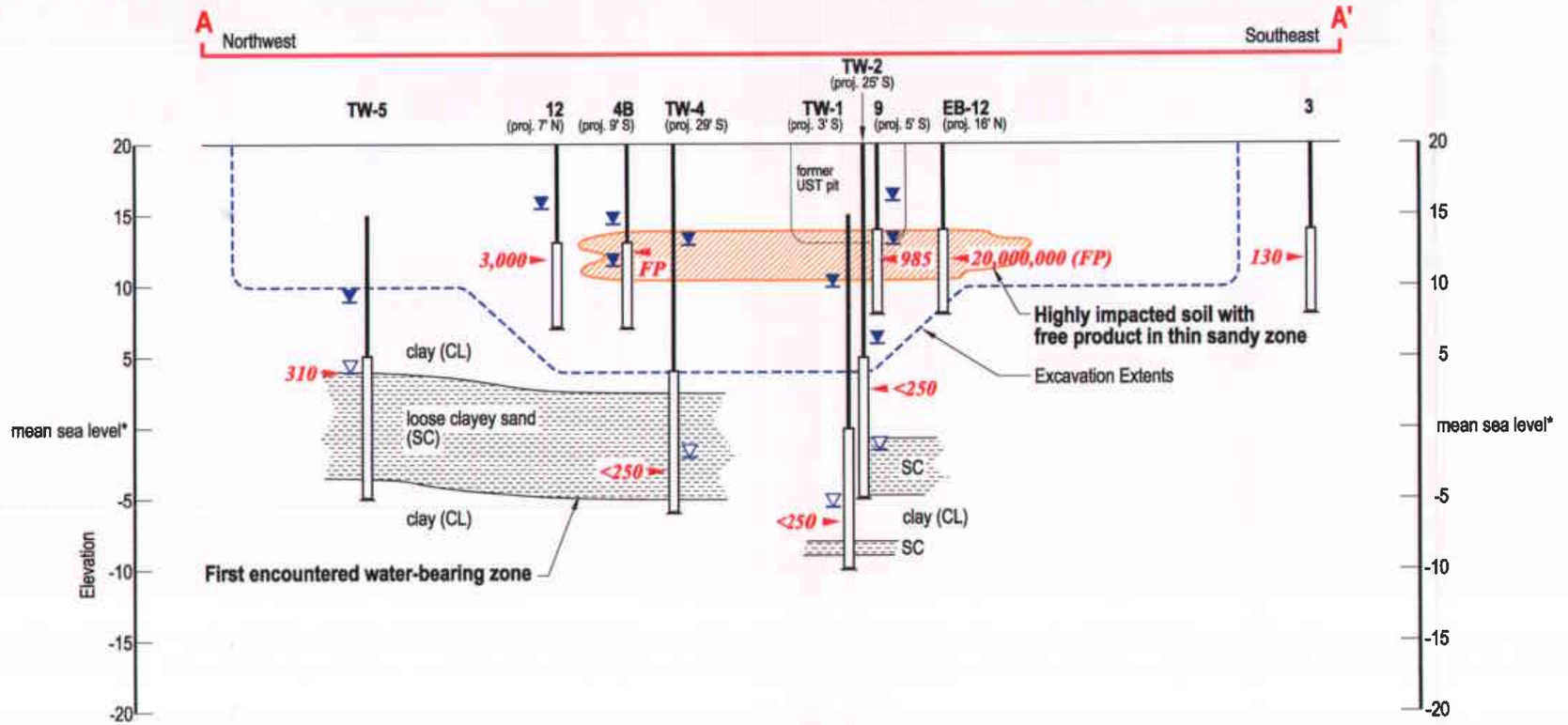
CAMBRIA

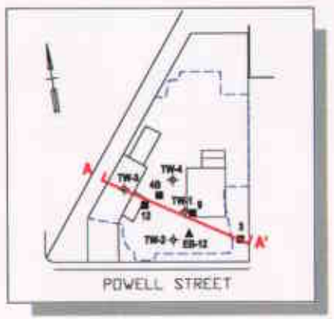
Balaam Property
1350 Powell Street
Emeryville, California

I:\BALAAM BROTHERS\FIGURES\CAMBRIA\GWCONC_12-10-02.DWG

12/15/03

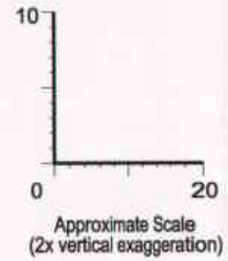
Cross Section A - A'





EXPLANATION

Well ID (proj.)	Well / Boring designation and projection information	*	Elevation per 19.39' benchmark on sidewalk
	Groundwater Monitoring Well	▼	Depth of Groundwater
	Well Screen Interval	▽	Initial Groundwater level
	Bottom of boring	310	Total TPH concentration in groundwater (ppb, µg/L)
		FP	Free Product



FIGURE

9

Balaam Property
1350 Powell Street
Emeryville, California

CAMBRIA

H:\BALAAM\FIGURES\X-SECTION-A.DWG

CAMBRIA

Table 1a. **Soil Analytical Data - Petroleum Hydrocarbons**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	TPHg (C6-C9) (mg/kg)	TPHd (C10-C23) (mg/kg)	TPHmo (C-18+) (mg/kg)	TPHbo (C-10+) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
EPA Method:			**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**
Residential RBSL*:			**400**	**500**	**500**	**NE**	**NE**	**0.18**	**8.4**	**24**	**1.0**	**1.0**
Cleanup Goal:			--	--	--	--	**1,000**	--	--	--	--	--
Post Remediation												
Hicks Borings, 2001												
Borehole #3**	Composite 0'-6'	8/7/01	ND	30	36	--	--	ND	ND	ND	ND	ND
Borehole #3**	Composite 6'-12'	8/7/01	ND	46	6.3	--	--	ND	ND	ND	ND	ND
Lowney Associates Borings, 2002												
EB-7**	9'-9.5'	3/4/02	85	190	<100	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
EB-7**	14'-14.5'	3/4/02	8.7	78	<50	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
EB-8**	6'-6.5'	3/4/02	36	190	52	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
EB-8**	12'-12.5'	3/4/02	<1.0	12	<50	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
Lowney Associates Borings, 2002												
SS-4 (fill)**	0'-0.5'	3/6/01	<1.0	41	110	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-4 (native)**	3.5'-4'	3/6/01	110	400	88	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
SS-6 (fill)**	0'-0.5'	3/6/01	<1.0	14	55	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-6 (native)**	6.5'-7'	3/6/01	67	130	<50	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
SS-8 (fill)**	0'-0.5'	3/6/01	<1.0	12	100	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-8 (native)**	7.5'-8'	3/6/01	7.5	<1.0	<50	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
Sidewall Sampling Event I												
North Side of Property												
EX-B-B-10**	10'-10.5'	7/24/02	<20	200	35	180	180	<0.1	<0.1	<0.1	<0.1	<1
South Side of Property												
EX-A-B-10**	10'-10.5'	7/24/02	7.4	99	18	88	95	**0.47**	0.027	0.038	0.13	<0.2
EX-A-S-9**	9'-10'	7/24/02	350	230	18	210	560	**2.0**	0.30	3.4	**2.1**	<2.0
Sidewall Sampling Event II												
North Side of Property												
EX-E-BW-6**	6'-6.5'	8/7/02	<10	330	<500	550	550	--	--	--	--	--
EX-E-BE-6**	6'-6.5'	8/7/02	<10	780	<500	730	730	--	--	--	--	--
EX-F-BE-2**	2'-3'	8/7/02	<1.0	<1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-F-BW-2**	2'-3'	8/7/02	<1.0	1.8	8.3	8.1	8.1	--	--	--	--	--
Sidewall Sampling Event IV												
South Side of Property												
EX-A-E-9**	9'-9.5'	8/17/02	<20	570	150	520	520	<0.1	<0.2	<0.1	<0.05	<1
EX-A-E-3**	3'-4'	8/17/02	<20	180	45	160	160	<0.1	<0.2	<0.1	<0.05	<1
Sidewall Sampling Event VI												
North Side of Property												
EX-E-B-7**	7'-7.5'	9/4/02	<20	160	41	140	140	--	--	--	--	--
EX-B-E-3**	3'-3.5'	9/4/02	<1.0	66	45	70	70	--	--	--	--	--
EX-J-W-3**	3'-3.5'	9/4/02	<2.0	46	18	44	44	--	--	--	--	--
EX-J-W-9**	9'-9.5'	9/4/02	<20	220	66	230	230	--	--	--	--	--

Table 1a. **Soil Analytical Data - Petroleum Hydrocarbons**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	TPHg (C6-C9) (mg/kg)	TPHd (C10-C23) (mg/kg)	TPHmo (C-18+) (mg/kg)	TPHbo (C-10+) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
		EPA Method:	**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**
		Residential RBSL*:	**400**	**500**	**500**	**NE**	**NE**	**0.18**	**8.4**	**24**	**1.0**	**1.0**
		Cleanup Goal:	--	--	--	--	**1,000**	--	--	--	--	--
Sidewall Sampling Event VII												
North Side of Property												
EX-E-W-3**	3'-3.5'	9/13/02	<5.0	440	110	470	470	--	--	--	--	--
EX-C-NW-3**	3'-3.5'	9/13/02	<20	810	110	960	960	--	--	--	--	--
EX-C-NW-9**	9'-9.5'	9/13/02	<20	390	60	410	410	--	--	--	--	--
EX-C-W-3**	3'-3.5'	9/13/02	<20	2,400	1,100	2,800	2,800	--	--	--	--	--
EX-C-W-9**	9'-9.5'	9/13/02	<20	190	44	190	190	--	--	--	--	--
Sidewall Sampling Event VIII												
North Side of Property												
EX-C-N-3**	3'-3.5'	9/24/02	<1.0	320	190	360	360	<0.005	<0.005	<0.005	<0.005	<0.05
EX-C-N-9**	9'-9.5'	9/24/02	2.8	410	91	400	403	<0.005	<0.005	0.016	<0.005	<0.05
South Side of Property												
EX-A-SW-3**	3'-3.5'	9/24/02	<1.0	<1.0	<5.0	<5.0	<5	0.0095	0.0051	<0.005	<0.005	<0.05
EX-A-SW-9**	9'-9.5'	9/24/02	<10	240	25	240	240	<0.05	<0.05	<0.05	<0.05	<0.5
EX-A-S-9**	9'-9.5'	9/24/02	<1.0	13	13	27	27	<0.005	<0.005	<0.005	<0.005	<0.05
Sidewall Sampling Event IX												
South Side of Property												
EX-A-S-3 (10-2-02)**	3'-3.5'	10/2/02	48	110	14	110	158	**3.5**	0.16	3.1	**4.5**	<0.5
TRENCH-1-9 (10-2-02)**	9'-9.5'	10/2/02	<5.0	470	70	480	480	<0.02	<0.02	<0.02	<0.02	<0.2
TRENCH-1-3 (10-2-02)**	3'-3.5'	10/2/02	<1.0	<1.0	<5.0	<5.0	<5	<0.005	<0.005	<0.005	<0.005	<0.05
TRENCH-2-3 (10-2-02)**	3'-3.5'	10/2/02	<1.0	2.1	<5.0	<5.0	<5	<0.005	<0.005	<0.005	<0.005	<0.05
TRENCH-2-9 (10-2-02)**	9'-9.5'	10/2/02	6.5	130	23	130	137	<0.02	<0.02	0.030	<0.02	<0.2
Sidewall Sampling Event X												
North Side of Property												
EX-K-S-3**	3'-3.5'	10/5/02	2.7	240	78	250	253	--	--	--	--	--
North Side of Property								--	--	--	--	--
EX-K-S-9**	9'-9.5'	10/7/02	<1.0	6.3	<5.0	8.5	8.5	--	--	--	--	--
EX-K-C-9**	9'-9.5'	10/7/02	<1.0	22	5.4	24	24	--	--	--	--	--
Pothole Sampling under former building												
EX-L-SW-3**	3'-3.5'	11/20/02	<1.0	<1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-L-SW-9**	9'-9.5'	11/20/02	<1.0	<1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-L-NW-3**	3'-3.5'	11/20/02	<1.0	<1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-L-NW-9**	9'-9.5'	11/20/02	67	3,000	650	2,800	2,867	--	--	--	--	--
EX-L-S-3**	3'-3.5'	11/20/02	<1.0	1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-L-S-9**	9'-9.5'	11/20/02	13	1,100	270	1,100	1,113	--	--	--	--	--
EX-L-S2-9**	9'-9.5'	11/22/02	<1.0	41	13	42	42	--	--	--	--	--

Table 1a. **Soil Analytical Data - Petroleum Hydrocarbons**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	TPHg (C6-C9) (mg/kg)	TPHd (C10-C23) (mg/kg)	TPHmo (C-18+) (mg/kg)	TPHbo (C-10+) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
EPA Method:			**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**
Residential RBSL*:			**400**	**500**	**500**	**NE**	**NE**	**0.18**	**8.4**	**24**	**1.0**	**1.0**
Cleanup Goal:			--	--	--	--	**1,000**	--	--	--	--	--
During Remediation												
Sidewall Sampling Event I												
North Side of Property												
EX-B-W-6	6'-7'	7/24/02	<200	4,600	1,900	5,000	5,000	<1	<1	<1	<1	<10
EX-B-N-7	7'-8'	7/24/02	<200	9,600	2,800	10,000	10,000	<1	<1	<1	<1	<10
EX-B-E-8	8'-9'	7/24/02	<100	1,900	500	1,700	1,700	<0.5	<0.5	<0.5	<0.5	<5.0
EX-B-S-9	9'-10'	7/24/02	<200	12,000	2,300	11,000	11,000	<1	<1	<1	<1	<10
EX-B-B-10**	10'-10.5'	7/24/02	<20	200	35	180	180	<0.1	<0.1	<0.1	<0.1	<1
South Side of Property												
EX-A-W-3	3'-4'	7/24/02	900	330	25	300	1,200	19	89	29	130	<10
EX-A-W-7	7'-8'	7/24/02	460	3,300	520	3,800	4,260	21	3.6	12	14	<10
EX-A-N-2.5	2.5'-3.5'	7/24/02	67	200	13	180	247	2.5	0.26	0.39	0.37	<0.5
EX-A-N-9.5	9.5'-10'	7/24/02	2,100	2,700	<500	2,300	4,400	36	24	85	350	<10
EX-A-B-10**	10'-10.5'	7/24/02	7.4	99	18	88	95	0.47	0.027	0.038	0.13	<0.2
EX-A-E-3	3'-4'	7/24/02	67	170	28	150	217	1.4	0.34	0.043	0.12	<0.2
EX-A-E-8	8'-9'	7/24/02	240	7,100	900	6,900	7,140	6.2	1.5	1.4	2.7	<10
EX-A-S-9**	9'-10'	7/24/02	350	230	18	210	560	2.0	0.30	3.4	2.1	<2.0
Sidewall Sampling Event II												
North Side of Property												
EX-B-NE-9	9'-10'	8/7/02	<5.0	340	130	370	370	--	--	--	--	--
EX-B-W-9	9'-10'	8/7/02	<100	3,800	640	3,900	3,900	--	--	--	--	--
EX-B-N-9	9'-10'	8/7/02	<100	7,100	1,300	7,100	7,100	--	--	--	--	--
EX-B-N-3	3'-4'	8/7/02	<1.0	17	16	24	24	--	--	--	--	--
EX-C-E-9	9'-10'	8/7/02	<100	3,200	820	3,200	3,200	--	--	--	--	--
EX-C-B-3	3'-4'	8/7/02	19	390	100	360	379	--	--	--	--	--
EX-C-N-9	9'-10'	8/7/02	16	1,600	<500	1,700	1,716	--	--	--	--	--
EX-C-N-3	3'-4'	8/7/02	<10	510	140	470	470	--	--	--	--	--
EX-C-W-9	9'-10'	8/7/02	39	2,600	570	2,800	2,839	--	--	--	--	--
EX-C-W-3	3'-4'	8/7/02	<40	920	250	850	850	--	--	--	--	--
EX-D-S-9	9'-10'	8/7/02	<100	4,200	810	4,200	4,200	--	--	--	--	--
EX-D-S-3	3'-4'	8/7/02	<10	340	72	300	300	--	--	--	--	--
EX-D-N-9	9'-10'	8/7/02	<10	300	95	320	320	--	--	--	--	--
EX-E-BW-6**	6'-6.5'	8/7/02	<10	330	<500	550	550	--	--	--	--	--
EX-E-BE-6**	6'-6.5'	8/7/02	<10	780	<500	730	730	--	--	--	--	--
EX-E-S-3	3'-4'	8/7/02	<100	12,000	2,600	11,000	11,000	--	--	--	--	--
EX-F-BE-2**	2'-3'	8/7/02	<1.0	<1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-F-BW-2**	2'-3'	8/7/02	<1.0	1.8	8.3	8.1	8.1	--	--	--	--	--

Table 1a. **Soil Analytical Data - Petroleum Hydrocarbons**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	TPHg (C6-C9) (mg/kg)	TPHd (C10-C23) (mg/kg)	TPHmo (C-18+) (mg/kg)	TPHbo (C-10+) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
		EPA Method:	**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**
		Residential RBSL*:	**400**	**500**	**500**	**NE**	**NE**	**0.18**	**8.4**	**24**	**1.0**	**1.0**
		Cleanup Goal:	--	--	--	--	**1,000**	--	--	--	--	--
Sidewall Sampling Event III												
South Side of Property												
EX-F-N-3	3'-4'	8/10/02	<20	1,300	220	1,200	1,200	<0.1	<0.1	<0.1	<0.1	<1
EX-F-N-9	9'-10'	8/10/02	15	1,000	180	1,100	1,115	<0.05	0.052	0.065	<0.05	<0.5
EX-F-B-10	10'-10.5'	8/10/02	11	1,500	400	1,300	1,311	<0.05	<0.05	<0.05	<0.05	<0.5
Note: EX-F is really an extension of EX-A in this case												
Sidewall Sampling Event IV												
South Side of Property												
EX-A-E-9**	9'-9.5'	8/17/02	<20	570	150	520	520	<0.1	<0.2	<0.1	<0.05	<1
EX-A-E-3**	3'-4'	8/17/02	<20	180	45	160	160	<0.1	<0.2	<0.1	<0.05	<1
North Side of Property												
EX-C-W-9	9'-9.5'	8/19/02	58	1,900	430	2,000	2,058	<0.1	<0.1	0.30	<0.05	<1
EX-C-W-3	3'-4'	8/19/02	47	2,600	540	2,300	2,347	<0.1	<0.1	0.21	<0.05	<1
EX-E-S-3	3'-4'	8/19/02	<20	3,500	640	3,700	3,700	<0.1	<0.2	<0.1	<0.05	<1
EX-D-W-9	9'-9.5'	8/19/02	<20	420	140	450	450	<0.1	<0.1	<0.1	<0.05	<1
EX-D-W-3	3'-4'	8/19/02	12	270	62	240	252	<0.05	<0.05	0.056	<0.02	<0.5
EX-B-NW-9	9'-9.5'	8/19/02	11	1,000	<500	1,600	1,611	<0.05	<0.1	<0.05	<0.02	<0.5
EX-B-NW-3	3'-4'	8/19/02	<20	4,900	970	4,900	4,900	<0.1	<0.1	<0.1	<0.05	<1
EX-D-E-9	9'-9.5'	8/19/02	<20	650	160	590	590	<0.1	<0.1	<0.1	<0.05	<1
EX-D-E-3	3'-4'	8/19/02	21	3,100	840	3,100	3,121	<0.1	<0.1	<0.1	<0.05	<1
TRENCHAB	0'-7'	8/17/02	25	2,500	560	2,900	2,925	<0.1	<0.1	0.21	<0.05	<1
EX-H-8	8'-9'	8/20/02	61	1,600	550	2,000	2,061	--	--	--	--	--
Sidewall Sampling Event V												
South Side of Property												
EX-A-E-9	9'-9.5'	8/27/02	16	570	120	560	576	<0.02	<0.02	0.16	0.33	<0.2
EX-A-E-3	3'-4'	8/27/02	53	2,300	650	2,600	2,653	<0.05	<0.05	0.40	0.57	<0.5
Sidewall Sampling Event VI												
North Side of Property												
EX-B-B-7**	7'-7.5'	9/4/02	<20	160	41	140	140	--	--	--	--	--
EX-E-W-3	3'-3.5'	9/4/02	<50	1,100	410	1,100	1,100	--	--	--	--	--
EX-E-E-3**	3'-3.5'	9/4/02	<1.0	66	45	70	70	--	--	--	--	--
EX-D-NW-9	9'-9.5'	9/4/02	<50	620	120	560	560	--	--	--	--	--
EX-D-NW-3	3'-3.5'	9/4/02	<50	150	30	140	140	--	--	--	--	--
EX-J-W-3**	3'-3.5'	9/4/02	<2.0	46	18	44	44	--	--	--	--	--
EX-J-W-9**	9'-9.5'	9/4/02	<20	220	66	230	230	--	--	--	--	--
EX-J-S-9	9'-9.5'	9/4/02	26	1,700	520	1,600	1,626	--	--	--	--	--
EX-J-S-3	3'-3.5'	9/4/02	6.3	290	97	310	316	--	--	--	--	--

Table 1a. **Soil Analytical Data - Petroleum Hydrocarbons**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	TPHg (C6-C9) (mg/kg)	TPHd (C10-C23) (mg/kg)	TPHmo (C-18+) (mg/kg)	TPHbo (C-10+) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
		EPA Method:	**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**
		Residential RBSL*:	**400**	**500**	**500**	**NE**	**NE**	**0.18**	**8.4**	**24**	**1.0**	**1.0**
		Cleanup Goal:	**--**	**--**	**--**	**--**	**1,000**	**--**	**--**	**--**	**--**	**--**
Sidewall Sampling Event VI												
North Side of Property												
EX-J-W-3	3'-3.5'	9/9/02	16	240	41	240	256	--	--	--	--	--
EX-J-W-9	9'-9.5'	9/9/02	160	4,900	<5,000	6,400	6,560	--	--	--	--	--
Sidewall Sampling Event VII												
North Side of Property												
EX-E-W-3**	3'-3.5'	9/13/02	<5.0	440	110	470	470	--	--	--	--	--
EX-C-NW-3**	3'-3.5'	9/13/02	<20	810	110	960	960	--	--	--	--	--
EX-C-NW-9**	9'-9.5'	9/13/02	<20	390	60	410	410	--	--	--	--	--
EX-C-W-3**	3'-3.5'	9/13/02	<20	2,400	1,100	2,800	2,800	--	--	--	--	--
EX-C-W-9**	9'-9.5'	9/13/02	<20	190	44	190	190	--	--	--	--	--
EX-C-N-3	3'-3.5'	9/13/02	31	3,100	1,100	3,400	3,431	--	--	--	--	--
EX-C-N-9	9'-9.5'	9/13/02	21	840	190	830	851	--	--	--	--	--
Sidewall Sampling Event VIII												
North Side of Property												
EX-C-N-3**	3'-3.5'	9/24/02	<1.0	320	190	360	360	<0.005	<0.005	<0.005	<0.005	<0.05
EX-C-N-9**	9'-9.5'	9/24/02	2.8	410	91	400	403	<0.005	<0.005	0.016	<0.005	<0.05
South Side of Property												
EX-A-SW-3**	3'-3.5'	9/24/02	<1.0	<1.0	<5.0	<5.0	<5	0.0095	0.0051	<0.005	<0.005	<0.05
EX-A-SW-9**	9'-9.5'	9/24/02	<10	240	25	240	240	<0.05	<0.05	<0.05	<0.05	<0.5
EX-A-W-9	9'-9.5'	9/24/02	12	140	<100	140	152	<0.05	<0.05	0.061	<0.05	<0.5
EX-A-W-3	3'-3.5'	9/24/02	2.4	28	<5.0	27	29	<0.005	0.0056	0.017	<0.005	<0.05
EX-A-S-9**	9'-9.5'	9/24/02	<1.0	13	13	27	27	<0.005	<0.005	<0.005	<0.005	<0.05
EX-A-S-3	3'-3.5'	9/24/02	810	630	54	640	1,450	21	14	33	120	<5.0
Sidewall Sampling Event IX												
North Side of Property												
EX-D-E-3 (10-20-02)	3'-3.5'	10/2/02	<10	3,300	960	3,700	3,700	<0.05	0.074	<0.05	<0.05	<0.5
South Side of Property												
EX-A-S-3 (10-2-02)**	3'-3.5'	10/2/02	48	110	14	110	158	3.5	0.16	3.1	4.5	<0.5
TRENCH-2-3 (10-2-02)**	3'-3.5'	10/2/02	<1.0	2.1	<5.0	<5.0	<5	<0.005	<0.005	<0.005	<0.005	<0.05
TRENCH-2-9 (10-2-02)**	9'-9.5'	10/2/02	6.5	130	23	130	137	<0.02	<0.02	0.030	<0.02	<0.2
TRENCH-1-9 (10-2-02)**	9'-9.5'	10/2/02	<5.0	470	70	480	480	<0.02	<0.02	<0.02	<0.02	<0.2
TRENCH-1-3 (10-2-02)**	3'-3.5'	10/2/02	<1.0	<1.0	<5.0	<5.0	<5	<0.005	<0.005	<0.005	<0.005	<0.05
Sidewall Sampling Event X												
North Side of Property												
EX-D2-E-3	3'-3.5'	10/5/02	<10	2,600	1,500	3,100	3,100	--	--	--	--	--
EX-D2-S-3	3'-3.5'	10/5/02	<20	3,400	730	3,900	3,900	--	--	--	--	--
EX-K-N-3	3'-3.5'	10/5/02	<50	1,900	<500	2,000	2,000	--	--	--	--	--
EX-K-S-3**	3'-3.5'	10/5/02	2.7	240	78	250	253	--	--	--	--	--

Table 1a. **Soil Analytical Data - Petroleum Hydrocarbons**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	TPHg (C6-C9) (mg/kg)	TPHd (C10-C23) (mg/kg)	TPHmo (C-18+) (mg/kg)	TPHbo (C-10+) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
		EPA Method:	**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**
		Residential RBSL*:	**400**	**500**	**500**	**NE**	**NE**	**0.18**	**8.4**	**24**	**1.0**	**1.0**
		Cleanup Goal:	**--**	**--**	**--**	**--**	**1,000**	**--**	**--**	**--**	**--**	**--**
North Side of Property								--	--	--	--	--
EX-K-C-9**	9'-9.5'	10/7/02	<1.0	22	5.4	24	24	--	--	--	--	--
EX-K-N-9	9'-9.5'	10/7/02	<4.0	350	57	360	360	--	--	--	--	--
EX-K-S-9**	9'-9.5'	10/7/02	<1.0	6.3	<5.0	8.5	8.5	--	--	--	--	--
Pothole Sampling under former building												
PH-1-3	3'-3.5'	11/5/02	<5.0	67	13	66	66	--	--	--	--	--
PH-2-3	3'-3.5'	11/5/02	2.6	50	13	50	53	--	--	--	--	--
PH-2-9	9'-9.5'	11/5/02	19	940	180	920	939	--	--	--	--	--
PH-1-9	9'-9.5'	11/5/02	41	620	120	640	681	--	--	--	--	--
PH-3-3	3'-3.5'	11/5/02	<1.0	10	<5.0	9.6	9.6	--	--	--	--	--
PH-3-9	9'-9.5'	11/5/02	84	7,300	1,500	6,700	6,784	--	--	--	--	--
EX-L-SW-3**	3'-3.5'	11/20/02	<1.0	<1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-L-SW-9**	9'-9.5'	11/20/02	<1.0	<1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-L-NW-3**	3'-3.5'	11/20/02	<1.0	<1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-L-NW-9**	9'-9.5'	11/20/02	67	3,000	650	2,800	2,867	--	--	--	--	--
EX-L-S-3**	3'-3.5'	11/20/02	<1.0	1.0	<5.0	<5.0	<5	--	--	--	--	--
EX-L-S-9**	9'-9.5'	11/20/02	13	1,100	270	1,100	1,113	--	--	--	--	--
EX-L-S2-9**	9'-9.5'	11/22/02	<1.0	41	13	42	42	--	--	--	--	--
Stockpile Samples												
STOCKPILE A	--	7/24/02	60	330	--	--	--	<0.2	1.4	1.6	7.8	<2.0
STOCKPILE B	--	7/24/02	<1.0	970	350	--	--	<0.005	0.0064	0.031	0.079	<0.05
STOCKPILE B2	--	8/7/02	<10	660	160	650	650	--	--	--	--	--
STOCKPILE C	--	8/7/02	<10	200	41	210	210	<0.05	<0.05	<0.05	<0.05	<0.5
STOCKPILE A2***	--	8/27/02	<1.0	44	40	84	84	<0.005	<0.005	<0.005	<0.005	<0.05
SP-1-1***	--	8/27/02	<20	400	290	480	480	--	--	--	--	--
SP-1-2***	--	8/27/02	<1.0	51	68	110	110	--	--	--	--	--
SP-1-3***	--	8/27/02	1.6	250	230	330	332	--	--	--	--	--
SP-1-4***	--	8/27/02	<1.0	400	170	470	470	--	--	--	--	--
SP-1-5***	--	8/27/02	<1.0	170	120	190	190	--	--	--	--	--
SP-1-6***	--	8/27/02	1.2	410	220	540	541	--	--	--	--	--

Table 1a. **Soil Analytical Data - Petroleum Hydrocarbons**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	TPHg (C6-C9) (mg/kg)	TPHd (C10-C23) (mg/kg)	TPHmo (C-18+) (mg/kg)	TPHbo (C-10+) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
		EPA Method:	**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**
		Residential RBSL*:	**400**	**500**	**500**	**NE**	**NE**	**0.18**	**8.4**	**24**	**1.0**	**1.0**
		Cleanup Goal:	--	--	--	--	**1,000**	--	--	--	--	--
SP-2-1	--	8/27/02	<1.0	380	300	690	691	--	--	--	--	--
SP-2-2	--	8/27/02	<100	8,000	2,400	8,400	8,400	--	--	--	--	--
SP-2-3	--	8/27/02	<100	88,000	19,000	89,000	89,000	--	--	--	--	--
SP-2-4	--	8/27/02	<40	2,000	640	2,100	2,100	--	--	--	--	--
SP-3-1	--	8/27/02	<10	360	200	400	400	--	--	--	--	--
SP-3-2	--	8/27/02	<10	680	320	880	880	--	--	--	--	--
STOCKPILE A3	--	9/30/02	78	160	45	170	248	--	--	--	--	--
STOCKPILE A3 (10-3-02)	--	10/3/02	25	940	180	860	885	--	--	--	--	--
N STOCKPILE 1,2,3,4	--	10/7/02	<50	2,700	950	3,100	3,100	--	--	--	--	--
COMPOSITE (SP-1 through SP-6)		11/5/02	11	70	13	66	77	--	--	--	--	--
STOCKPILE 1	--	11/20/02	<1.0	25	20	36	36	--	--	--	--	--
STOCKPILE 2	--	11/20/02	<3.3	170	59	180	180	--	--	--	--	--
Pre-Remediation												
Hicks Borings, 2001												
Borehole #1	Composite 0'-2.5'	8/7/01	ND	78	99	--	--	ND	ND	ND	ND	ND
Borehole #1	Composite 4'-12'	8/7/01	750	1400	55	--	--	ND	ND	ND	ND	ND
Borehole #2	Composite 0'-6'	8/7/01	45	2200	200	--	--	ND	ND	ND	ND	ND
Borehole #2	Composite 6'-12'	8/7/01	8.3	500	29	--	--	ND	ND	ND	ND	ND
Borehole #3**	Composite 0'-6'	8/7/01	ND	30	36	--	--	ND	ND	ND	ND	ND
Borehole #3**	Composite 6'-12'	8/7/01	ND	46	6.3	--	--	ND	ND	ND	ND	ND
Borehole #4	Composite 0'-6'	8/7/01	230	1600	ND	--	--	ND	ND	0.32	0.97	ND
Borehole #4	Composite 6'-12'	8/7/01	250	1600	ND	--	--	ND	ND	0.14	ND	ND
Borehole #5	Composite 0'-6'	8/7/01	67	4300	220	--	--	ND	ND	ND	ND	ND
Borehole #5	Composite 6'-12'	8/7/01	17	2400	110	--	--	ND	ND	ND	ND	ND
Borehole #6	Composite 11.5'-13'	9/27/01	--	ND	--	--	--	ND	ND	ND	ND	ND
Borehole #6	Composite 12'-16'	9/27/01	--	21	--	--	--	ND	ND	ND	ND	ND
Borehole #6	Composite 4'-10'	9/27/01	--	970	--	--	--	ND	ND	ND	ND	ND
Borehole #8	Composite 0'-5'	9/27/01	--	13	--	--	--	ND	ND	ND	ND	ND
Borehole #8	Composite 5.25'-7'	9/27/01	--	2800	--	--	--	ND	ND	ND	ND	ND
Borehole #9	Composite 7'-13'	9/27/01	--	210	--	--	--	ND	ND	ND	ND	ND
Borehole #10	Composite 0'-10'	9/27/01	--	170	--	--	--	ND	ND	ND	ND	ND
Borehole #12	Composite 9'-10'	9/27/01	--	16	--	--	--	ND	ND	ND	ND	ND

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Table 1a. **Soil Analytical Data - Petroleum Hydrocarbons**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	TPHg (C6-C9) (mg/kg)	TPHd (C10-C23) (mg/kg)	TPHmo (C-18+) (mg/kg)	TPHbo (C-10+) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
		EPA Method:	**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**
		Residential RBSL*:	**400**	**500**	**500**	**NE**	**NE**	**0.18**	**8.4**	**24**	**1.0**	**1.0**
		Cleanup Goal:	**--**	**--**	**--**	**--**	**1,000**	**--**	**--**	**--**	**--**	**--**
Lowney Associates Borings, 2002												
SS-1 (fill)	0'-0.5'	3/6/01	<1.0	**2,400**	**3,100**	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-1 (native)	3.5'-4'	3/6/01	110	94	<50	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
SS-2 (fill)	0'-0.5'	3/6/01	<1.0	100	960	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-2 (native)	5'-5.5'	3/6/01	26	150	<50	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
SS-3 (fill)	0'-0.5'	3/6/01	<1.0	34	<50	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-3 (native)	3.5'-4'	3/6/01	210	**790**	<500	--	--	<6.2	<6.2	<6.2	<6.2	<6.2
SS-4 (fill)**	0'-0.5'	3/6/01	<1.0	41	110	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-4 (native)**	3.5'-4'	3/6/01	110	400	88	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
SS-5 (fill)	0'-0.5'	3/6/01	<1.0	**960**	**1,900**	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-5 (native)	7'-7.5'	3/6/01	210	**700**	<250	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
SS-6 (fill)**	0'-0.5'	3/6/01	<1.0	14	55	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-6 (native)**	6.5'-7'	3/6/01	67	130	<50	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
SS-7 (fill)	0'-0.5'	3/6/01	<1.0	4.3	<50	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-7 (native)	6'-6.5'	3/6/01	260	440	<50	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
SS-8 (fill)**	0'-0.5'	3/6/01	<1.0	12	100	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-8 (native)**	7.5'-8'	3/6/01	7.5	<1.0	<50	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-9 (fill)	0'-0.5'	3/6/01	<1.0	5.4	83	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
SS-9 (native)	4.5'-5'	3/6/01	110	120	<500	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
Lowney Associates Borings, 2002												
EB-7**	9'-9.5'	3/4/02	85	190	<100	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
EB-7**	14'-14.5'	3/4/02	8.7	78	<50	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
EB-8**	6'-6.5'	3/4/02	36	190	52	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
EB-8**	12'-12.5'	3/4/02	<1.0	12	<50	--	--	<0.005	<0.005	<0.005	<0.005	<0.005
EB-9	7.5'-8'	3/5/02	260	**560**	<250	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
EB-9	14'-14.5'	3/5/02	100	140	<100	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
EB-10	6'-6.5'	3/5/02	380	**1,100**	<500	--	--	<3.1	<3.1	<3.1	<3.1	<3.1
EB-10	9'-9.5'	3/5/02	150	350	<500	--	--	<0.023	<0.023	<0.023	<0.023	<0.023
EB-11	6'-6.5'	3/5/02	160	**820**	<500	--	--	<0.62	<0.62	<0.62	<0.62	<0.62
EB-11	9'-9.5'	3/5/02	130	330	<250	--	--	<0.62	<0.62	<0.62	0.92	<0.62
EB-12	6'-6.5'	3/5/02	**980**	110	<500	--	--	**3.4**	**15**	9.5	**43**	<2.5
EB-12	8'-8.5'	3/5/02	**760**	**890**	<500	--	--	**12**	5.4	7.1	**5.7**	<3.1
Lowney Associates Test Pits, 2002												
TP-2B	1.5'	3/8/02	--	**1,800**	<1000	--	--	--	--	--	--	--

Table 1a. **Soil Analytical Data - Petroleum Hydrocarbons**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	TPHg (C6-C9) (mg/kg)	TPHd (C10-C23) (mg/kg)	TPHmo (C-18+) (mg/kg)	TPHbo (C-10+) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
		EPA Method:	**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**
		Residential RBSL*:	**400**	**500**	**500**	**NE**	**NE**	**0.18**	**8.4**	**24**	**1.0**	**1.0**
		Cleanup Goal:	--	--	--	--	**1,000**	--	--	--	--	--

Abbreviations and Notes:

* = Risk Based Screening Level (RBSL), CRWQCB, December 2001, Table B
** = Residual after excavation completion.
*** = Stockpile soil reused in deeper excavations at site.
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
TPHmo = Total petroleum hydrocarbons as motor oil
TPHbo = Total petroleum hydrocarbons as bunker oil
Total TPH = TPHg + TPHbo.
MTBE = Methyl tert-butyl ether
mg/kg = Milligrams per kilogram
<n = Below detection limit of n mg/kg
-- = Not analyzed

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Table 1b. **Soil Analytical Data - PAHs**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID / Sample ID	Depth - feet bgs	Date Sampled	Naphthalene[1] (mg/kg)	Acenaphthene[1] (mg/kg)	Fluorene[1] (mg/kg)	Phenanthrene[1] (mg/kg)	Anthracene[1] (mg/kg)	Pyrene[1] (mg/kg)	Chrysene[1] (mg/kg)	PCBs (mg/kg)
EPA Method:										
Residential RBSL*:			**4.9**	**16**	**5.1**	**11**	**2.9**	**55**	**3.8**	**NE**
Lowney Associates Borings										
SS-1 (fill)	0'-0.5'		<0.075	<0.05	<0.025	0.15	<0.025	<0.025	0.099	<0.05
SS-1 (native)	3.5'-4'		<0.015	0.13	0.44	<0.005	<0.005	<0.005	<0.005	<0.05
SS-2 (fill)	0'-0.5'		<0.15	<0.1	<0.05	<0.05	<0.05	0.014	<0.05	<0.05
SS-2 (native)	5'-5.5'		<0.015	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
SS-3 (fill)	0'-0.5'		<0.015	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
SS-3 (native)	3.5'-4'		<0.015	<0.01	0.25	0.075	<0.005	<0.005	<0.005	<0.05
SS-4 (fill)	0'-0.5'		<0.075	<0.05	<0.025	0.11	<0.025	<0.025	<0.025	<0.05
SS-4 (native)	3.5'-4'		<0.015	<0.01	0.27	0.027	<0.005	<0.005	<0.005	<0.05
SS-5 (fill)	0'-0.5'		<0.15	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SS-5 (native)	7'-7.5'		<0.015	<0.01	0.49	0.71	<0.005	<0.005	<0.005	<0.05
SS-6 (fill)	0'-0.5'		<0.15	<0.1	<0.05	<0.05	<0.05	0.29	<0.05	<0.05
SS-6 (native)	6.5'-7'		<0.015	<0.01	0.033	<0.005	0.016	<0.005	<0.005	<0.05
SS-7 (fill)	0'-0.5'		<0.015	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
SS-7 (native)	6'-6.5'		0.62	<0.01	0.33	0.53	<0.005	<0.005	<0.005	<0.05
SS-8 (fill)	0'-0.5'		<0.075	<0.05	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05
SS-8 (native)	7.5'-8'		<0.015	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
SS-9 (fill)	0'-0.5'		<0.075	<0.05	<0.025	<0.025	<0.025	0.2	<0.025	<0.05
SS-9 (native)	4.5'-5'		<0.015	<0.01	0.088	<0.005	0.067	<0.005	<0.005	<0.05
Lowney Associates Test Pits										
TP-2B	1.5'		0.25	ND	ND	0.88	ND	ND	ND	ND
Cleanup Goal							**1,000**			

Abbreviations and Notes:

[1] = Other VOCS were not detected at or above the stated laboratory reporting limit
* = Risk Based Screening Level (RBSL), CRWQCB, December 2001, Table B
mg/kg = Milligrams per kilogram
<n = Below detection limit of n mg/kg
-- = Not analyzed

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Table 1c. **Soil Analytical Data - Metals and Pesticides**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Depth - feet bgs	Date Sampled	Arsenic (mg/kg)	Cadmium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Organochlorine Pesticides (mg/kg)
		EPA Method:					
		Residential RBSL*:	0.39	1.7	200	4.7	NE
		Background Concentration**:	14	1.5	14.7	0.3	NE
Lowney Associates Borings							
SS-1 (fill)	0'-0.5'		<1.0	2.6	110	**<0.05**	--
SS-1 (native)	3.5'-4'		--	--	4.3	--	--
SS-2 (fill)	0'-0.5'		3.7	2.0	32	0.12	ND
SS-2 (native)	5'-5.5'		2.7	1.3	5.6	<0.05	ND
SS-6[1] (fill)	0'-0.5'		4.3	2.0	19.0	0.088	ND
SS-6 (native)	6.5'-7'		1.8	2.4	5.6	<0.05	ND
SS-7[1] (fill)	0'-0.5'		30	3.4	22	0.19	ND
SS-7 (native)	6'-6.5'		2.7	1.5	5.0	<0.05	ND
Lowney Associates Test Pits							
TP-2B	1.5'		9.0	1.7	200	4.7	--

Abbreviations and Notes:

* = Risk Based Screening Level (RBSL), CRWQCB, December 2001, Table B
** = Lawrence Berkeley National Laboratory Environmental Restoration Program, 1995
mg/kg = Milligrams per kilogram
<n = Below detection limit of n mg/kg
-- = Not analyzed
ND = Not detected
NE = Not established

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Table 2a. **Groundwater Analytical Data - Hydocarbon Analyses**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Date Sampled	TPHg (C6-C9) (ug/L)	TPHd (C10-C23) (ug/L)	TPHmo (C-18+) (ug/L)	TPHbo (C-10+) (ug/L)	Total TPH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Naphthalene (ug/L)
EPA Method:		**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**	**8270D**
MCL*:		**NE**	**NE**	**NE**	**NE**	**NE**	**1.0**	**150**	**700**	**1,750**	**13**	**NE**
RBSL:**		**--**	**--**	**--**	**--**	**--**	**46**	**130**	**290**	**13**	**1,800**	**24**
Cleanup Goal:		**--**	**--**	**--**	**--**	**20,000**	**--**	**--**	**--**	**--**	**--**	**--**
Post-Remediation												
Cambria Temporary Wells (Installed December 4, 2002)												
TW-1	12/4/02	<50	<50	<250	<250	<250	<0.5	<0.5	<0.5	<0.5	--	--
TW-2	12/4/02	56	340	<250	540	596	11	1.3	1.8	1.6	--	<10
TW-4	12/5/02	<50	<50	<250	<250	<250	<0.5	<0.5	<0.5	<0.5	--	<10
TW-5	12/4/02	<50	220	<250	310	310	<0.5	<0.5	<0.5	<0.5	--	<10
TW-6	12/4/02	<50	5,000	580	5,000	5,000	<0.5	0.52	<0.5	<0.5	--	--
TW-7	12/5/02	<50	79	<250	<250	79	<0.5	<0.5	<0.5	<0.5	--	--
TW-8	12/5/02	<50	<50	<250	<250	<250	<0.5	<0.5	<0.5	<0.5	--	<10
Pre-Remediation												
Hicks Sampling (Temp wells / stand pipes)												
1	8/01	5400	--	--	--	--	<5.0	ND	ND	ND	ND	27
2	8/01	3700	--	--	--	--	<5.0	ND	ND	ND	5.6	ND
3	8/01	130	--	--	--	--	<5.0	ND	ND	ND	ND	ND
4	9/01	**66,000**	4,473	<5.0	--	**66,000**	**200**	53	12	**29.4**	ND	**59**
4B	9/01	--	--	--	--	--	**350**	97	32	**170**	ND	**150**
6	9/01	--	--	--	--	--	<5.0	ND	ND	ND	ND	ND
7	9/01	--	--	--	--	--	<5.0	ND	ND	ND	ND	ND
9	9/01	--	--	--	--	--	<5.0	ND	ND	ND	ND	ND

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Table 2a. **Groundwater Analytical Data - Hydocarbon Analyses**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Date Sampled	TPHg (C6-C9) (ug/L)	TPHd (C10-C23) (ug/L)	TPHmo (C-18+) (ug/L)	TPHbo (C-10+) (ug/L)	Total TPH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Naphthalene (ug/L)
EPA Method:		**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**	**8270D**
MCL*:		**NE**	**NE**	**NE**	**NE**	**NE**	**1.0**	**150**	**700**	**1,750**	**13**	**NE**
RBSL:**		**--**	**--**	**--**	**--**	**--**	**46**	**130**	**290**	**13**	**1,800**	**24**
Cleanup Goal:		**--**	**--**	**--**	**--**	**20,000**	**--**	**--**	**--**	**--**	**--**	**--**
Lowney Sampling (Grab groundwater)												
EB-7	3/5/02	260	7,300	<500	--	7,560	<0.5	<0.5	<0.5	<1.0	<5.0	--
EB-8	3/5/02	<50	100	<580	--	100	<0.5	<0.5	<0.5	<1.0	<5.0	--
EB-9	3/5/02	17,000	**24,000,000**	<2,000,000	--	**24,017,000**	<5.0	<5.0	<5.0	<10	<50	--
EB-10	3/5/02	5,900	**4,400,000**	<400,000	--	**4,405,900**	<5.0	<5.0	<5.0	<10	<50	--
EB-11	3/5/02	280	2,100	<580	--	2,380	<5.0	<5.0	<5.0	<10	100	--
EB-12	3/5/02	**170,000**	**20,000,000**	<1,500,000	--	**20,170,000**	**5,800**	77	<50	<100	<500	--
Cambria Sampling (Hicks temp wells / stand pipes)												
4B	7/24/02	2,700	2,000	340	2,100	4,800	**790**	14	18	4.5	<10	--
7	7/24/02	280	1,100	420	1,300	1,580	0.65	<0.5	<0.5	<0.5	<5.0	--
1/10/04	7/24/02	<50	600	780	960	985	<0.5	<0.5	<0.5	<0.5	<5.0	--
10	7/24/02	1,300	**30,000**	9,500	**32,000**	**33,300**	<5.0	<5.0	<5.0	<5.0	<50	--
11	7/24/02	280	1,400	900	1,800	2,080	0.51	1.6	<0.5	0.78	<5.0	--
12	7/24/02	1,400	950	1,200	1,600	3,000	**360**	1.7	10	1.1	<5.0	--
Cambria Sampling (Grab from excavation pit near former UST)												
EX-A-W1	8/2/02	2,900	**23,000**	7,900	**23,000**	**25,900**	**240**	49	80	**360**	<50	--

Table 2a. **Groundwater Analytical Data - Hydocarbon Analyses**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Date Sampled	TPHg (C6-C9) (ug/L)	TPHd (C10-C23) (ug/L)	TPHmo (C-18+) (ug/L)	TPHbo (C-10+) (ug/L)	Total TPH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Naphthalene (ug/L)
EPA Method:		**8015m**	**8015**	**8015**	**8015**	**8015**	**8021**	**8021**	**8021**	**8021**	**8021**	**8270D**
MCL*:		**NE**	**NE**	**NE**	**NE**	**NE**	**1.0**	**150**	**700**	**1,750**	**13**	**NE**
RBSL:**		**--**	**--**	**--**	**--**	**--**	**46**	**130**	**290**	**13**	**1,800**	**24**
Cleanup Goal:		**--**	**--**	**--**	**--**	**20,000**	**--**	**--**	**--**	**--**	**--**	**--**

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
TPHmo = Total petroleum hydrocarbons as motor oil
TPHbo = Total petroleum hydrocarbons as bunker oil
MTBE = Methyl tert-butyl ether
ug/L= Micrograms per liter
<n = Below detection limit of n mg/kg
* = Drinking water Maximum Contaminant Levels - California DHS, January 11, 2001
** = Risk Based Screening Level (RBSL) for benzene, toluene, ethylbenzene, xylenes, and methyl tertiary butyl ether (CRWQCB, December 2001, Table B).
NE = Not establisehed
-- = Not analyzed/Not applicable

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Table 2b. **Groundwater Analytical Data - Volatile Organic Compounds**
Balaam Airgas
1350 Powell Street, Emeryville, California

Sample ID	Date Sampled	Screen Interval	n-Butylbenzene[1]	Sec-Butylbenzene[1]	Iso-Propylbenzene[1]	Napthalene[1]	n-Propylbenzene[1]
EPA Method:							
MCL*:			**NE**	**NE**	**NE**	**NE**	**NE**
RBSL:**			**NE**	**NE**	**NE**	**24**	**NE**
EB-7	3/5/02	--	<1.0	**3.4**	<0.5	**4.2**	<1.0
EB-8	3/5/02	--	<1.0	<1.0	<0.5	<1.0	<1.0
EB-9	3/5/02	--	**42**	**45**	**29**	**22**	**28**
EB-10	3/5/02	--	**23**	**21**	**14**	**20**	**13**
EB-11	3/5/02	--	**20**	**25**	**14**	**16**	<10
EB-12	3/5/02	--	<100	<100	<50	<100	<100

Abbreviations and Notes:

[1] = Other VOCS were not detected at or above the stated laboratory reporting limit
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
TPHmo = Total petroleum hydrocarbons as motor oil
TPHbo = Total petroleum hydrocarbons as bunker oil
MTBE = Methyl tert-butyl ether
ug/L= Micrograms per liter
<n = Below detection limit of n mg/kg
* = Drinking water Maximum Contaminant Levels - California DHS, January 11, 2001
** = Risk Based Screening Level (RBSL), CRWQCB, December 2001, Table B
NE = Not establisehed
-- = Not analyzed

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Table 2c. Construction Details and Water Levels for Temporary Wells
Balaam Airgas
1350 Powell Street, Emeryville, California

Well ID	Date Measured	Well Elevations (MSL)	Screen Interval (ft)	First Encountered Water Depth (ft)	Static Water Depth (ft)	Groundwater Elevations (MSL)
TW-1	12/4/02	--	20-30	20.0	5.0	not surveyed
TW-2	12/4/02	--	10-20	16.0	8.3	not surveyed
TW-4	12/4/02	19.19	15-25	21.0	--	--
TW-4	12/5/02	19.19	15-25	--	9.3	--
TW-4	12/11/02	19.19	15-25	--	10.41	8.78
TW-5	12/4/02	--	15-25	11.0	6.0	not surveyed
TW-6	12/4/02	20.80	20-30	26.0	--	--
TW-6	12/5/02	20.80	20-30	--	5.0	--
TW-6	12/11/02	20.80	20-30	--	9.14	11.66
TW-7	12/4/02	19.10	20-30	26.0	--	--
TW-7	12/5/02	19.10	20-30	--	5.0	--
TW-7	12/11/02	19.10	20-30	--	8.82	10.28
TW-8	12/4/02	18.08	20-30	26.0	5.0	--
TW-8	12/11/02	18.08	20-30	--	6.57	11.51

Abbreviations and Notes:

ft = depth below ground surface in feet.

MSL = elevation surveyed relative to a benchmark on the sidewalk of Powell Street with a noted elevation of 19.39 ft.

not surveyed = well was abandoned prior to survey due to grading activities.

-- = not applicable/not measured.

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Appendix A

Field Procedures and Well Installation Details

TEMPORARY WELL INSTALLATION DETAILS

Details of the December 2002 installation of temporary monitoring wells TW-1, TW-2, TW-4, TW-5, TW-6, TW-7, and TW-8 are presented below. Well locations are shown on Figure 9. Well construction details are presented in Appendix B.

Personnel Present: Cambria's Staff Geologist Matthew Meyers performed all well installation and sampling activities, which were overseen by Cambria's Principal Engineer Bob Clark-Riddell, a California Registered Professional Engineer.

Number of Wells: Seven temporary monitoring wells were installed (TW-1, TW-2, TW-4, TW-5, TW-6, TW-7, and TW-8).

Well Locations: The seven temporary well locations are shown on Figure 8. Temporary well TW-1 is located near the former USTs; TW-2 is south of the former USTs and near boring EB-12; TW-4 is west of the former USTs and near former temporary 'well' 4A/B/C; TW-5 along the western Site boundary beneath the former shed structure; TW-6 is south of the former ASTs/piping and near boring EB-9; TW-7 is north of the dock near boring EB-10; and TW-8 is located in the northern corner of the Site.

Permits: Alameda County Public Works Agency issued permits for the installation of 8 wells. The well installation permits are included in Appendix B.

Drilling Company: Vironex of Hayward, California (C-57 License #720904) performed the well installations and removals.

Drilling Date: Wells TW-1, TW-2, TW-4, TW-5, TW-6, TW-7, and TW-8 were installed on December 4, 2002.

Drilling Method: A Geoprobe hydraulic-push drill rig was used to install the 3/4-inch diameter wells (TW-1, TW-2, TW-4, TW-5, TW-6, TW-7, and TW-8).

Sampling Method: The borings were sampled continuously using Macrocore sampling tubes.

Boring Depths: Borings TW-1, TW-2, TW-4, TW-5, TW-6, TW-7, and TW-8 were advanced to 25.0, 20.0, 25.0, 20.0, 30.0, 30.0, and 30.0 ft bgs, respectively. Wells TW-1, TW-2, TW-4, TW-5, and TW-8 were installed at approximately 5, 6, 1, 5, and 3 ft below finished grade (bfg). Wells TW-6 and TW-7 were installed approximately at finished grade.

Groundwater Depths: During drilling, groundwater was first encountered approximately at 25, 22, 22, 16, 26, 26, and 29 ft bfg in borings TW-1, TW-2, TW-4, TW-5, TW-6, TW-7, and TW-8, respectively. On December 4, 2002, the static depth to water was measured at 10.0, 14.3, and 9.0 ft bfg in monitoring wells TW-1, TW-2, and TW-8, respectively. On December 5, 2002, the static depth to water was measured at 7.3, 11.0, 5.0, and 5.0 ft bfg in monitoring wells TW-4, TW-5, TW-6, and TW-7, respectively. Groundwater depths are shown on Table 2c.

Soil Types Encountered: Soils encountered during drilling consisted of silty, sandy clay fill mixtures to approximately 16 ft bfg, underlain mostly by silty clays and very fine to fine, sandy clays. Saturated soils usually consisted of loose, clayey sands and were encountered at depths from 16.0 to 29.0 ft bfg to the bottom of the borings. Soil boring logs are included in Appendix B.

Well Construction: Wells TW-1, TW-2, TW-4, TW-5, TW-6, TW-7, and TW-8 were constructed with 3/4-inch diameter schedule 40 PVC casing. TW-1 and TW-2 were constructed with pre-packed Geoprobe wells. TW-4 through TW-8 were constructed with 0.010-inch machine slot screen. Well TW-1 was screened from 20.0 to a total depth of 30.0 ft bfg. Wells TW-2 and TW-4 were screened from 16.0 to a total depth of 26.0 ft bfg. Well TW-5 was screened from 15.0 to a total depth of 25.0 ft bfg. Wells TW-6 and TW-7 were screened from 20.0 to a total depth of 30.0 ft bfg. Well TW-8 was screened from 23.0 to a total depth of 33.0 ft bfg. Wells TW-4 through TW-8 were completed with No. 2/12 sand from the bottom of the boring to approximately 1 ft above the top of the screened casing, which was overlain by bentonite to the surface. A riser was installed on wells TW-4, TW-6, TW-7, and TW-8. Well Construction Details are shown on Table 2c and Appendix B.

Well Development: On December 4, 2002, Cambria developed wells TW-1, TW-2, TW-4, TW-5, TW-6, TW-7, and TW-8 by purging multiple well casing volumes of groundwater until the turbidity was significantly reduced. Well development protocol is included in Cambria's *Standard Field Procedures for Soil Borings and Monitoring Wells* in Appendix A.

Water Sampling: On December 4 and 5, 2002 groundwater samples were collected from the temporary monitoring wells at the Site. Groundwater sampling protocol is included in Cambria's *Standard Field Procedures for Soil Boring and Monitoring Wells* in Appendix A.

Chemical Analyses: All groundwater samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (TPHg), and benzene, toluene, ethylbenzene, and xylenes (BTEX) by modified EPA Method 8015/8021; and TPH as diesel (TPHd), motor oil (TPHmo), and bunker oil (TPHbo) by modified EPA Method 8015Cm with silica gel cleanup. Select samples were analyzed for polynuclear aromatic hydrocarbons (PNA) by EPA Method 8270D. The samples were analyzed by McCampbell Analytical of Pacheco, California. Groundwater analytical results are summarized in Table 2, and the laboratory analytical report is presented as Appendix C.

Well Abandonment: After sampling was completed wells TW-1, TW-2, and TW-5 were removed and the corresponding boring hole was filled with bentonite slurry to the surface.

Well Elevation Survey: Cambria conducted a well elevation survey using a transit and rod on December 11, 2002. Cambria surveyed all top of casings (TOC) to the 19.39 ft benchmark elevation on the sidewalk outside the gate along Powell Street. Lowney Associates used the same benchmark to survey their temporary wells.

EXCAVATION SAMPLING PROCEDURES

After confirming a release from underground gasoline storage tanks, product piping or pump islands, soil excavation is often done to remove hydrocarbon bearing soils that may pose a threat to ground water quality beneath a site. Soil samples are routinely collected to monitor the progress of the excavation and to confirm that soils containing hydrocarbons above regulatory limits have been completely removed. Cambria has developed standard operating procedures for collecting soil samples during routine excavation operations to ensure that the samples are collected, handled and documented in compliance with State and local regulatory agency regulations.

Excavation Sampling

Prior to collecting soil samples during excavation operations, Cambria field staff screen the removed soils with a portable photoionization detector (PID) to qualitatively assess the presence or absence of volatile hydrocarbons. The removed soil is typically segregated based on hydrocarbon concentration and stockpiled on site on plastic sheeting. When the PID measurements indicate that the hydrocarbon bearing soil has been completely removed, Cambria collects soil samples from the excavation sidewalls and bottom for confirmatory analysis at a State certified analytic laboratory.

The soil samples are collected in steam cleaned brass or steel tubes from either a driven split-spoon type sampler or the bucket of a backhoe or excavator. When a backhoe or excavator is used, approximately three inches of soil are scraped from the surface and the tube is driven into the exposed soil.

Upon removal from the sampler or the backhoe, the samples are trimmed flush, capped with Teflon tape and plastic end caps, labeled, logged and refrigerated for delivery under chain of custody to a State certified analytic laboratory.

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SOIL STOCKPILE SAMPLING PROCEDURES

Soil excavation is often completed to remove contaminant-bearing soils. The removed soils are typically stockpiled onsite and sampled. Cambria has developed standard sampling procedures to characterize stockpiled soils for onsite or offsite treatment, reuse or disposal. The procedures ensure that the samples are collected, handled, and documented in compliance with Federal, State and local regulatory agency guidelines.

Cambria's stockpile sampling procedures are consistent with EPA SW-846 methods and are designed to ensure representative sampling as required by disposal facilities, when used. Procedures conform with Bay Area Air Quality Management District[1], San Joaquin Valley Unified Air Pollution Control District[2], and other oversight agency regulations. Sampling plans are determined on a site-specific basis and, typically, one composite soil sample is collected for every 50 cubic yards of excavated soil. Each composite sample consists of four discreet soil samples collected from the stockpile which are combined in the laboratory. The samples are collected by dividing each 50 cubic yard volume into 4 sectors. One discreet soil sample is collected from each sector.

The samples are collected by digging away approximately 2 ft of the surface soils. A clean brass tube is then driven into the exposed soils. The ends of the tube are trimmed flush, capped with Teflon tape and plastic end caps, labeled, refrigerated and transported under chain of custody to a State certified laboratory.

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1 San Francisco Bay Area Air Quality Management District, 1989, Regulation 8, Organic Compounds, Rule 40, Aeration of Contaminated Soil and Removal of Underground Storage Tanks, February 15, 1989 7 pp.

2 San Joaquin Valley Unified Air Pollution Control District, 1992, Rule 4651, Volatile Organic Compound Emissions from Decontamination of Soil, December 17, 1992

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STANDARD FIELD PROCEDURES FOR SOIL BORINGS AND MONITORING WELLS

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling groundwater monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

SOIL BORINGS

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Registered Geologist (RG).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4° C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable volatile vapor analyzer measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch® type sampler or are collected from the open borehole using bailers. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Groundwater monitoring wells are installed to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 ft below and 5 ft above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three ft thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two ft thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Groundwater Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

F:\TEMPLATE\SOPs\Wells-borings-gw.wpd

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Appendix B

Soil Boring Logs and Well Construction Details, and Well Permit

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
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BORING/WELL LOG

CLIENT NAME	Balaam Brothers - Airgas	**BORING/WELL NAME**	TW-1
JOB/SITE NAME	1350 Powell Street, Emeryville	**DRILLING STARTED**	04-Dec-02
LOCATION	1350 Powell Street, Emeryville, California	**DRILLING COMPLETED**	04-Dec-02
PROJECT NUMBER	502-1795	**WELL DEVELOPMENT DATE (YIELD)**	04-Dec-02 (2 gallons)
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	20 to 29.9 ft bfg
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	25.0 ft (04-Dec-02)
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	10.00 ft (04-Dec-02)

REMARKS Boring begun at approximately 5 feet below finished grade (ft bfg) - approximately 1ft below sidewalk.

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bfg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bfg)
				5			**FILL**: medium brown; medium stiff; moist; 50% clay, 20% silt, 30% fine to medium sand; low plasticity; moderate estimated permeability.	5.0
				10			**FILL**: dark brown; stiff; moist; 60% clay, 25% silt, 15% fine to medium sand; high plasticity; low estimated permeability.	10.0
								14.0
					CL		**Sandy CLAY** (CL): dark brown; stiff; moist; 60% clay, 30% medium to very coarse sand, 10% gravel to 10 mm; low plasticity, low estimated permeability.	15.0
				15	SC		**Clayey SAND** (SC): light brown; loose; moist; 30% clay, 70% very fine to fine sand; no plasticity; high estimated permeability.	16.0
					CL		**Sandy CLAY** (CL): light brown; stiff; moist; 60% clay, 40% very fine to fine sand; moderate plasticity; low estimated permeability. @ 18 ft below finished grade - medium stiff; 80% clay, 20% very fine sand; high plasticity; low estimated permeability.	
				20			@ 21 ft below finished grade - soft; 60% clay, 40% very fine to very coarse sand; medium plasticity; moderate estimated permeability; interbedded sand layers.	22.0
					CH		**Silty CLAY** (CH): light brown; very stiff; moist; 80% clay, 20% silt; high plasticity; low estimated permeability. @ 23 ft below finished grade - 65% clay, 35% silt.	25.0
				25	CL		**Sandy CLAY** (CL): light brown; soft; saturated; 60% clay, 40% very fine to fine sand; low plasticity; moderate estimated permeability.	
								28.0
					SC		**Clayey SAND** (SC): olive gray; very loose; saturated; 40% clay, 60% very fine to fine sand; moderate estimated permeability.	29.0
					CH		**Sandy CLAY** (CH): dark gray; very stiff; moist; 70% clay, 30% very fine sand; high plasticity; low estimated permeability.	30.0
				30				

WELL DIAGRAM

- Bentonite Seal
- Monterey Sand #2/12
- 3/4"-diam., 0.020" Slotted Schedule 40 PVC
- Bottom of Boring @ 30 ft bfg

WELL LOG (TPHG-FT BFG) H:\BALAAM-1\GINT\DC-493.GPJ DEFAULT.GDT 12/10/02

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BORING/WELL LOG

CLIENT NAME	Balaam Brothers - Airgas	**BORING/WELL NAME**	TW-2
JOB/SITE NAME	1350 Powell Street, Emeryville	**DRILLING STARTED**	04-Dec-02
LOCATION	1350 Powell Street, Emeryville, California	**DRILLING COMPLETED**	04-Dec-02
PROJECT NUMBER	502-1795	**WELL DEVELOPMENT DATE (YIELD)**	04-Dec-02 (2 gallons)
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	16 to 25.9 ft bfg
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	22.0 ft (04-Dec-02)
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	14.30 ft (04-Dec-02)
REMARKS	Boring begun at approximately 6 feet below finished grade (ft bfg) - approximately 1ft below sidewalk.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bfg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bfg)	WELL DIAGRAM
				5				6.0	
							FILL: medium brown; stiff; moist; 65% clay, 35% very fine to medium sand; medium plasticity; low estimated permeability.	7.0	
				10			**FILL**: dark brown; very stiff; moist; 60% clay, 35% silt, 5% medium to coarse sand; high plasticity; low estimated permeability, trace organics.		Bentonite Seal
				15			@ 15 ft below finished grade - crushed brick and gravel to 20mm.	16.0	Monterey Sand #2/12
					CH		**Sandy CLAY** (CH): dark brown; stiff; moist; 75% clay, 25% very fine to fine sand; high plasticity; low estimated permeability.	17.0	
				20	CH		**Silty CLAY** (CH): light brown; stiff; moist; 60% clay, 40% silt; high plasticity; low estimated permeability. @ 18 ft below finished grade - becomes saturated. @ 19 ft below finished grade - becomes moist.	21.0	3/4"-diam., 0.020" Slotted Schedule 40 PVC
					SC		**Clayey Sand** (SC): green gray; loose; saturated; 30% clay, 60% medium to very coarse sand, 10% gravels to 10mm; no plasticity; high estimated permeability.		
				25	CL		**Sandy CLAY** (CL): light brown; medium stiff; saturated; 60% clay, 40% silt; medium plasticity; moderate estimated permeability.	25.0 26.0	Bottom of Boring @ 26 ft bfg

WELL LOG (TPHG-FT BFG) H:\BALAAM-1\GINT\DC-493.GPJ DEFAULT.GDT 12/15/02

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BORING/WELL LOG

CLIENT NAME	Balaam Brothers - Airgas	**BORING/WELL NAME**	TW-4
JOB/SITE NAME	1350 Powell Street, Emeryville	**DRILLING STARTED**	04-Dec-02
LOCATION	1350 Powell Street, Emeryville, California	**DRILLING COMPLETED**	04-Dec-02
PROJECT NUMBER	502-1795	**WELL DEVELOPMENT DATE (YIELD)**	04-Dec-02 (2 gallons)
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	16 to 25.9 ft bfg
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	22.0 ft (04-Dec-02)
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	7.30 ft (05-Dec-02)

REMARKS Boring begun at approximately 1 feet below finished grade (ft bfg) - approximately 1ft below sidewalk.

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bfg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bfg)	WELL DIAGRAM
								1.0	
				5			**FILL**: dark brown; very stiff; damp; 60% clay, 20% silt, 20% fine to coarse sand; medium plasticity; moderate estimated permeability.		Bentonite Seal
				10			**FILL**: dark brown; very stiff; moist; 65% clay, 35% silt, 5% sand; high plasticity; low estimated permeability.	9.0	
				15	MH		**Clayey SILT** (MH): light brown; stiff; moist; 45% clay, 55% silt; medium plasticity; low estimated permeability.	13.0	Monterey Sand #2/12
				20	SC		**Clayey SAND** (SC): light brown; dense; moist; 40% clay, 60% very fine to fine sand; no plasticity; moderate estimated permeability. @ 21 ft below finished grade - becomes medium dense; saturated; high estimated permeability.	17.0	3/4"-diam., 0.020" Slotted Schedule 40 PVC
				25	CL		**Sandy CLAY** (CL): olive gray; stiff; moist; 60% clay, 40% fine sand; low plasticity; low estimated permeability.	25.0 26.0	Bottom of Boring @ 26 ft bfg

WELL LOG (TPHG-FT BFG) H:\BALAAM-1\GINT\DC-493.GPJ DEFAULT.GDT 12/10/02

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BORING/WELL LOG

CLIENT NAME	Balaam Brothers - Airgas	**BORING/WELL NAME**	TW-5
JOB/SITE NAME	1350 Powell Street, Emeryville	**DRILLING STARTED**	04-Dec-02
LOCATION	1350 Powell Street, Emeryville, California	**DRILLING COMPLETED**	04-Dec-02
PROJECT NUMBER	502-1795	**WELL DEVELOPMENT DATE (YIELD)**	04-Dec-02 (2 gallons)
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	15 to 24.9 ft bfg
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	16.0 ft (04-Dec-02) ▽
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	11.00 ft (05-Dec-02) ▼
REMARKS	Boring begun at approximately 5 feet below finished grade (ft bfg) - approximately 1ft below sidewalk.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bfg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bfg)	WELL DIAGRAM
				5			**FILL**: dark brown; stiff; damp; 60% clay, 40% fine to very coarse sand; low plasticity; moderate estimated permeability.	5.0	Bentonite Seal
				10				11.0 ▼	
					CH		**Silty CLAY** (CH): gray; stiff; moist; 60% clay, 40% silt; high plasticity; low estimated permeability.		Monterey Sand #2/12
				15				16.0 ▽	
				20	SC		**Clayey SAND** (SC): light brown; dense; saturated; 40% clay, 60% very fine to fine sand; no plasticity; moderate estimated permeability. @ 21 ft below finished grade - becomes medium brown.		3/4"-diam., 0.020" Slotted Schedule 40 PVC
					CH		**Silty CLAY** (CH): medium brown; very stiff; moist; 70% clay, 30% silt; high plasticity; low estimated permeability.	24.0 / 25.0	Bottom of Boring @ 25 ft bfg
				25					

WELL LOG (TPHG-FT BFG) H:\BALAAM-1\GINTDC-493.GPJ DEFAULT.GDT 12/10/02

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BORING/WELL LOG

CLIENT NAME	Balaam Brothers - Airgas	**BORING/WELL NAME**	TW-6
JOB/SITE NAME	1350 Powell Street, Emeryville	**DRILLING STARTED**	04-Dec-02
LOCATION	1350 Powell Street, Emeryville, California	**DRILLING COMPLETED**	04-Dec-02
PROJECT NUMBER	502-1795	**WELL DEVELOPMENT DATE (YIELD)**	04-Dec-02 (2 gallons)
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	20 to 29.9 ft bfg
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	26.0 ft (04-Dec-02) ▽
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	5.00 ft (05-Dec-02) ▼
REMARKS	Boring begun at approximate finished grade - approximately 1ft below sidewalk.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bfg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bfg)	WELL DIAGRAM
				0			**FILL**: dark brown; stiff; moist; 60% clay, 10% silt, 30% fine to very coarse sand; low plasticity; low estimated permeability. ▼		
				5					
				10			@ 9 ft below finished grade - some sand layers.		◄ Bentonite Seal
								11.0	
					MH		**Clayey SILT** (MH): light brown; stiff; moist; 45% clay, 55% silt; medium plasticity; low estimated permeability.		
				15			@ 15 ft below finished grade - becomes medium stiff.		
				20				20.0	◄ Monterey Sand #2/12
					CH		**Silty CLAY** (CH): medium brown; medium stiff; moist; 60% clay, 40% silt; high plasticity; low estimated permeability.		
							@ 22 ft below finished grade - becomes soft; moist; 70% clay, 30% silt.		
							@ 23 ft below finished grade - becomes very stiff.		
				25			@ 25 ft below finished grade - becomes very soft, high estimated permeability. ▽		◄ 3/4"-diam., 0.020" Slotted Schedule 40 PVC
							@ 26 ft below finished grade - becomes saturated.		
							@ 27 ft below finished grade - becomes very stiff.		
								28.0	
					SC		**Clayey SAND** (SC): olive gray; very dense; saturated; 60% clay, 40% fine sand; high plasticity; moderate estimated permeability.		
				30				30.0	Bottom of Boring @ 30 ft bfg

WELL LOG (TPHG-FT BFG) H:\BALAAM-1\GINT\DC-493.GPJ DEFAULT.GDT 12/10/02

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Balaam Brothers - Airgas	**BORING/WELL NAME**	TW-7
JOB/SITE NAME	1350 Powell Street, Emeryville	**DRILLING STARTED**	04-Dec-02
LOCATION	1350 Powell Street, Emeryville, California	**DRILLING COMPLETED**	04-Dec-02
PROJECT NUMBER	502-1795	**WELL DEVELOPMENT DATE (YIELD)**	04-Dec-02 (2 gallons)
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	20 to 29.9 ft bfg
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	26.0 ft (04-Dec-02)
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	5.00 ft (05-Dec-02)
REMARKS	Boring begun at approximate finished grade - approximately 1ft below sidewalk.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bfg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bfg)	WELL DIAGRAM
				0			**FILL**: medium brown; soft; moist; 50% clay, 10% silt; 40% fine to medium sand; low plasticity; moderate estimated permeability.		
							@ 1 ft below finished grade - becomes dark brown; stiff; damp; low estimated permeability.		
				5			@ 6 ft below finished grade - some wood fragments.		
								9.0	Bentonite Seal
				10	CH		**Silty CLAY** (CH): olive brown; stiff; moist; 60% clay, 40% silt; high plasticity; low estimated permeability.		
							@ 10 ft below finished grade - becomes saturated.		
				15			@ 14 ft below finished grade - becomes moist.		
							@ 15 ft below finished grade - becomes medium brown; soft.		
							@ 17 ft below finished grade - becomes stiff.	18.0	
				20	SC		**Clayey SAND**> (SC): medium brown; dense; moist; 35% clay, 65% very fine sand; no plasticity; high estimated permeability.	20.0	Monterey Sand #2/12
					CL		**Sandy CLAY**> (CL): medium brown; soft; moist; 60% clay, 40% very fine sand; medium plasticity; moderate estimated permeability.	23.0	
					SC		**Clayey SAND**> (SC): olive gray; dense; moist; 30% clay, 70% very fine sand; no plasticity; high estimated permeability.	25.0	3/4"-diam., 0.020" Slotted Schedule 40 PVC
				25	CL		**Sandy CLAY**> (CL): olive brown; soft; moist; 60% clay, 40% very fine to fine sand; low plasticity; high estimated permeability.		
							@ 26 ft below finished grade - becomes saturated.	28.0	
					SC		**Clayey SAND**> (SC): olive brown; loose; saturated; 30% clay, 60% fine sand, 10% gravel to 15mm; no plasticity; high estimated permeability.	29.0	
					CL		**Silty CLAY**> (CL): dark gray; very stiff; moist; 60% clay, 40% silt; low plasticity; low estimated permeability.	30.0	Bottom of Boring @ 30 ft bfg
				30					

WELL LOG (TPHG-FT BFG) H:\BALAAM-1\GINT\DC-493.GPJ DEFAULT.GDT 12/10/02

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Balaam Brothers - Airgas	**BORING/WELL NAME**	TW-8
JOB/SITE NAME	1350 Powell Street, Emeryville	**DRILLING STARTED**	04-Dec-02
LOCATION	1350 Powell Street, Emeryville, California	**DRILLING COMPLETED**	04-Dec-02
PROJECT NUMBER	502-1795	**WELL DEVELOPMENT DATE (YIELD)**	04-Dec-02 (2 gallons)
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	23 to 32.9 ft bfg
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	29.0 ft (04-Dec-02)
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	9.00 ft (04-Dec-02)

REMARKS Boring begun at approximately 3 feet below finished grade (ft bfg) - approximately 1ft below sidewalk.

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bfg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bfg)
				5			**FILL**: olive brown; very stiff; moist; 60% clay, 10% silt; 30% fine to coarse sand; medium plasticity; low estimated permeability. @ 5 ft below finished grade - some concrete chunks.	3.0
				10			@ 8 ft below finished grade - no concrete. ▼ @ 10 ft below finished grade - some gravel to 20mm.	11.0
				15	CL		**Sandy CLAY** (CL): olive brown; stiff; moist; 65% clay, 35% very fine to fine sand; medium plasticity; low estimated permeability; some mottling.	15.0
				20	CH		**Silty CLAY** (CH): olive brown; stiff; moist; 60% clay, 40% silt; high plasticity; low estimated permeability; some mottling. @ 18 ft below finished grade - becomes light brown; soft; no mottling.	22.0
					SC		**Clayey SAND** (SC): light brown; medium dense; moist; 40% clay, 60% fine sand; no plasticity; high estimated permeability.	23.0
				25	CH		**Silty CLAY**> (CH): light brown; soft; moist; 70% clay, 30% silt; high plasticity; low estimated permeability.	26.0
				30	CL		**Sandy CLAY**> (CL): light brown; soft; moist; 70% clay, 30% very fine sand; medium plasticity; moderate estimated permeability. @ 29 ft below finished grade - becomes saturated. ▽	33.0

WELL DIAGRAM

- Bentonite Seal
- Monterey Sand #2/12
- 3/4"-diam., 0.020" Slotted Schedule 40 PVC
- Bottom of Boring @ 33 ft bfg

WELL LOG (TPHG-FT BFG) H:\BALAAM-1\GINT\DC-493.GPJ DEFAULT.GDT 12/10/02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1250 Powell Street
Emeryville, CA

CLIENT
Name Bologna Bros.
Address 1115 Hillview Rd Phone 510 ~~986~~-6070
City Berkeley Zip 94708

APPLICANT
Name Cambria Environmental Technology
Mary Holland-Ford Fax # 450-8295
Address 6262 Hollis St Phone 510 450 1982
City Emeryville Zip 94608

TYPE OF PROJECT
Well Construction ( ) Geotechnical Investigation (X)
Cathodic Protection ( ) General ( )
Water Supply ( ) Contamination ( )
Monitoring ( ) Well Destruction (X)

PROPOSED WATER SUPPLY WELL USE
New Domestic ( ) Replacement Domestic ( )
Municipal ( ) Irrigation ( )
Industrial ( ) Other ______ ( )

DRILLING METHOD:
Mud Rotary ( ) Air Rotary ( ) Auger ( )
Cable ( ) Other (X)

DRILLER'S NAME V & W Drilling ?
DRILLER'S LICENSE NO. C57-~~270904~~ ?
720904

WELL PROJECTS
Drill Hole Diameter 2 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 5 ft. Owner's Well Number TW-1

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/4/2002
ESTIMATED COMPLETION DATE 12/4/2002

FOR OFFICE USE

PERMIT NUMBER W02-1175
WELL NUMBER ______
APN ______

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. (circled) Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. (circled) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-2-02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] for Cambria DATE 12/02/02

PLEASE PRINT NAME Mary C. Holland-Ford

Rev.3-04-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

PUBLIC WORKS

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT: 1350 Powell Street
Emeryville, CA

CLIENT
Name: Balaam Bros.
Address: 1115 Hillview Rd Phone: 510 486-6070
City: Berkeley Zip: 94708

APPLICANT
Name: Cambria Environmental Technology
Mary Holland-Ford Fax: 510 450-8295
Address: 6262 Hollis St Phone: 510 450-1982
City: Emeryville Zip: 94608

TYPE OF PROJECT
Well Construction ( ) Geotechnical Investigation X
Cathodic Protection ( ) General ( )
Water Supply ( ) Contamination ( )
Monitoring X Well Destruction ( )

PROPOSED WATER SUPPLY WELL USE
New Domestic ( ) Replacement Domestic ( )
Municipal ( ) Irrigation ( )
Industrial ( ) Other ____

DRILLING METHOD:
Mud Rotary ( ) Air Rotary ( ) Auger ( )
Cable ( ) Other X

DRILLER'S NAME: V & W Drilling
DRILLER'S LICENSE NO. C57 ~~270904~~ 720904

WELL PROJECTS
Drill Hole Diameter 2 in. Maximum Depth 20 ft.
Casing Diameter 2 in. Owner's Well Number TW-2
Surface Seal Depth 5 ft.

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum Depth ____ ft.
Hole Diameter ____ in.

ESTIMATED STARTING DATE 12/4/2002
ESTIMATED COMPLETION DATE 12/4/2002

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] for Cambria DATE 12/02/02

PLEASE PRINT NAME Mary C. Holland-Ford Rev.3-04-02

FOR OFFICE USE

PERMIT NUMBER W02-1176
WELL NUMBER ____
APN ____

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-2-02

PUBLIC WORKS

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION

399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1350 Powell Street Emeryville, CA

CLIENT
Name Balaam Bros
Address 1115 Wilma Rd Phone 510 ___-6070
City Berkeley Zip 94708

APPLICANT
Name Cambria Environmental Technology
Mary Holland-Ford Fax 510 450 8295
Address 6262 Hollis ST Phone 510 450 1982
City Emeryville Zip 94608

TYPE OF PROJECT
Well Construction ( ) Geotechnical Investigation ( )
Cathodic Protection ( ) General ( )
Water Supply ( ) Contamination ( )
Monitoring (X) Well Destruction (X)

PROPOSED WATER SUPPLY WELL USE
New Domestic ( ) Replacement Domestic ( )
Municipal ( ) Irrigation ( )
Industrial ( ) Other ______ ( )

DRILLING METHOD:
Mud Rotary ( ) Air Rotary ( ) Auger ( )
Cable ( ) Other (X)

DRILLER'S NAME V & W Drilling

DRILLER'S LICENSE NO. C57 ~~720904~~ 720504

WELL PROJECTS
Drill Hole Diameter 2 in.
Casing Diameter 2 in.
Surface Seal Depth 5 ft.
Maximum Depth 20 ft.
Owner's Well Number TW-3

GEOTECHNICAL PROJECTS
Number of Borings ______
Hole Diameter ______ in.
Maximum Depth ______ ft.

ESTIMATED STARTING DATE 12/4/2002
ESTIMATED COMPLETION DATE 12/4/2002

FOR OFFICE USE

PERMIT NUMBER W02-1177
WELL NUMBER ______
APN ______

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report. (circled)
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS (circled)
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-2-02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] for Cambria DATE 12/02/02

PLEASE PRINT NAME Mary C. Holland-Ford

Rev.3-04-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

PUBLIC WORKS

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1350 Powell Street Emeryville, CA

CLIENT
Name Balaam Bros.
Address 1115 Hillview Rd. Phone 510 486-6070
City Berkeley Zip 94708

APPLICANT
Name Cambria Environmental Technology
Mary Holland-Ford Fax 510 450 8295
Address 6262 Hollis St Phone 510 450 1982
City Emeryville Zip 94608

TYPE OF PROJECT
Well Construction ( ) Geotechnical Investigation X
Cathodic Protection ( ) General ( )
Water Supply ( ) Contamination ( )
Monitoring X Well Destruction ( )

PROPOSED WATER SUPPLY WELL USE
New Domestic ( ) Replacement Domestic ( )
Municipal ( ) Irrigation ( )
Industrial ( ) Other ______ ( )

DRILLING METHOD:
Mud Rotary ( ) Air Rotary ( ) Auger ( )
Cable ( ) Other X

DRILLER'S NAME V & W Drilling
DRILLER'S LICENSE NO. C57 ~~270704~~ 720904

WELL PROJECTS
Drill Hole Diameter 2 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 5 ft. Owner's Well Number TW-4

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/4/02
ESTIMATED COMPLETION DATE 12/4/02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] for Cambria DATE 12/02/02

PLEASE PRINT NAME Mary C. Holland-Ford Rev.3-04-02

FOR OFFICE USE

PERMIT NUMBER W02-1178
WELL NUMBER ______
APN ______

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report. (circled)
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS (circled)
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-2-02

PUBLIC WORKS

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1350 Powell Street
Emeryville, CA

CLIENT
Name Balaam Bros
Address 1115 Hillview Rd Phone 510 986-6070
City Berkeley Zip 94708

APPLICANT
Name Cambria Environmental Technology
Mary Holland-Ford Fax 510 450 8295
Address 6262 Hollis St Phone 510 450 1983
City Emeryville Zip 94608

TYPE OF PROJECT
Well Construction X Geotechnical Investigation
Cathodic Protection General
Water Supply Contamination
Monitoring X Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic Replacement Domestic
Municipal Irrigation
Industrial Other

DRILLING METHOD:
Mud Rotary Air Rotary Auger
Cable Other X

DRILLER'S NAME Vironex Drilling

DRILLER'S LICENSE NO. C57 ~~720904~~ 720904

WELL PROJECTS
Drill Hole Diameter 2 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 5 ft. Owner's Well Number TW-5

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/4/02
ESTIMATED COMPLETION DATE 12/4/02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] for Cambria DATE 12/02/02

PLEASE PRINT NAME Mary C. Holland-Ford

Rev.3-04-02

FOR OFFICE USE

PERMIT NUMBER W02-1179
WELL NUMBER ____
APN ____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-2-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1850 Powell Street
Emeryville, CA

CLIENT
Name Balaam Bros.
Address [illegible] Phone 510 [illegible]
City Berkeley Zip 94708

APPLICANT
Name Cambria Environmental Technology
Mary Holland-Ford Fax 510 450 [illegible]
Address 6262 Hollis St Phone 510 450 1982
City Emeryville Zip 94608

TYPE OF PROJECT
Well Construction ( ) Geotechnical Investigation ( )
Cathodic Protection ( ) General ( )
Water Supply ( ) Contamination ( )
Monitoring (X) Well Destruction ( )
X (Geotechnical Investigation / Well Construction line)

PROPOSED WATER SUPPLY WELL USE
New Domestic ( ) Replacement Domestic ( )
Municipal ( ) Irrigation ( )
Industrial ( ) Other ______ ( )

DRILLING METHOD
Mud Rotary ( ) Air Rotary ( ) Auger ( )
Cable ( ) Other (X)

DRILLER'S NAME V & W Drilling

DRILLER'S LICENSE NO. C57 ~~[illegible]~~ 720504

WELL PROJECTS
Drill Hole Diameter 2 in.
Casing Diameter 2 in.
Surface Seal Depth 5 ft.
Maximum Depth 20 ft.
Owner's Well Number TC-6

GEOTECHNICAL PROJECTS
Number of Borings ______
Hole Diameter ______ in.
Maximum Depth ______ ft.

ESTIMATED STARTING DATE 12/4/02
ESTIMATED COMPLETION DATE 12/4/02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] for Cambria DATE 12/02/02

PLEASE PRINT NAME Mary C. Holland-Ford

Rev.3-04-02

FOR OFFICE USE

PERMIT NUMBER W02-1180
WELL NUMBER ______
APN ______

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources - Well Completion Report. (circled)
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS (circled)
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-2-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

PUBLIC WORKS

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1350 Powell Street
Emeryville, CA

CLIENT
Name Balaam Bros.
Address [illegible] Phone 510 [illegible]-6070
City Berkeley Zip 94708

APPLICANT
Name Cambria Environmental Technology
Mary Holland-Ford Fax 450 [illegible]
Address 5762 [illegible] ST Phone 510 450 1982
City Emeryville Zip 94608

TYPE OF PROJECT
Well Construction ( )
Cathodic Protection ( )
Water Supply ( )
Monitoring (X)
Geotechnical Investigation ( )
General ( )
Contamination (X)
Well Destruction ( )

PROPOSED WATER SUPPLY WELL USE
New Domestic ( )
Municipal ( )
Industrial ( )
Replacement Domestic ( )
Irrigation ( )
Other ______ ( )

DRILLING METHOD:
Mud Rotary ( )
Cable ( )
Air Rotary ( )
Other (X)
Auger ( )

DRILLER'S NAME V & W Drilling
DRILLER'S LICENSE NO. C57 ~~[illegible]~~ 720904

WELL PROJECTS
Drill Hole Diameter 2 in.
Casing Diameter 2 in.
Surface Seal Depth 5 ft.
Maximum Depth 20 ft.
Owner's Well Number TW-7

GEOTECHNICAL PROJECTS
Number of Borings ______
Hole Diameter ______ in.
Maximum Depth ______ ft.

ESTIMATED STARTING DATE 12/4/02
ESTIMATED COMPLETION DATE 12/[illegible]/02

FOR OFFICE USE
PERMIT NUMBER W02-1181
WELL NUMBER ______
APN ______

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-2-02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] for Cambria DATE 12/02/02

PLEASE PRINT NAME Mary C. Holland-Ford

Rev.3-04-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1350 Powell Street
Emeryville, CA

CLIENT
Name Balogh Bros.
Address 1115 Hillview Rd Phone 510 ___ 6070
City Berkeley Zip 94708

APPLICANT
Name Cambria Environmental Technology
Mary Holland-Ford Fax 510 450 8295
Address 6262 Hollis St Phone 510 450 1982
City Emeryville Zip 94608

TYPE OF PROJECT
Well Construction [ ] Geotechnical Investigation [X]
Cathodic Protection [ ] General [ ]
Water Supply [ ] Contamination [ ]
Monitoring [X] Well Destruction [ ]

PROPOSED WATER SUPPLY WELL USE
New Domestic [ ] Replacement Domestic [ ]
Municipal [ ] Irrigation [ ]
Industrial [ ] Other ______ [ ]

DRILLING METHOD:
Mud Rotary [ ] Air Rotary [ ] Auger [ ]
Cable [ ] Other [X]

DRILLER'S NAME V & W Drilling

DRILLER'S LICENSE NO. C57-~~720904~~ 720904

WELL PROJECTS
Drill Hole Diameter 2 in. Maximum
Casing Diameter 2 in. Depth 20 ft
Surface Seal Depth 5 ft. Owner's Well Number TW-8

GEOTECHNICAL PROJECTS
Number of Borings ______ Maximum
Hole Diameter ______ in. Depth ______ ft.

ESTIMATED STARTING DATE 12/4/02
ESTIMATED COMPLETION DATE 12/4/02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] for Cambria DATE 12/02/02

PLEASE PRINT NAME Mary C. Holland-Ford Rev.3-04-02

FOR OFFICE USE

PERMIT NUMBER W02-1182
WELL NUMBER ______
APN ______

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-2-02

Work Request Form

To: _____

From: _____

Date Assigned: _____ Date Due: _____ ___a.m. ___p.m.

Send original to: _____

Send copies to: _____

File address: _____

Binding instructions:

_____

_____

How do you want it sent?

_____**FedX** Express_____ (next bus a.m.) FedEx Standard Overnight _____ (next bus p.m.) Fed Ex First Overnight_____ (earliest next bus a.m. at some locations)

_____**UPS** Next day air_____ Second Day Air_____ Ground_____

_____**USPO** First Class Mail____ Certified_____ (mailing receipt/online delivery status) Registered_____ (return receipt)

Express_____ (fastest, 365 days/yr inc weekends, holidays) Priority_____ (Preferential handling)

Certificate of mailing_____ (receipt showing evidence of mailing)

Other instructions:

Check list:

1.

2.

3.

4.

5.

Work Request Form

To: _____

From: _____

Date Assigned: _____Date Due: _____ ____a.m. ___p.m.

Send original to:_____

Send copies to: _____

File address:_____

Binding instructions:

_____

_____

How do you want it sent?

_____**FedX** Express_____ (next bus a.m.) FedEx Standard Overnight _____ (next bus p.m.) Fed Ex First Overnight_____ (earliest next bus a.m. at some locations)

_____**UPS** Next day air_____ Second Day Air_____ Ground_____

_____**USPO** First Class Mail____ Certified_____ (mailing receipt/online delivery status) Registered_____ (return receipt)

Express_____ (fastest, 365 days/yr inc weekends, holidays) Priority_____ (Preferential handling)

Certificate of mailing_____ (receipt showing evidence of mailing)

Other instructions:

Check list:

1.

2.

3.

4.

5.

Quotes to move
Award moving contract
Identify items not to be moved; sticker
Remove outside Cambria Sign
Packing / marking instructions to employees
Label all items with number
Label all items with number
Label work stations and post floorplan
Vacuum, touch up 65th
Notify janitoral service if we discontinue
Notify janitoral service if we decide on new one
Identify partitions to be moved
Identify partitions to be dumped
Show location of files, cabinets, copiers, printers postage machine, etc on floorplan
Collect keys from employees at 65
Collect keys from employees at Hollis
Make new keys for 5900
Order stickers advising clients, vendors of change of address
Change address at post office
Change address with professional magazines, affiliations,etc.
Find out cost of moving insurance
Drinks and ice for movers and employees on moving day
Rainforest; are we keeping?
Plants belong to us
Install server
Select new phone system
Install and test new phone system
Turn utilities off at 65
Turn utilities on at 5900
Notify alarm system at new place (see figures of cost from Security, Etc.)
Note damage spots on walk through 5900
Prepare and distribute "how to operate new phone system" if needed
Prepare new phone list w/extensions
Notify janitors of our move; get new bid from them
Clean out storage shed
Decide who moves first floor at Hollis
Decide when Hollis moves
Assign person to stay at 65 to answer questions
Assign person to stay at Hollis to answer questions
Assign person to stay at 5900 to answer questions
Repair 65th
Design and order new signs; do we need landlord's permission?
Contact Ikon to move copiers
Decide what to do with 3rd copier
Order FedX Airbills
Order UPS Ground bills
Each bank of file cabinets will be numbered in order
Notify telephone co of change of address
Order new business cards